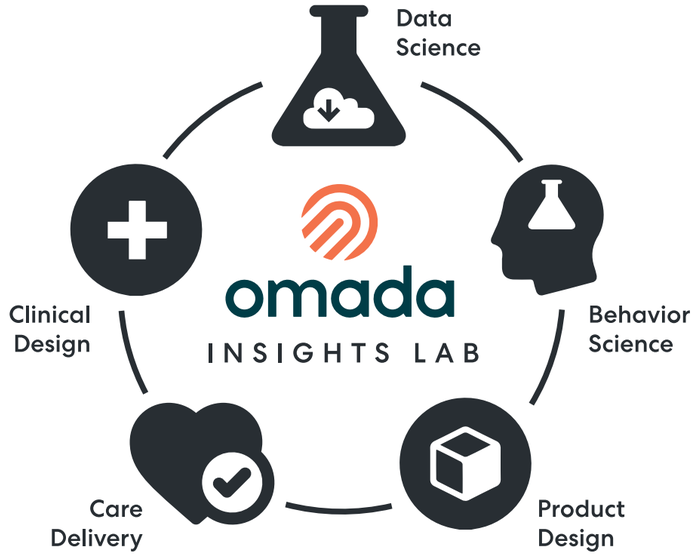
Meet the Omada Insights Lab

Where in-depth data meets deep expertise



In the growing market for virtual care, Omada Health has continued to deliver proven health outcomes and ROI for its customers. Now with the Omada Insights Lab, the company unveils the interdisciplinary collaboration and system for innovation behind its industry-leading care delivery, and releases introductory data and insights about the importance of meaningful relationships in chronic condition management. What's more, these findings and future research of the Insights Lab foster innovation in Omada's programs and can help improve the healthcare industry as a whole.

The virtual care landscape

The majority of Americans have at least one chronic health condition. Consumers face an extensive array of solutions that aim to address the booming need and desire for virtual care, from telehealth services through healthcare providers and third parties, to countless direct-to-consumer options, including tens of thousands of health apps for mobile devices.

But how do individuals know what will actually improve their health? How do employers, health plans, pharmacy benefits managers (PBMs), and other buyers know which solutions are cost-effective—and which are just yet another app or gimmick?

Furthermore, the rise in virtual care over the last decade has generated an unprecedented amount of new data that can advance population health management and better personalize each individual's experience. How can virtual care providers use this data to improve care and reduce costs, while also managing it responsibly?

At Omada, we've created a system for virtual care development and delivery that not only offers members with multiple chronic conditions the ability to achieve their health goals, but also creates transparency that can improve care across the industry and show employers and payers the elements that make virtual care programs worth investing in.

By leveraging deep expertise across five core functional areas, the Omada Insights Lab is the internal data corps powering the Omada platform. Thanks to data learnings from over a decade of research, the Omada Insights Lab remains focused on driving higher enrollments, improving ROI, increasing engagement, and delivering lasting outcomes.

We've always shared our outcomes with customers, partners, and the medical community in peer-reviewed scientific journals. Now we're unveiling the Omada Insights Lab to:

1. **Demonstrate how our programs drive industry-leading outcomes.**
2. **Achieve a broader goal by sharing our unique data and insights with the healthcare industry at large so that we can help make chronic disease care better for everyone.**

What is Omada?

Omada Health combines the latest clinical guidelines with breakthrough behavior science to help people with chronic conditions achieve long-term health improvements. We provide virtual-first care—the first line of chronic disease management integrated into the wider healthcare ecosystem—for prevention and management of diabetes, hypertension, musculoskeletal (MSK) issues, stress, anxiety, and depression.

As one of the few virtual care companies with full-time care teams, we support more direct interaction between members and care providers and make continuing investments in education, tools, and resources for our teams. Our care pathways are integrated across conditions to ease the burden of care coordination for our members so they can focus on their health rather than care navigation. We help our members prioritize and manage their information, translate care plans into action, and close the gaps in their care. Our virtual care programs are evidence-based and we've published 19 peer-reviewed studies and counting. We build programs that our members don't just try, but stick with, resulting in reduced healthcare costs that deliver sustained changes in health behavior and increased ROI for our customers.

Real health care

Omada isn't just an app. It's real health care based on validated clinical protocols, integrated across conditions and delivered by an engaged care team that builds meaningful relationships with members. Members can access Omada anytime, anywhere through their app and connected health monitoring devices. With members' permission, Omada also communicates with their healthcare providers to share updated care plans, health data, and member progress. Omada isn't just replicating in-person care, but improving how care is delivered for good.

Real engagement

Among 500,000 members across all 50 states and more than 1,500 customers, we've achieved the following markers of engagement:

13+ million

care team messages exchanged with members

100+ million

device interactions across all programs

1+ billion

actionable health data points, and another 25,000 every 30 minutes

An average of

31

weekly points of engagement per member, including activity tracking, meal tracking, weigh-ins, logins, and group messages

An average of

15.1

logins per member per week

88%

member satisfaction

Real outcomes and ROI

Where many digital health companies often stop at metrics of short-term, basic engagement, such as enrollment numbers and app logins, Omada is laser-focused on actually improving lifelong health. That's why we measure our impact by how well we engage members over the long-term and help them make sustained changes in their behavior and health.

In a cohort study, members in Omada for Diabetes with a baseline A1C ≥ 7.5% had, on average:[6,7]

0.8–1.4%
reduction in hemoglobin A1C,[8] which demonstrates improved blood sugar control

15mg/dl
decrease in total cholesterol[9]

11%
increase in medication adherence[6]

Decrease
in diabetes distress score, a measure of emotional response to the burdens of living with diabetes

A study on the Omada for Musculoskeletal program showed:[9]

51%
of members experienced total pain reduction[10]

71%
of members experienced total functional improvement[11]

98%
of members saw improvement in their area of concern

27%
overall reduction in medical spend per member

A national health insurance provider offering the Omada for Prevention program to its members experienced, on average:[12]

Per-member cost savings of:

Y1	Y2
$348	$989

Employer ROI:

Y1	Y2
1.7:1	2.7:1

Participant weight loss:

Y1	Y2
2.1%	4.1%

"We start with science and *insist on outcomes*."

