

Digital Medicine Diabetes Program

Ochsner Health

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Executive Summary

Diabetes affects 10.5% of the U.S. population, with Louisiana experiencing a higher prevalence rate of 14.2%, equating to approximately 500,791 adults. Patients with diabetes face severe complications including heart disease, stroke, amputation, end-stage kidney disease, blindness, and death. These risks increase if the patient's diabetes is uncontrolled. Depending on patient factors, the American Diabetes Association recommends an A1c goal of less than 7.0% or less than 8.0% for patients with Type 2 diabetes.

Ochsner Health (Ochsner), a prominent nonprofit, academic, multi-specialty, integrated healthcare system in the region, decided to tackle this challenge through innovative digital health solutions. Ochsner developed and scaled a digital solution for cardiometabolic chronic disease management, Digital Medicine, which has served over 50,000 enrollees to date across all treated conditions. The Digital Medicine program, which launched in 2015 as a hypertension-focused solution, offers personalized care for managing high blood pressure remotely using a Bluetooth-enabled blood pressure cuff and a specialized Digital Medicine care team.

Digital Medicine expanded in 2017 to incorporate Type 2 diabetes (T2D) care. To deliver this solution, Digital Medicine built upon the infrastructure already in place and continued to provide care to patients by leveraging patient-entered data through Bluetooth-connected devices (glucometers rather than blood pressure cuffs) and expert care team support. This approach delivered superior clinical outcomes and provided an outstanding patient experience in an integrated model of care.

The Digital Medicine care team leverages clinical data from the Electronic Health Record EHR (when available), as well as data submitted by the patient as part of the Digital Medicine program, including questionnaire responses and blood sugar readings. They use "live" and digital patient interactions to create a customized intervention plan consisting of health coaching and medication management to achieve disease control.

Patients participating in Ochsner's Digital Medicine program for diabetes surpass the National Committee for Quality Assurance (NCQA) for control rate, which is 71% (95th Percentile for all Levels of Benefits). They achieve an average of 76% A1c control after being enrolled in the program for 365 days. Current enrollment in Ochsner's Digital Medicine diabetes program has surpassed 5,000 patients, with over 8,000 patients receiving care for diabetes during the program's duration.

Define the Clinical Problem and Pre-Implementation Performance

Clinical Problem: Diabetes is the seventh leading cause of death in the United States, with Louisiana having the fifth-highest diabetes mortality rate in the nation. Patients with diabetes incur medical expenses estimated to be 2.3 times higher than those without diabetes.

Controlling hemoglobin A1c (HBD) Measure in the 2023 Adult and Health Home Core Sets:

Hemoglobin A1c Control for Patients with Diabetes - NCQA

National Diabetes Statistics Report | Diabetes | CDC

Methods for the National Diabetes Statistics Report | Diabetes | CDC

Clinical Problem: Diabetes affects 10.5% of the U.S. population, with Louisiana experiencing a higher prevalence rate of 14.2%, equating to approximately 500,791 adults. 27,082 individuals in Louisiana are newly diagnosed with diabetes each year. The economic burden of diabetes in Louisiana is estimated at \$5.7 billion annually and continues to rise as more patients are diagnosed with diabetes. This financial cost pales in comparison to the severe complications associated with the disease, including heart disease, stroke, amputation, end-stage kidney disease, blindness, and death. Uncontrolled diabetes further exacerbates these risks.

Traditional care for diabetes management is focused on an annual (or bi-annual) in-person "check-up" model. During this annual visit, the patient has labs taken and the physician adjusts their medication, as needed. However, further medication management often waits until a subsequent visit. This delay in data and treatment postpones the patient's time to control and prevents the physician from quickly intervening and course-correcting if the patient's condition deteriorates.

Performance prior to implementation of Digital Medicine diabetes program: National averages for Type 2 diabetes patients reflect a 57% hemoglobin A1c control rate for patients following the annual visit approach and low levels of patient engagement.

