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mobile

Communicate, Engage, Activate: Conversational AI Solutions for a Healthier Medicaid Population

In Partnership with

IE♥HP
A Public Entity
Inland Empire Health Plan

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Conversational AI Solutions for a Healthier Medicaid Population

Executive Summary

Growing evidence suggests that people who are more activated (i.e., have the skills, ability and willingness to manage their own health and healthcare) tend to have better health outcomes and generate lower healthcare costs. Inland Empire Health Plan (IEHP), a not-for-profit, rapidly growing Medicaid and Medicare health plan in California, asked mPulse Mobile to implement a Conversational AI strategy to better connect with its members. IEHP hoped to increase member activation across a sample of its 1.1 million members, improving knowledge of how to get care with IEHP through real-time, interactive text messages. The study assessed message response data of men and women of varied ages currently enrolled in Medicaid.

91%
FOUND THAT THE TEXT MESSAGES IMPROVED THEIR OVERALL KNOWLEDGE OF IEHP SERVCES

Targeted and customized interactive dialogues were sent in English and Spanish to 17,000 newly enrolled IEHP members, with the goal to drive higher engagement and health activation. A total of 227,222 messages were sent to IEHP members over the course of the 3-month study. Conversations were tailored based on demographics, behavior, and response sentiment.

REDUCTION IN PATIENTS UNSURE OF HOW TO GET CARE WITH IEHP

Baseline	59%

Post Study	11%

The study results demonstrated that a targeted and conversational text message program improves healthcare knowledge and member activation. The dialogues deepened engagement and yielded strong positive outcomes amongst the study group, including 91% of total users reporting that the text messages improved their overall knowledge of IEHP services.

This increased member activation could have a strong positive impact on resource utilization. After the study, members were significantly more knowledgeable and involved in making informed healthcare decisions. Most notably, after receiving educational conversational texts, the proportion of members who said they would go to the emergency room (ER) seeking care for a mild condition was less than half that of the control group. This study result is significant because Medicaid members visit the ER with double the frequency of those carrying private insurance (CMS) and the ER is the most expensive setting to receive medical care, according to the Medicaid and CHIP Payment Access Commission (MACPAC). ER encounters by this population surged from approximately 800,000 in the last three months of 2013, to about 1.4M encounters in the same period of 2015 (California Office of Statewide Health Planning and Development). Identifying the most appropriate setting for care can improve outcomes and lower costs.

EFFECTIVE USE OF IEHP SERVICES

Members were asked how they would use IEHP resources when sick with a mild condition

Control Group

ER 11%	Nurse/Self Care	53%

Study Group

ER 4%	Nurse/Self Care	62%

Introduction: Favorable Regulations for Healthcare Mobile Messaging

As the industry moves to embrace the consumerization of healthcare, healthcare companies must adopt more consumer-focused strategies to remain competitive. Despite a 98% read-rate for text messages, healthcare companies often fail to take advantage of mobile messaging due to concerns around changing federal regulations and increased litigation related to text message campaigns.

The legislation enacted by the Federal Communications Commission (FCC) to regulate telemarketing calls and text messaging, or the Telephone Consumer Protection Act (TCPA), looks favorably on healthcare messages, requiring the least restrictive level of consent. Providing individuals with mobile content for their health and wellness allows them to take charge of their health, leading the FCC to classify healthcare messages as informational.

In 2012, the FCC strengthened its TCPA regulations, requiring businesses to obtain prior express written consent when sending automated telemarketing messages to consumers. However, healthcare-related messages were still kept specifically exempt from these enhanced consent requirements in the FCC's regulations. As such, healthcare companies can and should take advantage of mobile messaging as a high-impact, low-cost method of engaging members.

## The Opportunity For Texting with Medicaid Members

As Medicaid-centric health plans like IEHP grow, there is a strong case for establishing efficient strategies to help members understand their benefits and the services offered to them. Adult Medicaid beneficiaries, in particular, have a higher prevalence of co-morbidities such as diabetes, cardiovascular and respiratory diseases, and mental illness, compared to non-Medicaid populations (Kaiser Family Foundation). A key challenge is delivering useful information, such as how to access health resources. Explaining how to choose a doctor, find an urgent care facility, and call the nurse line can provide benefit for Medicaid's most vulnerable populations—lower income, under-served and newly insured members.