- Carolyn Bradner Jasik, MD., Omada's Chief Medical Officer

Since Omada's inception in 2011, science has been the driving force behind our mission and health care programs. From evidence-based clinical guidelines at the foundation of our care programs to data science that helps us assess and iterate on our programs, Omada's experts have fostered a collaborative relationship that integrates data-driven input from across multiple disciplines to create the best user experience and outcomes for our members and customers.

Omada's earliest program, Omada for Prevention was structured upon the Centers for Disease Control's (CDC) evidence-based Diabetes Prevention Program (DPP). Omada has since become the largest CDC recognized DPP provider and has treated hundreds of thousands of members.

In conjunction with the program's clinical protocols, our care teams personalize care for each member to help them improve their overall health. Before long, however, it was clear that some members had significantly better results than others.

We observed the outcomes of members who engaged more with their care teams, and we saw that their interactions were valuable. We believe these relationships were instrumental in enabling people to reform the daily habits that led to improvements in their health.

This made intuitive sense because the management of chronic health conditions often includes an element of behavior or lifestyle change, which tends to be a harder, more personal nut to crack than clinical questions around medication choice, for example. But we couldn't explain how or why, exactly, this might work. We wanted to test it, measure it, and prove it.

We made our coaching experience more measurable, which consequently allowed us to better determine its effectiveness and establish a baseline for controlled testing and iteration. Our initial observations suggested that virtual-first care was the ideal modality to assess the impact of our coaches' interventions and modify peoples' behavior.

The reality is that a small part of real, sustained behavior change happens within in-person care visits. The time between doctor's office visits is where people live and make most of their behavioral decisions—and Omada was right there with them. We knew our behavior change data and insights had the potential to create an unprecedented transformation in care for people with chronic conditions, which are so rooted in everyday life.

These early questions and findings, coupled with our basic commitment to scientific rigor, have evolved over the years into what became the Omada Insights Lab.

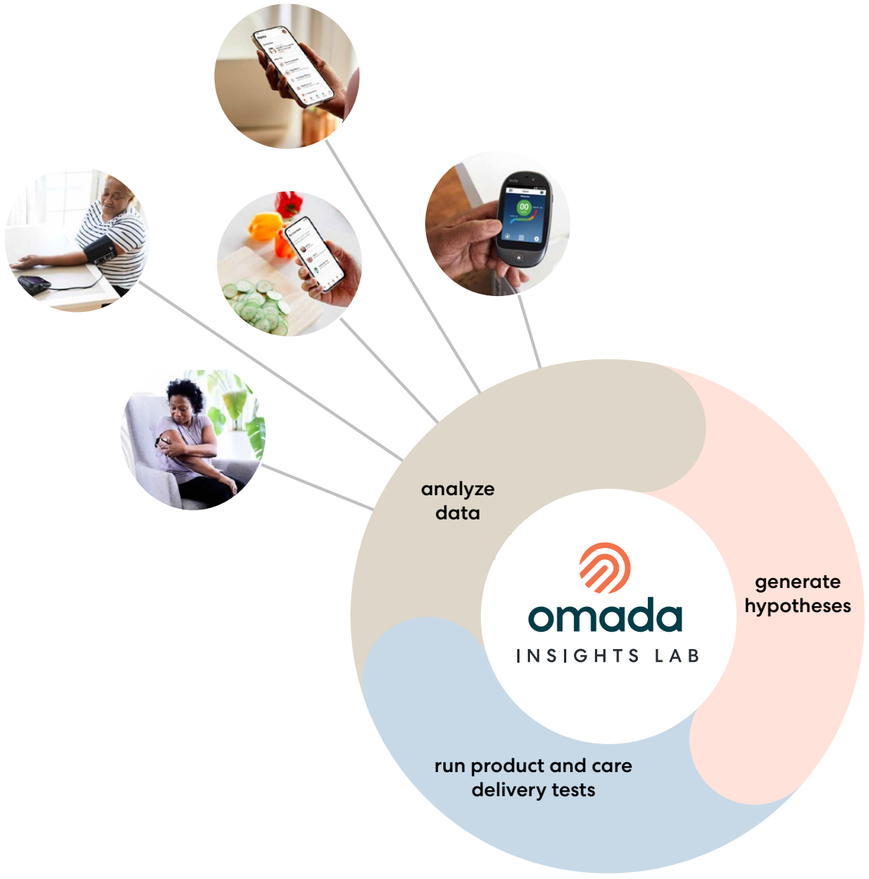
"We realized we needed to take intentional steps toward creating a coaching experience based on actionable insights. That would help us answer the questions: What are our coaches doing? And is it working or not?"

Chris Sharon, Omada's Vice President of Operations and Care Delivery

Target Health Outcomes by Omada Program

Prevention	Weight loss
Diabetes	Hemoglobin A1c maintenance or reduction
Hypertension	Blood pressure maintenance or reduction
Musculoskeletal	Improved pain score (VAS scale) Improved function score (PSFS scale)

The Omada Insights Lab: Innovation in action



The Omada Insights Lab is comprised of experts who collaborate across five cross-functional teams: Data Science, Behavior Science, Clinical Design, Product Design, and Care Delivery. The Insights Lab leverages this expertise to discover insights that drive the most innovative, cost-effective interventions in chronic disease care.

But why would any company reveal its secret-sauce recipe for innovation?

