OSF HEALTHCARE | **Lightbeam** Health Solutions

OSF Engages 17,000 Medicaid Patients in RPM, Aligning Cost & Intensity of Care Resources with Patient Risk

Background

OSF HealthCare is a health system based in Peoria, Illinois that operates 15 hospitals throughout the state. In 2023, OSF partnered with the Illinois Department of Healthcare and Family Services to support the Healthcare Transformation Collaboratives (HTC) with the Medicaid Innovation Collaborative. The HTC is an equity-driven program that aims to bridge care gaps and improve access for the 3.3 million Medicaid beneficiaries in the state.

OSF brought prior experience implementing digital health platforms to the HTC. OSF's implementation of Lightbeam's Deviceless Remote Patient Monitoring® solution, CareSignal, for OSF's Medicare and commercial contracts demonstrated success by engaging hard to reach patients and improving chronic disease outcomes. Digital engagement is critical to OSF because 63% of its care is provided to underserved, rural populations. The past results combined with a collaborative partnership with CareSignal gave OSF confidence to expand the Deviceless RPM® offering to the Medicaid population. This represented a significant expansion, from a couple thousand patients to over ten thousand.

Goals

OSF partnered with the Healthcare Transformation Collaborative and CareSignal to accomplish the following:

- Develop a solution that considered the needs of Medicaid-eligible patients 18+ years of age
- Increase health care accessibility to vulnerable populations
- Sustainably scale and expand the program to even larger populations

"Leveraging Deviceless RPM means larger volumes of patients are engaged at once, with the added bonus that our Digital Health Navigator workloads remain steady and manageable."

Courtney Pilat, MSHI, RN, BSN
Director of Digital Care Development
at OSF HealthCare

OSF HealthCare
www.osfhealthcare.org

Utilization of Deviceless RPM

17,000 Patients Enrolled

860,000 Automated Touches

6,400 Alerts Generated

Sample Outcomes

◊ **Diabetes: 2 Pt decrease** in HbA1c for patients with 9% baseline

♡ **Hypertension: 9 mmHg** drop in sBP and **5.02** drop in dBP for patients with 160+ baseline

☺ **7.89 / 9** patient satisfaction

🕐 **<1hr** Avg. alert response rate enabled timely response across all chronic condition programs

Solution

Lightbeam's Deviceless RPM is a scalable solution for the high, rising, and low-risk populations that enables OSF HealthCare to align the cost and intensity of care resources with real-time patient needs.

Solution: Supporting Medicaid Patients Across the Risk Continuum

To meet the needs of its diverse Medicaid population, OSF segmented patients into programs based on risk and disease burden, ensuring patients received the relevant outreach, assessment questions, and messages. It was important to not only engage the patients with chronic conditions, but also support patients in taking healthy preventative measures. According to Janelle Trier, Digital Care Strategic Program Manager at OSF Healthcare, "CareSignal has programs for every patient" and this flexibility enabled OSF to support patients across the risk continuum
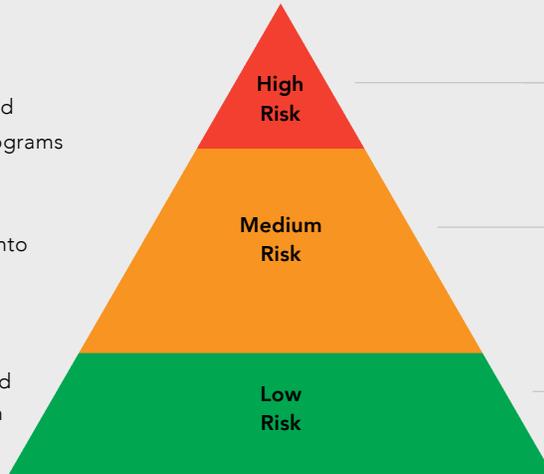
Inclusion Criteria

High-Risk Patients
2 + chronic conditions, enrolled into two condition-specific programs

Medium-Risk Patients
1 chronic condition, enrolled into condition-specific program

