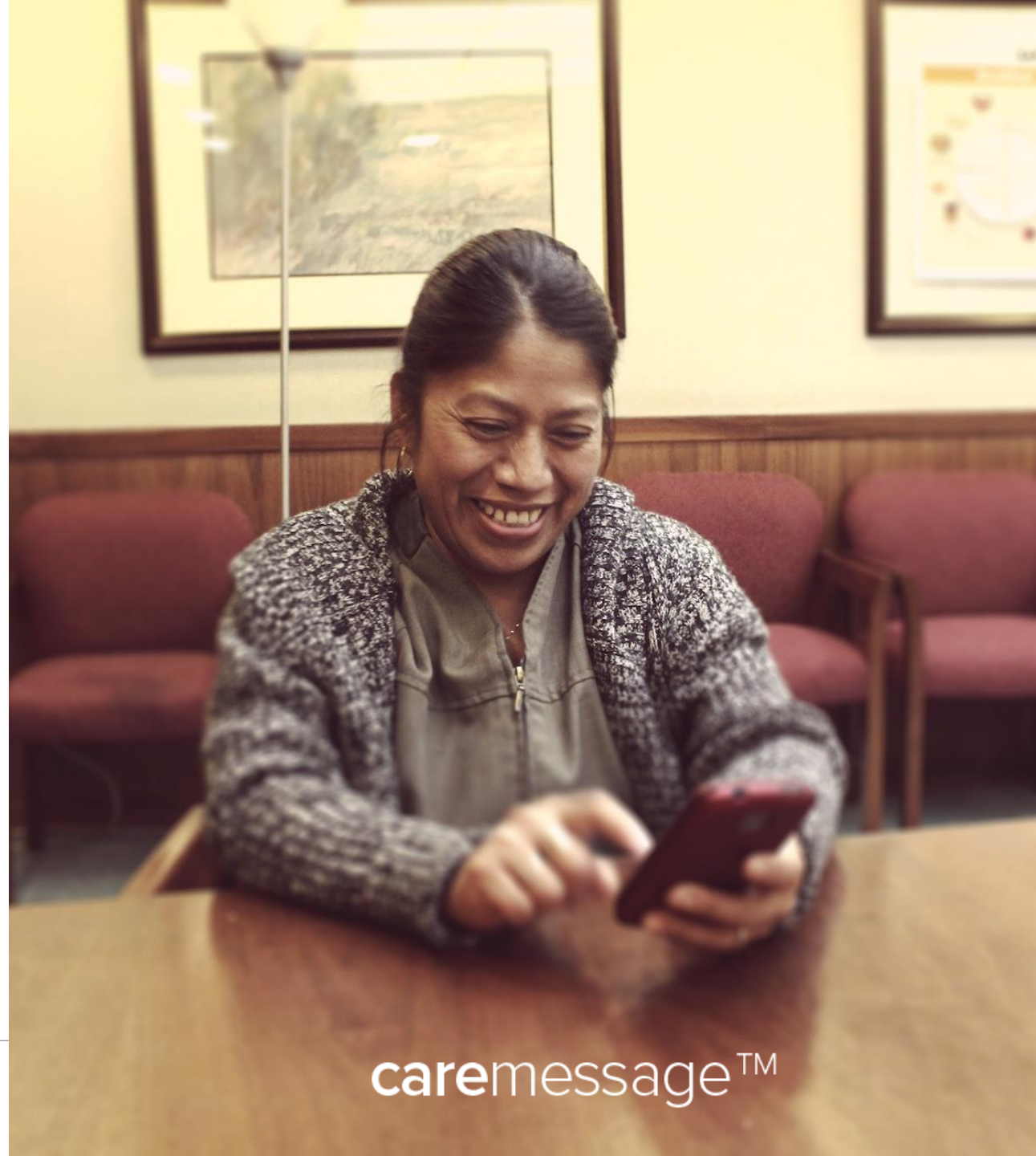
Medication Adherence Texting Pilot Program

Introductions

CareMessage is a San Francisco based nonprofit that empowers healthcare organizations to improve health outcomes and reduce cost of care.



Americares U.S. Program

Access to Medicine
Increase access to quality medicines and supplies to improve health outcomes for patients and communities.

Emergency Response
Work across response, recovery and preparedness to protect communities from the effects of disaster.

Clinical Services
Deliver and support quality clinical services that bridge treatment, prevention and health promotion.

Community Health
Design and implement clinic- and community-based programs to deliver sustained health improvements.

Overview

The Medication Adherence Texting Pilot Program combines:

- Adherence messaging with general educational and disease self-management content to promote positive behavior change for low-income patients battling high cholesterol

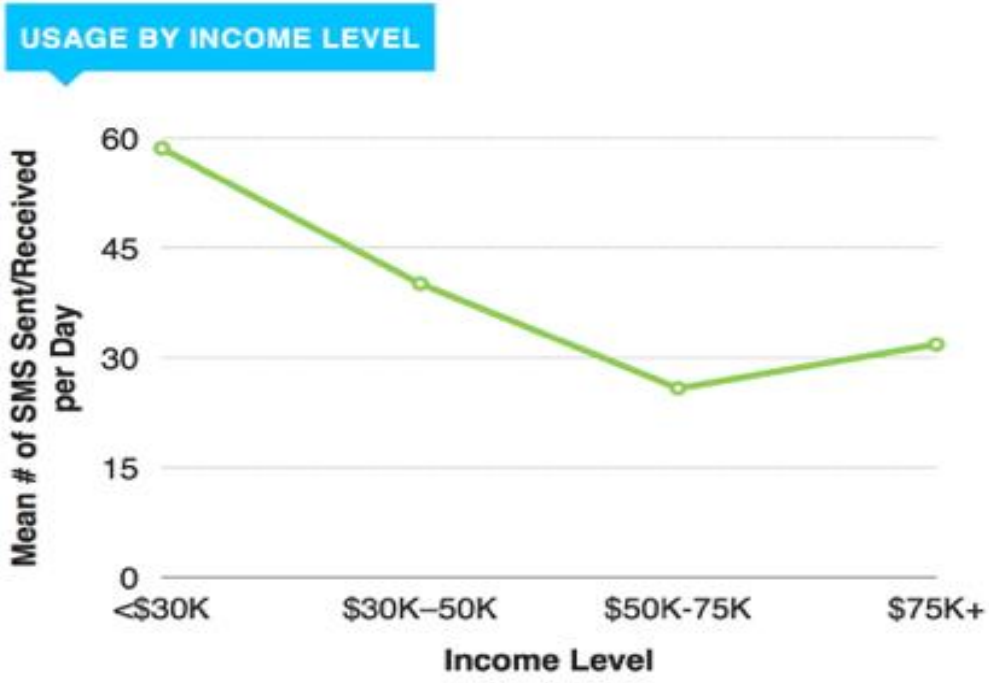
- Committed supply of Crestor, a top-selling cholesterol lowering Rx

