HEALTH IT AND HEALTH DISPARITIES

Patient Care Management and Rewards Program – promoting and tracking wellness behaviors within the context of an existing case-management program

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Case Study Report: Patient Care Management and Rewards Program – promoting and tracking wellness behaviors within the context of an existing case-management program

"On a daily basis, the medical team at AEH addresses the unique problems faced by those in our communities who have often had to go without adequate and quality health care. We have heard the needs of our people and we are continuously striving to meet these needs through the development and implementation of innovative health care strategies aimed at those prevalent health problems burdening our communities." – AEH Mission Statement[i]

Report Summary

Intervention and Setting	The Patient Care Management and Rewards Program implemented at Aaron E. Henry Community Health Services Centers (AEH) in the Mississippi Delta, in collaboration with Altruista Health, Inc., uses Altruista GuidingCare (Altruista) – a care management software system – to track three health behavior indicators: weight management, aerobic activity, and medication compliance. The program provides patients with financial rewards for progress toward meeting health goals. The patient-centered program incorporates health coaching, care support service delivery, and direct financial incentives; it focuses on patient education and self-management.
Target Population	Mississippi Delta residents with diabetes and/or hypertension
Technology Description	Altruista GuidingCare: A web-based, population care management software system.
Funding and Start-up	$100,000 from Heinz Family Philanthropies for a pilot project $175,000 from the Robert Wood Johnson Foundation (RWJF) in 2009 to replicate the pilot project on a larger scale
Data and Analysis	Content analysis using NVivo for a series of in-person and telephone discussions with program administrators, providers, and participants including: • AEH Executives: Chief Executive Officer, Chief Medical Officer, Chief Operating Officer • Patient Care Management and Rewards Program Director • An AEH physician, a nurse practitioner, a registered dietician, and three case managers • Individuals who obtain services from AEH clinics • Chief Executive Officer of Altruista Health, Inc. (Co-Principal Investigator and Altruista GuidingCare vendor)
Key Take-Aways	• Customizing systems to meet the needs of providers who care for the underserved encourages buy-in. • Technology can facilitate the provision of integrated interdisciplinary care. • Technology-driven case management can help engage both ancillary providers and patients. • Lack of interoperable systems poses serious barriers to sustainability.

Introduction

Aaron E. Henry Community Health Services Centers (AEH), a Federally Qualified Health Center (FQHC) located in the rural Mississippi Delta operates clinics in Clarksdale, MS, Batesville, MS, and Tunica, MS. AEH provides several medical and social services to over half of the 35,000 to 40,000 primarily Black patients in their four county service area. The Mississippi Delta consistently experiences some of the highest poverty rates and poorest health outcomes in the country. Representative of Mississippi poverty – 21.2% versus 13.8% nationwide[ii] – the majority of patients served by AEH either lack adequate insurance coverage or lack insurance all together. The patient population also experiences a disproportionately high chronic disease burden; one AEH provider estimated a third to a half of their adult population have diabetes, hypertension, or both, and approximately 75% have a Body Mass Index (BMI) above the normal range.

Populations with low-income experience reduced access to high-quality care, higher rates of disease, and face greater risk of premature death.[iii] The poor account for half of the nearly 46 million uninsured in the United States. Approximately one-third of the uninsured have a chronic disease and the uninsured receive care for a health problem six times less often than the insured.[iv] Studies show that racial and ethnic minorities face greater barriers in access to medical and preventive care due to cost than other groups[v,vi] and disproportionally experience the burden of chronic disease. One of the most glaring health disparities appears among Blacks, which represent 12.9%of the U.S. population; 48% of Black adults suffer from a chronic disease compared to 39% of the national population.[vii] Factors such as limited resources, low education levels, and few transportation options contribute to the health disparities faced by the populations served by AEH.