Low-Risk Patients
No chronic conditions, enrolled in disease-prevention program

High
Risk

Medium
Risk

Low
Risk

Condition-Specific Programs

Chronic Disease Management → **RNs**

Asthma, COPD, CHF, Diabetes, Hypertension

Chronic Disease Prevention → **Community Health Workers**

Healthy Living Program

Staff Level

High and medium-risk patients are enrolled into one or two of CareSignal's chronic condition programs, (Asthma, COPD, Congestive Heart Failure (CHF), Diabetes, and Hypertension) to receive automated questions about their condition and self-report data specific to that condition, such as blood sugar or inhaler use. When a patient reports abnormalities like frequent inhaler use or high blood sugar, CareSignal triggers an alert that goes directly to an OSF nurse. Timely alerts enable OSF nurses and health coaches to identify which patients need help and why they need help, enabling patients to get the care they need quickly.

Lower-risk patients enrolled in the Healthy Living program receive automated questions about physical activity and dietary behaviors. This program is focused on preventive care, improving lifestyle habits, and overall wellness. When patients report questions or a need for guidance, CareSignal sends an alert that is pushed directly to a Community Health Worker (CHW). To support OSF's nurses, CHWs serve as health coaches and monitor low-risk Medicaid patients to support them in making healthy lifestyle behaviors. "We wanted to show that the Community Health Workers could play an effective role in OSF's Medicaid Initiative," said Janelle Trier.

In addition to the aforementioned programs, OSF's nurses and CHWs can initiate two-way chat threads to capture additional patient information as needed. Two-way chat enables the care team to work efficiently by providing another route for patient engagement, especially among hard-to-reach patients. The care team can also send patients telehealth referrals, educational resources, and motivational messages.

Sample 2-Way Chat Thread

Care Team: I noticed you haven't responded to your program messages in the past couple of days. Are you doing okay?

Patient: Thanks for checking in. I haven't been feeling great.

Care Team: Are you experiencing any new symptoms? Can we set up a telephone nurse visit to discuss?

Patient:
Yes, I would appreciate that.

Workflow

Leveraging CareSignal's Deviceless RPM capabilities, OSF was able to perform automated outreach to their tens of thousands of Medicaid beneficiaries. But the solution itself is only the first step—creating a scalable workflow that reduces staff burden and enables clinical teams to effectively manage their workload is just as crucial.

OSF and CareSignal iterated on past workflows for Medicare and commercial contracts and identified potential barriers to growing the program, including identifying patients for enrollment, having enough providers to meet patient alerts, and the ability to initiate communication with patients who do not respond to messages. They created a scalable workflow that enabled OSF nurses and CHWs to streamline their daily tasks and focus on the patients that needed care, the moment they needed it.

Scaling Patient Engagement with Automated Messaging

Automated Enrollment

CareSignal's Engagement Specialists enrolled eligible patients into their programs, which required no lift from OSF's clinical team.

Patients Self Report Symptoms

Patients respond to condition-specific messages reporting their symptoms.

Categorized by Risk Level

Automatic triage based on patient symptom severity.

Alerts Triggered

Proactive alerts enable OSF to identify and deliver the appropriate care response.

RN and CHW Outreach to Patients

Though thousands of patients are engaged the workload is manageable because of targeted alerts based on patient acuity.

"By engaging with patients about their health on their phones with familiar texts or calls, we can provide better health care access to Medicaid patients."

Janelle Trier, M.A.
Digital Care Strategic Program Manager, OSF HealthCare

"The automated service allows us to contact patients each day without needing to do so manually. We are able to watch for patient responses and address concerning symptoms as soon as they come through the system."

