Midwest Health

Lightbeam Health Solutions

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Behind the Scenes of One of the Largest Remote Patient Monitoring Implementations and Evaluations in the U.S: Clinical, Staffing, and Claims ROI Analyses

A National Leader Meets a National Challenge: How to Do More with Less

Midwest Health* System serves patients in hospitals across Missouri, Arkansas, and Oklahoma and provides care nation-wide through innovative solutions such as Midwest Virtual, one of the first enterprise-wide telehealth services in the United States, and hosts one of the largest Epic EHR instances in the U.S.

Despite being a leader in virtual care, Midwest Health faced the same challenges as health systems, IDNs, and physician groups across the country, including staffing difficulties, reduced revenue from elective procedures, and value-based care accountability. Mirroring a trend across U.S healthcare, Midwest Health aggressively grew value-based contracts year over year. Midwest Health needed to improve outcomes and reduce costs across the enterprise to succeed.

Midwest Health's executive leaders transformed population health with pragmatic yet visionary strategies that reduced costs and improved outcomes across the enterprise. Midwest Health built a sustainable care management strategy that leveraged automated Deviceless Remote Patient Monitoring, centralized 24/7 care management pods, and streamlined workflows to reach more patients, faster, and with less resources.

Identifying the needs of the various segments of Midwest Health's patient population allowed for a personalized approach to be applied in a proactive manner. An important aspect of the innovative care model is to address the needs of the individual in a team-based manner. Midwest Health collaborated with CareSignal specifically to help patients whom were deemed to be of increasingly greater risk before they require hospitalization for chronic conditions.

As provider organizations face similar challenges, Midwest Health's path provides an example for other population health leaders to learn from.

Midwest Health's Deviceless Remote Patient Monitoring Utilization

2016 - 2021

35,959
Total Number of Patients Enrolled

2.9MM
Total Automated Patient Touches

2.0MM
Total Automated Text Messages

963,900
Total Automated Phone Calls

80,000
Proactive Alerts Raised

19 Programs
Currently Utilized by Midwest Health

* "Midwest Health" is used in place of the client name and brand during active collaboration on journal submission and other co-branding opportunities. All patient names and information have been changed and de-identified.

Identifying Constraints

Midwest Health's Value-Based Care Potential was Constrained by the Traditional Care Management Model

1. Care Management was at Maximum Capacity and Needed to Grow Sustainably

Care management is the backbone of any successful value-based care or chronic disease management program. Care managers manually called patients to provide support and attempt to catch exacerbations before they turn into costly ED visits. The traditional care manager at Midwest Health could only call and manage a small sliver (2-5%) of the highest-risk patients and usually for no longer than 30 days before new patients would cycle through. As the number of value-based contracts at Midwest Health grew, care management capacity subsequently needed to grow along with it. Yet, with staffing challenges and high costs, hiring an additional care manager for every few hundred patients was not financially sustainable.

2. Care Management was Reactive and Needed Better Data to Become Preventative

Care managers spend most of their time calling patients, but connecting with few. Recent analyses shows that it takes 8 missed calls before a care manager can connect with a patient.[1] Not only is this low license work for an RN-trained care manager, it is quite frustrating. Despite their best efforts, Midwest Health's care managers did not know which patients were beginning to worsen making it difficult to prevent avoidable hospitalizations. The team needed better and more timely data that identified patients with worsening conditions to effectively provide proactive care.

3. A New Care Management Model was Needed to Reach Rising-Risk Patients

Recent research made a compelling case for expanding the scope of care management to support medium and lower-risk patients to have a greater clinical and financial impact.

According to the New England Journal of Medicine, "the strategy of targeting super-utilizers did not lead to savings because many patients whose medical costs are high today will not be as high in the future as patients regress to the mean".[2] Research from the Advisory Board showed that the high-risk population segment is 5% of a provider's population while the rising-risk segment makes up 20%. Each year, nearly 1/5th of rising-risk patients escalate into the high-risk category when unmanaged.[3]

> Addressing the rising-risk represented Midwest Health's greatest opportunity to bend the cost-curve.

By investing in rising-risk patient management, Midwest Health could significantly slow the vicious cycle of rising-risk patients moving into the high-risk patient cohort and avoid associated future costs. Midwest Health's population health leaders recognized that instead of the traditional care management model used for managing the high risk, they would need to create a new model built to reach the much larger rising-risk populations and they would need better insight into patient health status.