- Numerator: Number of beneficiaries currently enrolled in Ochsner's Digital Medicine diabetes program who hemoglobin A1c reading is <8% at 365 days enrolled in the program.
- **Denominator:** Number of beneficiaries currently enrolled in Ochsner's Digital Medicine diabetes program enrolled for at least 365 days.
- **Exclusions:** Patients who have any of the following exclusionary criteria are not eligible to participate in Digital Medicine: insulin u500 use, CKD5/ESRD/dialysis, pregnancy, history of heart or kidney transplant, Alzheimer's/dementia, hospice, or any diagnosis beyond the scope of Digital Medicine remote care.
- **Goal:** A greater % of patients enrolled in the Digital Medicine diabetes program with hemoglobin A1c control (<8%) compared to the national average (58%).
- The QC National Benchmarks are as follows:

- Ochsner Digital Medicine diabetes patients show a 20% increase in A1c control.
 75% of participants achieved diabetes control at 365 days.
 - Measure Name: Hemoglobin A1c Control for Patients with Diabetes HbA1c Control (<8%)
 - Benchmark Category: National (all LOBs)
 - Average Rate: % 58.4%
 95th Percentile 71.05%
 - Measure Domain: Effectiveness of Care

Design and Implementation Model Practices and Governance

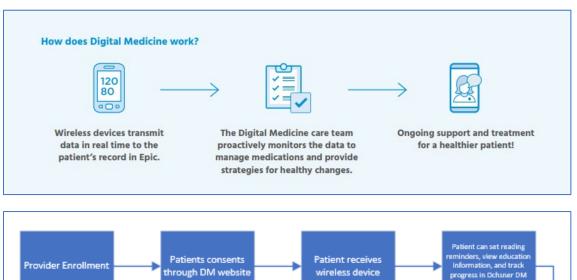
Key members of the care delivery team:

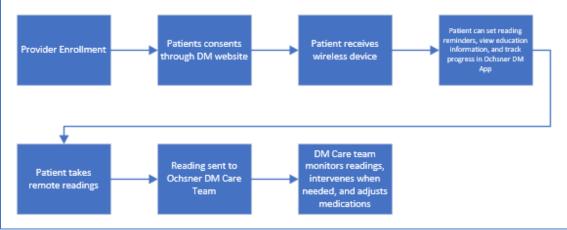
- The Digital Medicine operational team in collaboration with the Connected Health product team requests changes to improve care, workflow, analytics for the Digital Medicine programs.
 - The Ochsner IS Digital Medicine team, Connected Health product team and Digital Medicine operational team use Agile methodology to test and implement these new interventions and workflows.
 - An IS Epic Specialist and the Digital Medicine customer success managers ensure education and training is provided to our clinical team members. Additionally, the patient services coordinator team triages patient queries using the Epic Cheers Customer Relationship Management application.
 - The Digital Medicine Governance Committee consists of the Chief Digital Officer, Chief Informatics Officer, VP of Product, CEO of Digital Medicine, Chief Clinical Innovation Officer, and VP of Clinical Improvement.

Governance and important meetings:

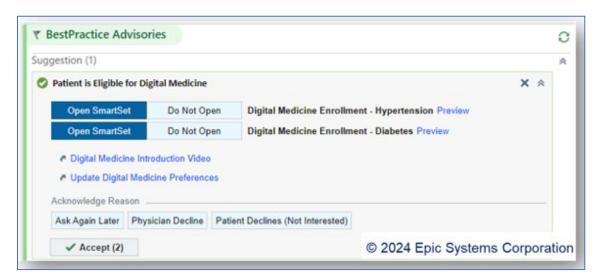
- Regular legal and compliance meetings for any approvals
- Monthly leadership Digital Medicine meeting (Product and Operations)
- Quarterly review with Chief Digital Officer (CDO)
- Quarterly strategy meetings with CDO

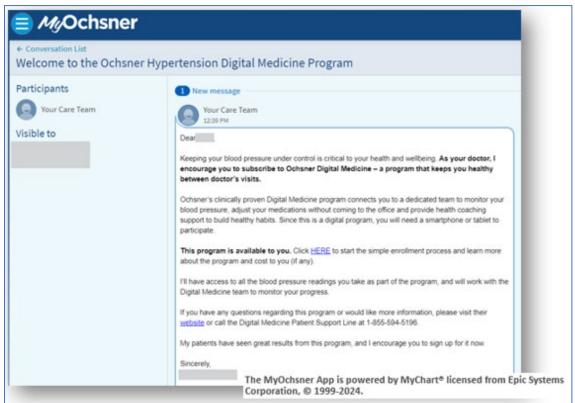
Clinical Transformation enabled through Information and Technology





Leveraging experience with the Digital Medicine hypertension program, Digital Medicine began the diabetes program as a pilot with a select number of primary care physicians and endocrinologists. An algorithm was developed within the EHR to identify patients meeting the program's clinical eligibility and insurance criteria requirements. This algorithm surfaces a Best Practice Advisory (BPA) to notify the patient's primary care provider of their eligibility for Digital Medicine, allowing the provider to initiate enrollment during the clinic visit. Additionally, the patient receives periodic outreach via MyChart and messages on their After Visit Summary to notify them of their Digital Medicine eligibility.