Conversational texting has become recognized as a powerful way to deliver healthcare information. Text messages have the highest reach of any communication channel, with 98% read rates. They are especially effective with the Medicaid population as they use their mobile phone as their primary means of communication and 79% of Medicaid members text (PWC HRI Consumer Survey, 2010). Conversatonal texting, more so than email or mail, enable quick delivery and response to real-time, important health information and advice.

TEXT MESSAGE READ RATES 98%
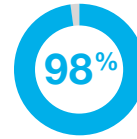
MEDICAID POPULATION TEXT USAGE RATES 79%
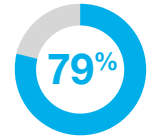
Objectives

As a health plan dedicated to making quality health and wellness resources accessible to their members, IEHP partnered with mPulse Mobile to discover the benefits of using tailored and conversational text messages to deliver conversational text messages to 17,000 newly enrolled IEHP members. By increasing member activation and improving knowledge of benefits and services, IEHP's goal was to help its Medicaid members more easily and effectively take charge of their health. This, in turn, would lead to more cost-effective medical care and create a healthier membership base overall.

The study was focused on using automated, insight-driven workflows to deliver relevant, targeted messages. Demographic and response data was used to improve and customize these workflows so the most meaningful content was delivered to the individual.

Ultimately, IEHP wanted to increase member knowledge in very specific content areas relating to plan benefits and services.

Message workflows were developed to encompass:
- Choosing a doctor
- Using the nurse advice line
- Scheduling routine care
- Finding an urgent care clinic
- Operating the community resource center
- Health tips and challenges

Methodology

A research study was conducted through text message outreach to 17,000 newly-enrolled IEHP members. Results compared engagement of the messaging data from the study group to engagement of messaging data from IEHP members outside of this group.

mPulse Mobile used its Conversational AI technology to deliver relevant, targeted messages. Dialogues were automated using data inputs about each individual member, preset rules and natural language understanding (NLU). Click rates, sentiment, response rates, engagement, and activation levels across the two groups were analyzed to arrive at the study results.

All messages were sent in English or Spanish based on member preference, and all messages in the IEHP study were written at a sixth-grade reading level to be easily understood. All shortened web links within the messages were written as smart links or branded links to increase click through rates.

> Engagement is a combination of (1) response rate (how many people responded to a message or texted in even without a message prompt or question), (2) sentiment of response, (3) length of response, and (4) clicks on message links.
>
> Sentiment is calculated by extracting all words that have emotional polarity ("love," "hate," "care," etc.). Neutral words such as "dog" and "house" have sentiment scores of 0. Negative words have sentiment scores ranging from -1 to -5 and positive words have sentiment scores ranging from +1 to +5.

Engagement Strategies and Findings

Traditionally, healthcare communication has focused on outbound communications without the ability for a person to respond and engage with the organization in a meaningful way, creating a one-sided relationship. By enabling conversational texting, wherein a healthcare company has the ability to interact in a conversational manner with their consumers, a new level of communication has been developed that helps to create successful, engaging discussions that can include talking, listening and analyzing the needs of individuals.

This conversational approach enabled IEHP to learn more about their individual members, which led to engaging conversations and tailored responses. Instead of using generic, one-size fits all, informational messages, the study customized messages so that members would be drawn in and more likely to interact with the content.

Within the study messages, mPulse Mobile used a combination of rules and NLP to respond intelligently to individual text messages, providing a human-like interaction. Using sentiment and engagement analysis of member responses, mPulse Mobile could track the effectiveness of message campaigns and overall member engagement levels.

Message Types

mPulse Mobile delivered different message types to engage members. Messages were mostly interactive and response rates were assessed based on message type.

