How Deviceless Remote Patient Monitoring Scales Virtual Care to Improve Chronic and Behavioral Health Outcomes

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1

Agenda & Learning Objectives

- Review the **State of Whole-person Care**: Balancing Revenue & Relationships

- Examine **Real-world Impacts & Quantitative Outcomes**: Engagement & Clinical Results

- Identify **Specific, Actionable Strategies** to Increase Care Access for High-risk & Rising-risk

- Connect **Key Learnings** to Your Organization's Position

- Q&A

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Learning From the Past: Sensitive PWS Avoid Care, Resulting in Higher Morbidity & Mortality

"[T]he continuity of regular medications or **treatments for chronic diseases were interrupted** during the SARS epidemics because the **patients were fearful of going to hospitals**."
(T.-H. Lu et al., 2007)

"**[M]ortality caused by diabetes mellitus and cerebrovascular diseases significantly increased** during the SARS epidemic by 8.4% and 6.2%, respectively.
(S.-Y. Wang et al., 2012)

Illustrated by Victor Tseng, MD
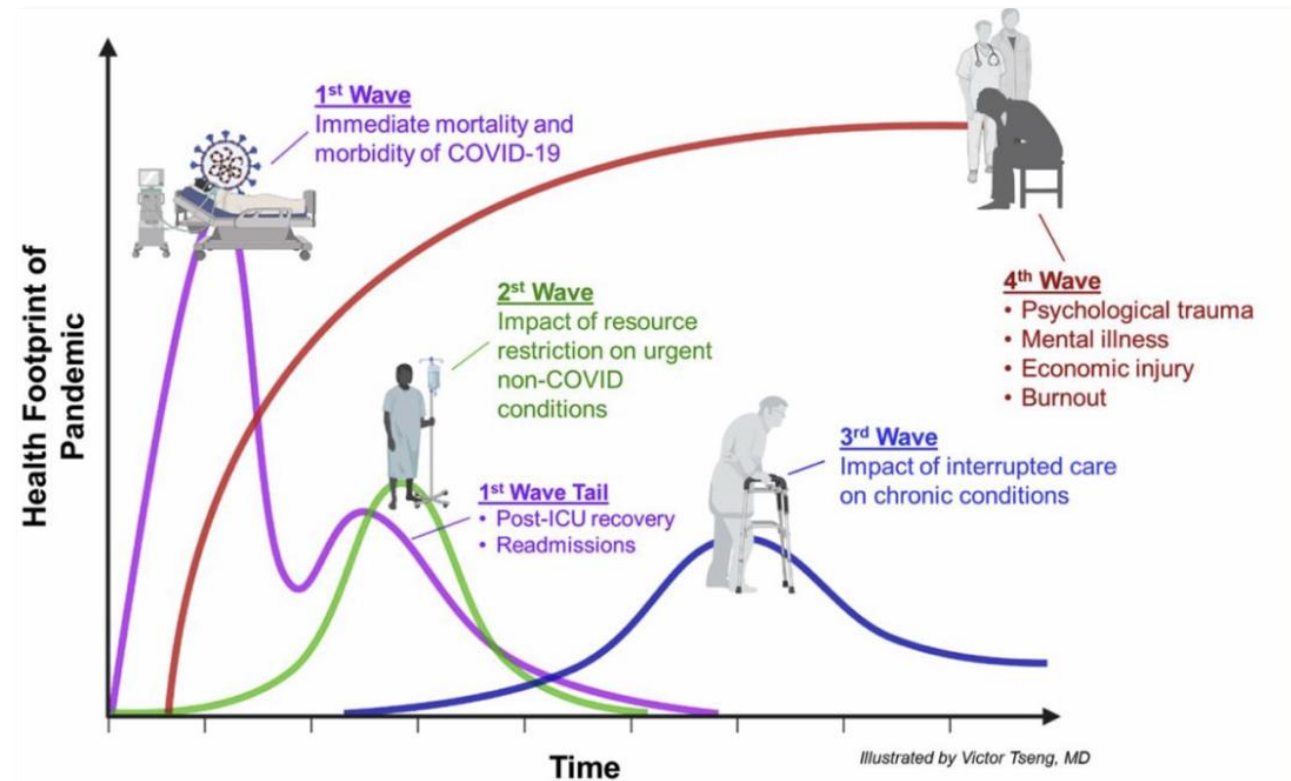
New Challenges & Obstacles to Care

Inappropriate utilization, stemming from social, behavioral, and medical determinants, exacerbates existing issues
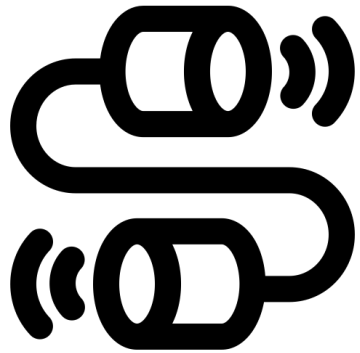
Traditional patient-facing engagement may not scale, particularly if the only solution is to ramp manual processes
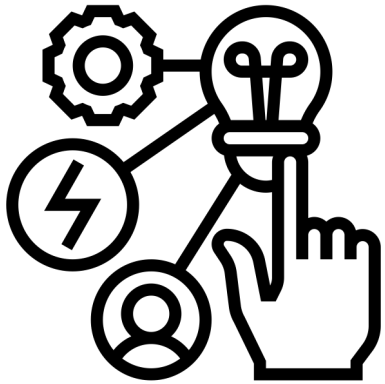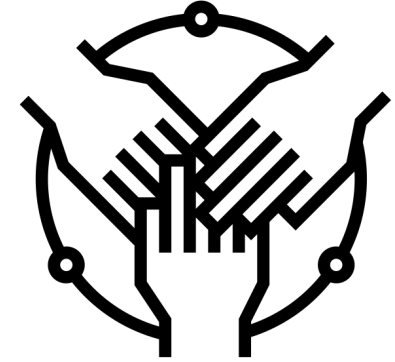
Limited resources and provider availability, compounded by barriers to appointment adherence, reduce capacity

