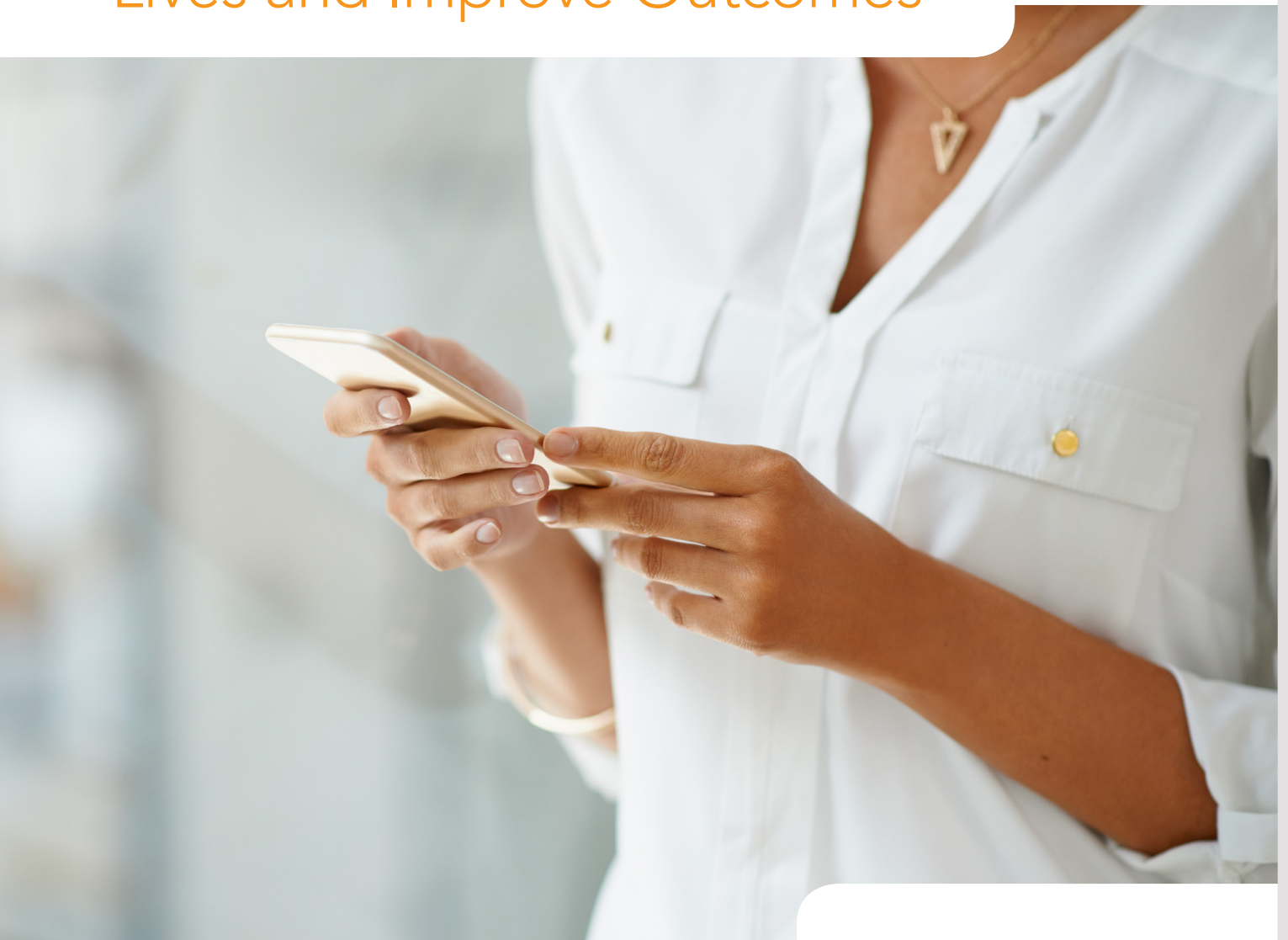


# Interactive Text Messaging and Behavioral Science:

Digital Conversations Change  
Lives and Improve Outcomes



**agile**  
health



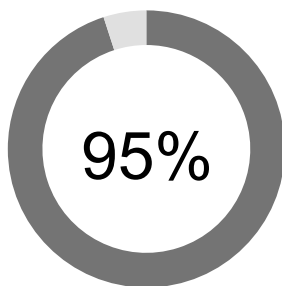
## INTRODUCTION

The healthcare industry continues to look for ways to improve the efficiency, efficacy and experience of care delivery. The market is demanding solutions that engage more people, cost effectively, to improve population health and produce meaningful outcomes. Successful population health management is engagement with a purpose, to enable sustained behavior change and empower health improvement. It is a simple proposition that is not easy to execute successfully – getting people to recast life-long behaviors that are difficult to change.

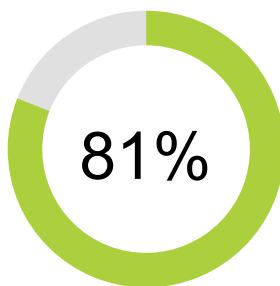
People are using text messaging as a prevalent mode of communication, across age groups, ethnicities and income levels. Text messaging is a communication modality with the potential to improve population health management solutions – it is salient, scalable, produces economies in reach, and has the capability to enable engagement. Text messaging brings the power for on demand, in the moment interaction, to shape purposeful conversations that relevantly reach more people.

After nearly two decades, evolving from tools initially borrowed from consumer marketing to platforms designed and developed specifically for health engagement and behavior change, text messaging is making meaningful progress impacting health management in two important ways: 1) tactical engagement for point outcomes enabling participants to take a prescribed action at a specific point in time, and 2) programmatic coaching for behavior change empowering participants to proactively practice better self-care and better utilize healthcare resources over time. Both are relevant elements of population health management, regardless of modality, but simply adding text messaging as a communication modality does not ensure program success.

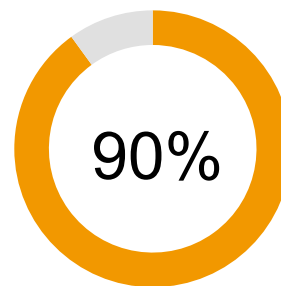