Four types of messages were used:

1. **Informational**
   Example: "Call IEHP at 888-123-4567 if you need health advice and want to talk to a nurse."

2. **Open-ended**
   Example: "Imagine that you wake up in the middle of the night with a sore throat. How would you use IEHP to get care? Please reply in your own words. Thanks!"

3. **On-demand resources and challenges**
   Example: "If you need urgent care, text URGENT for information about a nearby IEHP urgent care clinic" or "For new ways to take care of your health, text TRY and we'll send you health tips and challenges."

4. **Interactive polls**
   Example: "See your doctor for your annual physician exam and routine care. His or her phone number is on your IEHP Card. Do you know who your doctor is? Reply YES or NO."

CONVERSATIONAL TEXTING WITH AUTOMATED LISTENING, ANALYZING AND RESPONDING

IEHP has been sending you about 5 text messages a month. Would you like to receive more messages, less messages, or keep it the same? Reply MORE, LESS or SAME.

Same, thank you

That's great! We will keep sending you messages and hope you are finding them helpful.

Your efforts make me feel not alone. Thank you.

You are very welcome!

I still want to know who you are. You are a person, not a number but all I know about you is 90902.

Actual text exchange during study

Strategy: Closed vs. Open-Ended Questions

Closed questions are those for which answers are limited to a list of choices, for example "yes" or "no," while open-ended questions are those which ask for more than a simple one-word answer and give the respondent broad scope to respond what they wish. For the purpose of this study, mPulse Mobile asked both closed and open-ended questions to members. Open-ended questions yielded rich personal responses, and large numbers of members were willing to take the time to share their

thoughts. These unstructured responses were very helpful in understanding member knowledge about IEHP services and also to identify gaps in knowledge that were then addressed in tailored follow-up messages.

Strategy: Incentive-Driven vs. Engaging Content

One would assume that a quick and effective way to engage members is to reward them for a particular behavior or to provide them with incentives. IEHP tried this approach and found that one-way messaging with a coupon received a lower response rate (1.1%) compared to conversational texting without a coupon (8.2%). Overall, conversational messaging with meaningful content was found to be the most effective way to drive positive engagement.

IMPROVED RESPONSE WITH CONVERSATIONAL TEXTING

|	
Get a $10 gift card! Come learn how to use your IEHP benefits @ IEHP Community Resource Center. It's free! bit.ly/1TQgXXP	Let's talk about IEHP programs and services. Do you know how to find a doctor or specialist? Reply YES or NO
One-Way Coupon Message **1% Response**	**Conversational Message** **8.2% Response**

Strategy: Activation Through Health Challenges & Resources

To study the link between engagement and activation, members were asked to take on a health challenge by texting "TRY" (or "RETO" for Spanish speakers). Of the 12,000 members who received this message, approximately 1,200 (10%) sent challenge requests. More than 33% of the participants who requested a health challenge completed the task.

The messages were targeted to patients based on age, delivering a health challenge tailored to each individual age group. Challenges were kept simple and members could cycle through 16 different challenges. For example, parents with children under 15 years old received a text message:
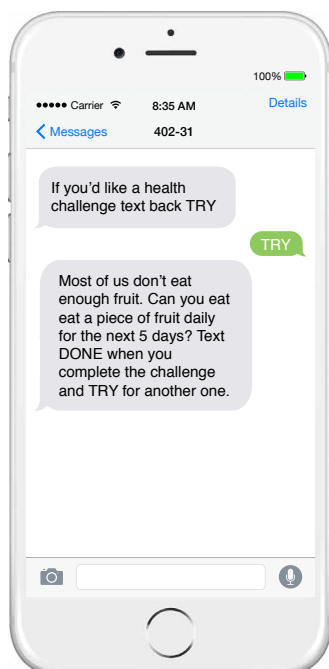
"Do some gardening, yard work, or play outside with your kids. Text DONE when you complete the challenge and TRY for another one."