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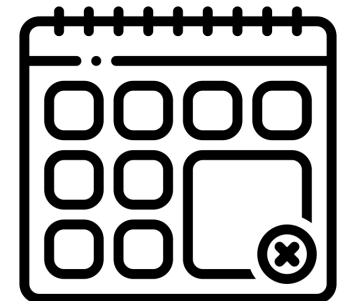
Many Opportunities Exist to Recover, and Improve

Behavioral healthcare and whole-person care providers are in a powerful position to innovate on care models

Patients, more than ever before, will consider engaging through new, virtual-first care delivery channels

Existing clinical resources can be augmented, without creating new workflows or adding staff headcount, through a combination of technology and tech-enabled services

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Specific, Actionable Strategies Begin With the Right Population Focus

Each year, 1 in 5 of rising-risk patients become expensive, high-risk patients
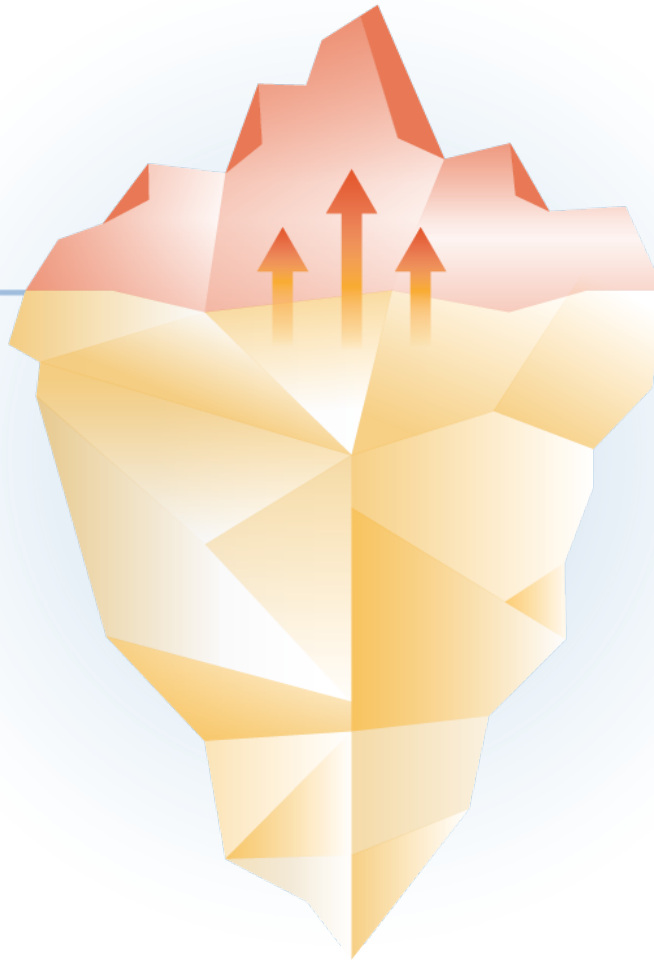
High-Risk: 5% of population
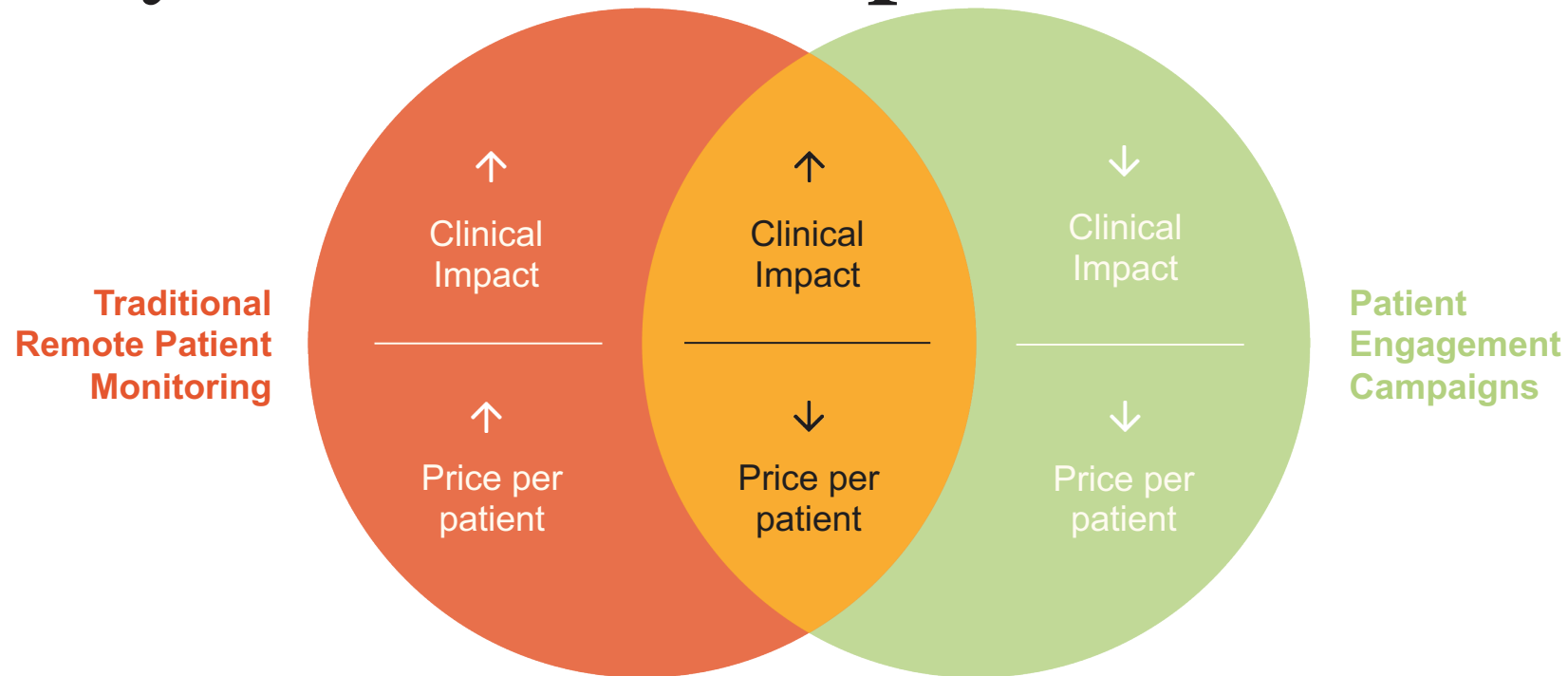
Rising-Risk: 20% of population

