

DELTA HEALTH ALLIANCE  
**BLUES**  
BEACON COMMUNITY



PROJECT REPORT FALL 2014



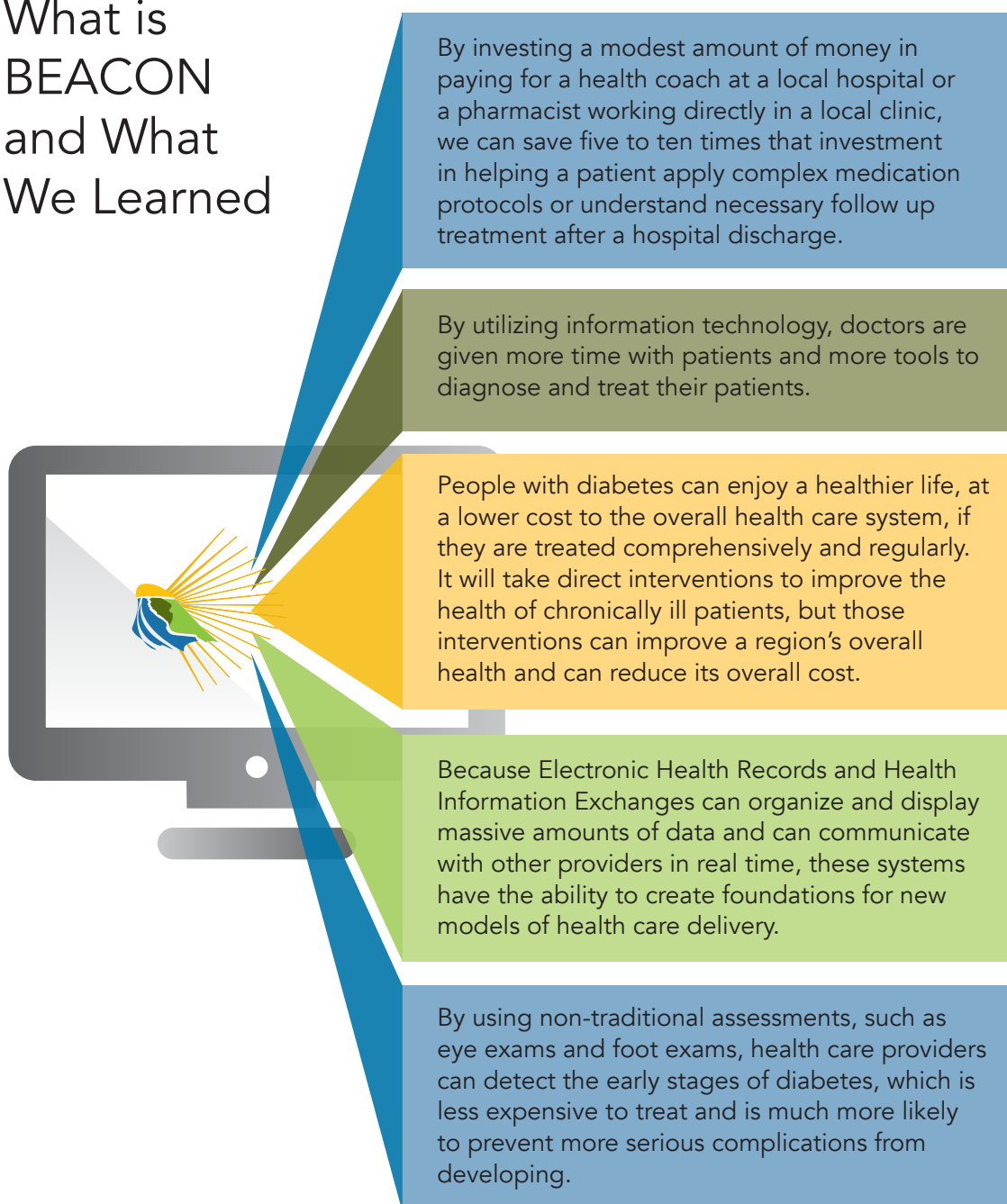
**BEACON** was a federal grant program that provided funding to build and strengthen health care systems (1) using nationally recognized best practices in direct patient care and (2) supporting and enhancing those practices with health information technology. Delta Health Alliance was a recipient of one of the seventeen Beacon grants awarded nationally in 2011. The U.S. Office of the National Coordinator for Health Information Technology (ONC) provided us with \$14.6 million over a three year period to implement a BEACON grant in the Mississippi Delta. We called it the Better Living Utilizing Electronic Systems (BLUES) project.