Rose Smith, RN, MSN, AMB-BC
OnCall Connect Interim Manager, OSF HealthCare

Results: OSF Improved Chronic Disease Outcomes for High & Rising-Risk Patients

Overall, CareSignal's Engagement Specialists enrolled **17k Medicaid patients** into one or more CareSignal programs. Using automated SMS text messaging and phone calls, CareSignal sent a combined 860k automated messages to patients at a regular cadence. The messages collected patient-reported data over a 15-month period resulting in more than 6,000 alerts for patients needing help. The average OSF nurse alert response time across chronic condition programs was less than one hour for high and rising-risk populations, and the alert response for low-risk populations was approximately one day meaning that patients received fast support and answers.

OSF's Medicaid Initiative used over 8,000 automated push messages to communicate with patients and this saved staff time from typing the initial messages. Furthermore, it enabled support and communication during re-determination months. "CareSignal's device-agnostic structure as well as the two-way chat threads have been a great fit for our diverse population" said Courtney Pilat, Director of Digital Care Development at OSF HealthCare.

Patients Enrolled in Chronic Disease Programs

- Hypertension: 2,201
- Diabetes: 1,305
- Asthma: 1,119
- COPD: 548
- CHF: 135
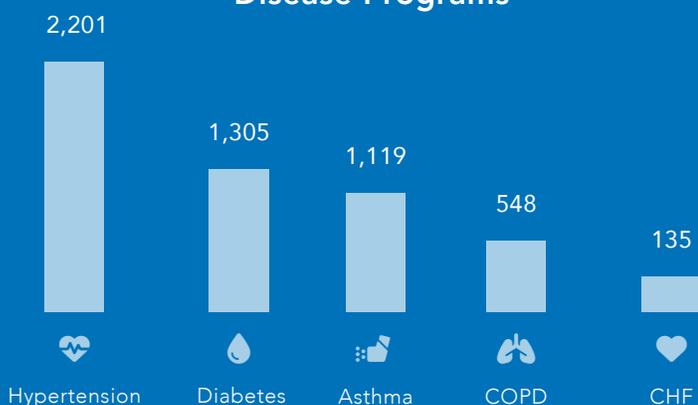
6 Month Average Engagement Rate

53%

across all chronic disease programs

*Compare this to a <1% utilization of a health app developed for Michigan's Medicaid population and more broadly, average medical app retention rate of 36% at 3 months.

Diabetes

HbA1c Pre – Post Changes

Group	Baseline	Most Recent
< 7% (N = 322)	5.91	6.11
7% to 8% (N = 67)	7.44	6.87
8% to 9% (N = 33)	8.5	8.07
> 9% (N = 43)	10.48	8.48

Hypertension

BP Pre - Post Changes

Average Systolic Blood Pressure (mmHg) / Average Diastolic Blood Pressure (mmHg)

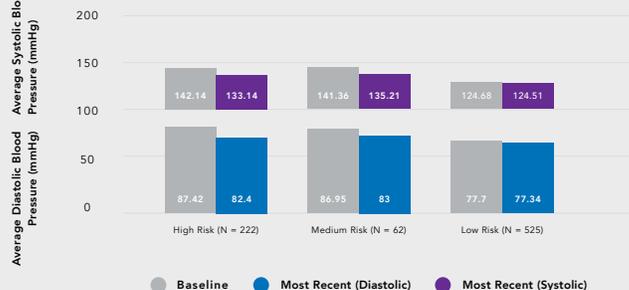| Group	Baseline (Systolic)	Most Recent (Systolic)	Baseline (Diastolic)	Most Recent (Diastolic)
High Risk (N = 222)	142.14	133.14	87.42	82.4
Medium Risk (N = 62)	141.36	135.21	86.95	83
Low Risk (N = 525)	124.68	124.51	77.7	77.34

2 Point

Average drop HbA1c for baseline > 9%

In the diabetes program there were 72,950 messages resulting in 168 alerts which were opportunities to outreach and improve blood sugar control.

9 mmHg

Average drop in sBP for patients with a baseline of 160+

5.02 mmHg

Average drop in dBP for patient with a baseline of 160+baseline

In the hypertension program there were 140,756 automated touches resulting in 1,868 alerts which were opportunities to outreach and improve blood pressure control.