At Omada, we don't believe in black boxes in healthcare. We've made it a core value and habit to publish our outcomes, but we think process matters too. That's why we're compelled to share details of how we attain these industry-leading outcomes and cost savings, because we hope doing so will fuel faster innovation across the industry and make care better for everyone.

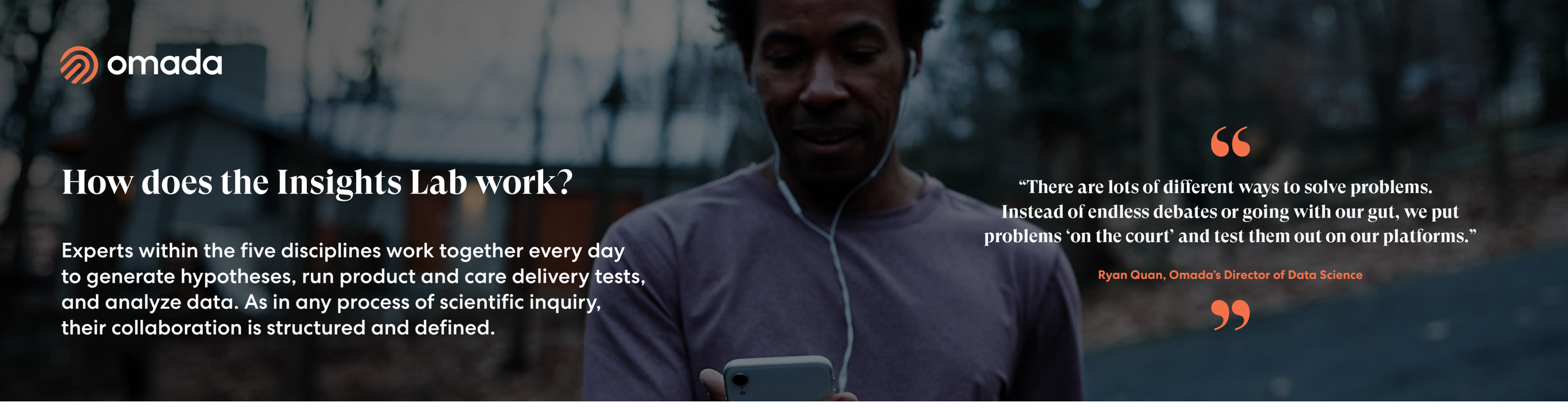
Every program at Omada starts with evidence-based clinical design. We mix in the science of behavior change and add quantitative and qualitative data about our users to find patterns and draw insights. We apply it all to human-centered services facilitated by the flexibility of a digital platform, so it's simple and actionable for our clinicians and coaches to deliver the highest quality care to members.

In turn, members' interactions with our software and coaches generate more data for further analysis, insights, and iterations, enabling us to rapidly learn what works—and what doesn't—for behavior change in virtual care.

Understanding the social and behavioral circumstances of our members' lives is at the heart of the Omada Insights Lab. It helps us leverage the context-rich moments in their individual health journeys to tap into their motivations, help them set goals, and continuously improve their care.

"Think of a laboratory research bench. In a pharmaceutical company, for example, scientists have the necessary tools and methods to elucidate which molecular pathways or protein sites to target, and this can lead to the development of products, like blockbuster drugs, that improve outcomes. The Omada Insights Lab embodies this kind of inquiry, but instead of targeting molecular pathways, we target social and behavioral pathways in order to improve our programs."

Ryan Quan, Omada's Director of Data Science



How does the Insights Lab work?

Experts within the five disciplines work together every day to generate hypotheses, run product and care delivery tests, and analyze data. As in any process of scientific inquiry, their collaboration is structured and defined.

> “There are lots of different ways to solve problems. Instead of endless debates or going with our gut, we put problems ‘on the court’ and test them out on our platforms.”
>
> Ryan Quan, Omada’s Director of Data Science

The Omada Insights Lab includes five main disciplines:

Data Science

Led by Director of Data Science Ryan Quan, the Data Science team looks at billions of data points to find behavioral patterns not readily apparent to human observers and surfaces them as intervenable moments for our care teams. They combine this quantitative data on what’s happening with our users with qualitative data—stories from user interviews and clinical observations—to gain deeper insights that we can lean into for improvements in care delivery.

Behavior Science

The Behavior Science team, helmed by Jennifer La Guardia, Ph.D., applies the framework of self-determination theory to our clinical and product design. It integrates insights from the Data Science team to constantly reassess and improve upon how we foster our members’ motivation and guide how we support them through behavior change.

Clinical Design

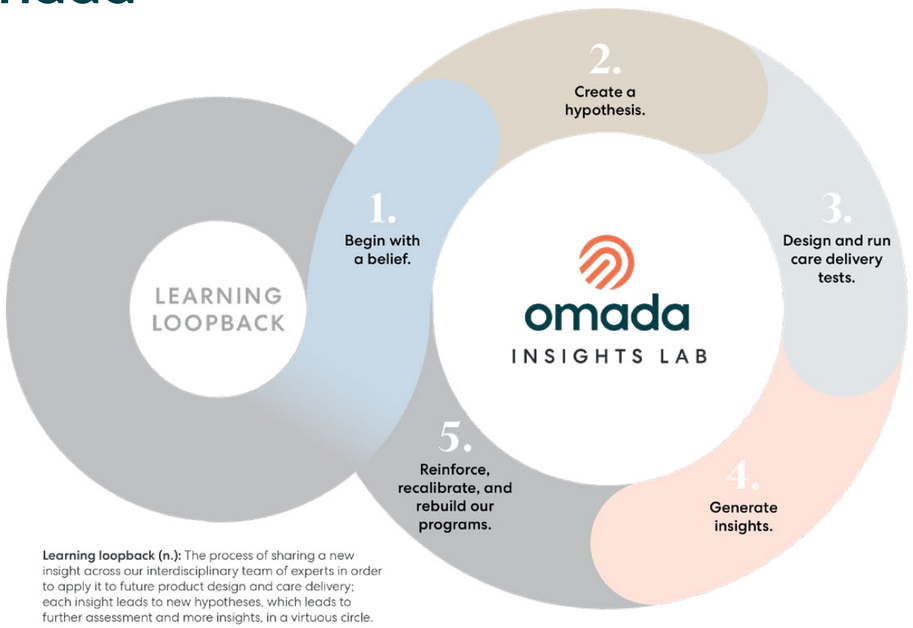
Carolyn Bradner Jasik, MD and her Clinical Design team build the backbone of our programs by constructing Omada’s clinical protocols. They work in deep collaboration with the Behavior Science team to ensure that our coaches provide care that’s both evidence-based and human-centered, then hand off their blueprints for implementation and ongoing assessment.