The NEW ENGLAND JOURNAL of MEDICINE

*"Our findings may also reflect fundamental challenges with the strategy of targeting superutilizers: **many patients whose medical costs are high today will not be as high in the future**." – Hotspotting Study*
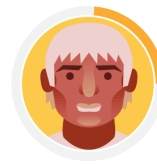
(A. Finkelstein et al., 2020)

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Deviceless Remote Patient Monitoring: a Scalable, Clinically Actionable Component of Virtual Care

Traditional Remote Patient Monitoring

↑ Clinical Impact

↑ Price per patient

↑ Clinical Impact

↓ Price per patient

↓ Clinical Impact

↓ Price per patient

Patient Engagement Campaigns

High Risk
0.5 – 5 %

Rising Risk
20%

Low Risk
75%

Relevant Patient Population

Financial Opportunity

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Ubiquitously Accessible Technology Meets Patients Where They Are

CareSignal works for **any** patient

Via smartphone, pay-as-you-go phone, landline, or concerned caregiver's phone
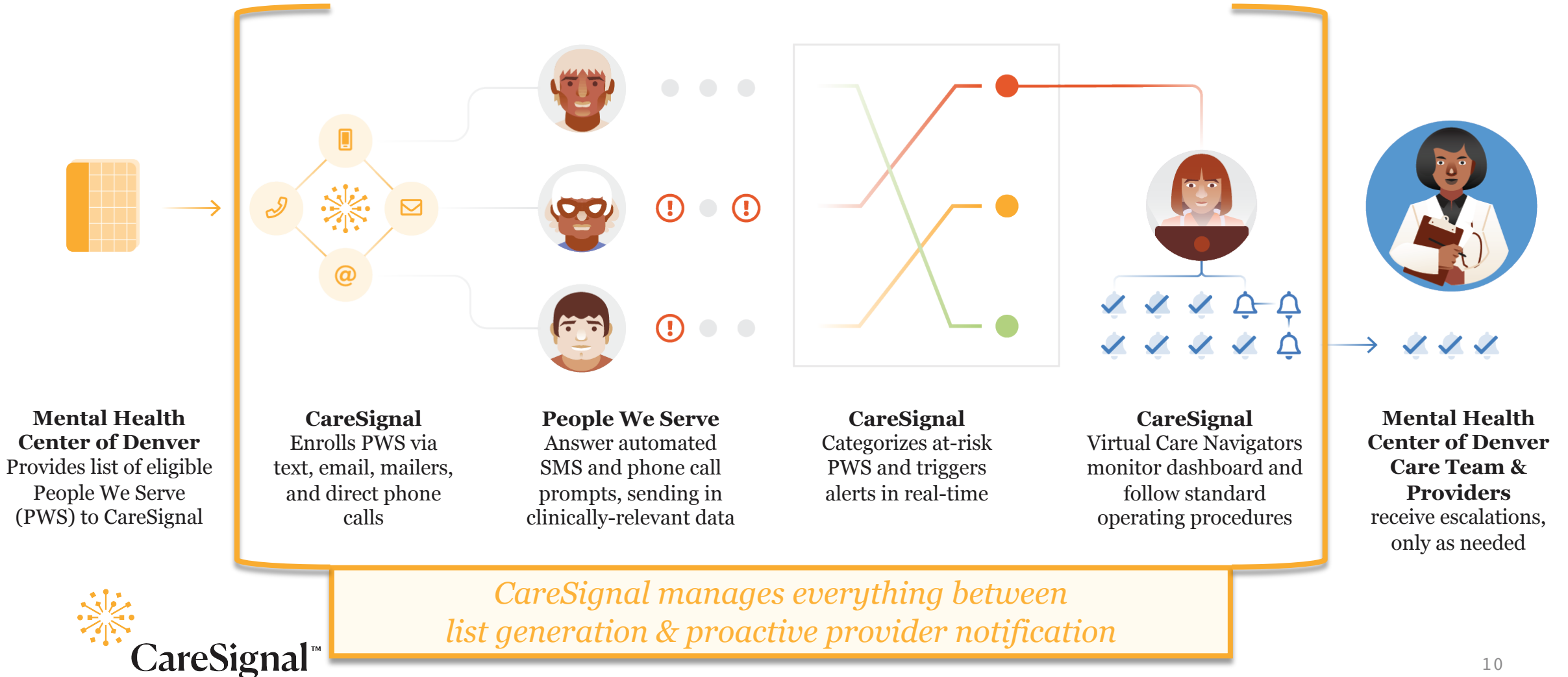
10+

Publications in peer-reviewed journals

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PHILIPS

9:41AM
YOUR CARE TEAM
18669768910
OK   BACK

INBOX-OPEN

From: Your Care Team

How are you feeling now?
Please rate from 0 (very bad)
to 10 (very good)

CB: 1-866-976-8910
Received
Jan 27, 2020

REPLY   Options

●●●○○ MetroPCS 3G   9:41 AM   75% ▬

‹ Messages **Your Care Team**   Details

What is your weight today? Please enter in lbs (e.g. 180)

197

How has your breathing or swelling in your legs felt compared to normal? Reply 1 if better, 2 if worse, 3 if the same.