The underpinnings to program success come from leveraging the ubiquitous nature of text while staying true to the proven science of behavior change, creating relevant and engaging digital coaching dialogues, and connecting to care team staff and workflows.



**of all adults own a mobile phone<sup>1</sup>**



**of adults text regularly<sup>2</sup>**



**are opened within 3 minutes, 99% overall<sup>3</sup>**

**SOURCES:**

- (1) Pew Research Center, Mobile Fact Sheet, FEBRUARY 5, 2018
- (2) Pew Research Center, U.S. Smartphone use in 2015, APRIL 1, 2015
- (3) <https://mobilesquared.co.uk/>, 2011



### Proven Behavioral Science

The goal of successfully delivering health improvement through behavior change is not new. Technology can help to more effectively and cost-efficiently deliver successful behavior change at scale, but only if it is grounded in proven behavioral science and evidenced based clinical guidelines.



### Relevant Digital Dialogues

While text messaging provides anywhere, anytime access, the program curriculum needs to create the digital conversation that promotes and supports behavior change over an extended period of time. The curriculum must be personal, relevant and engaging while covering the evidence based content required for behavior change.



### Connected Care Teams

Text messaging offers access, reach, and scalability to connect with people in the spaces in between care settings. The technology must support integration back into the care team to ensure the right resources are engaged when clinical intervention is warranted – allowing qualified clinical resources to work at the top of their licensure.

## CLIENT PROFILE

**Walmart** implemented the text-based tobacco cessation program, **Kick Buts**, provided by Agile Health. **Kick Buts** was selected based on the rigor of the science and proven results behind the program.

“We were looking for a way to change employee lifestyles to build a healthier workforce for the long-term, and understood the importance for programs to be scientifically validated. It was really a next generation program keeping up with science while improving the technology behind it.”

– David Hoke, Senior Director for Associate Health and Well-Being at Walmart in Bentonville, Ark.