10%

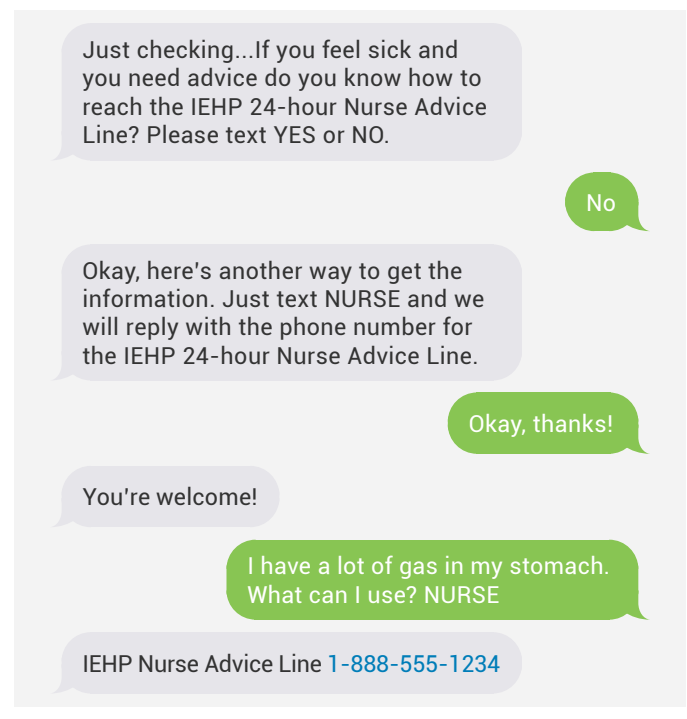**OF IEHP MEMBERS RESPONDED TO A HEALTH CHALLENGE**

BREAKOUT OF RESPONDENTS:

28% WOMEN 45-60	14% WOMEN 30-44	12% MEN 20-29	11% WOMEN 20-29

Strategy: Engagement Leads to Activation

Beyond the health challenges, members were sent text messages encouraging them to access text-based resources and take an active role in their healthcare. As a result, several members used IEHP resources more effectively: 183 texted in "Nurse" or "Consejo" to get nurse advice line information, and 130 members texted in "Urgent" or "Urgente" to get contact information for the three closest clinics to their zip code. The conversation below shows a text dialogue of a member requesting the advice line to seek medical help.

REQUESTING THE ADVICE LINE

Just checking...If you feel sick and you need advice do you know how to reach the IEHP 24-hour Nurse Advice Line? Please text YES or NO.

No

Okay, here's another way to get the information. Just text NURSE and we will reply with the phone number for the IEHP 24-hour Nurse Advice Line.

Okay, thanks!

You're welcome!

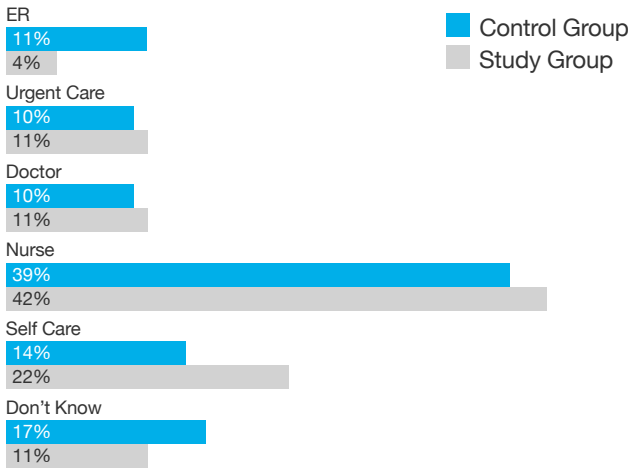I have a lot of gas in my stomach. What can I use? NURSE

IEHP Nurse Advice Line 1-888-555-1234

The study assessed a member's self-efficacy and how well they would utilize IEHP resources by asking members in the control and study group what they would do if they woke up in the middle of the night with a sore throat. The study group was more likely to handle the issue on their own through self-care than go to the emergency room. The improvement in knowledge of IEHP resources has has the potential to reduce costs and improve utilization.