3

Is your breathing while lying down better, worse, or the same compared to normal? Reply 1 if better, 2 if worse, 3 if the same.

Text Message   Send

Deviceless Remote Patient Monitoring Removes Barriers that Traditionally Accompany "Virtual"

Messages written at 4th - 6th grade reading level

Dynamic messaging adjusts to each member

Health Literacy

Free-to-End-User

Minimize Member Fatigue

Familiar Technology

CareSignal incurs cost of SMS texts and calls

Members use their own phones

Text Message vs. Phone Call Engagement Over Time
Average Health App — CareSignal Text Messages — CareSignal Phone Calls

6x
Better Engagement for Members on CareSignal

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Examining the Mental Health Center of Denver + CareSignal Workflow

Mental Health Center of Denver
Provides list of eligible People We Serve (PWS) to CareSignal

CareSignal
Enrolls PWS via text, email, mailers, and direct phone calls

People We Serve
Answer automated SMS and phone call prompts, sending in clinically-relevant data

CareSignal
Categorizes at-risk PWS and triggers alerts in real-time

CareSignal
Virtual Care Navigators monitor dashboard and follow standard operating procedures

Mental Health Center of Denver Care Team & Providers
receive escalations, only as needed

CareSignal manages everything between list generation & proactive provider notification

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Key Drivers of High Enrollment & Retention:
People We Serve-facing and provider-facing awareness

People We Serve-facing education & onboarding   Provider-facing program education

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Key Drivers of High Enrollment & Retention:
Mental Health Center of Denver-friendly workflow via white-labeled subclinical "Virtual Care Navigation"
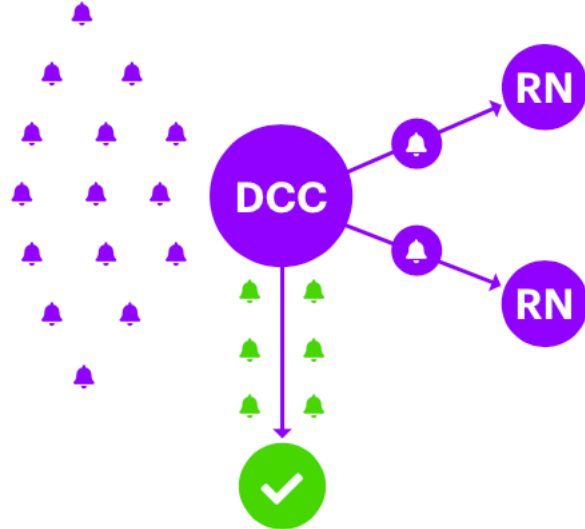
- As Mental Health Center of Denver People We Serve (PWS) generate alerts, CareSignal-employed "DCC" Digital Care Coordinators (a.k.a. Virtual Care Navigators) promptly reach out to each PWS.

- Many alerts are resolve with no escalation

- Alerts that require a clinical level of care are escalated to Mental Health Center of Denver teammates

- People We Serve experience seamless, high-touch care; Mental Health Center of Denver teammates only interact at top-of-license, and as a result scales virtual care to larger populations than previously possible

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Real-world Impact: Activation & Engagement

Depression

Automated Touches

15,507

Texts
13,092

Calls
2,415

Alerts Triggered
646

Activation

15%

85%

- Did not Activate
- Activated

Engagement

Number of Patients

Percent of Patients Engaged

Number of week(s) on Depression since 04/28/2020

- Activated Patients
- Engaged Patients
- Percent Engaged
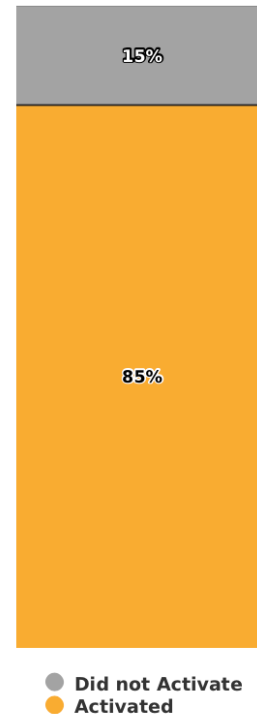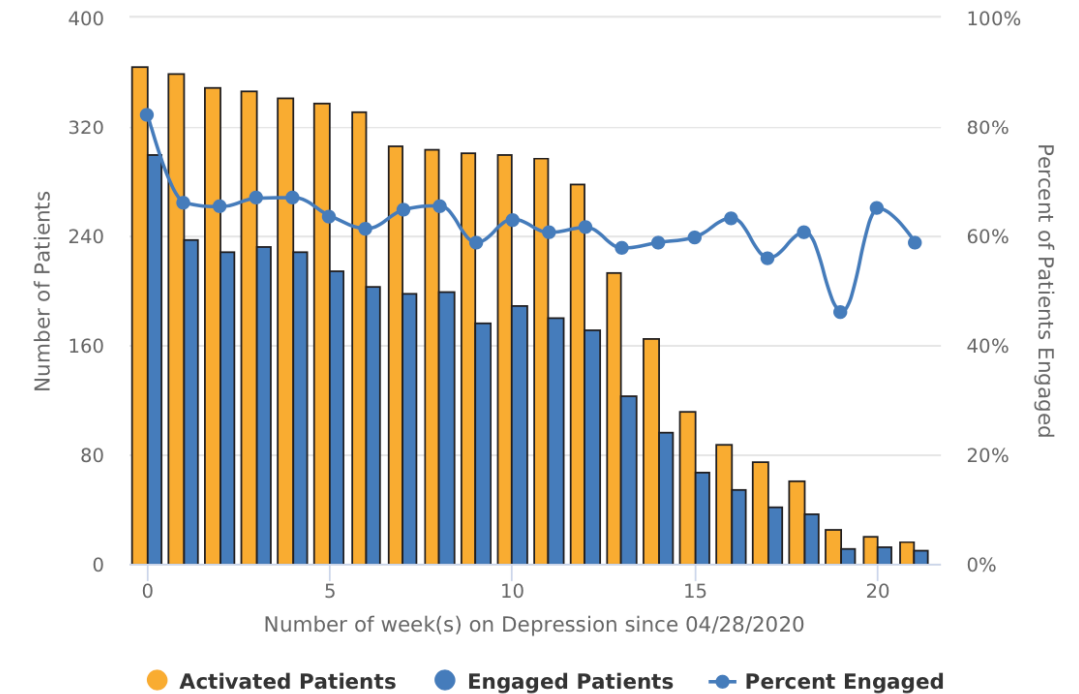
Real-world Impact: Clinical & Risk Improvements