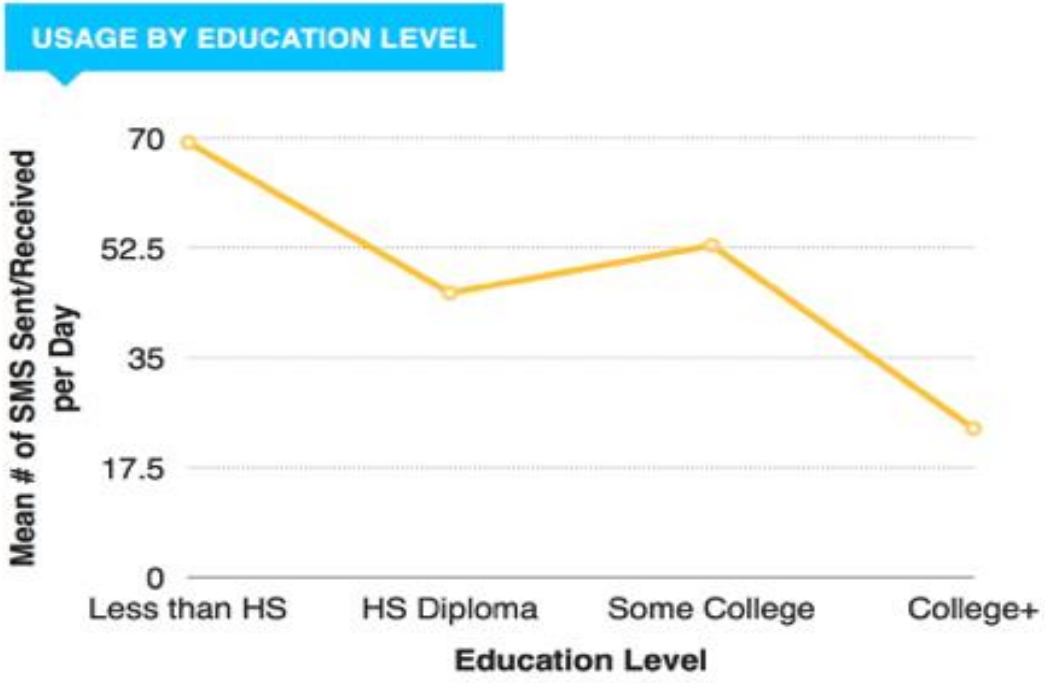
Non-Adherence and Cholesterol

- Non-adherence to medications is one of the largest drug related issues
- Non-adherence is greatest when patients are symptom free
- Compliance rates drop dramatically when an medication is to be taken over a long period of time

Why Text Messaging

Text messaging usage is 2-4x higher in lower income, less educated populations, and has a 99% open rate





SOURCE:

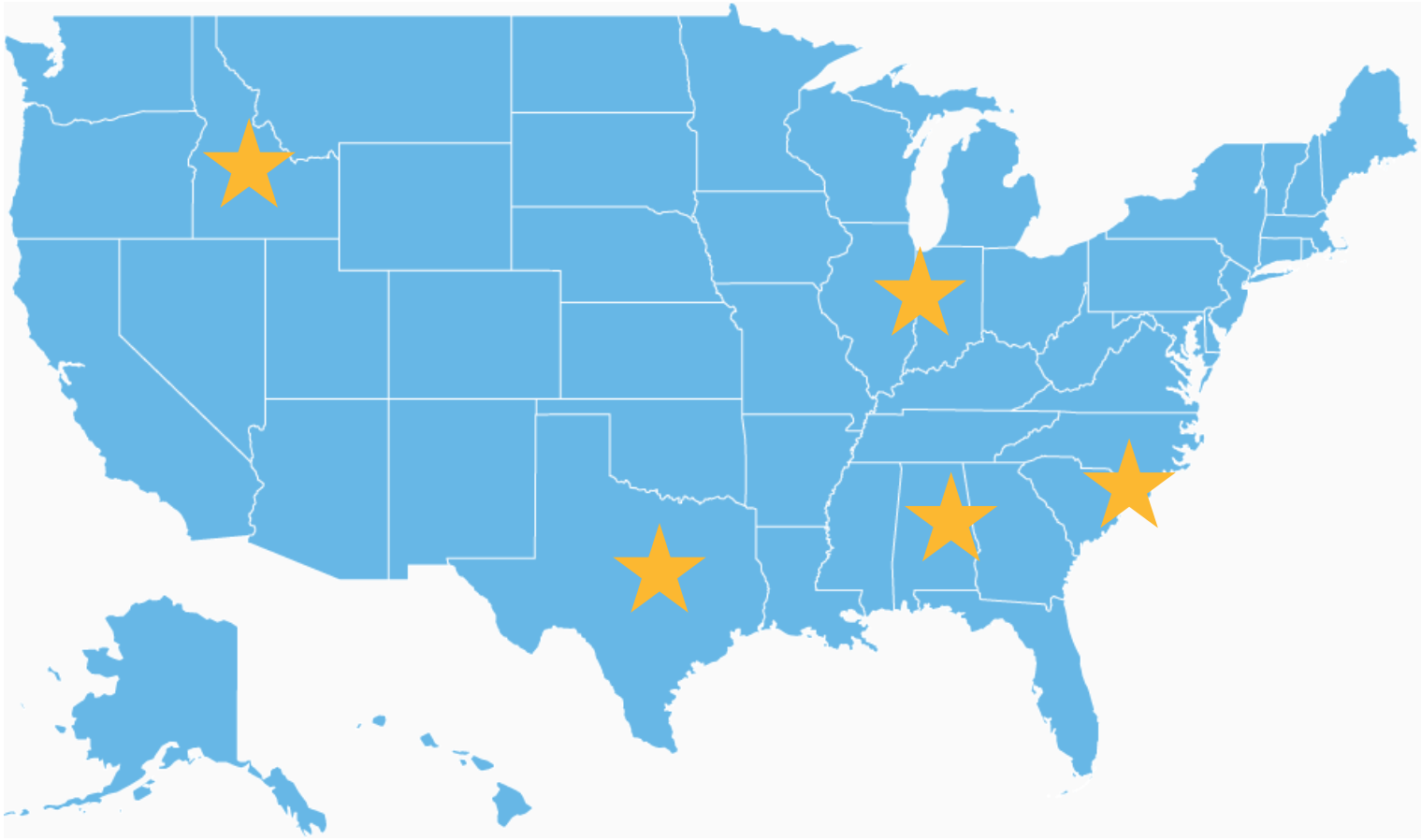
Smith, A., "Americans and Text Messaging" Pew Research Center. Sept 2011