Digital Medicine Program Information

Take control of your High Blood Pressure and Type 2 diabetes with the Ochsner Digital Medicine program

Manage your condition between visits with support and monitoring from home.



How do I get started?

- 1. Scan the QR code to start the enrollment process.
- 2. Receive your digital blood pressure cuff and glucometer.
- 3. Download the Digital Medicine App and take your first reading.

How the Digital Medicine program works:



Take readings with a digital blood pressure cuff and glucometer using your smartphone



Get treatment from a licensed clinician who monitors your readings and adjusts your medications.



Create healthy habits with health coaching support.

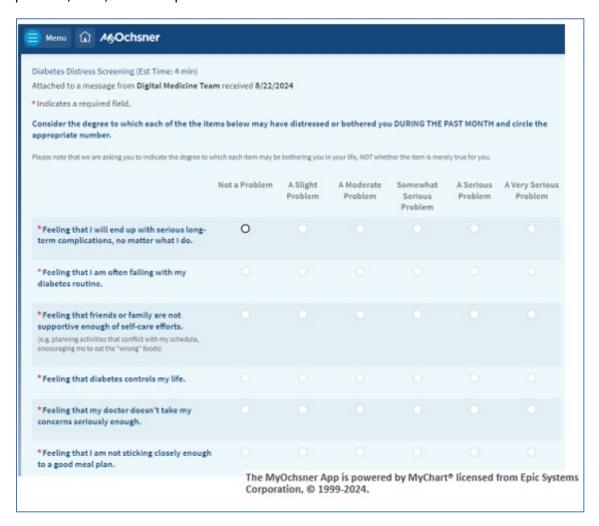
For questions or more information, visit our website at Ochsner.org/DigitaLlourney or call Digital Medicine Patient Support at 866-273-0548.

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In addition to a diagnosis of Type 2 diabetes, patients must possess a smartphone or tablet, obtain a wireless Bluetooth-connected glucometer (iHealth glucometer) and have an active patient portal account (MyChart). If patients do not have an active MyChart account, they are given the opportunity to sign up for one during the enrollment process. Ochsner excluded patients with certain co-morbid conditions which would preclude them from effective participation in the pilot. These clinical exclusions included heart or kidney transplant, chronic kidney disease stage 5, and end stage renal disease as patients with advanced kidney disease require enhanced monitoring to mitigate adverse events and reach blood pressure targets. Additionally, patients with advanced kidney disease require robust care coordination that is not always available via digital intervention. These clinical exclusions remain in effect today.

Program details, questionnaires, and electronic consent to participate take place online through MyChart. The questionnaires assessed factors related to diabetes and chronic disease management, including diet, physical activity, depression, medication adherence, patient

activation, health literacy, and social circumstances (e.g., medication affordability and number of people living in home). Diabetes-related emotional distress is assessed using the Diabetes Distress Scale. Health literacy is measured using a single item literacy screener. Additional clinical data is obtained from the Electronic Health Record (EHR), including serum glucose, Hemoglobin A1c, lipid levels, creatinine, estimated glomerular filtration rate, thyroid function test, urine protein, BMI, and completion of retinal examinations.