Depression

Depression Status Changes

12 → 2	
4	
6	

Red at Baseline → Most Recent Status

	4
45 → 11	
30	

Yellow at Baseline → Most Recent Status

	5
	12
126 → 109	

Green at Baseline → Most Recent Status
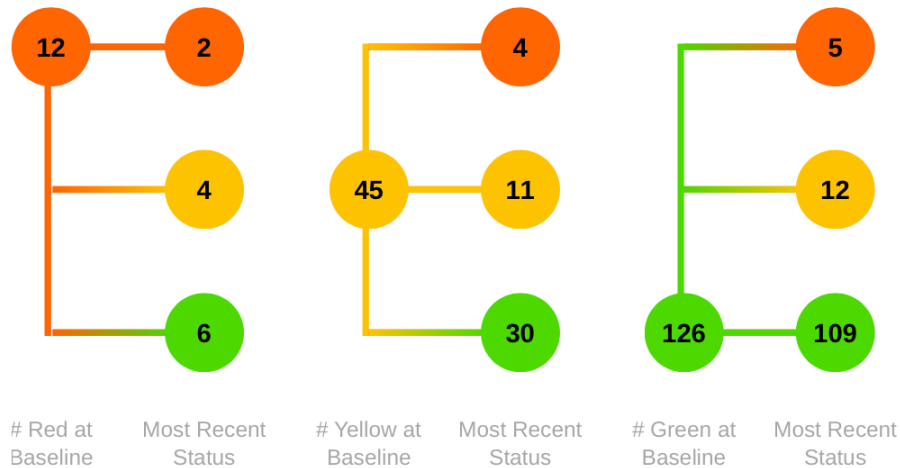
PHQ-9 Stratification for Depressive Disorder
Starting Score vs End Score

Patients per Category

Category	Baseline	Most Recent
Minimal (=< 4)	25	51
Mild (5-9)	54	61
Moderate (10-14)	72	49
Moderately Severe (15-20)	53	53
Severe (>20)	29	19

● Baseline ● Most Recent

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14
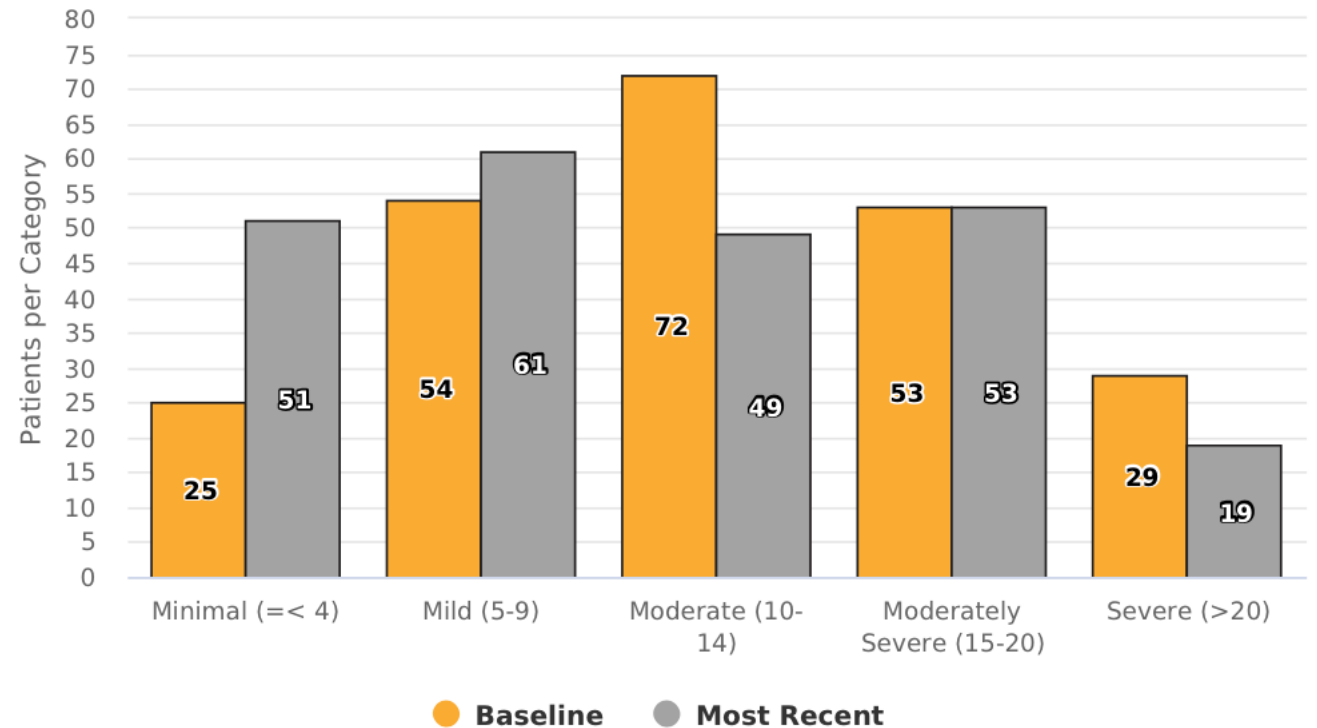
Real-world Impact: Clinical & Risk Improvements Substance Use