Pilot Overview

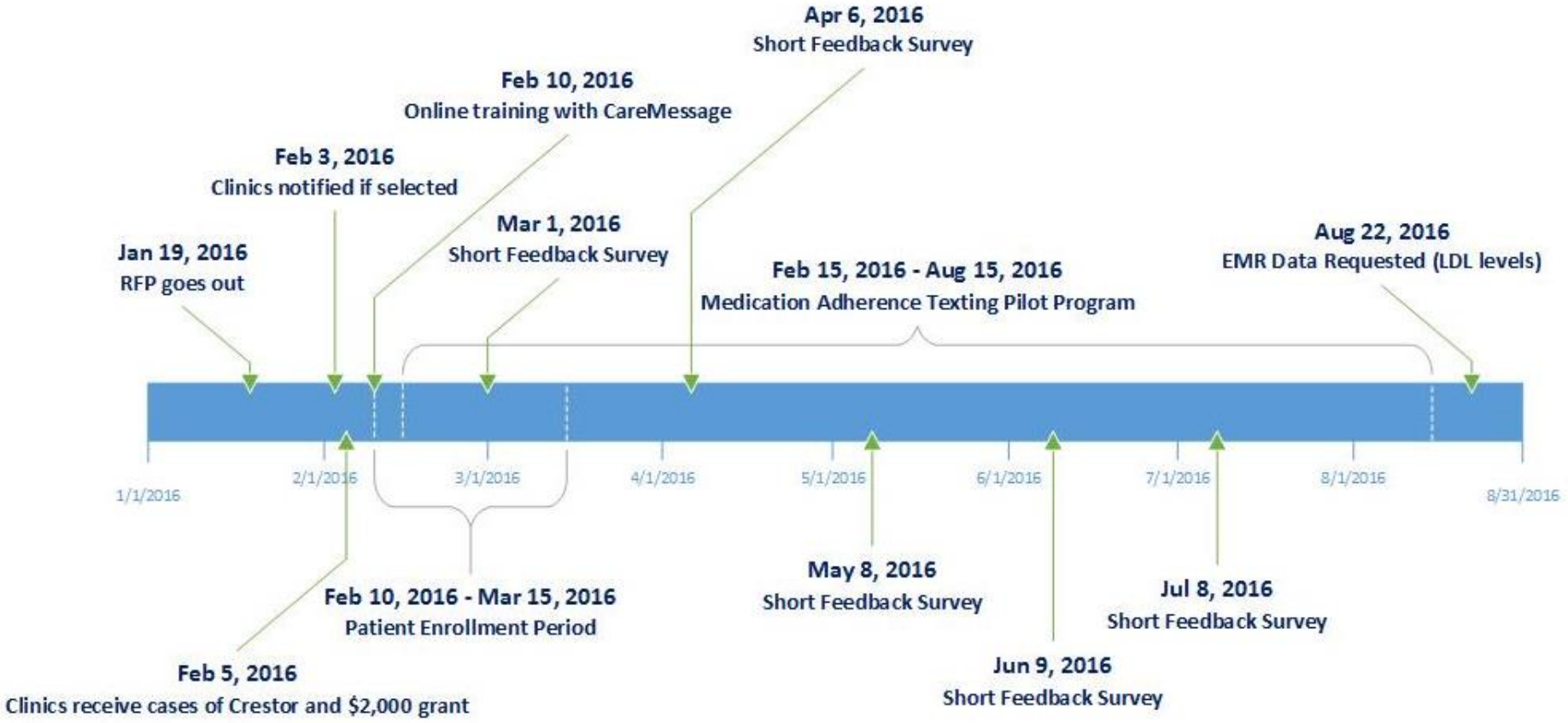
Clinic Demographics

	OPERATING BUDGET	HOURS OF CARE PER WEEK	NUMBER VOLUNTEERS	NUMBER PAID STAFF	UNDUP. ANNUAL PATIENT VISITS	ANNUAL PATIENT VISITS
1	$110,000	25	75	8	400	2,057
2	$240,000	16	28	3	600	2,900
3	$462,580	40	50	6	2,000	3,500
4	$585,000	32	175	9	1,750	13,500
5	$900,000	40	250	14	2,500	4,000
Mean	$459,516	31	116	8	1,450	5,191
Median	$462,580	32	75	8	1,750	3,500

Clinic Profiles



Program Timeline



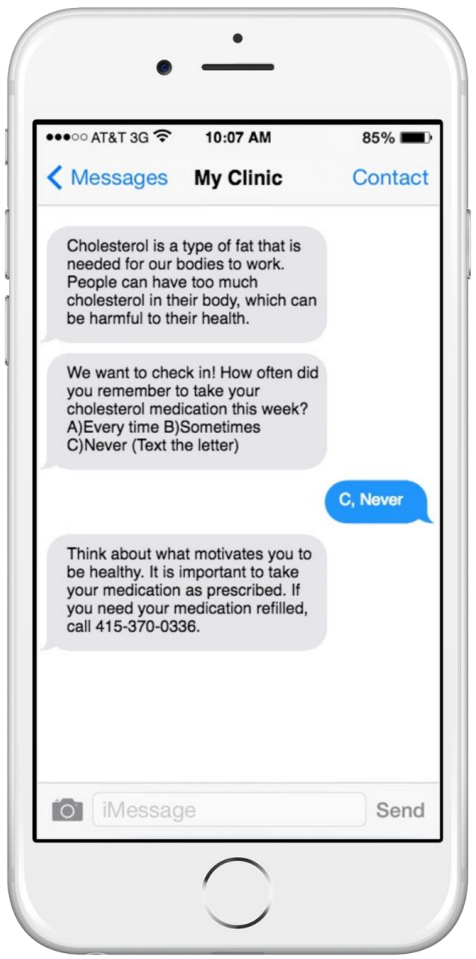
Texting Program

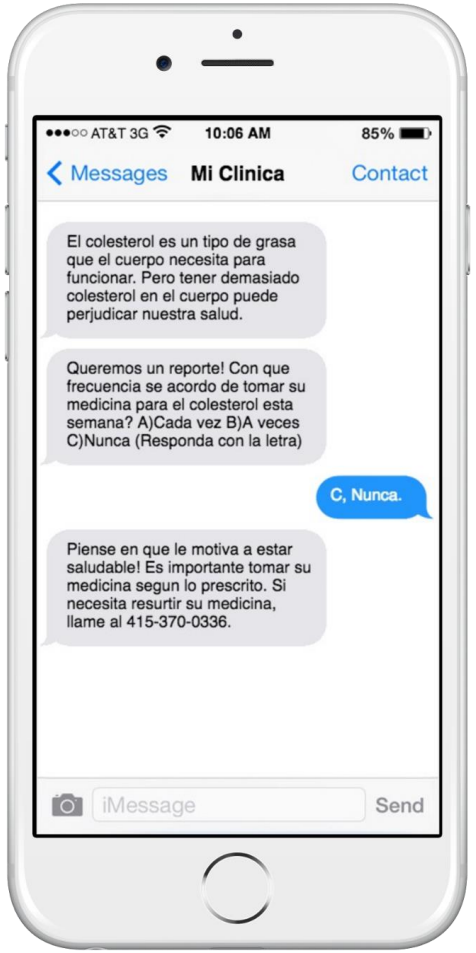
About the Program

- Health Belief Model via SMS
- Culturally Tailored Messaging
- 6th Grade Reading Level or Below
- 6 Month Long Intervention

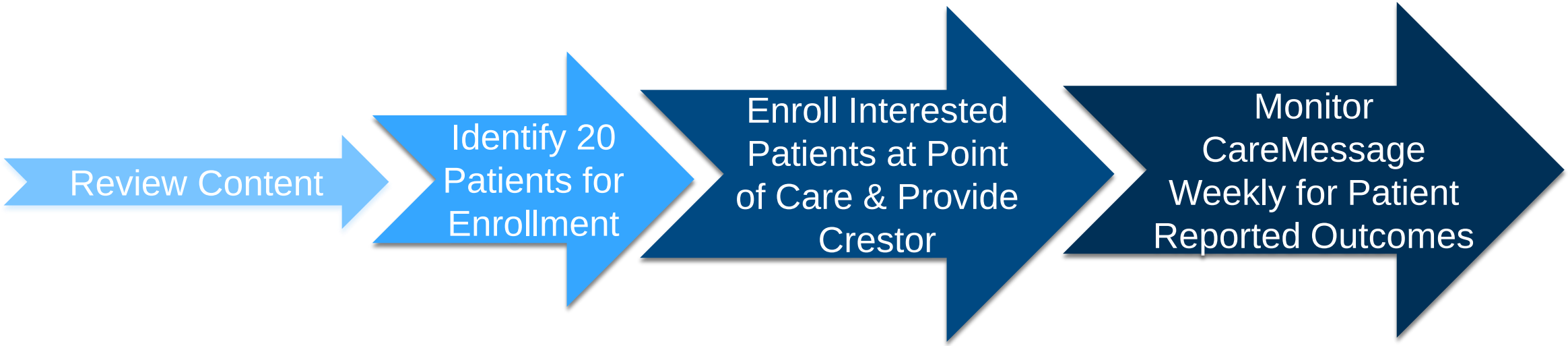
Data Tracked by Program

- Response & Retention Rates
- Medication Adherence
- Self Efficacy & Motivation to Change
- Barriers to Adherence
- Satisfaction with Texting Program





