Arturo Valledor Alamo Engineering Management Héctor J. Cruzado, PhD Graduate School Polytechnic University of Puerto Rico

Abstract — The healthcare system in the USA has expanded the use of an alternative to its traditional fee-for-service programs. This paper is built on the need one Bayamon Medical Office has to develop a transition plan to change their fee-for-service model into a value-based care model. This plan focuses on the implementation of a capitation payment plan. Capitation offers opportunities to influence the future of healthcare by improving the management of resources. For this plan, the development of new measures was needed. The first tool is a performance metric based on survey and questionnaire data to determine how effective the plan has become. The second tool was a risk strategy to tackle the diverse needs of the patients the office is charged with. Lastly, the organization of a new team was developed to manage and monitor the plan. Findings indicate the model would show a 22% decrease in patient health costs and a 19%-28% improvement in care quality and patient satisfaction.

Key Terms — *bundle-payment, capitalization, fee-for-service, value-based care.*

INTRODUCTION

Medical health care providers have begun to change the ways they provide their services to the public. Despite the US spendings more in health care than most other countries, it suffers from having the highest rates of infancy deaths and preventable death in a high-income country. Experts have identified the root cause for these problems stem from the incentives used for the nation's traditional, fee-for-service (FFS) payment models. In an FFS model, providers are reimbursed based on the quantity of services delivered, even when unable to achieve the desired results. As a result, the Centers for Medicare and Medicaid Services (CMS), began the creation and implementation of a value-based care model to incentivize more cost-effective and methods to get lifesaving care. Four common models are used to reward facilities whose primary goal was value creation for patients. These models are: Accountable Care Organizations, Bundled Payments, Patient Centered Medical Homes, and Shared Risk value-based care model.

The objective of this paper is to create a transition plan for Dr. Sanchez's medical office, located in the Bayamon Medical Plaza, from the current fee-for-services model and into a value-based care model.

LITERATURE REVIEW

Conceptualization and Implementation of Value-Based Care

Since its introduction by Porter & Teisberg in 2006 [1], value-based care has received growing attention, and healthcare organizations in several countries are changing their strategies towards its direction. Value Based HealthCare (VBHC) was operationalized into six components that were assumed to be mutually reinforcing: organize care into Integrated Practice Units, measure outcomes and costs for every patient, move to bundled payments for care cycles, integrate care delivery across separate facilities, expand excellent services geography, and build an enabling across information technology platform. By focusing on the outcomes that matter most to patients, value aligns care with how patients experience their health.

However, ambiguity exists regarding both the conceptualization and the implementation of VBHC which makes it difficult to share best practices or compare across healthcare organizations [2, 3]. One hospital can implement one value-based care

strategy while another hospital in the same state can implement a completely different strategy. The lack of a common conceptualization of VBHC impedes the ability to have a shared understanding of its application in the US healthcare system and to distinguish it from other broader concepts.

Nevertheless, it does not diminish the impact that Porter & Teisberg had with their introduction of a value-based care model [1]. During a time of uncertainty within the healthcare system, VBHC has brought new possibilities into a troubled healthcare system.

Measuring Success in Value-Based Programs

As the Department of Health and Human Services actively considers the federal government's near-term and long-term strategy for how to design and implement VB programs, the department is seeking to apply the best available evidence to guide policymaking [2]. This push can be seen not just in the US, but across the globe. Countries such as Australia and India have seen their current system fail to properly tackle the latest pandemic and have begun to develop their own VBHC programs to fix these issues [2]. It leads to an ever-growing problem the department faces, the ability of publicly available information regarding what constitutes a successful VBP program to adequately teach policymakers how to design VBP programs.

The application of value-based payment models represents a work in progress regarding how best to design VBP programs [3]. Bundled payment programs that embed clinical quality measures have only recently emerged and are just now being tested and evaluated. There is currently limited evidence regarding the impact of these programs and whether they can be successfully implemented. Countries around the world have begun their own research and development in value-based care. This has resulted in an extensive evaluation of their current medical practices and policies, which revealed serious weaknesses in core funding and professional staffing models for hospitals and medical practices [2, 3]. The published evidence regarding improvements in performance from some of the most common valuebased care models is mixed, where improvements were typically modest.

However, the research has shown promise and led to discoveries of observable improvements [4]. By changing reimbursement, for example, researchers discovered that providers and payers can redefine what services are considered valuable, supporting reductions in unnecessary utilization and improvements in care coordination. Researchers across the medical field have argued the everincreasing need for a healthcare framework that includes understanding the needs of patients and measuring its outcomes and cost would help guide policymakers created their own value-based care programs [4].