Product Design

Led by SVP of Product Management & Design Randhir Vieira, the Product Design team digests and unifies guidance from the Clinical Design, Behavior Science, and Data Science teams. This holistic input helps them determine where to focus discovery and design efforts, prioritize features on our roadmap, and build and iterate on the user experience for both our members and our care delivery teams.

Care Delivery

Care Delivery, led by Chris Sharon, VP of Operations & Care, and Devin Ellsworth, Director of Health Coaching, is where the work of the Insights Lab core teams culminates. They take the building blocks of data science, behavioral science, clinical protocols, and product design and construct a seamless, scalable process to deliver care to our members through our frontline care teams.



Learning loopback (n.): The process of sharing a new insight across our interdisciplinary team of experts in order to apply it to future product design and care delivery; each insight leads to new hypotheses, which leads to further assessment and more insights, in a virtuous circle.

The Insights Lab approaches each problem using a stepwise scientific process:

1. **Begin with a belief.** It might come from the healthcare industry, how things are done by other digital health companies, or from Omada's own insights. For example, our health coaches might notice that some of our members live in food deserts. It's commonly believed that living in a food desert leads to poorer health outcomes.

2. **Create a hypothesis.** In our food desert example, we might hypothesize that Omada's dietary recommendations won't work for members who live in food deserts and have limited access to healthy food.

3. **Design and run care delivery tests.** The Clinical Design and Behavior Science teams then assemble A/B protocols from evidence-based guidelines and best practices to collect data from our members about the effectiveness of our dietary recommendations. We test this on our platform, and the Data Science team collects the resulting data.

4. **Generate insights.** From the data, we derive insights about our programs and users. For example, in general we find that our members who live in food deserts disengage more rapidly than others who use our program, and our interventions are less effective for those who disengage.

5. **Reinforce, recalibrate, and rebuild our programs.** The last step is to feed each insight back into Product Design and Care Delivery, either reinforcing something that's working or making adjustments to protocols, process, or design wherever change is needed. We might use the insight about member disengagement in food deserts to try new content, such as education, discounts, or recipes, specific to that population.

We surface these at the point of care for clinicians and coaches to assess and choose what would be most helpful for each member. But it doesn't stop there. These insights have the potential to generate improved care—and also new questions. So we measure outcomes again: Did this lead to improved engagement? Which ones resulted in better diet quality or weight loss?

That's how we take each insight to a deeper level of innovation: As care teams interact with each member, our proprietary platform surfaces options to our care team based upon not just clinical and behavior change best practices, but also on our acquired insights. Our care teams use their creativity, knowledge of best practices, and judgment to select the best options for individual members, in turn sending back data that helps us learn what works most effectively for whom.

In this way, we don't just monitor our coaches' choices—we collaborate with them to test their best hypotheses of what works and what doesn't in how we deliver care to our members. Our software is not simply a result of tests, but also a part of the testing process itself; it's designed both to support effective care delivery and to run and scale continuous learning and improvement.

We call each hypothesis, test, and resulting insight, when shared across our teams and applied to product design and care delivery, a learning loopback. Each insight leads to new hypotheses, which leads to further assessment and more insights, in a virtuous circle.

There are hundreds of moments ripe for analysis and intervention in the journey of our members, from noticing food deserts, to patterns around blood glucose tracking, down to the specific goals of an individual member, and we've run thousands of analyses on these moments. Learning loopbacks help us continuously optimize and personalize our clinical protocols to achieve demonstratable health outcomes for members and ROI for our customers.

From belief to insight

Through our focus on long-term health and well-being, the Omada Insights Lab has generated a high volume of novel insights that myth-bust industry norms on how to apply behavior change to developing effective virtual treatments for chronic conditions. Here are some of our most interesting and actionable findings so far.

INDUSTRY BELIEF

#1: Apps and connected devices are sufficient for chronic condition management

Many virtual care companies rely largely or entirely on remote monitoring devices and apps for tracking health and behavior across users and health conditions.

Hypothesis: Based on our review of clinical literature and initial internal insights, we hypothesized that interactions with coaches and peer groups would achieve better member engagement and outcomes than apps and devices alone.

Data: Across Omada programs, we found that:

- Members who engage with their Omada care team and community in the first week of the program are ~94% more likely to achieve their target health outcomes in the Omada program.[13]
- Members are more likely to churn—specifically, to stop logging into Omada after the first month—if they engage only with connected devices.[14]
- Members who message their coach or specialist experience two times more weight loss.[15]

Omada insight: Apps and devices are not enough. Trusted relationships with healthcare coaches and professionals, especially at the outset of a virtual care program, are crucial for purposeful engagement and sustained outcomes across conditions.

Learning loopback: As a result of this insight, we strengthened resources for our care teams and propietary care delivery platform, and we offloaded device troubleshooting to our support team so that coaches and specialists could focus on building relationships with members.

INDUSTRY BELIEF

#2: Education is sufficient for behavior change

Many virtual care solutions depend on self-serve educational content to motivate behavior change among people with chronic conditions.