Implementation



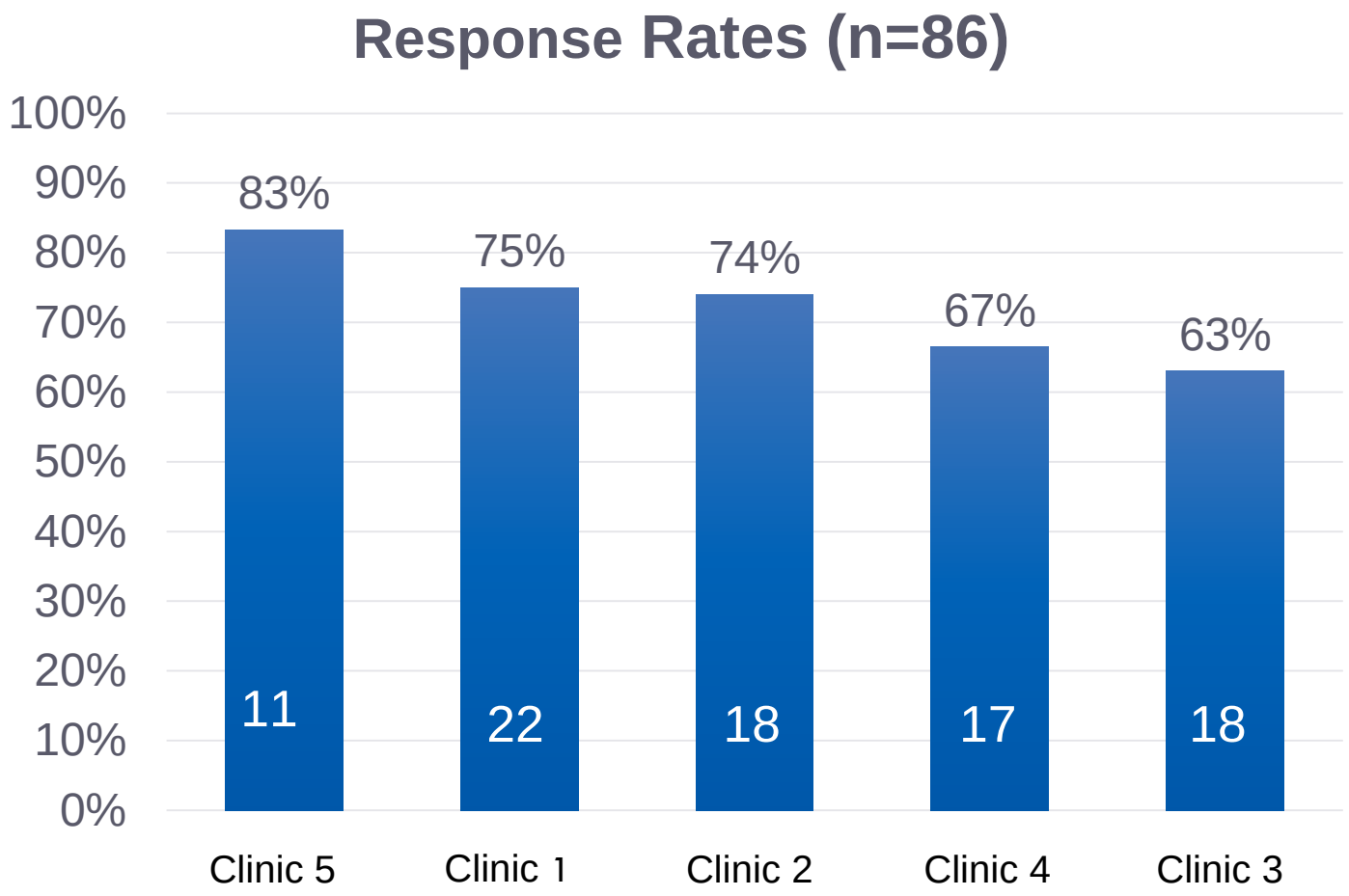
Program Outputs & Outcomes

Participants

Clinic	Participants Included in Analysis
Clinic 1	22
Clinic 2	18
Clinic 3	18
Clinic 4	17
Clinic 5	11
Total	**86**

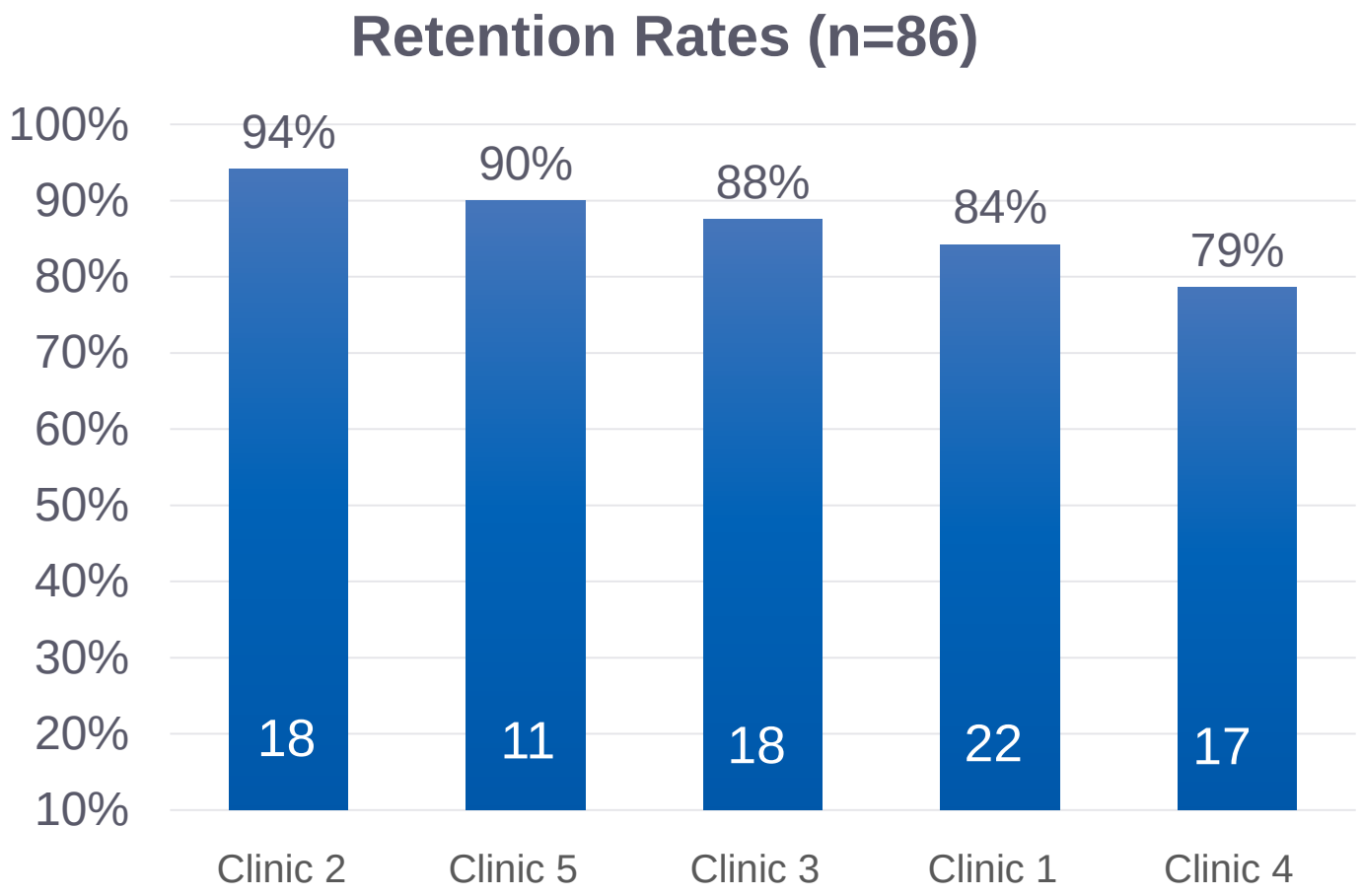
Response Rates

Avg Response Rate: 72%



Retention Rates

Avg Retention Rate: 87%



Program Questions & Metrics

Barriers to Adherence

"What prevents you most from taking your cholesterol medication?