Automated Touches

3,418

Texts	Calls
2,969	**449**

Alerts Triggered

177

Activation

- 25% Did not Activate
- 75% Activated

Engagement

Legend:
- Activated Patients
- Engaged Patients
- Percent Engaged

X-axis: Number of week(s) on Substance Use since 04/28/2020
Left Y-axis: Number of Patients
Right Y-axis: Percent of Patients Engaged

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15

Real-world Impact: PWS Satisfaction/Experience

That they make me refocus my day....and regain my mood and relationship for that day. Regroup myself and deal with my issues at that moment. -Patient #94892

Comforting to know someone out there cares enough to check up on me, without knowing me. Non Judgemental - Patient #94872

I like the sense of security the program provides. Reminds me to use my skills. -Patient #99638

I love this program, giving myself a chance to reflect on my emotions twice a week has been very beneficial working with my doctor. Including the crisis line number for emergencies may be helpful. -Patient #97073

I know if I really am having a rough day if that text comes when I feel that way someone knows and will reach out to me. -Patient #95961

I like that they are little reminders to stop and think about how i am feeling during the day -Patient #95299

It let's me know someone is listening to me and checking in on me because I matter. -Patient #97448

They help me with my mood and makes me realize that sometimes I could feel better than I do -Patient #94884 I think they have come in handy for my iwn use too. They allow me to stop and think about how I feel. -Patient #94886

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Real-world Impact: PWS Satisfaction/Experience

Improved Communication · These messages have improved your communication with _____.

N = 290

Average = 7.13

1 - Strongly Disagree   Strongly Agree - 9

Care Satisfaction · You are getting the best possible care from _____.

N = 298

Average = 7.15

1 - Strongly Disagree   Strongly Agree - 9

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Key Learnings

The future is virtual, and incentive structures are finally catching up to make that future financially sustainable
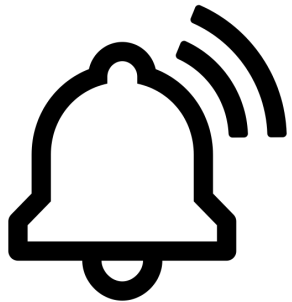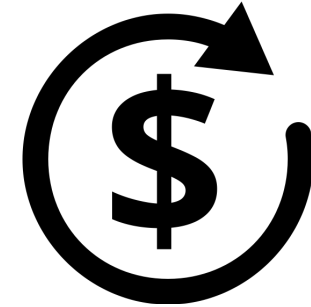
Alert fatigue, even with Virtual Care Navigation to augment existing staff, is an easily overlooked real-world challenge

The "digital divide" for low-socioeconomic status individuals is more detrimental than ever before; technology solutions must account for this potential Achilles heal
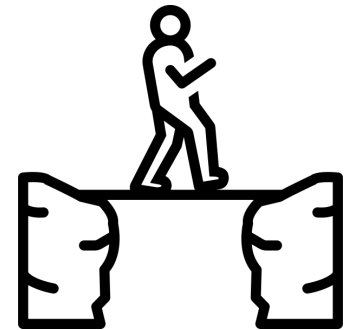
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CareSignal®
Deviceless Remote Patient Monitoring

Mental Health
Center *of* Denver

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CareSignal Portfolio

Chronic Condition Management

- Diabetes
- Hypertension
- Heart Failure
- COPD
- Asthma
- Dialysis
- Epilepsy

Behavioral Health & Substance Use

- Depression
- Substance Use
- Opioid Management
- Mood
- Caregiver support
- Basic Needs / SDOH

Maternal Health

- Breastfeeding
- Breastmilk
- Postpartum depression

Discharge Support

- Appointment Reminder
- Post Discharge
- Referral
- Surgery
- Pneumonia

Screening Reminders

- Colorectal cancer
- Breast cancer
- Cervical cancer
- Diabetes ophthalmology
- Chlamydia screening
- Lead screening