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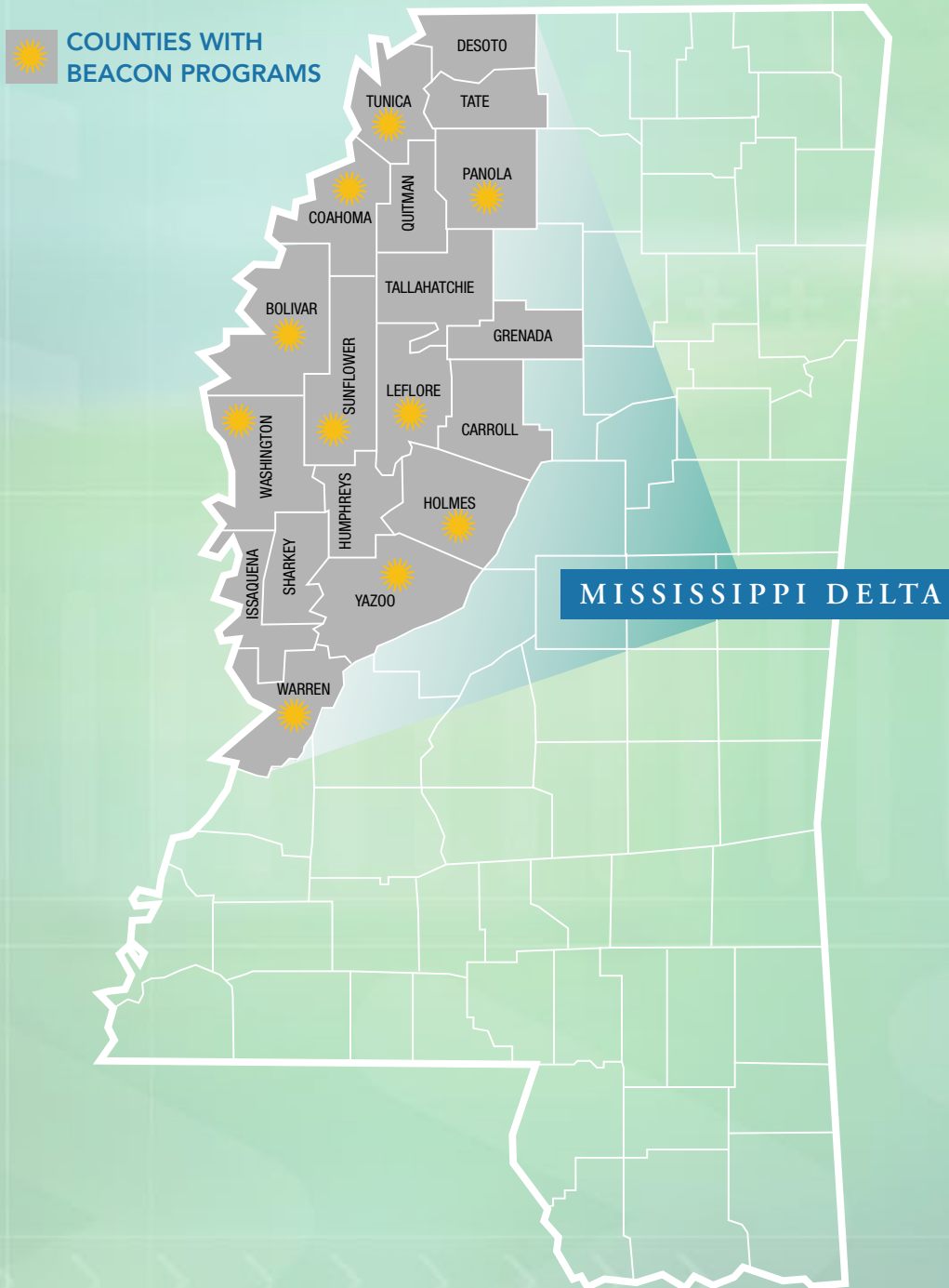
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Beacon's specific goal in Mississippi was to demonstrate new and innovative ways to improve the health care of people with diabetes while, at the same time, lowering the cost of that care. Here is what we learned from our Beacon project:

## What is BEACON and What We Learned



## BEACON PROGRAM LOCATIONS IN THE MISSISSIPPI DELTA



## ABOUT BEACON AND BLUES

**THE FOCUS OF THE DELTA BLUES BEACON PROJECT** was to improve outcomes for diabetic patients by making use of innovative technologies and clinical interventions to improve the management of this debilitating chronic disease. This Delta Health Alliance project brought physicians, nurses, hospitals, clinics, pharmacists, community health programs, and patients together to craft new ways of improving the quality of health care and the efficiency of health care delivery. The project also redirected existing resources out of administration and record keeping and into patient care.

With the Delta BLUES Beacon project, our aim was to create a system where health care providers would have instant access to the latest diagnostic tools and practice procedures. We electronically connected providers to each other to dramatically expand the flow of information among professionals involved in treatment planning.

Unlike many other major diseases, such as heart disease or cancer, the occurrence of diabetes is increasing at an alarming rate. In the last ten years alone, the incidence of Type 2 diabetes has increased by almost fifty percent, especially among young people. This rapid increase in diabetes goes hand-in-hand with the epidemic of obesity; being overweight is the main risk factor for Type 2 diabetes. Diabetes is even more common in the service area targeted by Delta Health Alliance, and has long been a major barrier to achieving a long term quality of health in the Mississippi Delta.

The Delta BLUES Beacon project was designed to develop and test ways to overcome this crisis. The key initiatives were health information technologies (HIT) and clinical interventions, both of which are described in greater detail in the following pages. As part of the federal grant, DHA conducted a needs assessment that looked at current diabetes initiatives at the outpatient (clinic) setting, the inpatient (hospital) setting, and the community setting. Through this research, we identified gaps in services that could be filled by expanding services already in place and by introducing new services. As a result of this study, we identified specific clinical interventions that could make a difference in the care of patients and technology deficits that prevented the implementation and use of the latest software and communication tools. It was those interventions that formed the backbone of our BLUES project.



# HIT HEALTH INFORMATION TECHNOLOGIES

**HEALTH INFORMATION TECHNOLOGIES (HIT)** uses cutting edge communication technology to improve the efficiency with which care is delivered to patients, to reduce delays in care and medication errors, to increase patient monitoring, to conform to recognized standards of care, and to serve as a launching pad for numerous potential health-improving interventions. All of these factors are especially important in a rural area, where health care providers are not clustered together as they are in urban settings, and where transportation can be a significant barrier to accessing care.

## Our HIT interventions included:

- improving internet infrastructure and connectivity in the Delta,
- installing Electronic Health Record (EHR) systems and bringing them up to Meaningful Use standards (as required by federal law), and
- connecting doctors, hospitals, pharmacies, and labs to each other through a regional Health Information Exchange.



Our Beacon system meant that providers would always have a current and complete picture of a patient's health history, from tests to lab work to medications. They could share a patient's health information, collaborate on diagnosis and care, and prescribe medications, all within a seamless electronic network. Accomplishing this yielded a higher level of care for Delta residents.