Sources

https://www.medrxiv.org/content/10.1101/2019.12.22.19015636v1.full
http://tinyurl.com/healthcareengagementbenchmarks

Results: OSF Improved Healthy Behaviors Among Low-Risk Patients

Healthy Living is a light-touch wellness program that encourages patients to stay healthy via step tracking, nutrition, and weight questions. Healthy Living enables patients to indicate when they would like to speak to a community health worker. Nearly 13,000 patients were enrolled in the program and many patients reported improved adherence to a healthy diet and increased physical activity.

12,782 → **500,291** → **1,031** → **26.8** HRS

patients were enrolled in the Healthy Living Program

receiving half a million automated messages

resulting in over a thousand alerts for proactive care

with the average alert resolved within approximately one day

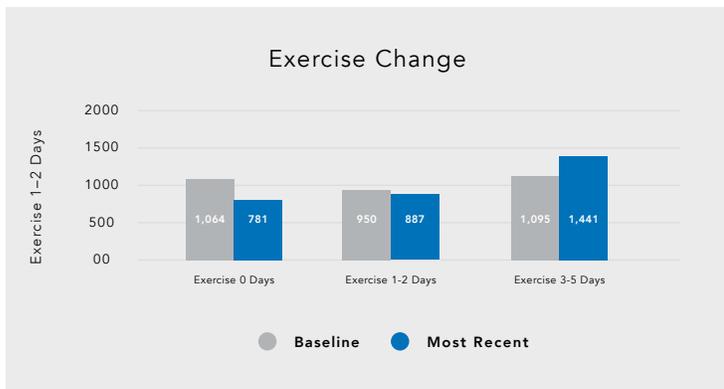## Increasing Clinically-Relevant Patient Engagement

8,032

Push Messages

10,348

Chat Threads

"The goal of Healthy Living is to expand reach and connection to patients that are currently without disease to support prevention efforts. When patients receive preventative care they can avoid disease and ED visits." – Courtney Pilat

Exercise Change

	Baseline	Most Recent
Exercise 0 Days	1,064	781
Exercise 1-2 Days	950	887
Exercise 3-5 Days	1,095	1,441

(Y-axis: Exercise 1–2 Days; 00, 500, 1000, 1500, 2000)

Step Change

	Baseline	Most Recent
< 5,000	255	229
5,000 – 7,500	269	283
7,500 – 10,000	313	353
> 10,000	334	306

(Y-axis: Number of Patients; 00, 100, 200, 300, 400)

The number of patients who exercised 3 – 5 days per week increased, while the number of patients who did not exercise at all decreased.

Diet Change: The number of patients who were non-adherent to a healthy diet decreased by 18%.

The number of patients who walked 7,000 - 10,000 steps per day increased, while the number of patients who walked fewer than 5,000 steps per day decreased.

Patients Engaged in RPM Report High Satisfaction

Improved Communication

The majority of patients agree that the messages have improved communication with their OSF care team.

Average = 7.7   N = 1,657

1 – Strongly Disagree   Strongly Agree – 9

Higher Care Satisfaction

The majority of patients strongly agree that they receive the best possible care from OSF.

Average = 7.89   N = 1,641

1 – Strongly Disagree   Strongly Agree – 9

Message Frequency

The majority of patients strongly agree that they are happy with the number of messages they receive per week.

Average = 7.88   N = 1,553

1 – Strongly Disagree   Strongly Agree – 9

Frequency Explained

On average, patients reported receiving messages at a "perfect" frequency – not too few, and not too often.

Average = 4.07   N = 86

1 – Strongly Disagree   5 – Perfect   Strongly Agree – 9

Increased Health Literacy

The majority of patients report OSF's automated messages helped them gain a better understanding of their condition and care management.

Average = 7.2   N = 579

1 – Strongly Disagree   Strongly Agree – 9

Patients Appreciate the Connection & Accountability of the RPM Program

"I feel more secure knowing I have someone to talk to who understands my problems."

"This program is amazing. I have been doing a lot better remembering to check my blood sugar."

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