Complementary Support

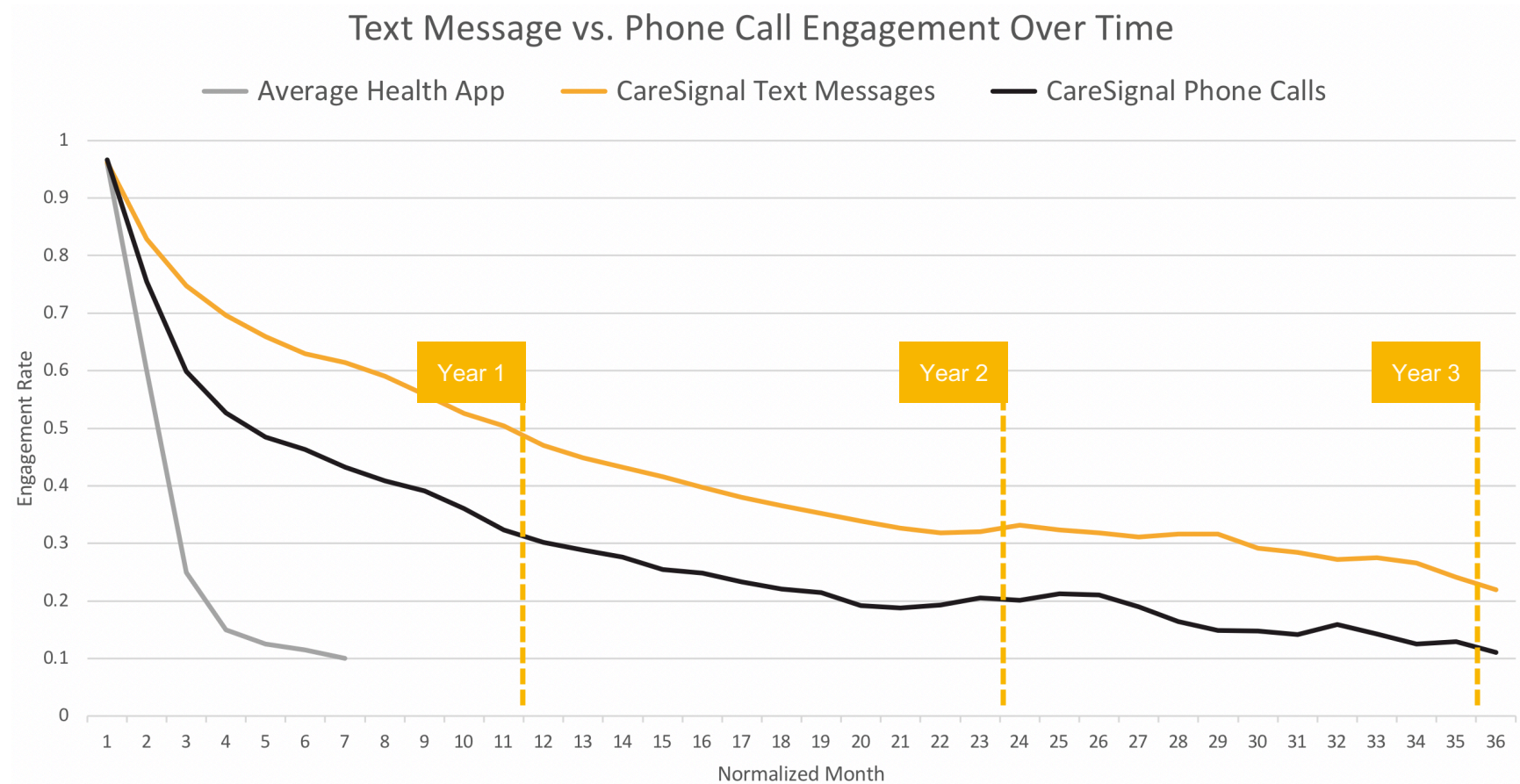- Fall Risk
- Wellness
- Medication Tracking
- Medication Adherence

CareSignal: 6x-12x Better Engagement Duration

Patient Engagement

1 in 2

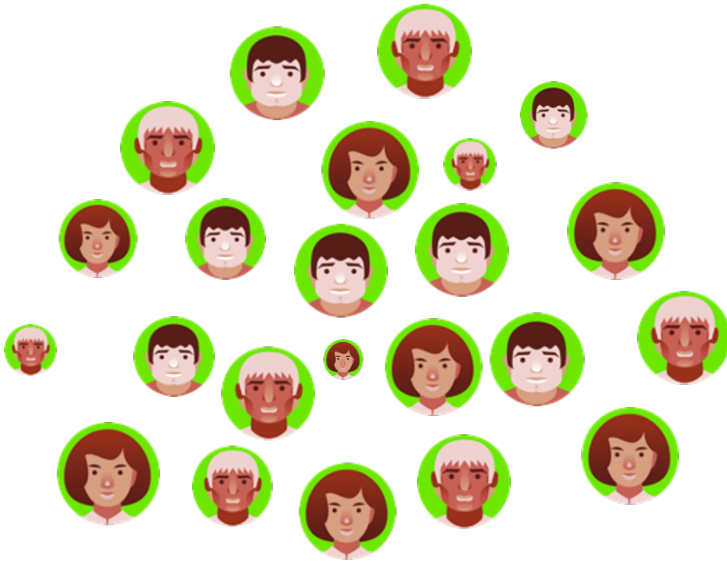Patients stay engaged 12 months or longer

Text Message vs. Phone Call Engagement Over Time

— Average Health App   — CareSignal Text Messages   — CareSignal Phone Calls

Year 1

Year 2

Year 3

Engagement Rate
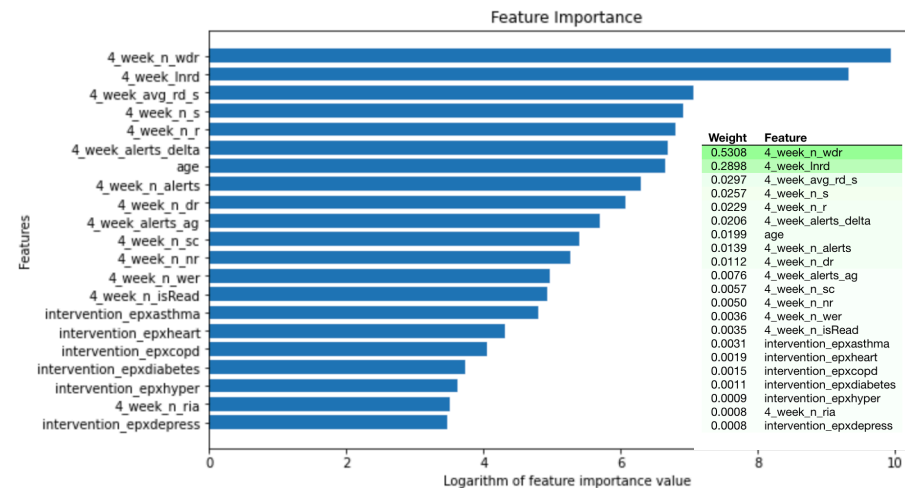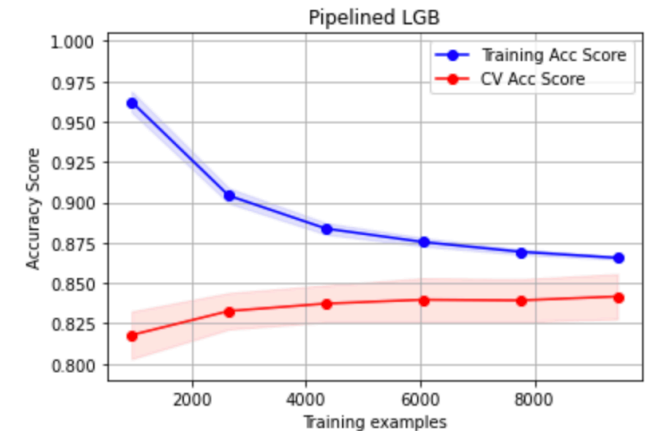
Normalized Month