## INFRASTRUCTURE/CONNECTIVITY

It came as no surprise that a rural region of the country with one of the lowest per capita incomes would fail to have the kind of internet/communications backbone needed to support a high-tech EHR systems envisioned by the BLUES Beacon grant. For example, many of the clinics chosen to participate in the Beacon project were using dial-up or non-business-grade internet connections, which meant the time it took for a physician to access a patient record and enter data was excessive. The first priority for building this infrastructure was working with local telecommunication carriers and providers to build a high-speed, high-bandwidth, secure communications infrastructure.

Beacon funds were used to support this build out for the targeted clinics by working with providers to assess their HIT needs, redesign workflows, and provide training and technical support. Because all of the initial costs were paid using Beacon funds, the physicians and clinics agreed to privately support the cost of connectivity after the first year; this agreement allowed the connectivity component to be sustainable after Beacon funding ends.



*"I believe as we mature in the electronic health records era, the information that will be readily available to the provider is going to reduce the time of healthcare delivery. We now have patients' charts that are digitally saved, as opposed to handwritten notes.*

*You have the things you need pretty much in front of you. At the end of the day, this will help us make the patient feel like they're the most important person in that room."*

– JOHNNIE E. CUMMINGS, III, MD,  
AARON E. HENRY COMMUNITY HEALTH SERVICES CENTER, BATESVILLE, MISSISSIPPI

## **ELECTRONIC HEALTH RECORDS (EHR)**

EHRs were the technological cornerstone of the BLUES Beacon project. They served as the communication platforms for clinical interventions, data repositories for health outcomes, and the gateway to connect with providers throughout and beyond the Mississippi Delta. Beacon installed EHR systems for three new providers and provided upgrades and improved performance and functioning for 64 providers at 36 different sites. These EHR systems tracked more than 7,500 active diabetic patients each year and were upgraded to software platforms that now meet the federal government's requirement of "meaningful use," which qualifies healthcare providers to improve their reimbursement rates for services.

The advantages to both doctor and patient users of EHRs are plentiful. With a PC or tablet in hand, a doctor can process every aspect of a patient visit, from time of arrival to time of discharge, review a patient's history, trend vitals such as weight and blood pressure, assess lab results, manage medications, send prescriptions to pharmacies with a click of a mouse, and can access patient records from home in the middle of the night if emergencies arise.

One of the many benefits of using an EHR system is taking advantage of programs like the State Department of Health's electronic immunization registry and population health registry. The population registry is designed to maintain health care statistics from across Mississippi in real time, analyze trends and target efforts to identify and address specific health care needs. Beacon funding enabled our EHR clinics to connect to these registries.

*– continued on next page*

## HEALTH INFORMATION EXCHANGE NETWORK (HIE)

The first effort at creating a connected and integrated system of electronic patient records in Mississippi came after Hurricane Katrina in 2005. The importance of a coordinated approach to health care records was clearly demonstrated and magnified when the hurricane not only displaced a massive number of Mississippians from their homes, but also separated them from their medical records, many of which were destroyed by the wind and water. Efforts to reconstruct medical histories and access patient records from remote locations underscored the need to electronically protect medical health records and establish connectivity among providers across locations. Consequently, some of the federal Katrina funding went towards the establishment of the Mississippi Coastal Health Information Exchange (MSCHIE).

After Beacon created the telecommunications infrastructure for a similar network in the Delta that would electronically tie together physicians, clinics, pharmacies and hospitals, it became clear to state health officials that a Delta network and a Gulf Coast network offered an opportunity to leverage those resources with new grants from the federal government to create a statewide exchange. That has now been done. Known as the Mississippi Health Information Network (MSHIN), the system is using a common software platform and is now expanding into areas of the state beyond the Delta and the Gulf Coast and is using the Mississippi State Medical Association to engage their physician members.