> "Value-based care success hinges on our ability to proactively identify and manage patients with rising-risk needs. Deviceless RPM allows us to provide the right level of care when needed and avoid unnecessary utilization."
>
> **Vice President**, Population Health; Care Navigation, Midwest Health

Creating a Scalable and Sustainable Population Health Program

1. Automated, Standardized Messages Cast a Wider Net

Midwest Health automated and standardized patient outreach enabling it to extend the reach of Population Health Navigation to the previously unmanaged rising-risk while freeing up nurses time for more pressing clinical tasks. Midwest Health implemented CareSignal's Deviceless Remote Patient Monitoring platform to monitor the health status of patients in between visits. The platform sent SMS and phone messages to the patient's phone allowing them to easily report biometrics and symptoms (e.g., blood sugar, blood pressure, breathing status) in real-time. The technology flipped Population Health Navigation from a manually-driven, outbound call model, to an automated, inbound data model saving the equivalent of over 13 FTE in just 9 months. Midwest Health leveraged CareSignal's programs

for 19 use cases including common chronic conditions, behavioral health, and post-discharge across the new and much larger rising-risk population. With CareSignal and the newly centralized Population Health Navigation structure, one population health navigator could now manage 1,000 patients, nearly 10x more than the national average of 150 patients.[4]

2. Enabling Preventative Care: Same Day Enrollment and Real-time Alert Data

Midwest Health did not rely on population health risk stratification alone to identify patients in need, rather, Midwest Health continued where most organizations stop, by folding in real-time symptom data with alerts for highest-risk patients. Midwest Health prioritized building an integrated workflow. By flowing real-time patient data into the patient's chart in Epic and sending alerts, population health navigators could review and resolve alerts while staying in one familiar EHR. On average, only 2-3% of patients in the panel triggered an alert, meaning for 1,000 patients, 20-30 needed support, making it a predictable and manageable workload focused on creating the biggest clinical and financial impact.

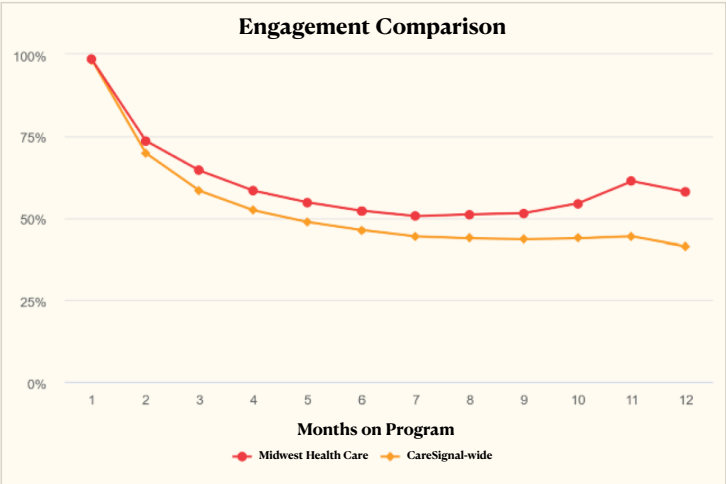
Midwest Health also recognized the importance of a fast and straightforward patient enrollment workflow to place patients on the RPM platform quickly after a hospital discharge or condition exacerbation. In the original post-discharge enrollment workflow, population health navigators manually identified and outreached to patients deemed eligible for Midwest Health Care Connect, a new rising-risk care program. In the second iteration, a discharge ADT feed directly sent over patients who are considered candidates for the Deviceless RPM program. This feed of data allowed for a CareSignal-managed enrollment campaign, including mailers, texts, and calls. With CareSignal Engagement Specialists (ES) calling and enrolling patients, it freed up time for Midwest Health population health navigators to focus on clinical tasks, saving the equivalent of 3.3 FTE as the ES enrolled over 15,000 patients in 9 months.

> "Automated patient outreach and real-time data alerts allowed us to scale our Population Health program to serve thousands of additional patients without adding additional resources, while focusing on patients needing the most support."
>
> **Executive Director**, Population Health Navigation, Midwest Health

3. Redesigning Population Health Navigation for Clinical Speed and Scale

With any care program, clinical speed is often the deciding factor in preventing avoidable utilization. To address it, Midwest Health population health leaders organized clinical (RN, APP, MD), and subclinical licenses (Patient Navigator) in a centralized Population Health Navigation structure paired with Deviceless Remote Patient Monitoring. The goal was to create a team that would be able to monitor greater numbers of patients with its existing staff and ensure staff operated at the top of their license. The new structure was known as Midwest Health Care Connect and it operated 24/7/365 enabling fast alert review and resolution, and an efficient path for subclinical to clinical escalation. Analyses of the Midwest Health Care Connect population showed that patients had higher long term engagement rates than the average CareSignal client population, and high patient satisfaction due to the fast alert review and resolution.