EFFECTIVE USE OF IEHP SERVICES

Members were asked how they would use IEHP resources when sick with a mild condition

ER
- Control Group: 11%
- Study Group: 4%

Urgent Care
- Control Group: 10%
- Study Group: 11%

Doctor
- Control Group: 10%
- Study Group: 11%

Nurse
- Control Group: 39%
- Study Group: 42%

Self Care
- Control Group: 14%
- Study Group: 22%

Don't Know
- Control Group: 17%
- Study Group: 11%

Overall Results: Improved Member Knowledge of IEHP

This unique text-messaging program successfully increased member activation and member knowledge of how to get care with IEHP services. After three months of interactive, tailored engagement, members were significantly more knowledgeable about IEHP's services and had greater activation levels. The study showed a 48% point decrease in those reporting they were unsure of how to obtain needed care from IEHP. 91% reported finding the text messages from IEHP to be helpful. In an exit survey with participants, the statement "The text messages improved my overall knowledge of IEHP services" was given a ranking of 4.3 out of 5, with 5 indicating they "strongly agree." 86% agreed or strongly agreed with the statement "I received information on how to use the 24-hour nurse advice line, and 75% said they had learned how to choose a primary care doctor.

REDUCTION IN PATIENTS UNSURE OF HOW TO GET CARE WITH IEHP
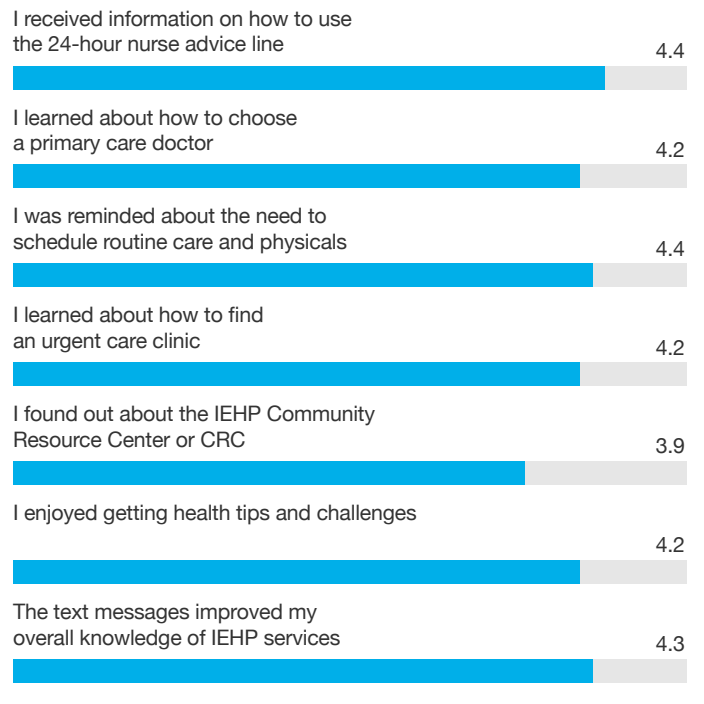
Baseline 59%

Post Study 11%
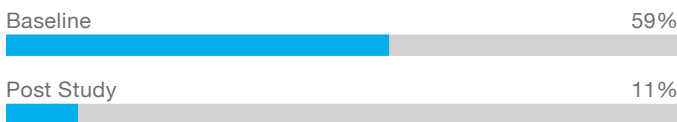
To analyze the value of interactive mobile dialogue on driving positive member engagement, IEHP and mPulse Mobile looked at the sentiment and engagement level comparison of study group data vs. the control group data. They found that the sentiment score for the study group was twice as positive as the control group and the engagement score for the study group was 2.5 times greater than the main group.

One of the most important findings at the end of the three-month study was that participants were 63% less likely than the control group (4% vs. 11%) to seek care at an ER for a mild condition (based on a text-based poll). This result strongly suggests that timely, helpful information about healthcare resources via text messaging empowers individuals to utilize cost-effective resources.

EVIDENCE OF IMPROVED KNOWLEDGE

Using a scale of 1 (strongly disagree) to 5 (strongly agree) members rated the text messages very highly on providing content relating to IEHP services and on health tips and challenges.