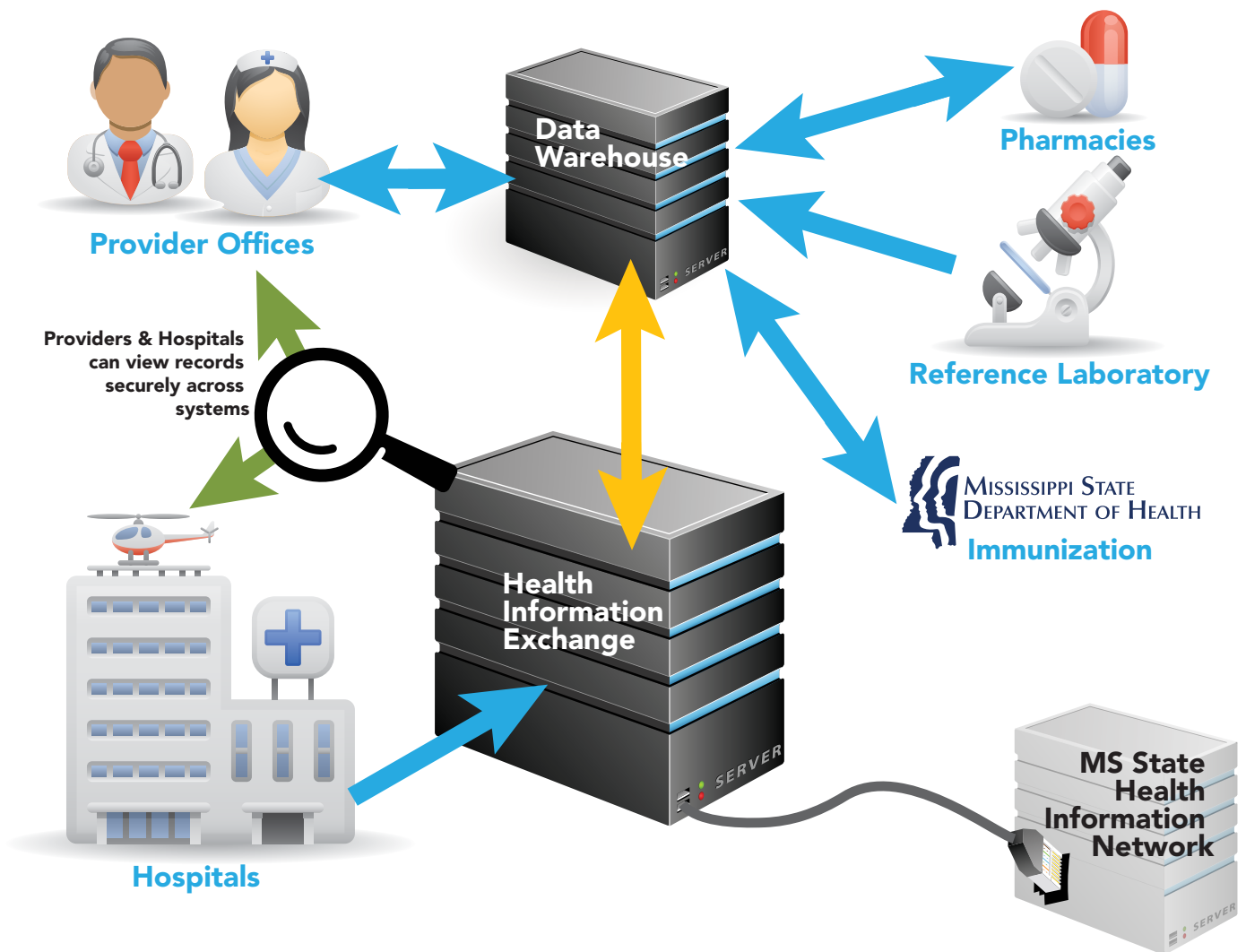
The Delta information exchange is up and running as well, and has connected 64 Delta health care providers and four hospitals in Greenville, Indianola, Ruleville and Greenwood to the network.