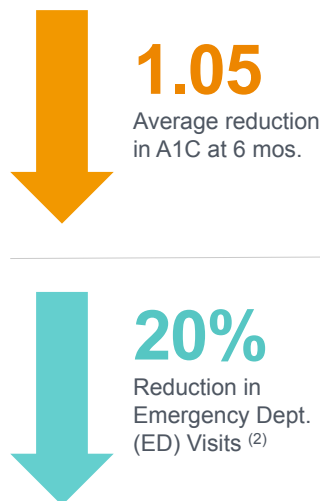
## SUCCESS STARTS WITH PROVEN BEHAVIORAL SCIENCE

To create long-term behavior change and lasting health outcomes, programs must have a foundation of well-engineered behavioral science, applied to evidence based clinical guidelines that have been rigorously validated. Moving to a digital communication mode emphasizes the need to have behavior change programs grounded in proven, behavioral science.

As an example, Agile Health's text-based diabetes self-management program was initially designed and developed through research conducted by Sanjay Arora, MD (et.al.) at the USC Keck School of Medicine. The primary goal of the program was to improve the A1c level in patients with uncontrolled diabetes, defined as those with an A1c level of greater than 8 percent. The secondary goals were: improved medication adherence, increased performance of self-care tasks, expanded diabetes-specific knowledge, better utilization of the emergency department, and patient satisfaction.

The program leverages behavioral science to provide participants with accurate information about the behaviors, motivation to do the behaviors, and a set of skills to achieve the behaviors. In this case, the behaviors revolve around foundational self-care

skills that have been proven through clinical research and targeted in clinical guidelines for optimal management of Type II Diabetes. "In behavioral science this is known as the IMB (information, motivation, behavioral skills) model, which Agile Health uses to provide a guiding framework for the text messaging content and interactive coaching model that drives its behavior change programs," says Sheri Pruitt Ph.D., a behavioral health scientist and principal with Evidence Based Answers LLC in Sacramento, CA.



According to the IMB Model, information is necessary, but not sufficient on its own to change participant behavior. Performing a behavior is a function of the extent to which a participant is informed about the behavior to be changed, motivated to perform the behavior, and possesses the skills to execute the behavior. Long-term maintenance of behavior or "habit" occurs by repeating a behavior until it has become automatic.

"We leverage applicable gold-standard clinical guidelines and research materials to ensure our interventions are focused on the outcomes that each is designed to achieve – like taking medications, eating a healthy diet, being more active, and monitoring your condition. We engineer each program using a theory-driven and empirically based approach for changing

participants' behaviors, not guesswork," Pruitt says, who provides the behavioral science expertise for Agile Health's text messaging programs. "The curriculum is designed towards implementing "better behavior" to step the individual into the habits that will result in permanent change." Agile Health uses the evidence-based strategy of Motivational Interviewing to help participants tap into their intrinsic motivation to change their behavior. The behavioral skills for lifestyle change include goal setting, environmental cuing, self-monitoring, reinforcement, and social support. These skills help participants acquire new behaviors, practice them, and maintain them over time, creating a sense of self-efficacy and confidence leading to real lifestyle change.

Text messaging curriculums designed with validated, evidence based behavioral change techniques and clinical guidelines provide the foundation to facilitate lasting individual behavior change, and produce relevant population outcomes. In a published randomized control trial conducted at the Los Angeles County Hospital Emergency Department, Agile Health's text-based diabetes self-management program achieved a 1.05 average decrease in A1c level at six months in the active intervention group - a 75% improvement over the control group. Medication adherence also improved significantly in the active intervention group, while decreasing slightly for those in the control group. There were 20% fewer emergency department visits in the active group, and the participants in the active intervention were 30% less likely to visit

the emergency department. Similar outcomes have been replicated in commercial settings.

## BUILD RELEVANT DIGITAL DIALOGUES

Because of its simplicity, privacy, immediacy, and its ability to support a trusted daily interactive conversation that transitions seamlessly from automated to live dialogue, text messaging provides a uniquely capable tool set for the application of behavioral science in healthcare. By combining digital communication with proven behavioral science and evidence based clinical guidelines, an interactive and engaging messaging curriculum can create relevant, personal, and salient two-way conversations empowering individuals to take control, proactively practice improved self-care, and better utilize available healthcare resources on a sustained basis.