Hypothesis: We hypothesized that information is necessary but not sufficient for behavior change and health improvement, and that those with chronic conditions need help finding the intrinsic motivation to put information into action.

Data: Analysis of our prediabetes program found that the following factors, ranked in order of importance, predicted weight loss outcomes at four months:[16]

1. engagement with coaches
2. engagement with peers
3. in-app meal tracking
4. physical activity
5. remote monitoring via connected devices
6. interaction with health lessons

Omada insight: Among Omada members with prediabetes, health education content was the least likely intervention to predict weight loss outcomes. Again, coach and community engagement had the greatest relative effects.

Learning loopback: In response to this insight, we removed lesson completion from our milestone-based pricing model in favor of coach and community interaction, along with other, more diverse interactions that align incentives with purposeful engagement and long-term health outcomes. Value-based care arrangements have always been at our core, and we apply insights and innovations beyond our products to our pricing models as well.

INDUSTRY BELIEF

#3: Reactive health coaching is sufficient for sustained behavior change and outcomes

Many virtual care providers utilize health coaching only for acute needs—for instance, a one-time conversation during a low blood sugar event. Coaches are assigned based on availability, not on prior relationship with or knowledge of the member who needs support.

Hypothesis: We hypothesized that reactive health coaching leads to inferior engagement and outcomes as compared to proactive health coaching and ongoing rapport.

Data: We analyzed the impact of when our coaches gave food feedback relative to when members track their meals in the app. We found that timely, proactive feedback from Omada coaches led to a 10–15% increase in meal tracking retention, which directly caused 0.5% more weight loss in four months.[17] Proactive feedback included personalized guidance on possible meal substitutions, recipe recommendations, callouts if the member included photos, and probing questions if the coach needed clarification on a meal log.

Omada insight: Proactive, dynamic coaching leads to deeper support and engagement, contributing to more sustained behavior change and better outcomes.

Learning loopback: We do more proactive coaching across our entire population, and we use artificial intelligence (AI), which helps the care team understand in better detail what the member needs before reaching out. Omada's care teams now initiate greater than half of messaging behavior on our care platform.

INDUSTRY BELIEF

#4: AI, automated nudges, and gamification are sufficient for generating sustained engagement

Many virtual care companies lean on automated, algorithmic communication with users to encourage behavior change because it's affordable and scalable.

Hypothesis: We hypothesized that these methods would not be as effective as live care teams at achieving behavior change and improved health outcomes.

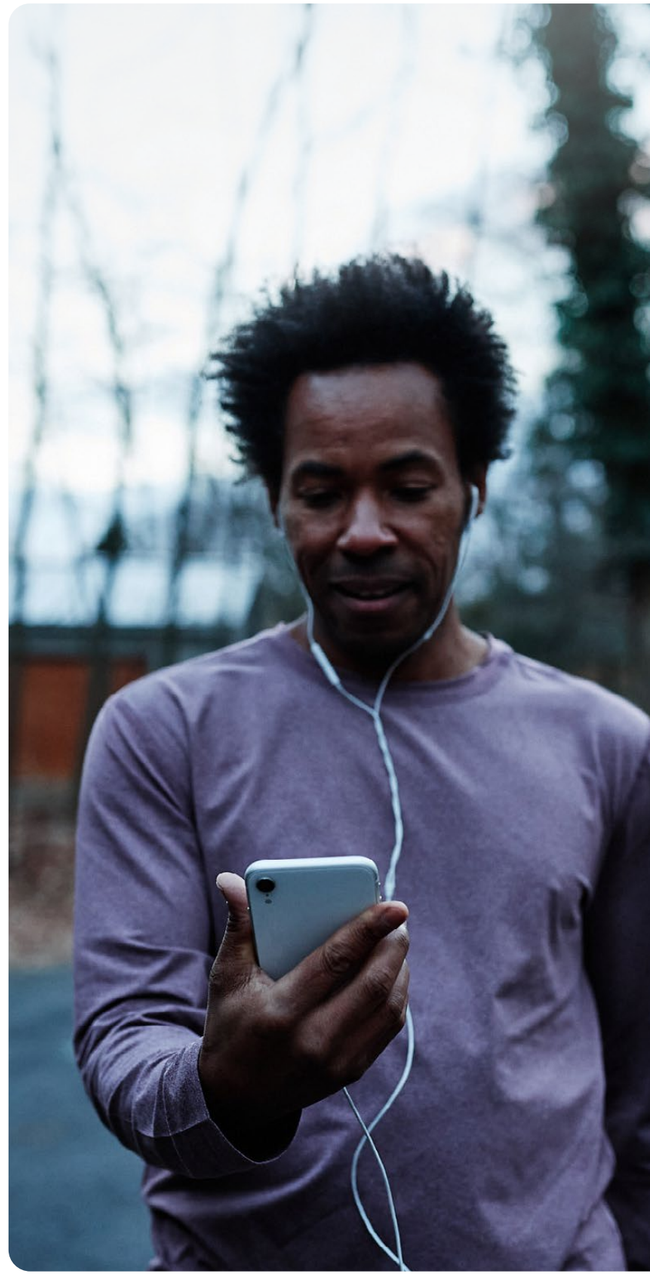
Data: We ran a series of internal analyses comparing automated nudges and coach-led encouragement. Here's what we found:

- Automated nudges resulted in a 30% increase in meal tracking year over year compared to a control group that did not receive the intervention, but they showed no corresponding change in health outcomes, specifically, weight loss at four months.[18]
- In another study, members who received coach-led encouragement and feedback had 10% more weigh-ins than members who received the same feedback via automated nudges.[19]
- Coaches are 10% better at re-engaging disengaged members than nudges.[20]

Omada insight: While automated nudge tactics do increase short-term engagement, they don't seem to improve short- or long-term health outcomes for people with chronic conditions. Instead, members who interact with live care teams are more likely to purposefully engage with providers and experience sustained behavior change and health improvements.