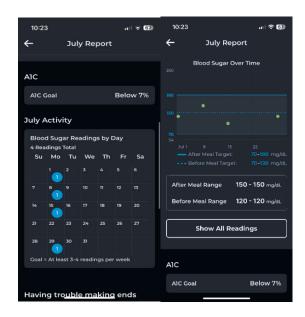


liabetes Digital Medicine Flowsheet Readings recent readings (past 60 days):			Last	Last HBA1C	
Time Taken	Time Submitted	Glucose (mg/dL)	HDA1C	Date	Next A1c Due
8/21/2024 7:20 AM	8/21/2024 7:20 AM	92			
8/20/2024 8:23 AM	8/20/2024 8:23 AM	90	5.8	06/27/2024	12/24/2024
8/18/2024 7:03 AM	8/18/2024 7:03 AM	106	5.9	06/10/2024	12/07/2024
8/17/2024 8:33 AM	8/17/2024 8:33 AM	113	5.8	02/17/2024	08/15/2024
8/15/2024 8:48 AM	8/15/2024 8:48 AM	114	6.4	05/31/2024	11/27/2024
8/13/2024 9:53 AM	8/13/2024 9:53 AM	213	5.1	09/19/2023	03/17/2024
8/12/2024 7:40 AM	8/12/2024 7:40 AM	116	€ 6.5	€ 06/13/2024	06/04/2024
8/11/2024 7:29 AM	8/11/2024 7:29 AM	108	4.7	06/13/2024	12/10/2024
8/10/2024 9:40 AM	8/10/2024 9:41 AM	133	6.6	08/02/2024	01/29/2025
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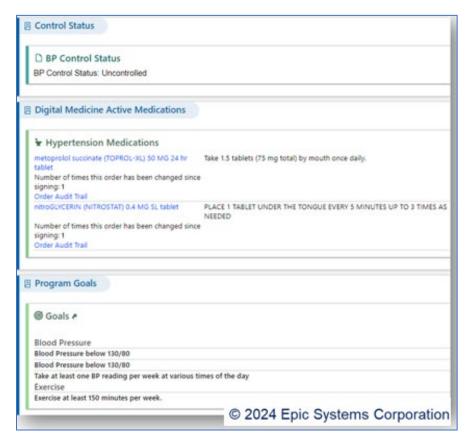
During the onboarding process, patients receive both digital and "live" outreach attempts to encourage the patient to complete their enrollment. Automated digital outreach is based on an algorithm, and an onboarding patient report identifies patients who have not yet completed onboarding and could benefit from proactive outreach. Patients can receive assistance in setting up their device via telephone, chat, scheduled appointments, or in-person visits to an O Bar, depending on their convenience. Over 80% of patients independently connected their devices without the need for technical support.

Patients may receive their Bluetooth-enabled glucometer free of charge or may incur a co-pay depending on their insurance coverage. Although readings submitted from the glucometer are not monitored in real-time, patients receive alerts when their blood glucose readings are abnormal. The care team follows up with education to address and prevent future reading escalations. Initially the program sent alerts via SMS and are now sent through the Digital Medicine app.

Enrollees also receive a monthly report documenting their progress in the program that includes customized tips on how to achieve better glucose control. The report is electronically generated using data uploaded by the patient and sent via MyChart or via the Digital Medicine app. The method of delivery depends on which tool the patient is using. The report contains a definition of diabetes, the patient's glucose results, their progress in controlling their glucose, and seasonal or disease-specific tips to continue managing their diabetes.



Once the patient is enrolled, their primary care physician and other specialty providers can review all documentation in the Digital Medicine navigator that collates the Digital Medicine care team documentation and patient-entered readings into one place.

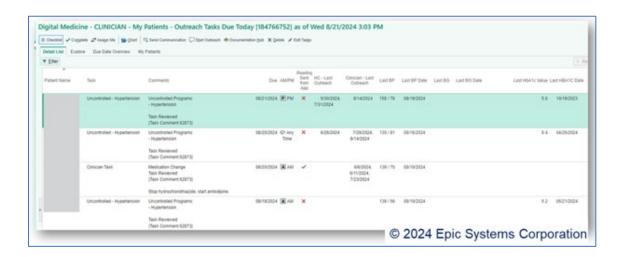


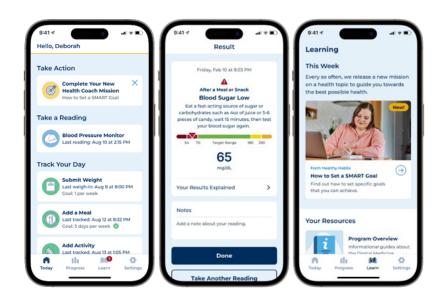


Patients interact with their care team using traditional phone calls and digital tools, ensuring that they can track progress and take readings using their Bluetooth-enabled glucometer. Recently, Digital Medicine created an app to provide patients with a centralized place to track progress, receive program notification, engage with educational content, and take readings from anywhere using their smartphone and connected devices. This approach not only enhances convenience but also empowers patients to take control of their health and well-being.