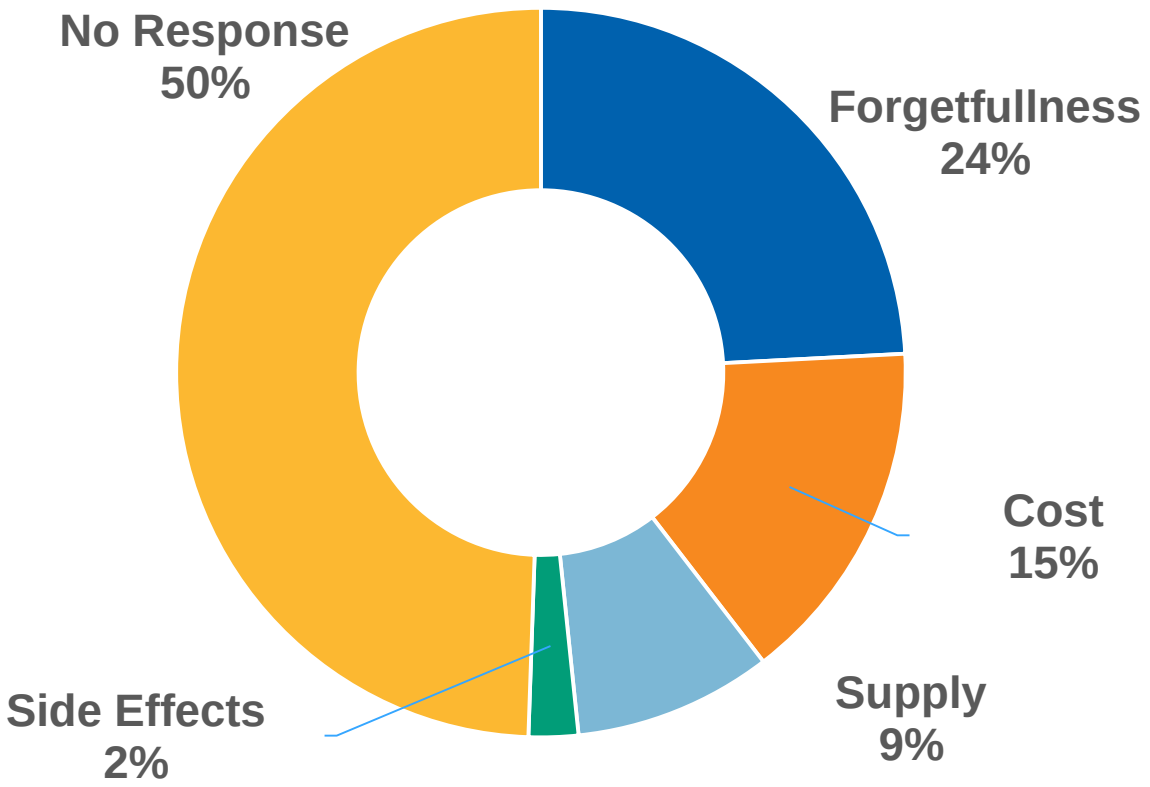
A) Cost

B) Side effects

C) I feel I do not need it

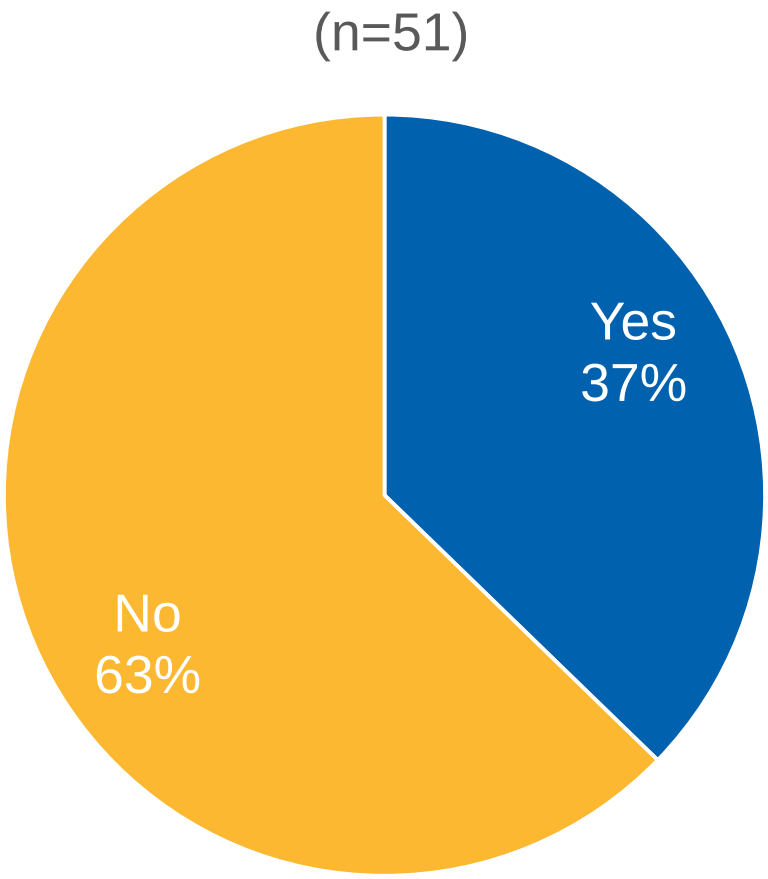
D) I just forget

E) I run out of pills" (n=93)



Medication Adherence

"Have you ever missed taking a dose of your cholesterol medication?"