ANALYSIS APPROACH

The Chosen Value-Based Care Model

To begin any transition plan from a fee-forservice model into a value-based care model, the first step that must be accomplished is to select which model to use for the plan. The model chosen for this transition plan will be a capitation bundle payment model. A bundled payment is a fixed-price agreement for a predefined episode of care, commonly consisting of a procedure and all related services or all care for a medical condition. Capitation is a fixed amount of money per patient per unit of time paid in advance to the physician for the delivery of health care services. In this model, a risk pool is established as a percentage of the payment. Money in this risk pool is withheld from the physician until the end of the fiscal year. If the health plan does well financially, the money is paid to the physician; if the health plan does poorly, the money is kept to pay the deficit.

When the insurer provider signs a capitation agreement, a list of specific services provided to patients is included in the contract. Most capitation agreements would include services such as: preventive services, administered medication, injections, laboratory tests, health counseling, and routine visits. The model proved popular in Puerto Rico, leading to many research and development plans that can be readily studied and expanded upon in this economic system. This popularity is due to the plan's financial flexibility for both physicians and providers alike. Providers can more easily forecast their revenue and expenses, while payers can more accurately budget their healthcare spending. Providers also have an incentive to invest in preventative medicine for patient health, leading to fewer cases of surgical procedures required.

Performance Outcome Metrics

To ensure the viable restructuring of the office's payment model, management would need to develop metrics to help guide the implementation. Performance metrics assess the effectiveness, efficiency, and quality of care delivered by healthcare providers. The focus is on patient outcomes, cost of care, and overall patient satisfaction, aiming to improve care delivery while reducing costs. For this plan, the performance metrics to be implemented are:

- Patient Satisfaction Surveys
- Readmission Rates
- Patient-reported Outcomes
- Cost-efficiency Analysis

The patient satisfaction surveys measure the overall satisfaction levels of patients with the care they receive. This would be handed out to patients during their scheduled visit and will be asked to fill it out. The next metric would be to measure the readmission rates. This metric tracks the percentage of patients who are readmitted to a hospital within a specified period after being discharged or the recurrence of an acute condition, indicating the quality of care received during their initial hospital stay or medical office visit.

Patient-reported outcomes are any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else. This report can assist clinicians and future patients to select the best treatment by providing a clearer picture of the costs and benefits of treatment [4]. Lastly, cost efficiency would measure the cost of delivering care per patient, focusing on reducing unnecessary procedures and hospitalizations while maintaining or improving quality outcomes.

Risk Management Strategies

The biggest hurdle for any transition plan is that every model comes with a certain amount of risk in providing care for patients. VBHC requires a proactive approach to managing the health of entire populations. It is vital for healthcare organizations to develop strategies with a focus on risk stratification and population health management. Population management is the process of planning the health care needs of all your patients by shifting the focus from individual patient visits to the entire population. This is done by grouping patients based on needs, then target resources and services accordingly [5], [6]. The framework used to design sub-groups of the patient population would be: High-Risk Care, Rising-Risk Care, and Low-Risk Care.

Patients under High-Risk Care are those with one or more chronic medical conditions that can be improved or kept under control. These patients had suffered a one-time catastrophic health problem that is dangerous if left untreated. Patients would be assigned a special Care Manager who serves as a central point of contact between patient and physician. They'll be accountable for coordinating care in partnership with the care team and across the care continuum. Each patient will have an individual Care Management Model with templates and documentation capabilities within the health center's electronic health record. This includes 24/7 patient access to services and personal assessment of needs for every visit.

The group under Rising-Risk are likely to have greater health care needs and higher expenditures near term, compared to the current level of expenditures. The goal is to improve their health outcomes while reducing costs and preventing escalation into High-Risk. This group will be cared for by incorporating the patient-centered medical home model (PCHM). This approach delivers highquality, cost-effective primary care using teambased approaches. Strategies to address the needs of rising-risk patients include review of gaps in care followed by targeted outreach. Follow-up visits can be scheduled for chronic diseases that incorporate preventive screenings particularly with a family member or friend to serve as an 'influencer'. They would serve as an extension of the care team and notify the team when significant events occur.

Lastly, the Low-Risk group are less likely than others to get a particular disease, condition, or injury, requiring less personal care as a result. The plan is to provide an alternative access point to receive care services, such as phone, video, and patient portal, decreasing the need to go through face-to-face provider interactions. The focus should be on prevention and care needs that are efficient, satisfying to the patient, and less costly for the patient and practice.

Administrative Restructure

To develop a transition plan for this medical office, both an active examination of current staffing and adaptability to change is needed. The current staff in the office, as shown in Table 1, shows a large number of employees are assigned to billing and record keeping. To transition into a capitation model, the staff needs to be reassigned to ensure all facets are operating at peak capacity.

 Table 1

 Current Staff in Dr. Sanchez Medical Office

Staff Cadres	No. of HealthCare Workers
Audiologists	2
Clinical Nurses	1
Lab Technologists	1
Health Records Officers	3
Financial Administrators	3

The staff in Financial Administration can be reassigned since the office would receive a predetermined sum of money. Members in Health Records can also be distributed as providers would already give out the necessary patient information upon contract completion. The plan allows two staff members in each department to move into a new team created for the implementation of the capitation plan, while the last members remain. This new team will be led by the senior financial administrator, who will oversee and manage care for the qualified patients. Monthly meetings will be conducted to discuss the implementation of the plan and further tweak it when needed. One other administrator will be in charge of patient engagement and survey data collecting. Lastly, the last two members of the team will be charged with handling the flow of visiting patients and preparing them for physician examination.