*"To implement electronic health records is very expensive. So, on the financial end of it, the Beacon project has been key. The Delta Health Alliance and the Beacon project have been extremely helpful certainly in terms of funding for electronic health records. But more than that, I think it has helped drive the quality of care higher in the Delta."*

– JOHN H. JONES, MD,  
INDIANOLA FAMILY MEDICAL GROUP, INDIANOLA, MISSISSIPPI



## THE HEALTH INFORMATION TECHNOLOGY MODEL



## CLINICAL INTERVENTIONS

## CDS CLINICAL DECISION SUPPORT

**CLINICAL DECISION SUPPORT (CDS)** provides enhanced diagnostic and patient monitoring tools through the adoption of “Care Guides.” Incorporating the best practice tools and national care standards into the EHR system, Care Guides provide online, instant intervention reminders to health care providers and suggest best practice tests, medications, health education, and other tools that are unique to the patient and disease code.

The Beacon grant provided funding to implement diabetic Care Guides which contain specific automatic reminders and alerts for screenings and tests such as glucose screenings, hemoglobin A1c tests, cholesterol tests, foot examinations, and eye screenings during a patient’s exam. Diabetic patients require these tests more frequently than non-diabetic patients. The wide range of protocols for case management of diabetes is one of many reasons why timely information management and clinician decision support is so crucial to effective diabetes care.

Beacon funds were also used to pay for specially trained staff to work in the clinics and with individual physicians as they adopted this new clinical tool. As a result of the implementation of Care Guides in 29 targeted Delta clinics, patients were treated and their health care progress followed with more than 31,000 examinations using the Care Guides system. The number of patients whose key diabetic measurements were controlled and kept in check experienced a substantial increase.



One outgrowth of the Clinical Decision Support intervention was that providers began to request additional Care Guides, such a hypertension guide, after experiencing so much success with the initial guides. Providers and patients alike have embraced this service and are requesting more information. Based on these trends, incorporation of best medical practices will continue.



*A fifty-two year old female diabetes patient with hypertension and a history of uncontrolled blood sugars makes an appointment with one of the clinics that is using CDS and is entered into the system. Following an ER visit, an electronic reminder prompt is generated by the EHR triggered by CDS causing the clinic to contact the patient via telephone. She is encouraged to make a follow-up appointment for evaluation with her primary care provider to get her diabetes under control. CDS provides the clinic with a mechanism to change the way it practices. The provider sees the patient again, as a result of the telephone contact, and labs are ordered prior to her visit. She receives medication, nutrition, and physical activity counseling by several staff members. She now follows up regularly and is taking all of her medications as directed. Her blood glucose levels are improving. She feels great for the first time in years and is excited about keeping her diabetes under control. Without the use of CDS within the EHR, this patient would not have received the quality of care that she deserved and health outcomes would have worsened.*

## CLINICAL INTERVENTIONS **CARE** TRANSITIONS



**THE CARE TRANSITIONS PROGRAM** was aimed at reducing hospital readmissions rates for diabetic patients, by assisting targeted patients in transitioning from hospitalization to patient-centered primary care. Patients can receive more specialized and personal care at a primary clinic where the cost is substantially less expensive. Working in participating hospitals, a specially trained “health coach” assisted the medical team during the discharge and then followed up with one-on-one education and intervention with the patient to make sure medicines were taken properly, routine self management tests were performed, and when problems occurred to direct the patients to a primary care provider as opposed to being treated in a hospital setting (a much more expensive and less personal way to provide primary care). Although this person did not have a nursing or medical degree, their knowledge of the patients’ lifestyle and community helped many patients overcome barriers to treatment. Through phone calls and reminders, the coaches helped to make sure patients saw their personal doctors and received the medication they needed to improve their health.

Because many patients in the Delta are low-income and have difficulty securing transportation, health coaches also coordinated with them so they didn’t miss the appointments that are vital to their continued care. We implemented this system in three Delta hospitals, and of the 1,446 patients referred to the program, only 14 (or 3.1 percent) were readmitted to a hospital, as compared to a U.S. average of 26.3 percent readmissions among diabetic patients, according to the National Institutes of Health. For example, of the 161 patients who completed the program at the Greenwood-Leflore Hospital, no patients were readmitted.