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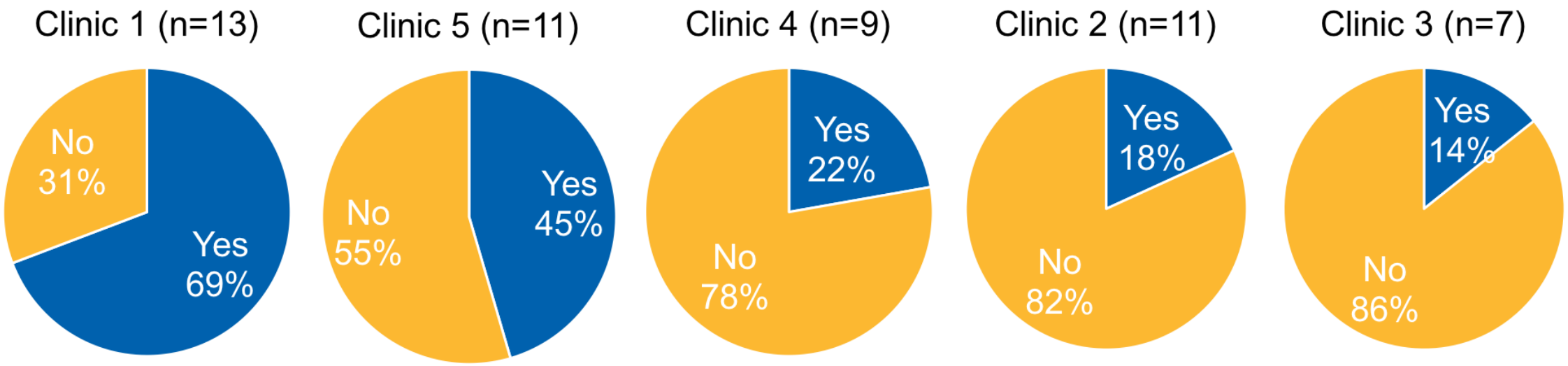
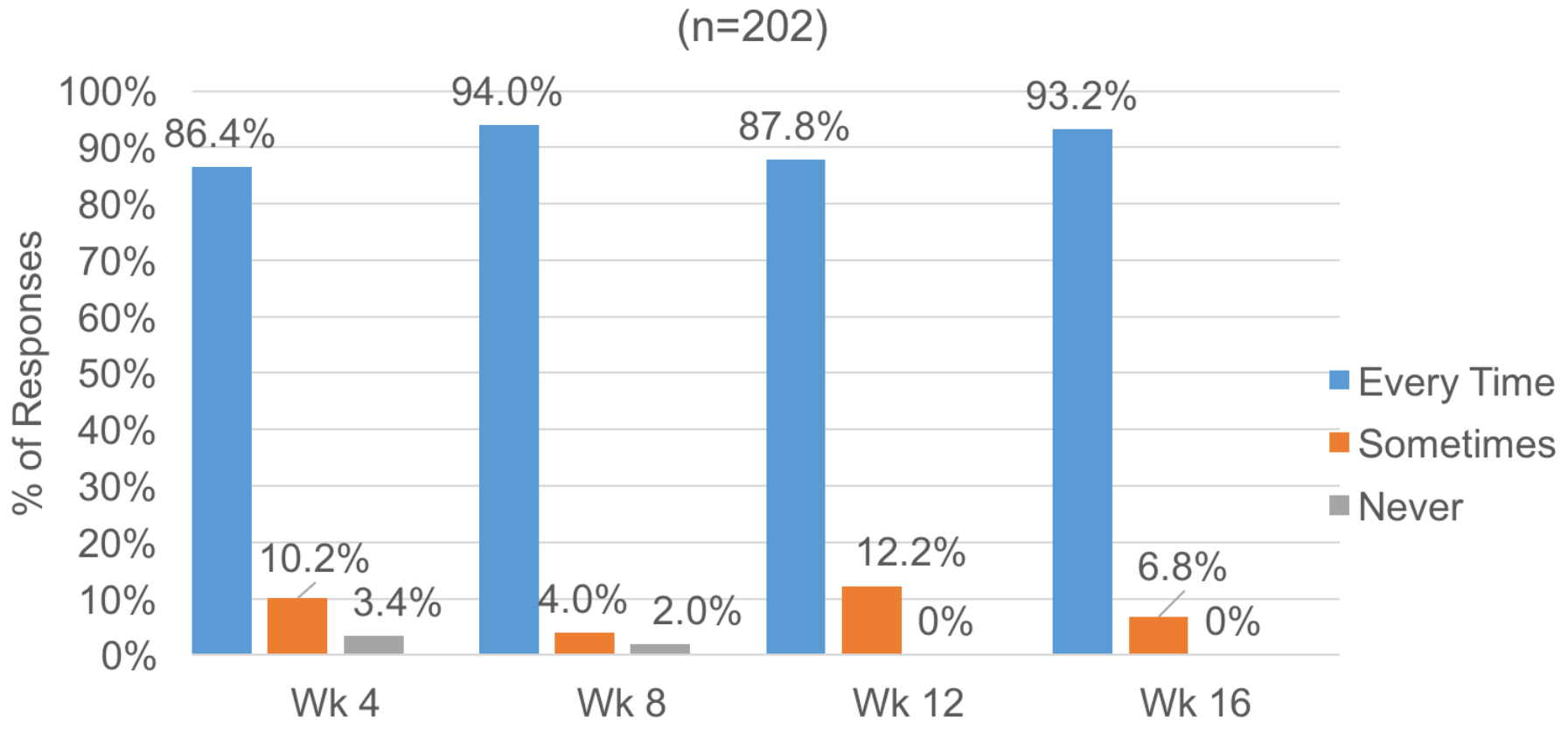


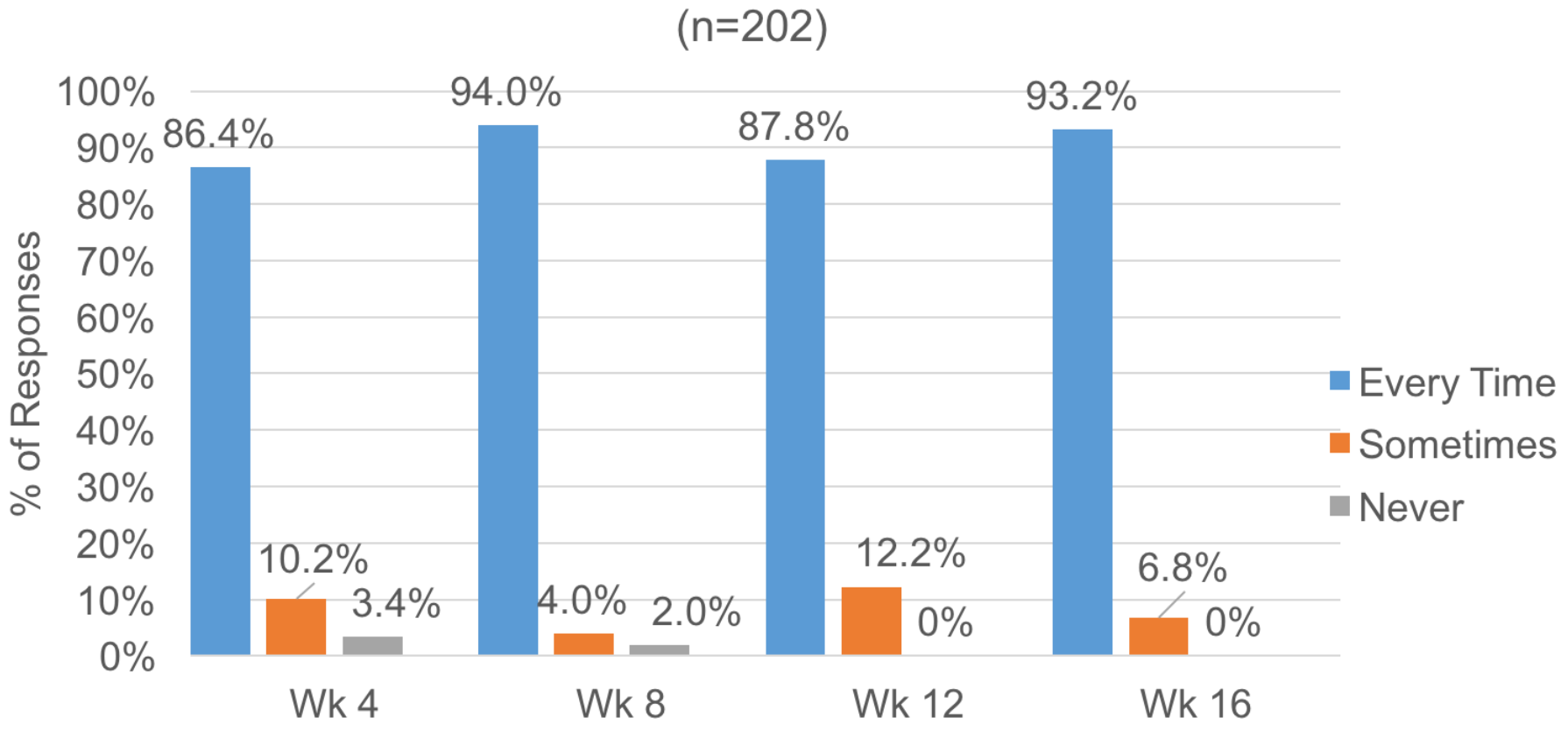
Medication Adherence

"How often did you remember to take your medication this week?"