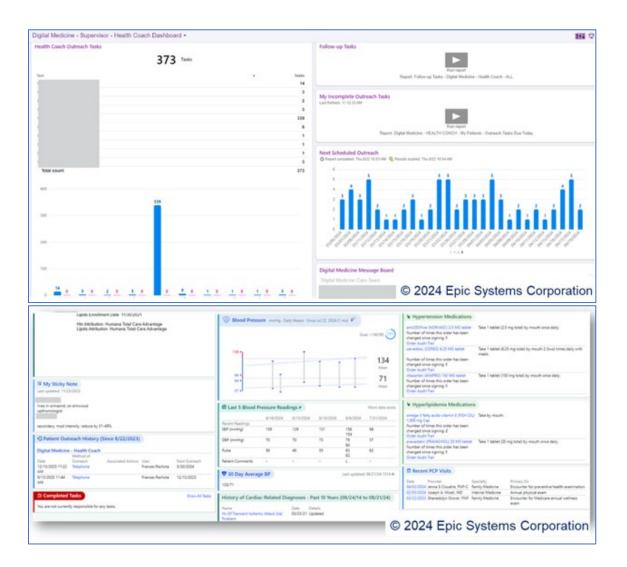
The Digital Medicine care team includes doctoral pharmacists, physician assistants, and health coaches (with backgrounds in allied health or public health). This team routinely monitors blood sugar trends and adjusts medication to manage chronic disease.

As the program has grown, Digital Medicine has refined its care delivery model to enhance efficiency while maintaining excellent clinical outcomes. Initially, the care team reached out to patients on a standard check-in schedule, regardless of acuity, with additional outreach for acute issues. Over time this approach was improved by refining the cadence of live check-in calls and developing an algorithm to prompt outreach based on patient acuity. For example, incoming blood glucose data is analyzed using an internally developed algorithm that assesses the validity and trends of the readings. This algorithm automatically generates tasks for clinicians in the EHR when intervention is needed. Additionally, patient interactions are supported with digital coaching resources and reference materials accessible through the Digital Medicine app.



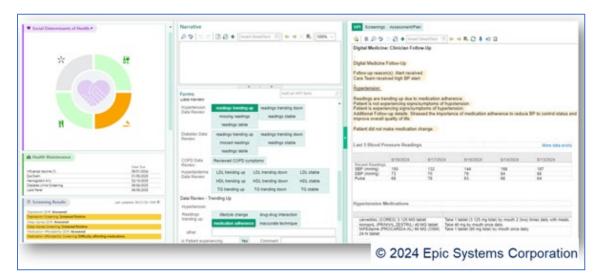


In Epic, dashboards enable leaders to quickly view the total number of outreach tasks due or overdue with a breakdown by individual care team member. When a task is selected from this report, a snapshot of the patient's data appears at the bottom of the page, displaying social determinants of health, 30-day reading averages, medications by disease-state, 30-day average glucose levels, a 24-hour snapshot of continuous glucose monitoring (if applicable), recent provider visits, outreach history, overdue health maintenance, and patient goals—all without needing to open the patient's chart. Each care team member also has a personal dashboard displaying their tasks and unassigned tasks.



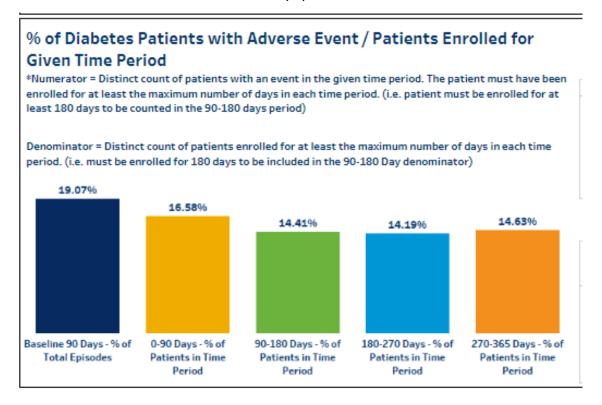
The pharmacist tasks are focused on interventions for patients with uncontrolled diabetes and/or hypertension, blood pressure alerts, hyperlipidemia prevention status, and medication changes. Health coach tasks are focused on lifestyle interventions, blood glucose alerts, routine health maintenance screenings, missing readings, and social determinants of health interventions.