Potential benefits of using care management technology like Altruista. Effective use of population care management technology can improve clinical care processes and reduce health care expenditures. When integrated as part of a comprehensive effort, such as coupling with a care management approach, care management technology can improve the quality of care for patients with chronic and complex health conditions in ways that prevent costly complications. Cost savings accrue from increasing effective use of medications and improving patients' self-care, improving productivity (offloading work from doctors to case managers; delivery of care and patient education by telephone, etc.), and reducing inappropriate utilization with a supportive approach acceptable to patients.[viii] Population management systems can also improve patient reminders and provide case managers with insight to track and group patients with similar care needs for targeted interventions. These components help clinicians and case managers plan and deliver evidence-based care, and help patients play an active and informed role in caring for themselves.

Key functionality and uses. AEH's RWJF-funded Patient Care Management and Rewards Program, which replicates a pilot intervention on a larger scale, uses a suite of health information technology (health IT) tools. AEH's existing case management program integrates with Altruista GuidingCare (Altruista) – a web-based population care management software system. Altruista serves as a case management decision support system enabling case managers to track, manage, and access health information for individual patients and populations with one or multiple chronic illnesses. The system includes panel management, incorporates clinical decision support (CDS), and offers modules for tracking health indicators. A reporting and analytics module allows users to run standard and customized reports at

the patient and/or population level. These reports satisfy Uniform Data System (UDS) requirements and support internal performance improvement. Users create automatic care alerts for health indicators of interest according to parameters and input values set for specific disease categories. It also includes a module with communication tools such as scripts for telephone outreach to assist case managers with patient engagement and education functions.

AEH couples this technology-supported case management approach with the use of financial rewards to patients who meet goals related to three health behavior indicators – weight management, aerobic activity, and medication compliance. Altruista works with IncentPay – a CECsoft incentive platform used to manage incentives to participants. Due to limited interoperability between these two systems, AEH staff manually enters some data to calculate the incentive payments. Additionally, AEH directly downloads data from Omron pedometers, which measure aerobic minutes, into IncentPay but transfers data manually into Altruista. Through its health center control network, the Delta Health Alliance, AEH will ultimately use the Allscripts Electronic Health Record (EHR) and a practice management system (PMS) across their three clinics. Implementation began in October 2010, coinciding with the start of the RWJF project. They interfaced Altruista with AEH's old PMS (MISYS), which allowed demographic data to flow from the PMS to Altruista; however, they have not yet developed an interface between Altruista and Allscripts.

Over the course of the RWJF project, AEH randomly assigned approximately 600 patients into either a control group or one of seven intervention groups each representing incentives for different combinations of outcomes and behaviors such as weight loss, exercise, and medication compliance. They then tracked these groups over the duration of 12 months. AEH experienced a high retention rate in the program and key respondents partially attributed this to patient acceptance of the program. Data analyses (in progress) will assess improvements in key health indicators and associated clinical outcomes (i.e., blood glucose levels, blood pressure, hemoglobin A1c [HbA1c] and cholesterol), and reductions in health care costs.

Sources of Funding

- $100,000 for pilot project from Heinz Family Philanthropies
- $175,000 from RWJF in 2009 to replicate the pilot project on a larger scale

Encouraging Adoption & Implementation

In this section we discuss findings related to the design, implementation, and adoption of Altruista at AEH. We include stakeholders' assessments of lessons learned from the experience.

Effective adoption requires planning and leadership around buy-in and acceptance. Case managers did not initially embrace the adoption of Altruista. Some case managers had no previous experience with health IT, while others resisted taking on additional responsibility in an already overburdened environment. Case managers mentioned using Altruista increases the data entry burden and complicates their workflow, in part due to a lack of integration between Altruista with other IT systems at AEH.

"Everyone did not initially buy-in to [Altruista], but it got better as the program went along."
AEH Administrator

Despite initial resistance, strong leadership from midlevel and senior staff at AEH, coupled with support from the vendor, helped encourage case managers to embrace the Altruista system. AEH leadership responded to case managers' concerns, providing them with additional support for data entry and working

with them to rearrange their workflow. System training sessions with the vendor helped case managers realize the benefits of using Altruista, importantly, the ability to demonstrate care management outcomes more effectively. As a result, case managers embraced the technology and believe it greatly improved their case management approach. When asked to comment on the overall usability of the system, one case manager responded: "*Once you familiarize yourself with the system, it is easy to move through and find the things you need… I think it has been real beneficial. I loved it once I learned it."*

Customization of systems can add to buy-in. The vendor customized and configured Altruista to fit the needs of the existing AEH case management program and the community health center on the whole. AEH staff and the vendor customized the software to reflect the information case managers previously captured on paper. Case managers seemed appreciative of the opportunity to provide the vendor with direct feedback and noted the software adjustments made the system easier to use. According to AEH staff, the reporting functionality of Altruista exceeds those of the previously used Patient Electronic Care System (PECS) system. Case managers especially liked the ability to run reports on individual patients as well as panels.