**Every single inpatient  
day for preventable  
unscheduled readmissions  
among diabetics costs  
an average of \$2,679,  
demonstrating the  
significant cost savings  
made possible by the  
Delta BLUES program.**

What this intervention meant to the patient is that they had more information that was reinforced over time so that they could learn to manage their disease, as opposed to being held captive by it. In the Delta, diabetes is often accepted as a slow death sentence; therefore people don't try to control it. By using health coaches, the patients in our project learned they could still enjoy the things they love while learning how to live healthier (i.e. taking their medicines properly, learn different ways to get to the doctor for preventive visits, avoid ERs as primary care settings, avoid being in the hospital by going to the doctor when they should instead of when it's too late.) By learning different ways of helping themselves, patients became more involved in managing their own health, as opposed to becoming a victim of it. Patients learned about healthy eating, effective means for communicating with doctors and nurses, how to keep track of their multiple medicines...and what taking each medicine meant to their health.

*The health coach at Bolivar Medical Center was introduced to the patient immediately following admission, working with the patient throughout the hospital stay and until discharge. When the patient returned home, the coach stayed in contact throughout the next weeks or months. It is the period in which a patient is most likely to need to return to the hospital should their condition worsen. The patient-coach relationship ensures that follow-up doctor visits are made, that prescriptions are filled and that the patient complies with other components of the recovery plan. It is these steps that are crucial to the patient's full recovery. As JoAnn McCollum, Chief Nursing Officer for Bolivar Medical Center, said, "The coach has made the difference! She works one-on-one with the patients, and always follows up. She makes sure our employees are properly trained and know what key health concerns to address with each patient. She really is a life coach and is a necessity to our facility.*



## CLINICAL INTERVENTIONS

# MTM MEDICATION THERAPY MANAGEMENT

**MEDICATION THERAPY MANAGEMENT (MTM)** helps patients maintain the prescribed levels of drugs by integrating health care technology with patient education and patient care. Most diabetic patients are placed on a variety of prescription medications to manage blood glucose levels, control blood pressure, and reduce cholesterol levels. Patients may require other medications to address the variety of complications that often accompany diabetes, including ailments of the heart, eyes, kidneys, or feet. Each diabetic patient has unique medication needs and these needs can change dramatically over time as the disease progresses or improves.



*"The Medication Therapy Management services are above and beyond what you might get from a typical visit to pick up a prescription from a community pharmacy. This is a time when a pharmacist spends one-on-one time, likely a 30-minute encounter where you're really looking at a comprehensive medication review and you're intervening in some way with that patient. It's very collaborative. To hear some of the inspirational stories of Delta residents and how their diabetes had never been controlled, and to see how excited they were about managing their disease through weight loss and healthy eating and proper medication really spoke to me."*

– LEIGH ANN ROSS, PharmD, ASSOCIATE DEAN FOR CLINICAL AFFAIRS,  
UNIVERSITY OF MISSISSIPPI SCHOOL OF PHARMACY





This specific intervention embedded a pharmacist in a local clinic (as opposed to a traditional stand-alone pharmacy) to assist patients in managing their medication dosages, to provide medication-specific education, screenings and medication management, to make recommendations on adjustments to a patient's medication, and in some instances to adjust patient prescriptions. The pharmacist was tied in with the treating physician via EHRs, received an e-referral for high-risk patients and followed a prescribed template of care, individualizing it to each patient's situation. By including the pharmacist as a member of the healthcare team and the EHR as a means for communication, the clinic took a step toward being a patient-centered medical home. As a result of this intervention, the patients in our project saw their health improve while the overall cost to the system was reduced.



The MTM initiative was active in nine locations, with 321 patients, who received more than 3,000 interventions and education in MTM services. Almost a quarter of the patients had prescribed doses of medication that were too low and nearly half of patients needed additional drug therapy

due to miscommunication and lack of education. Approximately three-quarters of the patients in the program enjoyed a reduction in key diabetic values. Better patient health also meant a substantial savings in healthcare costs. As a result of MTM in this limited context, projections indicate that more than \$300,000 was saved, primarily in reduced hospital admissions and subsequent chronic-care costs. The study demonstrated that the use of MTM could save \$1,000 per patient.