The care team's workspace includes streamlined workflows designed to help them complete tasks efficiently. These workflows feature quick buttons and auto-populated data about the patient, such as blood sugar readings, A1c control status, labs, activity levels, medications per disease state, program goals, and previous interactions with the Digital Medicine program.



All interventions are communicated to the patient via a phone call or MyChart message (depending on the patient's communication preference) and documented in the patient's chart.

The Digital Medicine program implements several quality assurance initiatives to ensure patient safety in focused medication management. The program closely monitors and annually reviews quality assurance outcomes, including adverse events. The rate of diabetes-related adverse events such as hyperglycemia (E11.65, E13.65, R73.9), and hypoglycemia (E11.64, E11.641, E11.649, E13.641, E13.649, E16.0, E16.1, E16.2) decreased from 19.84% in the 90 days before enrollment to 16.51% in the 90 days post-enrollment.



Improving Adherence to the Standard of Care (Guideline: One Page)

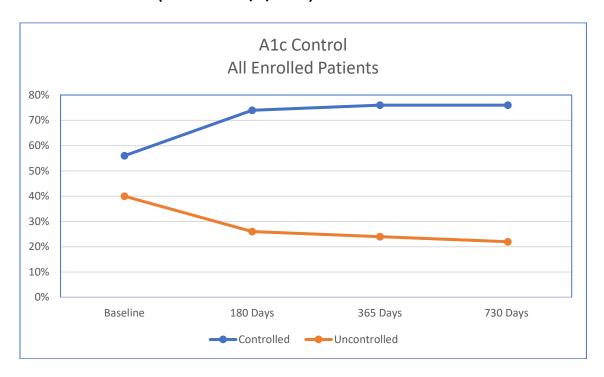
- Hemoglobin A1c control is the outcome Ochsner measures for Diabetes Digital Medicine.
- Numerator: Number of beneficiaries currently enrolled in Ochsner's Digital Medicine diabetes program who hemoglobin A1c reading is <8% at 365 days enrolled in the program.
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Results:

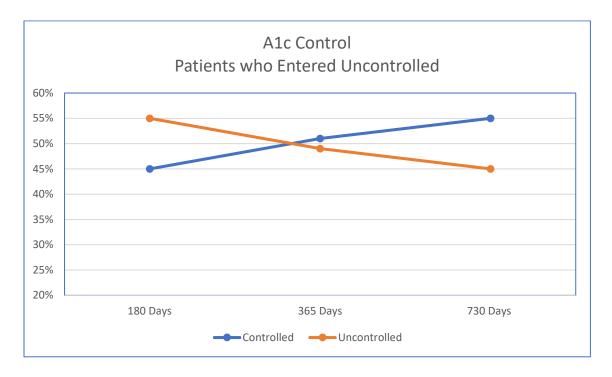
Patients in the program surpass the national standard for control rate of 71% (95th Percentile for all Levels of Benefits) for patients receiving care under the annual visit model, achieving an average of 76% A1c control after being enrolled in the program for 365 days. Additionally, of patients who entered the program uncontrolled, 51% of those patients achieved control after one year in the program – with 45% of those patients achieving control within 6 months.

Additionally, a third-party actuarial analysis of the Digital Medicine program revealed an overall decrease in utilization among participants. The study found that participants experienced a 30% reduction in emergency room visits and a 15% decrease in hospital admissions within the first year of enrollment.

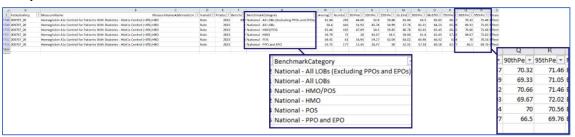
All Active Patients (Data as of 8/6/2024)



All Active Patients Who Entered the Program Uncontrolled (Data as of 8/6/2024)



NCQA Benchmarks:



Improving Patient Outcomes

Evidence of Program Impact

- Clinical Outcomes, Quality and Safety: Program enrollees achieved greater glucose control at 365 days as evident by 76% of their HbA1c level being <8%.
- Financial and Operational Impact: Based on a third-party actuarial analysis, Digital Medicine participants in the diabetes program had an overall \$163 per member per month (PMPM) savings within the first year of participation. Due to the clinical impacts of the program and the overall savings realized, Ochsner has expanded Digital Medicine to contract with carriers and self-insured employers to incorporate Digital Medicine into the

benefit design for their beneficiaries. These arrangements are with groups nationwide, not just in Louisiana.