"I think there was a problem with understanding… what a community health center does and getting the software to work for us as opposed to a private practice office… that isn't as comprehensive with [their] care. We had lots of calls to make clear what was needed and they went above and beyond in regards to what needed to be done." *AEH Administrator*

Additionally, the Altruista vendor configured the software to not only meet the reporting needs of the RWJF grant, but to also easily produce reports for UDS reporting; a requirement for all Health Resources and Services Administration (HRSA) funded community health centers. AEH administrators provided the vendor with a list of additional metrics, such as self-management indicators and customized response categories, to add to the Altruista system for further customizing functionality.

Impact of Adoption and Consequences

Having explored strategies used by AEH to implement a technology-driven case management incentive project, we next describe the impact of the adoption and implementation of this approach at AEH.

Technology can facilitate the provision of integrated interdisciplinary care. Staff at AEH found use of Altruista for case management facilitates a "team approach" to the provision of care. Specifically, the collective development of goals for each of the three key health indicators brought together case managers, providers, and administrative staff. The ability to electronically monitor these goals and other related outcomes improved accountability and communication across AEH staff. As described by one case manager, *"[Before] it was just risk management on a chart, but now it's a team [effort]. Everyone is on board and accountable for each other."* Despite limited direct use of Altruista by clinicians, all providers review the reports produced using Altruista during team meetings and, according to respondents, these reports facilitate *"better communication between provider and the case manager"* through more extensive communication across the care management team. Providers and case managers discussed using data from these reports to collectively develop or revisit care plans and believe they learned from each other as a result of these discussions.

"If the goals aren't met we try as a team to make them meet. The case managers… can tell us more about what we can do to better help the patients. The social worker comes in and refocuses us." *AEH Provider*

Some staff mentioned improvements in efficiency as a result of utilizing Altruista. One provider indicated the center shifted some standing orders to case managers, reducing the burden on physicians and increasing responsibility and engagement of case managers in the provision of care.

Technology can empower ancillary providers and improve quality of care. According to stakeholders, the use of Altruista not only advanced case managers knowledge, but also empowered them to improve the quality of case management services provided. Once case managers embraced Altruista, they felt the technology helped remind them of best practices and improved their clinical knowledge. As indicated by one case manager, *"We're learning a lot. [Altruista] helps us stay aware of the standards and updates of new changes. We're keeping up with it, which means that we can better educate our patients."* Respondents frequently identified the impact of the technology on case managers' confidence as an unintended positive benefit. One administrator suggested the case managers "*develop(ed) a sense of ownership of their cases*" as a direct result of the Altruista system.

"Our case managers grew a lot professionally. Before they were just going off paper for what they were supposed to be doing, but I think this software [Altruista], it has focused them on what case management is all about and what they need to be doing." *AEH Administrator*

Stakeholders report improvement in health outcomes and patient engagement. AEH stakeholders report the use of Altruista as part of the center's case management approach contributed to observed improvements in health outcomes and patient engagement. Specifically, case managers and providers agreed that patient medication compliance improved. Patients echoed this observation, one of which said, *"Knowing that the doctor is tracking me encourages me to take [the medication]."* Several staff observed weight management improvements noting many patients in the program appeared more interested in participating and compliant with care instructions, while others experienced notable clinical drops in HbA1c and weight values. AEH respondents agreed that of the three targeted health indicators, aerobic activity improvement proved the most difficult to achieve for their target population because many patients' circumstances greatly compromised their ability to meet the physical requirements associated with this indicator's goal. Staff reported some patients have co-morbidities (e.g., arthritis of the knee) that make achieving this goal less attainable. Despite not meeting the prescribed goal, AEH staff emphasized many of these patients made progress. As one case manager explained, *"They are making steps in the right direction which is great because it is more exercise then they were getting before!"*