Midwest Health Care Connect's Population has Higher Engagement Than the Average CareSignal Client Population



High Patient Satisfaction • Average 7.9/9

Most CareSignal enrollees agree that they are getting the best possible care from Midwest

Analyses of data from Jan.-Sept. 2021 showed that the average time for Midwest Health Care Connect's Population Health Navigation team to respond and resolve an alert was less than an hour, nearly a half day faster than Midwest Health's traditional care team structure.

Midwest Health Care Connect's Speed and Scale

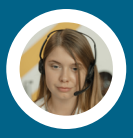
Programs	Asthma N=1,965	CHF N=2,543	COPD N=2,857	Post Discharge N=9,157*	General Medical N=4,430
# Alerts	4,898	8,319	6,910	5,500	3,113
Avg. Time to Alert Resolution	0.31 HR	14.7 HR†	0.32 HR	0.53 HR	1.85 HR

Team Collaboration Enables Rapid Alert Resolution 24-7-365

Alert Triggered

Example Alerts:
- Breathing Status
- Patient Needs Care
- Swelling

Patient Navigator



Subclinical

Registered Nurse

Advanced Practice Provider

Board ED Certified Physician

Clinical

Overall Average Time to Alert Resolution

32 MIN

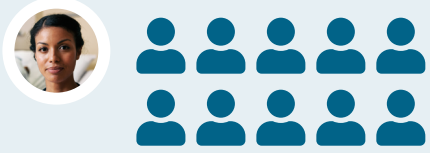
Automation Enables Management of 10x More Patients than the National Average Caseload

National Avg. 1:150

10x

Increase in patient caseload, helping 1 population health navigator manage 10x more patients than the national average

Midwest Health 1:1,000



CareSignal's Automated RPM and Enrollment Services Saved the Equivalent of Over 13 FTE in 9 Months

(Jan-Sept.2021)

Midwest Health Staff Time Saved Due to Enrollment Services

3.3 FTE

Midwest Health Staff Time Saved Due to Automated RPM

10.4 FTE

Patients Enrolled in 9 Months

15,507

*Represents health system-wide, †Length artificially high due to pre-dating automated ticket closure upon alert resolution

The Standard of Care for Post-Discharge Follow-up

To effectively reduce readmissions and utilization, it is critical to identify, enroll, and support patients quickly. Midwest Health has discharged nearly 14,000 patients that have since been seamlessly enrolled in the post-discharge monitoring program. A daily list of patient discharges is sent automatically through an ADT feed to CareSignal Engagement Specialists (ES) who call the patient on average three hours after the patient is discharged from the hospital. The rapid enrollment process is so critical because nationally, over one-third of 30-day readmissions occur within the first seven days.[5] The sooner patients are enrolled in the program, the greater likelihood that Midwest Health can prevent readmissions. Of the 14,000 Midwest Health patients enrolled in the CareSignal post-discharge program, 10% triggered an alert within the first seven days and because CareSignal caught them, the care manager was able to identify and support those patients, preventing readmissions. After 30 days, the post-discharge program concludes, and the ES help transition patients into either the general medical program or a condition specific program (e.g., CHF, COPD) to maintain long-term support.

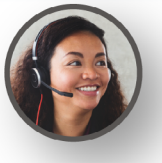
Automated Post-Discharge Outreach Helps Prevent Readmissions