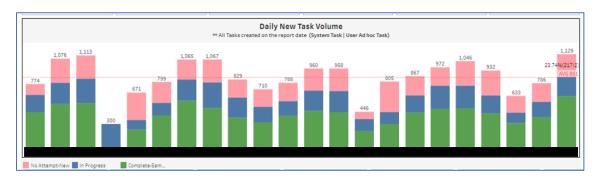
Access to Care

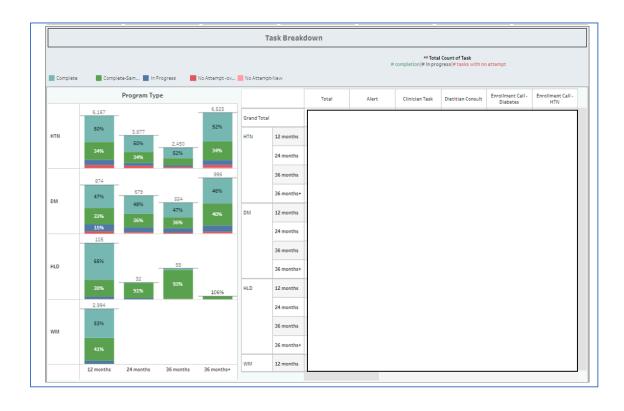
- Clinical Touches: Every time a blood glucose reading is uploaded an algorithm is run to ensure the blood glucose is not critical. If blood glucose is <=70g/dL a task is autogenerated and sent to a clinician. A notification is also sent to the patient asking them to validate if the reading is outside of their normal range.
- Clinical Satisfaction: The program has enabled Ochsner's primary care clinicians to provide an elevated level of support to patients, which has enhanced clinical satisfaction. When reflecting on how useful the program has been in a primary care setting, Ochsner's chair of primary care notes to the leader of the Digital Medicine programs, "We forgot what help looked like" in 2021.
- Patient Satisfaction: Each year, Digital Medicine conducts a Net Promoter Score (NPS) survey to gauge patient satisfaction. The NPS survey consists of one question, "How likely are you to recommend Digital Medicine to a friend or family member?" which patients are asked to answer based on a score of 1-10 with 1 being the lowest and 10 being the highest. A score of 70 or above is considered best-in-class. Digital Medicine has scored Best-in-Class since beginning to survey patients in 2019, most recently achieving an 82 in 2023. In a free text comment field, one patient wrote, "The digital team really supports their patients with controlling their BP and Diabetes. The consistency of follow up won me over. Most of all, they monitor, and when they see an unreasonable reading, they pick up the phone and call you. I would recommend this for anyone."
- Health Equity: Recognizing some of the inherent challenges with the widespread use of technology in healthcare, Digital Medicine strives to optimize the patient experience to maximize equity. Digital Medicine processes strive to lower barriers to entry including enabling a fully digital setup, improving tech support availability, and providing seamless device fulfillment. The program's focus on incorporating an assessment of social needs in the initial screening and ongoing progress reporting helps improve care team understanding of structural barriers to patient health. When available, the Digital Medicine care team will review Social Determinants of Health (SDOH) data and discuss strategies to close the patients' resource gaps.
- A matched cohort analyst of just uncontrolled Medicaid patients who joined Digital Medicine revealed that participants' baseline A1c (9.9) decreased on average by over 2 points (7.9) amongst enrolled patients at 12 months. This decrease was a statistically significant reduction compared to the decrease within the same time amongst patients who received usual care (.66).
- When available, the Digital Medicine care team will review SDOH data and discuss strategies to close the resource gap. The program's focus on incorporating an assessment of social needs in the initial screening and ongoing progress reporting helps improve care team understanding of structural barriers to patient health.