"I think we've been most successful with making sure patients had their medications and that they were taking them. They really accepted medication compliance wholeheartedly." *AEH Provider*

"[Case management] is pretty much the same. We still communicate the same, but [patients] appear to be much more aware about what is going on and why they're doing what they're doing." *AEH Provider*

Providers and case managers reported the RWJF project positively affected patient engagement. Case managers reported more contact from patients enrolled in the program and increased patient involvement in their own health. As an example of this impact, one provider said, "*You'll run into patients outside of the clinic and you'll see that they're much more aware of their health – they'll say 'Look I'm wearing my*

pedometer!'" Patients provided positive feedback on the program; several indicated participation in the program improved their overall health.

Barriers to Use of Technology

While the case study presented several positive findings relative to the use of care management software for improved patient engagement and quality of care, we did identify some notable barriers. We highlight some of these barriers below.

Interoperability would improve usefulness. Altruista does not automatically pull information from other IT systems – instead all health-related documentation must be scanned or entered manually into each system. The only current interface existing between Altruista and IncentPay requires a manual prompt from users to import data as opposed to an automatic process that updates data in Altrustia. AEH case managers indicated an increased data entry burden, largely the result of duplicative entry into the various systems. One case manager noted, "*You can spend days entering the data… I've received some help, which has allowed me to focus on my social work tasks."* While Altruista includes functionalities to assist case managers identify gaps for health improvement, case managers reported using manual logs to stay current tracking patients' clinical data. Some staff indicated adjusting workflow by entering patient data in real time during patient visits. Others indicated designating "data entry days" each week.

"All the information about goals… Entering [the information] again is one of the barriers that we hate because we have so much duplicate information. Altruista is a good system but our concern is the time consumed… We've got to have three or four programs up, plus a chart... and a phone if we need information from the patient." *AEH Case Manager*

Care management software cannot overcome all barriers to care for some in this vulnerable population. Respondents identified geography and access to a limited health workforce as barriers to care for many patients at AEH. While Altruista presents opportunities for providers to engage patients in holistic care, rural patients often lack access to transportation or must travel greater distances to obtain services. A limited number of primary care providers available to see patients further complicates access issues. One provider explained: "*The primary care providers… are just not there... A lot of patients are not going to be seen and will become disenfranchised from the health system.*" Although such individuals benefit from Altruista's identification of gaps in preventive care and the patient engagement phone outreach, they still face access limitations due to geography and the lack of adequate transportation options. Case study respondents also identified the lack of accessible tertiary care centers as a barrier for AEH's patient population.

"We can have the best IT around, but you need basic primary care providers to be able to deliver face-to-face care and a place to send patients when they're ill. When you don't have that, you're shooting into the wind." *AEH Provider*

Lack of trust of new technologies inhibits adoption and use. Many patients served by AEH have low education and literacy levels, a factor that can complicate attempts to use health IT to improve their health. Staff observed a relationship between low patient education levels and skepticism towards participating in health improvement initiatives using web and computer-based programs. Reflecting on the observation in the context of the RWJF project, one case manager explained, "*They think because their information is entered into the computer that the government will find out [about added income via the incentive payment] and stop the benefits.*" Although such individuals could benefit from the patient care engagement component of Altruista, their reluctance towards web and computer-based interventions, and lack of internet access, led AEH to decide against including Altruista's patient portal component.