3 Hours
Average Time from List Sent to First Call

30 Days
Post-Discharge Monitoring Program

Programs Continue Beyond Post-Discharge Monitoring

Linda Jenkins
46, Patient



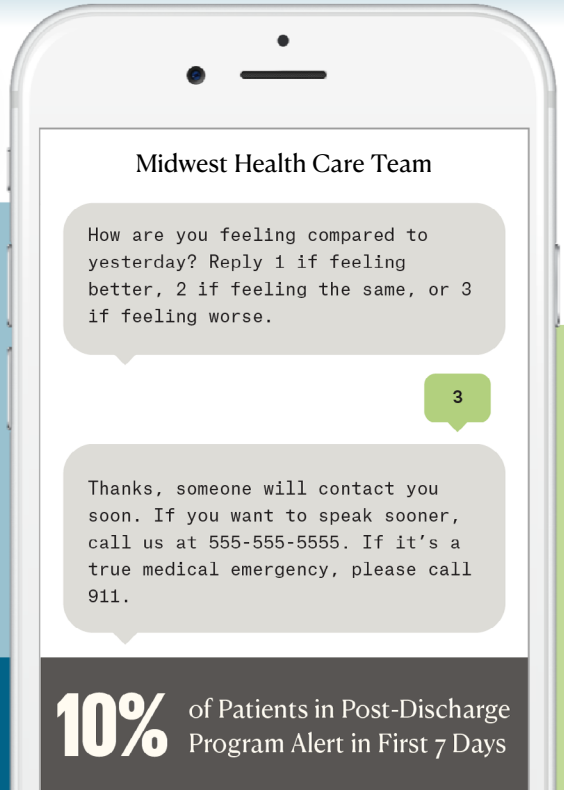
Linda enrolled in another relevant program after Post-Discharge

- Patient is Discharged
- Daily ADT List Sent to CareSignal
- Patient gets Enrollment Call within 2–24 HR
- Epic EHR "FYI Flag"

CareSignal Engagement Specialists Enroll Patients

140 Enrollment Calls Per Day

57 Patients Enrolled Per Day



General Medical
N=9,477

Condition-Specific
N=1,059

Most Common Programs
- Asthma
- COPD
- CHF
- Diabetes

13,883 Total Patients Enrolled in Post-Discharge Program

10% of Patients in Post-Discharge Program Alert in First 7 Days

> "One-third of 30-day readmissions occur in the first 7 days post-discharge. Patients need support the day they are discharged".[5]

Midwest Health Improved Outcomes and Reduced Costs Across the Enterprise

The collaboration between Midwest Health and CareSignal began in 2016 with a few hundred patients on the remote patient monitoring platform for chronic diseases. After initial programs showed improved clinical outcomes, cost savings, and increased Population Health Navigation efficiency, Midwest Health expanded the scope across payer types and conditions. Since the beginning of the collaboration through Sept. 2021, over 35,000 patients have been enrolled in the platform across 19 condition-specific programs, reducing thousands of ED visits and generating a total medical cost reduction of $32MM. To be included in the ED claims analysis and cost analyses, patients needed to be enrolled in CareSignal for ≥ 90 days and have ≥ 90 days of "pre" claim history.

> "Not every patient requires in home device monitoring. Many patients benefit from frequent contact with their care team and this can be accomplished simply and in a personalized manner at scale utilizing their phone."
>
> **President**, Midwest Health-Clinical Integration, SVP Population Health

Claims Analysis Shows Midwest Health Reduced ED Visits in High-Cost Conditions | Health System-Wide

Programs	Asthma	CHF	COPD	Diabetes	Gen Med
ED Visits Avoided per 1,000 Patients	255	329	183	402	475
Relative ED Reduction	-31.8%	-26.4%	-20%	-37.9%	-27.1%
Change in ED Visits Per 1,000 Patients Per Year	803 / 547	1241 / 912	912 / 730	1058 / 657	1752 / 1277
Total Cost Savings	$1.40MM	$17.70MM	$1.55MM	$9.77MM	$2.25MM

Before CareSignal

After CareSignal

Claims Analyses Show Midwest Health Reduced PMPM Spend and Total Medical Costs | Health System-Wide

Total Medical Cost Reduction

$32 Million

PMPM Cost Reduction

$143 PMPM

Rate of Cost Reduction*

14.25%

Midwest Health Increased Screening Rates & Flu Vaccinations

Amidst the pandemic, Midwest Health observed a troubling trend in the reduction in patients scheduling important preventative screeners. While CareSignal supports over 30 evidence-based condition-specific programs, it also offers a variety of services, including white-labeled blast text campaigns and secure two-way messaging. Midwest Health used these services to launch awareness campaigns to increase utilization of colonoscopy screenings and Flu shots that reached hundreds of thousands of patients. Midwest Health put the power to schedule at the patients' finger tips and saw response rates of 35% and 39%, respectively.