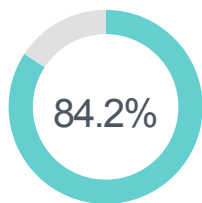
Hospital discharge is a prime example where maintaining a relevant and timely digital dialogue can achieve meaningful results. Agile Health developed a 90-day post-hospital discharge program focused on helping discharged patients recover effectively and stay connected with their care team to avoid returning to the hospital. Sharp Rees-Stealy Medical Centers in San Diego was an early adopter and key contributor to the development of the curriculum. "They just got out of the hospital. So they're really serious about trying to take care of themselves and doing what the doctor says, but still need help along the way," says Janet Appel RN, director of population health for Sharp Rees-Stealy.

The program’s goals are to reduce readmissions and lower costs, as well as minimize the negative impact on the patient’s health and well being from ending up right back in the hospital. The curriculum focuses on four key themes commonly associated with hospital discharge and preventing readmissions to the hospital – medication adherence, self-care management, follow up appointments, and diet and activity. Covering all of this ground effectively across the variety of subject matter involved for individuals facing an array of complicating challenges in their lives requires a structured conversation and an interactive dialogue over an extended period of time.

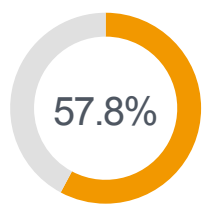
The program applies evidenced based guidelines as the foundation for the clinical content and the IMB behavioral methodology further shapes the patient-centered message curriculum. The

curriculum was carefully designed to inform, activate and facilitate an effective recovery process, and to create an experience promoting sustained and meaningful engagement during, as well as following completion of the program. The design encourages interactivity, as well as the ability to engage with live coaches for discussion beyond the automated text messages. The seamless integration of automated text messaging and live support creates a “safety net” for the participants and further solidifies the connection with their care team.

The program has allowed Sharp to keep patients closely connected and highly engaged during the critical post-discharge period, and has resulted in readmission rates that are 22.4% below the average for their total managed population at 30 days, and 46.0% at 90 days.