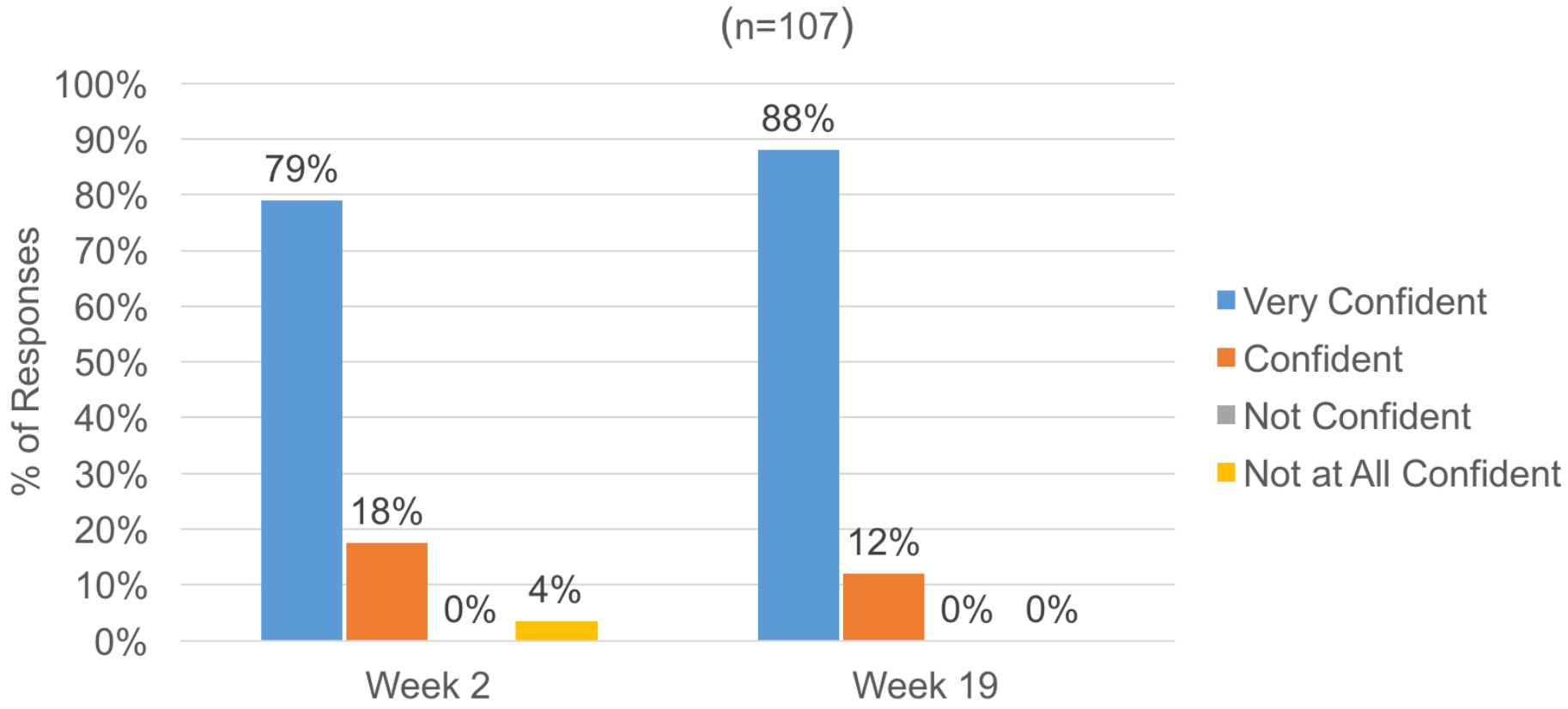
Medication Adherence

"These text messages helped me remember to take my cholesterol medication"

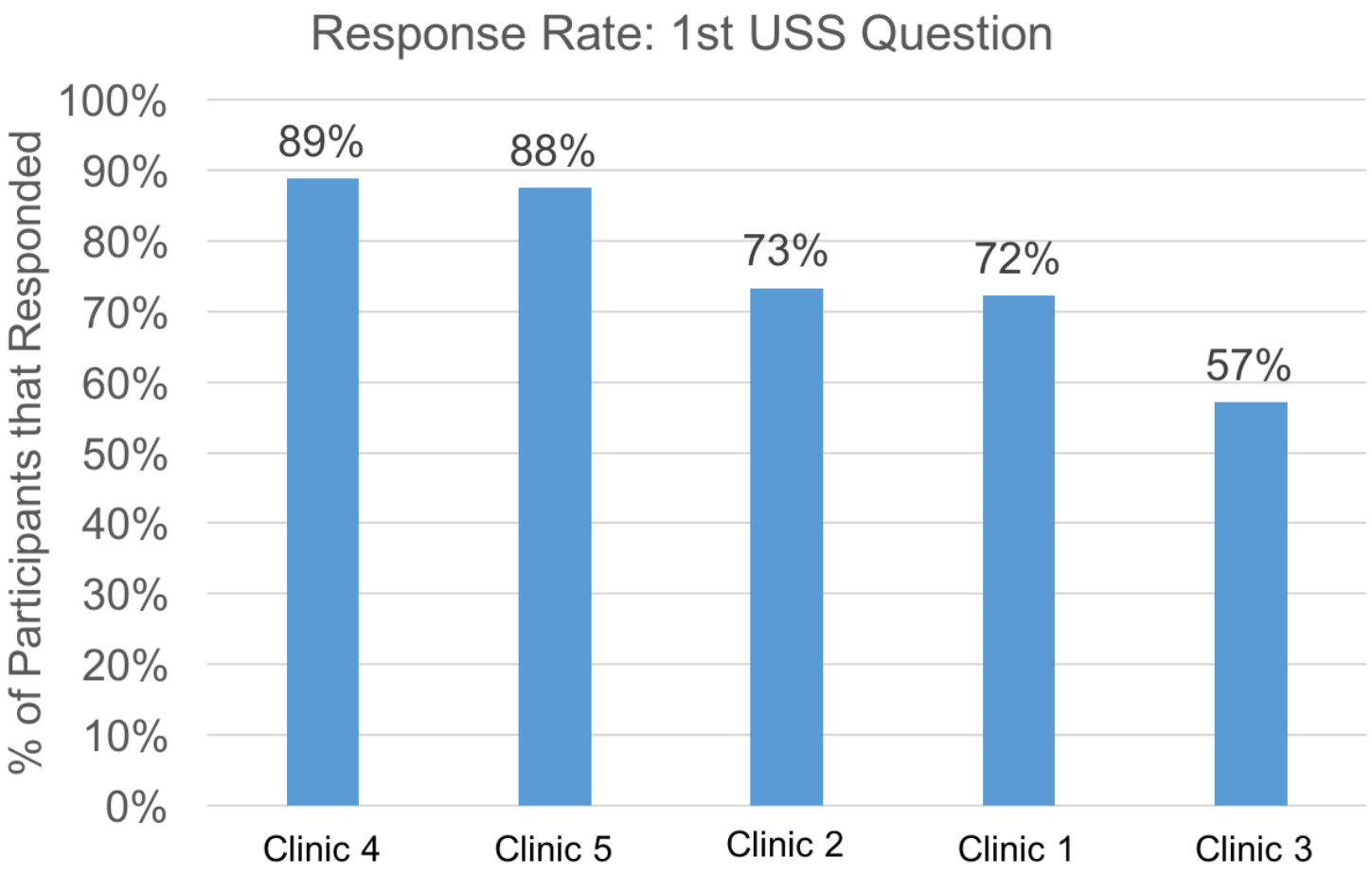


Patient Confidence & Self Efficacy

"How confident are you that you can take your cholesterol medications as prescribed?"