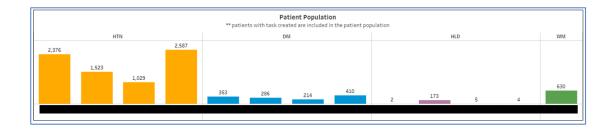
Accountability and Driving Resilient Care Redesign

The high priority task workflow allows discrete tracking and documentation of clinical tasks. Tasks are classified as in-progress or overdue in real-time, allowing for dynamic work assignment and tracking of needed clinical touchpoints. The Digital Medicine care team utilizes a custom patient snapshot for maximum pre-call efficiency. This snapshot shows social determinants of health, current medication medications including reason for taking the medication, average glucose for 30 days along with a 24-hour snapshot of their continuous glucose monitoring (if applicable), recent provider visits, outreach history, overdue health maintenance and the patients personalized goals all without having to open the patient's chart. Each health coach and clinician has individualized reporting of their active and overdue tasks.

Tableau dashboards are also used to track both clinical and operational trends.

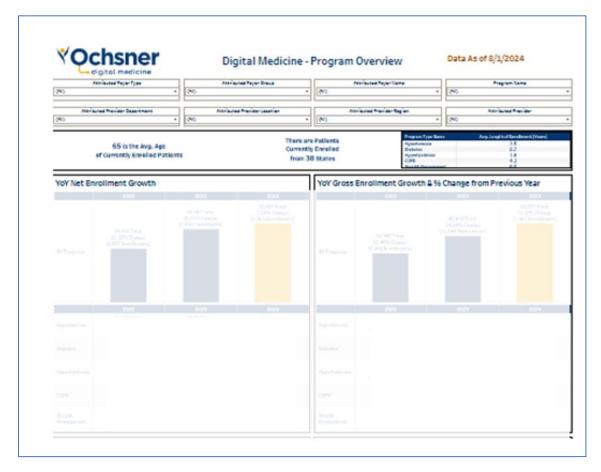






Operational Dashboard Samples (all data can be filtered by program of enrollment, provider, location, and coverage type)

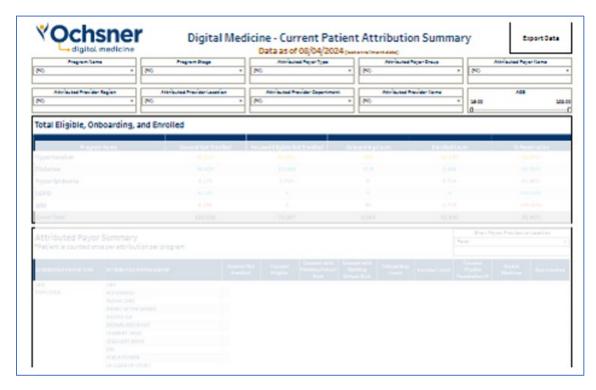
Overall Program Operational Trend Tracking:



Demographic Trends:

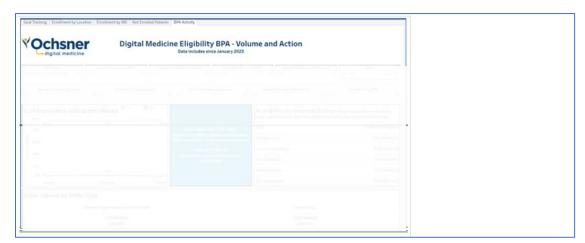


Current Enrollment by Stakeholders:



BPA Activity for Digital Medicine Eligibility - Volume and Action:

This data can be filtered down by location, region, provider, and encounter department specialties to identify trends of no action taken on BPAs.



HIMSS Global Conference Audience Guidance (This will not be published)

Topic Guidance: Check three which apply to this case study

Clinical Informatics and Clinician Engagement Healthy Aging and Technology

Clinically Integrated Supply Chain Improving Quality Outcomes

Consumer/Patient Engagement and Innovation, Entrepreneurship, and Venture

Digital/Connected Health Investment

Consumerization of Health Leadership, Governance, and Strategic Planning

Culture of Care and Care Coordination Population Health Management and Public Health

Data Science/Analytics/Clinical and Business Precision Medicine and Genomics

Intelligence Process Improvement, Workflow, and Change

Disruptive Care Models Management

Grand Societal Challenges Social, and Behavioral Determinants of Health

Health Informatics Education Telehealth

Health Information Exchange User Experience (UX)

Interoperability Usability

Data Integration, and Standards User-Centered Design

Healthcare Applications and Technologies Enabling

Care Delivery