Learning loopback: Based on this insight, we doubled down on further improvements in relationship-driven interactions.

- **Care delivery platform:** We created a care platform product team whose primary goal is to supercharge the provider-to-member relationship. This team has transformed our care platform from the basic inbox it once was to the member-centric proprietary EHR it is today. It surfaces unique information and key moments in a member's journey for our care teams, making it easier to build rapport and personalize communication and care plans.
- **Notification control:** We gave users more granular control for notifications so that they could decide which nudges they received, rather than leading with nudges in all instances.



INDUSTRY BELIEF

#5: Public trust in the U.S. healthcare system is at an all-time low

Over the last four decades, Gallup polling has found that confidence in the medical system has dropped from 80% in 1975 to 36% in 2019.[21] Moreover, a 2006 study suggested that distrust in the healthcare system is strongly associated with self-reported fair or poor health.[22] Despite low trust, Omada's competitors in the virtual care space rely on automated nudges and reactive, one-off outreach from clinicians and coaches with whom the member has little or no prior relationship.

Hypothesis: We hypothesized that people with chronic health issues trust healthcare providers with whom they have established rapport and relationships, and that this trust can lead to better health outcomes.

Data: In a retrospective analysis of members in our diabetes, prediabetes, and hypertension programs, the Omada Insights Lab found that rapport between members and coaches correlates strongly with target health outcomes.[23] Omada members send a message of gratitude to their care team approximately once every two minutes.

Omada insight: Relationships between patients and individual healthcare providers can counteract lack of trust in the healthcare system as a whole. Long-term relationships with care providers establish trust, facilitate behavior change, and improve health outcomes. This is consistent with third-party clinical studies showing that patients who had higher trust in their individual healthcare provider reported healthier behaviors, fewer symptoms, higher quality of life, and greater satisfaction with their treatments.[24]

Learning loopback: We invest continually in relationship-driven care. We train coaches and specialists to build rapport with members so that they have a solid foundation of trust on which to facilitate the lifestyle improvement necessary to manage chronic conditions like diabetes. We also measure rapport quantitatively to ensure that we're oriented toward building high-trust relationships within Omada's care delivery platform.

INDUSTRY BELIEF

#6: We can use the same engagement strategies and care plans for people with different chronic conditions

Many virtual care companies apply the same or similar methodology to engage people with different chronic conditions and use one-size-fits-all plans to manage their care.

Hypothesis: We hypothesized that people with different conditions have different underlying motivations, needs, and ways they manage their health, so how we engage members and create care plans should be tailored to each condition to maximize health outcomes.

Data: In a correlational study, we found that members in Omada for Prevention who interacted with devices, completed lessons, and engaged in any tracking or social activity in at least nine out of 16 weeks averaged two times more weight loss than those who didn't. By contrast, among members in Omada for Diabetes, these measures of engagement were not correlated with their target health outcome, hemoglobin A1c reduction.[25]

Omada insight: Engagement strategies that work for one condition won't necessarily work for another—even when health issues are ostensibly similar. In order to get the best outcomes for people with different chronic conditions, we need to give members guidance, support, and care plans that are personalized to their unique health circumstances.

Learning loopback: As a result of this insight, we updated and customized our engagement metrics and care plans for the Omada for Diabetes program to more effectively drive their particular target health outcomes.

- **Engagement:** We leaned into tracking data from connected blood glucose monitors and continuous glucose monitors, as well as condition-specific surveys to assess medication adherence and diabetes distress.
- **Care plans:** We added more SMART goals[26] that a member can set related to diabetes-specific challenges such as remote monitoring and medication tracking. We also enhanced data sharing with members' primary care providers due to the importance of care coordination.

INDUSTRY BELIEF

#7: Programs that treat a single chronic condition can manage that condition most effectively

Conditions like diabetes, back pain, and depression are all high drivers of cost. Many employers and health plans partner with single-point solutions that address only one major chronic condition, or they cobble together several apps or services to address each one individually.

Hypothesis: We hypothesized that single-point solutions miss or ignore comorbidities related to the chronic health condition they aim to manage.

Data: Based on surveys of our population through October 2020, the Omada Insights Lab found that 70–80% of participants in Omada for Diabetes and Omada for Hypertension have multiple conditions. Among members with diabetes in particular, 85% have elevated body mass index (BMI), 47% have hypertension, and 21% have mild depression symptoms.

Omada insight: Assessing comorbidities and integrating care across related health conditions is crucial in the effective treatment of chronic disease, especially where chronic issues have similar underlying behavioral causes.

Learning loopback: We started with Omada for Prevention, but this insight prompted our expansion over the last five years to include treatment across four more chronic conditions—diabetes, musculoskeletal health, hypertension, and behavioral health—to allow us to synergize care across conditions to achieve better health outcomes.

Why the Omada Insights Lab matters

The Omada Insights Lab is a core reason for the success of Omada's healthcare programs. It drives constant analysis and evolution. It forces us to ask better questions, find truer insights, and transform those insights into care and outcomes that are better every day. It also gives the industry a framework to assess whether a digital health or virtual care program is effective—or not.

Here are some of the most important themes we've discovered so far through our collaborative work in the Omada Insights Lab.

The best virtual care starts with relationships

"The Insights Lab has taught us something that we know fundamentally as human beings. Now we have not just intuition but evidence that relationships are useful. We need more connection, so our mission as a virtual care company should be not to automate more workflows, but to enhance the human aspects of care delivery with technology."

Ryan Quan,
Omada's Director of Data Science

Relationships and trust matter in health care. In a joint consumer survey between Omada and Ipsos in 2019, 84% of respondents said they prefer to have a real person involved in their care no matter how advanced technology becomes, and 62% would want a human health coach for guidance and motivation if a virtual care program were offered to them.[27] This jibes with the commonmost thread we hear when we interview successful Omada members: They talk about their coach or clinician a lot, by name, and regard them as close support.