User Satisfaction Survey (USS)



User Satisfaction Survey (USS)

	Question	% Agreement (n)
1	I learned useful information from the text messages.	98% (46)
2	The text messages helped me better manage my high cholesterol.	95% (42)
3	I would recommend this texting program to a friend with high cholesterol.	98% (43)
4	I found the text messages annoying.	17% (7)
5	The text messages were clear and easy to understand.	93% (38)

Patient Satisfaction

I truly enjoyed the text of reminders and recipes

Sending a txt in the eve to remind us to actually take the meds just before bedtime.

El programa es perfect y muy buenos–gracias!

Clinical Data

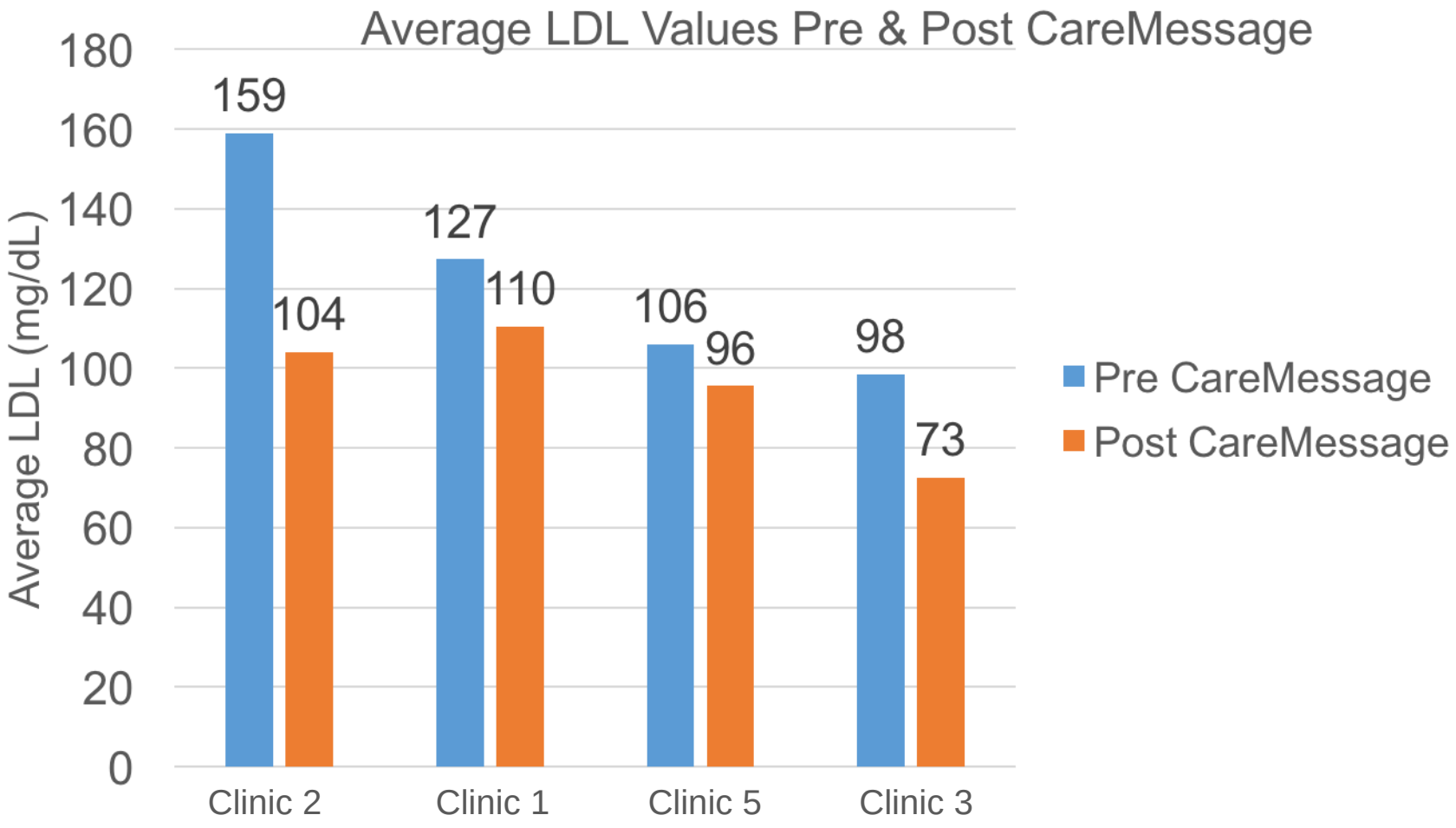
Analysis

Program Metrics
Response Rate
Retention Rate

Program Questions	Data From
“Have you ever missed taking a dose of your cholesterol medication?”	Week 2
“How confident are you that you can take your cholesterol medications as prescribed?”	Weeks 2, 19
“How often did you remember to take your medication this week?”	Weeks 4, 8, 12, 16
“These text messages helped me remember to take my cholesterol medication.”	Week 19
User satisfaction (6 questions)	Week 20

Clinical Data	Data From
Change in LDL Values	Pre, Post Program
Medication prescribed	Pre, During, Post Program

LDL Values


Average LDL Values Pre & Post CareMessage
Average LDL (mg/dL)
180
160
140
120
100
80
60
40
20
0
159
104
127
110
106
96
98
73
Clinic 2
Clinic 1
Clinic 5
Clinic 3
Pre CareMessage
Post CareMessage

What Worked

High Response & Retention Rates	Medication adherence improved as the program progressed	Increased confidence to manage chronic condition from beginning to end
Text message proved to be a positive form of communication for the patients	Provided access to a popular and proven statin, Crestor	**LDL levels significantly decreased**

Limitations

No Control	Longer data collection period for providers	Small Pilot Size

Lessons Learned

Grant component allowed more selectivity	Capacity for and interest in texting programs among our partner network	Use more accessible statin

Implementing Similar Programming

Americares & Community Health Programs

Newest Initiatives:

- Driving Quality Outcomes Program
- Oral Health Project

Continuation of Programming:

- Ongoing Access to Meds Program
- Prediabetes & Hypertension

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Appendix

Limitations

- Had to exclude 7 participants that were not scheduled to complete program before analysis
- Clinical data analysis limited by quality/availability of data provided
  - Medication prescribed: 1) prior to, 2) at beginning of, and 3) at end of program
    - Not all clinics provided data for all 3 time frames
  - If participant discontinued Crestor in the program, why?
    - Not all clinics provided this data. Unclear if blanks = no participants discontinued Crestor
  - Medication frequency
    - Some clinics provided provided tab-level data (e.g. 1 tab QD), others didn't (e.g. QD)
  - Number dispensed at each visit
    - Some clinics reported by bottle, some reported by number of pills
  - Date dispensed
    - Some clinics reported "monthly" instead of mm/dd/yy (or didn't report at all)
- Clinic 4 did not provide clinical data – excluded from clinical data analyses

LDL Values

```
                                        Paired t-test

     pre             post          data:  pre and post
Min.   : 41.0   Min.   : 38.00     t = 3.3816, df = 40, p-value = 0.001621
1st Qu.: 71.0   1st Qu.: 69.00     alternative hypothesis: true difference in means is not equal to 0
Median :105.0   Median : 91.00     95 percent confidence interval:
Mean   :121.4   Mean   : 95.49      10.42135 41.38352
3rd Qu.:152.0   3rd Qu.:122.00     sample estimates:
Max.   :289.0   Max.   :209.00     mean of the differences
                                                  25.90244
```

There was a significant difference in the LDL values pre-CareMessage (M=121.4 mg/dL, SD=59.38) and post-CareMessage (M=95.49 mg/dL, SD=36.41) conditions; $t(40)=3.3816$, $p<0.005$.