EXPECTED RESULTS

Decreased Spending Through Capitation

Bundled payment models are intended to decrease spending via several mechanisms: a reduction in unnecessary physician services during a hospitalization, more judicious use of health care resources during the hospital stay, and a reduction in post discharge costs. Reference [7] shows the results Humana has experienced with value-based care. Patients under VBHC were more engaged with preventive and primary care, with 85% of patients able to see their primary care provider at least once in 2022, compared with 75% in FFS programs. It also observed 30.1% fewer inpatient admission for its VBHC compared to those enrolled in FFS. In a capitation model, patients experienced a moderate reduction in their treatment intensity, the total treatment duration, session length and frequency of practice opportunities supported by the treatment. Under capitation, the overall treatment intensity is 7-12% lower than that under FFS [8]. Furthermore, there was no evidence of increased relapse rates for these patients. Capitation programs also reduce follow-up and further extended treatment costs, as patients under capitation systems reflected a 22% lower cost of care than those in the FFS systems [9].

One outcome of reducing reimbursement could be a reduction in unnecessary care. Capitation

encourages clinicians to limit unnecessary medical services that raise costs. Per-person payment methods can encourage waste reduction in unnecessary or suboptimal use of care during a hospital stay, inefficiencies in producing item consumed in patient treatment, and cases within a patient population that are unnecessary or preventable. This reduction in turn gives patients and physicians the freedom to make the treatment decisions they think are best.

Quality Care Means Safer Care

Value-based care can result in higher-quality care for patients and more solid financial footing for health systems. Programs that include the use of patient satisfaction metrics encourage patient loyalty for the office. This loyalty leads to better clinical outcomes, patient compliance and fewer malpractice suits. Tools like telemedicine and written surveys emphasize communication between patients and their physicians. Patient satisfaction is thus an effective indicator to measure the success of doctors and medical offices.

A key feature in most value-based care models is the emphasis on quality care for a patient. Many programs include efforts to increase patient satisfaction. Capitation is no different, and although there aren't many studies focused on the topic, the data available has shown that efforts have made some progress in increasing patient satisfaction. Patients in the capitation systems reported an average patient quality 19%-28% higher than those provided under fee-for-service systems [9].

CONCLUSION

The evidence is clear: To create a futureproof healthcare plan, Dr. Sanchez's medical office must incentivize the transition from the fee-for-service model to a Capitation plan. The 2019 pandemic taught the world that not only is FFS wasteful, but in dire need of innovation. The advantages of the Capitation plan are incentivizing providers to coordinate care and improving efficiency and quality of all included services. With new measures in staffing arrangement, performance metrics, and risk management strategies implemented, this plan allows for stronger cost controls, healthier patient populations, and lower financial risks. For the future, the plan can serve as a model for expansion into the other offices headed by Dr. Sanchez and his associates in Plaza las America and Plaza Carolina.

REFERENCES

- Porter ME, et al. "Redefining Health care: creating valuebased competition on results:" Harvard Business School Press; 2006.
- [2] Ramsdal H, Bjørkquist C. "Value-based innovations in a Norwegian hospital: from conceptualization to implementation." Public Manag Rev. 2020;22(11):21.
- [3] McAlearney AS, et al. "Moving organizational culture from volume to value: a qualitative analysis of private sector accountable care organization development." Health Serv Res. 2018;53(6):4767–88.
- [4] R. Mercieca-Bebber, "The importance of patient-reported outcomes in clinical trials and strategies for future optimization," *Patient Related Outcome Measures*, vol. Volume 9, pp. 353–367, Nov. 2018.
- [5] L. R. Haas, "Risk-Stratification Methods for Identifying Patients for Care Coordination," The American Journal of Managed Care, vol. 19, no. 9, Sep. 2013.
- [6] Case Management Society of America and National Association of Social Workers. (2008). Case Management Caseload Concept Paper: Proceedings of the Caseload Work Group. http://www.cmsa.org/portals/0/pdf/CaseloadCalc.pdf
- [7] K. Patterson, "VALUE-BASED CARE REPORT 2023," Humana, <u>https://docushare-web.apps.external.pioneer.humana.com/Marketing/docushare-app?file=5247853</u>
- [8] Y. Ding and C. Liu, "Alternative payment models and physician treatment decisions: Evidence from Lower back pain," Journal of Health Economics, vol. 80, p. 102548, Dec. 2021.
- [9] R. Grieve and J. S. Sekhon, "Evaluating health care programs by combining cost with quality-of-life measures: A case study comparing capitation and fee for service," Health Services Research, vol. 43, no. 4, pp. 1204–1222, Jul. 2008.