> **"You ask [a patient] why they won't pick up their gift card and they respond that they '*don't want the government to cut off my [social assistance] check because the gift card is added income.*' Education plays an important role…they think the government knows everything because of computers."**
> *AEH Provider*

> **"If we are going to be mandated to have things done by a certain period of time, how do we get them done if we don't pay for them ourselves? Therein lies the rub for middle America. We have to compete for funds to get things done."**
> *AEH Program Administrator*

Inadequate broadband infrastructure constraints limit functionality. AEH staff members discussed ongoing barriers related to technology infrastructure and funding at length. Due to inadequate infrastructure supporting internet connectivity, AEH faces the responsibility of developing the infrastructure to support their own connectivity. Lacking the technical expertise and limited by a small IT workforce, program administrators acknowledged infrastructure development "*slowed the organization's pace of progress.*" From a financial perspective, although funding supported Altruista software implementation, the work required support from overtaxed local IT resources. One program administrator noted, "*[Health IT implementation] costs a lot of money in [disparities] settings. It costs more money here because we need to build the basic infrastructure. In other places WiFi is readily available; here it is not.*" While staff indicated an interest in pursuing development of an EHR interface with Altruista, to do so effectively requires funding currently not available. Additional desired features include interoperability with other electronic record systems, population health management and an interface for lab communication.

Policy and Organizational Factors for Replicability

Finally, we present key findings related to organizational factors playing an important role in the implementation of Altruista, particularly as they relate to replicability.

Vision and grassroots up leadership approach are key to replicability. As mentioned above, AEH's vision and leadership approach proved essential in successfully implementing their IT systems. Senior AEH staff served as mentors to case managers and providers as they learned both Altruista and Allscripts. When asked about the successful implementation and adoption of Altruista at AEH, one administrator said, *"[It took] leadership and vision, also a strong commitment around understanding the data and using it to inform practice."* Several other stakeholders echoed this sentiment. Further, respondents identified strong and respected ties with the community as an important factor supporting successful recruitment and retention of patients for the project, despite skepticism expressed by some.

Partnerships can provide functional support. AEH's experience with partnerships demonstrates the benefit of collaboration when determining health improvement priorities, implementing IT, and evaluating local impacts. To begin, their relationship with Heinz Family Philanthropies during the pilot facilitated their introduction to Altruista. The health center's partnership with the regional medical center allowed AEH stakeholders to obtain hospital data for patients involved in the RWJF study. Hospital admissions trend data help the team to assess the intervention's impact on health outcomes and costs saved. Additionally, membership in the Delta Health Alliance network provided AEH with technology and personnel infrastructure support necessary to implement Allscripts. Finally, the AEH-Altruista partnership illustrates the importance of a solid relationship with technology developers and vendors as instrumental to use of health IT in underserved communities.

Effective use of data can support sustainability. Stakeholders emphasized the need for data-driven care management solutions to enhance services and organizational capacity in underserved areas. AEH staff use data points tracked in the care management system to inform bi-monthly performance improvement meetings. AEH staff noted the availability of comprehensive data on their patients plays an important role in sustainability; it improves efficiency and accountability.

"In today's resource-constrained environment, there is no other option but to use technology… Cost per patient has declined and that will continue. Care coordination and care management need to be done in an intelligent fashion… We believe strongly in this intense need for data-driven care management solutions."
AEH Stakeholder

Summary of Findings

The AEH case study illustrates how care management software can facilitate the provision of integrated interdisciplinary care and empower providers, leading to improved quality of care and health outcomes. Respondents emphasized the importance of customizing technology to fit the unique needs of users and more broadly, community health centers. The case also demonstrates the importance of interoperability with other IT systems with respect to acceptance, utilization, and sustainability. The case also shows that limited infrastructure and in some cases, skepticism and limited access to IT, remain important challenges. Finally, the case demonstrates that data-driven performance improvement is a critical consideration for improving efficiency and accountability, facilitating a sustainable team-oriented care approach.

Project Background and Data Sources

The Office of the National Coordinator for Health Information Technology (ONC) and the Health Resources and Services Administration (HRSA) awarded NORC at the University of Chicago a project to conduct case studies examining lessons learned from community organizations using health IT to serve the needs of underserved groups or to address health disparities. The final report from this project will inform the Secretary of the Department of Health and Human Services'(HHS) work under these topics per Section 3001 of the Health Information Technology for Economic and Clinical Health (HITECH) Act passed as part of the American Recovery and Reinvestment Act of 2009 (ARRA). Findings are based on analysis of notes taken during a series of discussions with, administrators, providers, vendors, and AEH patients.

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