Campaign Utilization

Flu Shot

722,854
Patients Outreached

273,712
Responses Collected

1.4M
Messages Sent

62%
Had Flu Shot

39%
Response Rate

38%
Offered to Schedule

Colorectal Screening

35,844
Patients Outreached

1,234
Responses Collected

34%
Had Colonoscopy

35%
Response Rate

65%
Offered to Schedule

Innovative CareSignal AI Maintains Long-term Engagement

Midwest Health is tapping into a variety of CareSignal services, from blast text and secure two-way direct messaging to the latest CareSignal AI to facilitate machine learning-based patient re-engagement. CareSignal AI keeps Midwest Health patients proactively engaged. CareSignal AI identifies patients at risk of disengaging from the platform.

These patients receive a call from a CareSignal ES to answer questions about the program, reaffirm the importance, and make any adjustments. Together, they prevent 57% of weekly patient disengagement, which extends patient engagement by an average of two months enabling longer-term clinical and financial impact.

Key Takeaways

1. Population Health Leads, with Enterprise-Wide Implications

Population Health leaders at Midwest Health and elsewhere are well positioned to lead clinical transformation efforts from the top down, setting the vision, aligning clinical resources, and advocating for technology and services investments. Balancing clinical and financial goals, population health's focus on meeting value-based care quality measures can help provider organizations create effective and efficient care programs that will have implications across the enterprise.

2. Design Workflows for Scale and Speed

Midwest Health integrated real-time patient symptom data into the Epic EHR to empower population health navigators to act on patients needing support. Further, it streamlined patient referrals by adding FYI flags in Epic to indicate patients needing enrollment, which went directly to CareSignal to enroll and onboard. Midwest Health also facilitated fast follow-up by pairing clinical and subclinical licenses to enable 24-7-365 alert follow-up. Population health leaders built a system that could scale to enroll and remotely monitor large populations without adding FTE.

3. Reduce Fragmentation by Designing Solutions that Span Payer Types

Bucking the trend of providers implementing single-condition point solutions, Midwest Health chose a vendor that enabled strategic flexibility and supported 19 programs ranging from chronic disease and behavioral health, to post-discharge and AWV campaigns. Robust solutions enable fast pivots as quality goals shift and increase competitiveness with proven outcomes in commercial, Medicare Advantage, ACO, and Medicaid contracts.

4. Trust and Collaboration Enables Rapid Implementations

With a strong foundation of trust, collaboration, and mission alignment, Midwest Health and CareSignal built the framework to jump on opportunities that arise. Amidst the pandemic, the two spun up a brand new program, Post-Discharge, in two weeks. The program reached over 15,000 patients in the first nine months.

5. Outcomes Over Reimbursement

Reimbursement or outcomes is the modern day which comes first, the chicken or the egg? With $32MM in total cost savings, Midwest Health clearly focused on total cost reduction, readmissions, quality metrics and prioritized the conditions that contribute most, including CHF and HTN, with reimbursement second.

About CareSignal, a Lightbeam Company

CareSignal Deviceless Remote Patient Monitoring® is a scalable, evidence-based remote monitoring solution that improves payer and provider performance in value-based care by engaging and identifying rising-risk patients. Care teams receive real-time alerts enabling clinically informed prioritization and outreach, and patients respond to clinically validated questions via automated SMS text messages or IVR phone calls.

CareSignal amplifies care team operations, improving clinical outcomes and delivering financial returns for over two dozen conditions such as CHF, COPD, diabetes, depression, and more.

Citations

1. Internal CareSignal Analysis, Account Management Client Data, Unpublished, 2022
2. https://www.nejm.org/doi/full/10.1056/NEJMsa1906848
3. https://advisory-prod.azureedge.net/-/media/project/advisoryboard/shared/research/pha/research-briefings/2018/addressing-the-needs-of-your-rising-risk-patientspdf?rev=b0af43abbf574467815a2a1b5fb480e5&hash=D3969F2A310CADBB4ACF88D43F863EEF
4. http://www.aamcn.org/guidelines_final%20draft.pdf
5. https://www.hcup-us.ahrq.gov/reports/statbriefs/sb230-7-Day-Versus-30-Day-Readmissions.jsp

Learn how to leverage Deviceless RPM at your organization.
Schedule a free consultation with Value-Based Care expert, Jen Paule: crsg.nl/jen-paule.

CareSignal® a Lightbeam Company

About CareSignal, a Lightbeam Company:
Together, Lightbeam and CareSignal align best-in-class population health capabilities with proven remote engagement and monitoring solutions. Learn more about solutions specific to your organization and population by trying our self-guided demo: https://try.caresignal.health/

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