The most promising achievement was the number of diabetic patients who experienced improved health from a reduction in blood sugar as a direct result of more adequate screening through pharmacist-provider care agreements and consistent drug therapy. The impact on these patients was more significant because of the one-on-one counseling that taught patients how to manage their diabetes over a long period of time, rather than focusing on a short-term treatment of ongoing symptoms.

## CLINICAL INTERVENTIONS **LEARNING** COLLABORATIVE



JOHNNIE E. CUMMINGS, III, MD

**ONE OF THE MOST FAR REACHING INITIATIVES** of the BLUES Beacon project was a series of regular meetings and conference calls of participating physicians. We called it the Diabetes Learning Collaborative, and it consisted of a select number of Delta health care providers who agreed to meet on a regular basis with professional staff to discuss diagnostic and treatment strategies for use in improving diabetes outcomes.

After each conference, providers took the lessons learned during a session, tried them in their practice and reported back to the other participants on their successes and struggles. Using the EHR, patient outcomes were tracked. For example, the group could compare and monitor which providers made progress with specific interventions, such as more screenings for blood sugar or cholesterol levels.

As a result of this unique approach, the participating providers reported positive changes in their approach to patient care. For example, many moved away from a “treat the chief complaint” to treating the “whole person” through a quality-driven standard of care. Instead of simply trying to alleviate symptoms, clinicians and patients worked together to resolve the underlying problems. In addition, the participating providers who were members of multiple provider practices allowed them to spread the change throughout the practice.

Finally, the ongoing collaboration motivated the providers to meet and exceed the patient objectives that were established at the beginning of the process.

*“The Diabetic Learning Collaborative helps us understand the dynamics of the disease process in our local area. These are the standards of care that would go beyond our patient population and reach toward the national norms. Then you can have a better avenue to help you decide whether you’re actually reaching those norms or not. Diabetes affects every part of the body, and the collaborative helped us to understand that annual eye exams, annual dental exams, foot exams are all critical to achieving a higher standard of care.”*

– JOHNNIE E. CUMMINGS, III, MD,  
AARON E. HENRY COMMUNITY HEALTH SERVICES CENTER, BATESVILLE, MISSISSIPPI

# ACKNOWLEDGMENTS

## DELTA HEALTH ALLIANCE AND THE STAFF OF THE DELTA BLUES BEACON

**COMMUNITY** would like to express gratitude for the support, affiliation, and hard work of many individuals and project partners that made the success of the Delta BLUES Beacon Community possible. The three years of our work together was filled with many challenges, opportunities for learning, and successes. Without those listed here, this project and our ultimate successes would not have been possible.

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eQ Health- Care Transitions Project

Mississippi State Department of Health

Mississippi Health Information Network

University of Southern Mississippi, Community Health Workers Program  
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University of Illinois, Chicago

Roger Chaufourmier and Staff of CSI Solutions

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Northwest Mississippi Regional Hospital

Bolivar County Hospital

North Sunflower Medical Center

Indianola Family Medical Center

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## ABOUT DELTA HEALTH ALLIANCE

**DELTA HEALTH ALLIANCE (DHA)** is a community-based, non-profit organization headquartered in Stoneville, Mississippi that aims to improve the health of the 400,000 men, women, and children who call the Mississippi Delta their home by advocating, developing, and implementing collaborative initiatives that increase access and availability of health care, by conducting and applying the latest in health research, and by offering health education programs that foster healthy lifestyles.

We have a five-member board and a staff of 75 involved in a number of projects and programs throughout the Delta. Our funding comes from a variety of governmental and private foundation grants, as well as contributions from individuals and businesses.

Virtually all of our work is done in collaboration with local partners representing the full spectrum of organizations involved in health care, state and local government agencies, universities and community colleges, hospitals, clinics, schools, grassroots organizations, and faith-based groups.



**DELTA HEALTH ALLIANCE**

Solutions for a Healthy Tomorrow



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