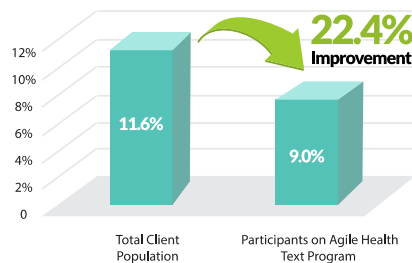


Completion rate at 14 days

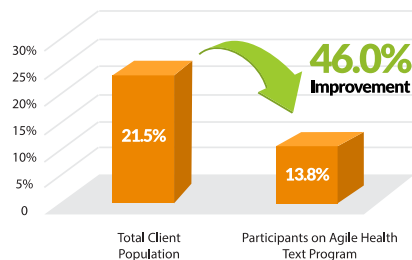


Completion rate at 90 days

**Comparative 30-day Readmission Rates**



**Comparative 90-day Readmission Rates**



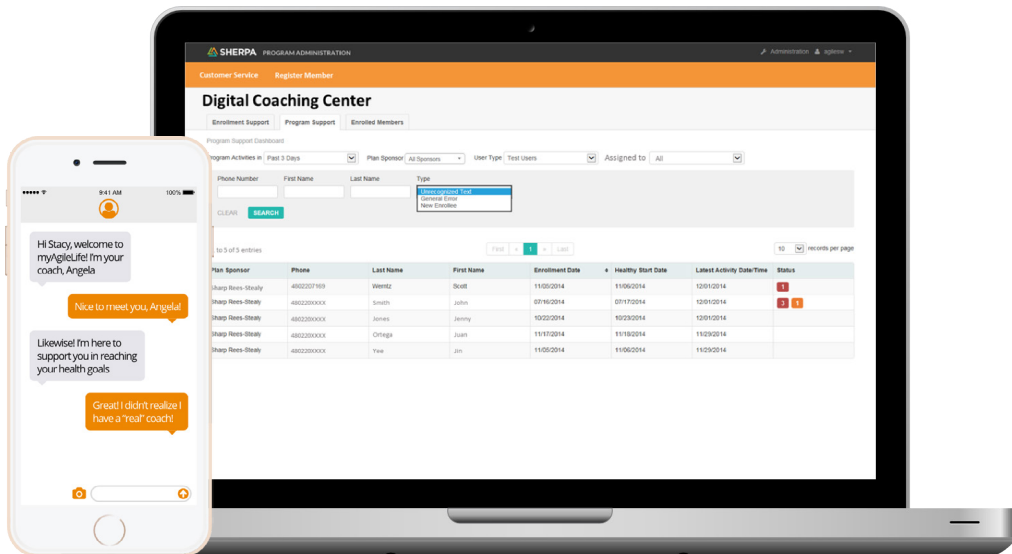
## CONNECT WITH CARE TEAMS

Text messaging provides direct connections with individuals anytime, anywhere. While the capability of the technology allows expanded access and reach, automation without a relevant connection to the care team can create a silo effect in an already fragmented healthcare system. The technology needs to connect back to the care team to develop a complete solution that integrates across and in between care settings to realize maximum value.

Text-based programs that incorporate the care team staff provide better support to program participants across the healthcare system, enable timely escalation and complication avoidance, and create higher levels of participant as well as clinician satisfaction. The integration should seamlessly align with existing care systems and workflows to allow

the care team staff to fully and efficiently leverage the capabilities of the text-based programming.

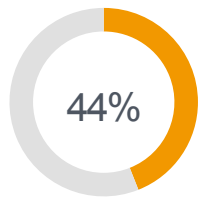
Care teams can easily access Agile Health’s proprietary digital coaching platform, SHERPA, to maintain a direct connection with participants. SHERPA integrates with existing care management systems and workflows to enroll participants directly in Agile programs, monitor the automated text-based dialogue logged for each participant, and engage in live dialogue in response to questions, concerns or requests received from program participants via ad-hoc inbound text, or based on data received or utilization patterns observed for a given participant, all of which are managed via queues built within the platform’s digital coaching center. Inbound messages received from program participants can be triaged by



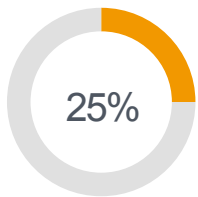
Agile Health’s certified Well Coaches, and either responded to, or referred to the client’s care team based on client-approved protocols. Leveraging Agile Health’s *Frontline Coaching Support* allows client’s care teams to focus their expertise and operate closer to the top of their licensure when engaging with program participants. With the help of SHERPA, an ongoing conversation is orchestrated between the patient and the care team enabling the patient access to anytime, anywhere support,

creating sustained engagement, and improving patient outcomes and satisfaction while positively impacting operating efficiencies and costs.

When Sharp Rees-Stealy implemented Agile Health’s post-hospital discharge program, the SRS care team accessed SHERPA directly via integration with the SRS care management system, in order to seamlessly provide live coaching support augmenting the automated evidence-based curriculum. Inbound text messages were triaged by a non-licensed specialist, providing timely responses to non-clinical questions. Clinical concerns and requests were escalated to registered nurses for follow up, keeping newly discharged patients connected to their care teams when they needed clinical support. Additionally, patient feedback was encouraged through periodic and personalized ‘check-ins.’ This process has helped the SRS care team to engage and provide impactful support to significantly more patients per year at substantially reduced cost per engaged patient.



Increase in caseload



Reduction in cost of service per managed patient



4.25 - 4.75 satisfaction

In the words of a program participant, “I know if I’m in need, you’re just a text away. This is a great service with amazing people. Thank you all for taking such good care of me.” ●

Agile Health is a digital health engagement company leveraging the power of text messaging to improve population health and achieve better healthcare outcomes through lasting behavior change. Agile’s secure, proprietary platform delivers a suite of highly interactive, evidence-based programs with a substantive record of clinical validation and proven results. The Agile solution creates a personal, relevant digital experience engaging more people, more intensively, and more cost effectively.