Relationships create meaningful engagement

"We've learned that engagement without outcomes is a distraction. We've found interventions that drive engagement but not meaningful behavior change or positive outcomes, and we've actually removed those interventions. That's crazy for a technology company when the industry standard is to do everything just to keep people in the app."

Devin Ellsworth,
Omada's Director of Health Coaching

Clearly, we're not content with just driving good enrollment numbers and satisfaction rates. We've learned that push notifications won't change people. Education alone is not sufficient. Features are a dime a dozen, and convenience and access aren't enough. We want individuals in our programs to live longer, healthier lives, so targeting the right kind of engagement—that which leads to better health outcomes—through relationships with care teams and peer communities has fundamentally changed the mechanics of our programs.

Our programs build health behaviors that last a lifetime

"Omada members leave our care with more than just better health. We teach them the process of how to approach any behavior change that might come their way. That's not just giving them a set of tools or skills to practice, such as problem solving and goal setting, but it's about fundamentally shifting their mindset to experiment with changes, learn from those experiences, and continually adapt and refine those changes to make them fit in their lives. In this way, members aren't dependent upon our technology or programs. They can sustain better health on their own and tackle new health challenges that emerge down the road, which can improve their lives for years to come based on their experience in the Omada program."

Jennifer La Guardia, Ph.D.,
Omada's Director of Clinical Product and Behavior Science

Health data from between office visits is the key to unlocking behavior change

The management of any chronic condition includes a component of behavior change, but it's one of the hardest things to deliver in in-person care. From prescribing a drug to a patient taking it, there are hundreds of things that could go wrong. Many are behavioral, and they happen beyond the walls of the doctor's office.

Traditional healthcare providers have data from clinic and hospital encounters, but when it comes to managing chronic conditions, the Omada Insights Labs covers the daily behavioral interactions of members between their clinical encounters. While Omada works within the healthcare ecosystem, our insights have guided us to use virtual care to improve and rethink the delivery of healthcare, rather than just replicate in-person care. Even some of the biggest brands in virtual care think of themselves as "virtual clinics" and specialize in the same discrete, formal encounters as in-person care.

The broad, challenging space between visits is where Omada started, so we're uniquely positioned to tap into the problems of behavior change in our members' lives and deliver truly differentiated care for their chronic health issues.

Data-driven insights will transform health care

Now that we have an emergent trove of data on what motivates people to change their behavior and improve their health for the long term, we're ready to begin sharing it in responsible, powerful ways.

Our first priority is to maintain the highest standards of privacy and security for our members' health information. Like any healthcare provider, we protect our members' data in accordance with HIPAA and other applicable privacy laws.

With that in mind, primary care doctors, payers, and other healthcare buyers might start to see their own clinical data very differently if it could be mapped to the behavioral data of patients' everyday actions and decisions. For example, what if they could see the direct impact of specific, between-visit behaviors on important quality metrics like emergency room encounters and hospital readmissions? It could radically alter where our traditional healthcare providers apply focus to improve outcomes and bend the cost curve in health care.

Beyond the data itself, the insights we generate from within the Omada Insights Lab are not just ours to use. We want traditional healthcare systems and cutting-edge technology companies alike to avail themselves of what we've learned about what works and what doesn't to make improvements in their health products and services—and we want them to share what they learn, too.

For these reasons, we believe that the collaborative feedback loop between clinical design, behavior science, data science, product design, and care delivery—the building blocks of the Omada Insights Lab—will be the fundamental driver of improvement and innovation in health care.

The future of Omada insights

Now that we've answered the most important initial questions in virtual-first care, we're ready to tackle even bigger challenges and use the Omada Insights Lab to make our care programs more effective and personalized with every iteration.

How should we customize care for different populations?

Is what works for low-income communities different from what's effective for more affluent demographics? How do we address the various social determinants of health, which account for 80–90% of the modifiable factors that affect health outcomes?[28, 29]

Barriers to achieving health goals are deeply personal and nuanced, so we suspect it takes active support from empathic coaches and specialists who are skilled in helping members identify and overcome barriers, along with proprietary technology that quickly surfaces the best response and resource for each individual need.

How can we deliver the best care to people with multiple chronic conditions?

If data science tells us that the type of support we need to provide someone with depression is different from the type of support we need to provide for someone with hypertension, what about someone with depression **and** hypertension **and** chronic back pain?

Forty-two percent (42%) of U.S. adults have two or more chronic conditions,[30] and we know there are comorbidities amongst the conditions that Omada manages. Fifty-eight percent (58%) of people with diabetes have a musculoskeletal disorder.[31] People with diabetes are also two times more likely to experience depression.[32]

Results that get better over time

While most of care remains siloed—treating conditions through separate providers and care plans—Omada is early in the journey of integrating care to address comorbid conditions holistically. We believe that integrated care will be more effective than piecemeal point solutions or disconnected providers and it will lead to better care, but we're still learning exactly how best to deliver it.

Furthermore, we hypothesize that relationship-led care will be essential to making it happen. We don't believe that algorithms can weave together multiple care programs successfully—at least not yet—but a clinical care team can, and, in fact, that's what the best clinicians already do every day.

Can real relationships scale? Conventional wisdom says no, but the Omada Insights Lab has preliminary evidence to suggest that it's possible. We already use natural language processing and machine learning algorithms in our care delivery platform to detect and highlight members' major life events—a recent loss, stress at work or home, a health scare—to help care teams effortlessly engage with members in appropriate and meaningful ways.