I received information on how to use
the 24-hour nurse advice line — 4.4

I learned about how to choose
a primary care doctor — 4.2

I was reminded about the need to
schedule routine care and physicals — 4.4

I learned about how to find
an urgent care clinic — 4.2

I found out about the IEHP Community
Resource Center or CRC — 3.9

I enjoyed getting health tips and challenges — 4.2

The text messages improved my
overall knowledge of IEHP services — 4.3

Gender, Age Group and Language Insights

- Women ages 45-60 most likely to reply to health challenge text (28%); same group most likely to complete a challenge

- English & Spanish speakers equally likely to complete challenges

- Participants ages 45-60 & 60+ were significantly more familiar with who their Doctor is

- Participants ages 60+ were 9% of the population, yet they were responsible for 15% of the "help" requests

- Participants ages 60+ were the least likely group to text "stop" and opt out of receiving text messages

- English speakers constituted 81% of the study group but provided 88% of the positive responses, while Spanish speakers were 19% of the study group and provided only 12% of the positive responses

Conclusion

Consumers expect an easy to use and compelling mobile experience with all of the organizations they interact with. Healthcare organizations are no exception to this and should look to deliver a mobile experience that fits seamlessly with consumer expectations by reaching individuals where they are—on their mobile phones. Shifting communication from less effective channels, including email or mail, to the highly effective text message channel enables members to read and respond to messages at their convenience, thereby increasing engagement, knowledge and satisfaction.

"The mPulse Mobile study results demonstrate that engaging in conversational texting with our Members improved their knowledge and use of our services, leading to better health outcomes. IEHP recognizes great opportunity to apply these learning to our larger Member population."

Thomas Pham
Senior Director of Marketing and Product Management
IEHP

Well-timed and tailored interactive messages, based on demographic, psychographic and behavioral data, drive members to receive care when and where it is appropriate for them. For hard to reach and high-risk groups, like the Medicaid population, text messaging has proven to be highly effective at getting consumer attention, and more importantly, encouraging consumers to participate in their own health. Benefits of educational and engaging mobile dialogue include improved adherence to preventive services, increased awareness of health resources and how to utilize them, and overall deeper engagement and activation.

Next Steps

As illustrated by this study, adopting a mobile messaging strategy provides significant opportunities for healthcare organizations to continue to improve population health and deliver a high quality of care, resulting in a reduction of per capita cost and achieving the Triple Aim.

With more than 1.1 million Medicaid and Medicare members occupying one of the largest and fastest growing metropolitan areas in the country, IEHP will continue to partner with mPulse Mobile to apply tactics that proved successful at increasing member response rates and activation levels from this research.

While this study aimed to explore member knowledge and activation, the implementation of similar mobile strategies shows promise in other areas of healthcare, including patient engagement and retention, medication adherence, preventive care and post-discharge follow-up. With best-in-class mobile solutions based on a powerful context-based, secure, HIPAA-compliant messaging platform, mPulse Mobile is uniquely positioned to guide healthcare organizations into the consumer age of healthcare.

"We were looking for an innovative approach that would have a significant impact on improving engagement with our Members. mPulse Mobile has been an effective partner in delivering a high-impact mobile engagement solution based on their mobile expertise, depth of product capabilities and deep understanding of the needs of the Medicaid population."

Susan Arciadiacono
Chief Marketing Officer
IEHP

About mPulse Mobile

mPulse Mobile, the leader in Conversational AI solutions for the healthcare industry, drives improved health outcomes and business efficiencies by engaging individuals with tailored and meaningful dialogue. mPulse Mobile combines behavioral science, analytics and industry expertise that helps healthcare organizations activate their consumers to adopt healthy behaviors.

With over a decade of experience, 100+ healthcare customers and more than 300 million conversations annually, mPulse Mobile has the data, the expertise and the solutions to drive healthy behavior change.

To ask a question or request a call, go to: mpulsemobile.com/contact

mpulsemobile.com