We're just getting started

Now that we have a sense of how much more effectively live care teams can empathize, establish trust, and alter the mindsets behind deeply rooted behaviors in people with chronic diseases, we'll continue to assess and expand this body of evidence and probe how we can leverage our platform to best foster and enhance these therapeutic connections, rather than automate and replace live care itself.

These are some of the big questions that the Omada Insights Lab must address in the future in order for us to continue improving and providing the highest quality, most cost-effective care possible. What remains essential to our work at Omada every day is to question everything—including our own insights and conclusions—and to follow the data wherever it guides us.

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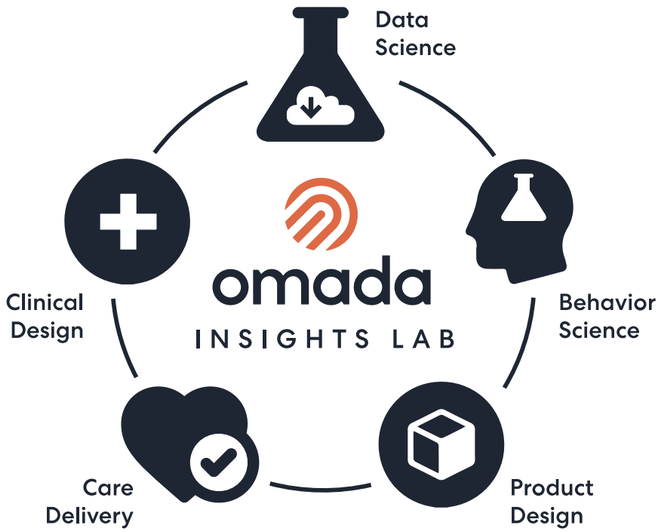
Learning loopback (n.):
The process of sharing a new insight across our interdisciplinary team of experts in order to apply it to future product design and care delivery; each insight leads to new hypotheses, which leads to further assessment and more insights, in a virtuous circle.

Virtual-first care (n.):
First-line medical care accessed through digital interactions where appropriate, guided by a clinician, and integrated into the wider healthcare ecosystem. Adapted from the Digital Medicine Society (DiMe), http://impact.dimesociety.org/v1c/.



Endnotes

1 Buttorff et al. RAND Corporation, 2017. (See References for full citations.)
2 Google Play store and Apple's App Store.
3 For members in Omada's prediabetes program who complete 4+ lessons in the first four months.
4 2018 average logins per week in the first 16 weeks for participants who complete 4+ lessons.
5 For members across all Omada Health programs at four months.
6 Wilson-Anumudu F, Quan R, Castro Sweet C, Cerrada C, Juusola J, Turken M, Bradner Jasik C. Early Insights From a Digitally Enhanced Diabetes Self-Management Education and Support Program: Single-Arm Nonrandomized Trial. JMIR Diabetes 2021;6(1):e25295. doi:10.2196/25295
7 Sweet CC et al. Journal of Health Economics and Outcomes Research, 2020.
8 Hemoglobin A1c is a primary marker of blood sugar control. The higher the percentage, the higher an individual's blood sugar levels over the previous three months. A hemoglobin A1c above 6.5% falls into the range for diabetes. A lower hemoglobin A1c lowers an individual's risk for heart attack, stroke, and other cardiovascular events.
9 Physera and Activision Blizzard partner study, 2020.
10 From the final survey administered to all participants in Physera's guided physical therapy program. Assessed on the VAS pain scale from 0 to 10.
11 Ibid. Assessed on the PSFS functional scale from 0 to 10.
12 Omada Medical + Rx Savings & ROI for DPP Enrolled National Health Plan: A prospective analysis, 2021. Study population included 15,780 members at Year-1 and 4,253 members at Year-2 follow-up.
13 Omada internal analysis, member population data 8/2020 - 3/2021, on our diabetes, prediabetes, and hypertension programs. Other Omada programs are still under evaluation.
14 Omada internal analysis, member population data 4/2018–4/2020. Members who engaged only with devices did not engage with coaches, meal tracking, or health lessons.
15 Omada internal analysis, member population data 1/2017–1/2020.
16 Omada internal analysis, member population data 1/2016-1/2020. Based on a feature importance analysis, a machine learning technique that outputs relative scores to explain which variables contribute most to the prediction of a target outcome.
17 Omada internal analysis, member population data 1/2017–1/2019, on our prediabetes program. Reactive coaching was defined as coaches primarily responding to member-initiated messages or providing no response to members. Proactive coaching was defined by contacting members proactively based on behavioral cues.
18 Omada internal analysis, member population data 1/2017–1/2020. Nudges for meal tracking included push notification reminders, group post reminders, and in-app modals to celebrate streaks and milestones, Nudges for weigh-ins included push notification reminders, badges for weighing in consistently, and push notifications to celebrate when a member weighed in.
19 Omada internal analysis, member population data 6/2017–3/2019. Nudges for meal tracking included push notification reminders, group post reminders, and in-app modals to celebrate streaks and milestones, Nudges for weigh-ins included push notification reminders, badges for weighing in consistently, and push notifications to celebrate when a member weighed in.
20 Omada internal analysis, member population data 6/2017–3/2019.
21 Gallup poll, "Confidence in Institutions," accessed online June 2021.
22 Armstrong K et al. J Gen Intern Med, 2006.
23 Omada internal analysis, member population data 3/2019-3/2020.
24 Birkhäuer J et al. PLoS One, 2017.
25 Omada internal analysis, member population data from 2019 - 2020. Because this is a correlational study, it suggests a relationship but not necessarily direct cause and effect.
26 SMART goals are specific, measurable, achievable, relevant, and time-bound. Some examples of diabetes SMART goals include checking fasting blood glucose every morning or taking medications along every morning when leaving the house.
27 Omada 2019 Consumer Landscape Survey in partnership with Ipsos; n = 2,007 U.S. adult consumers across a variety of demographics.
28 Hood CM et al. Am J Prev Med, 2016.
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