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CareSignal AI: Preventative Re-Engagement

Over 16,000 patient years of data & metadata

Seven ML models & more than 80 features
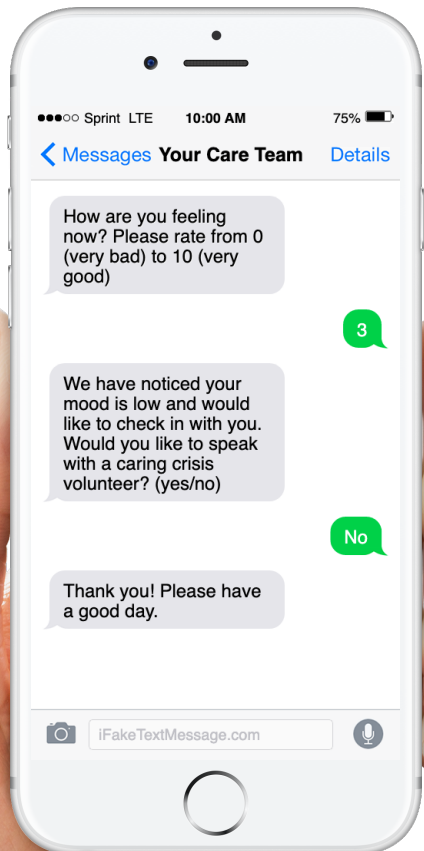
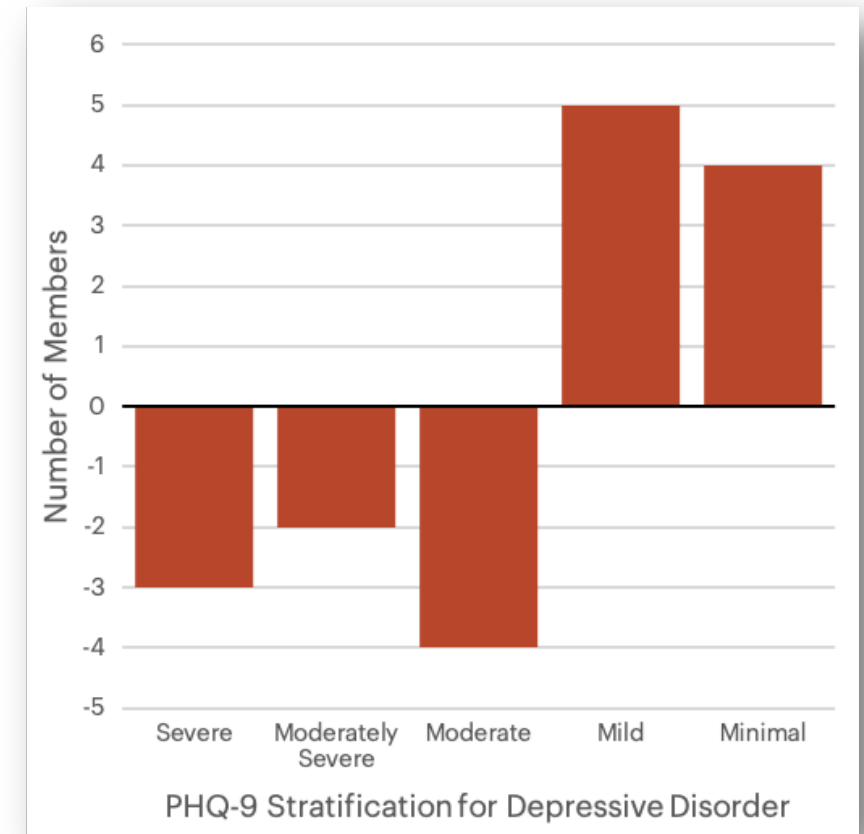High Accuracy (precision & recall 83% - 90%)

Behavioral Health

- *Partner Case Study: 28% reduction in PHQ-9*

Patient Generated Health Data

- **Depression**
  - Mood & PHQ-9
- **Substance use**
  - Tracking uses & triggers to use
- **SDOH**
  - Housing, food, employment, insurance, interpersonal violence
- **Anxiety**
  - GAD-7

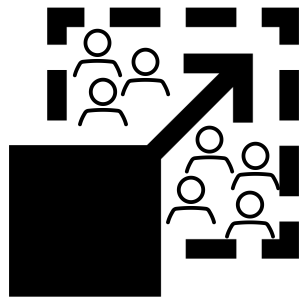PHQ-9 Stratification for Depressive Disorder

What is *Deviceless* RPM?

Functions solely with the technology that patients or concerned caregivers already own and understand: cell or landline phones.

Does *not* use or require costly Bluetooth kits that require ongoing IT support and expensive deployment management.
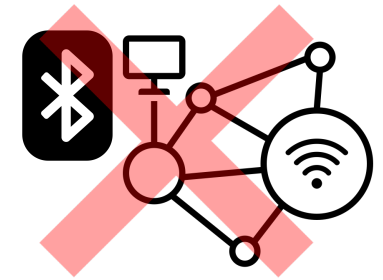
Allows risk-bearing organizations to deploy clinically actionable monitoring across tens of thousands of eligible patients, instead of just a few hundred.

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TCPA and HIPAA Compliance in Context
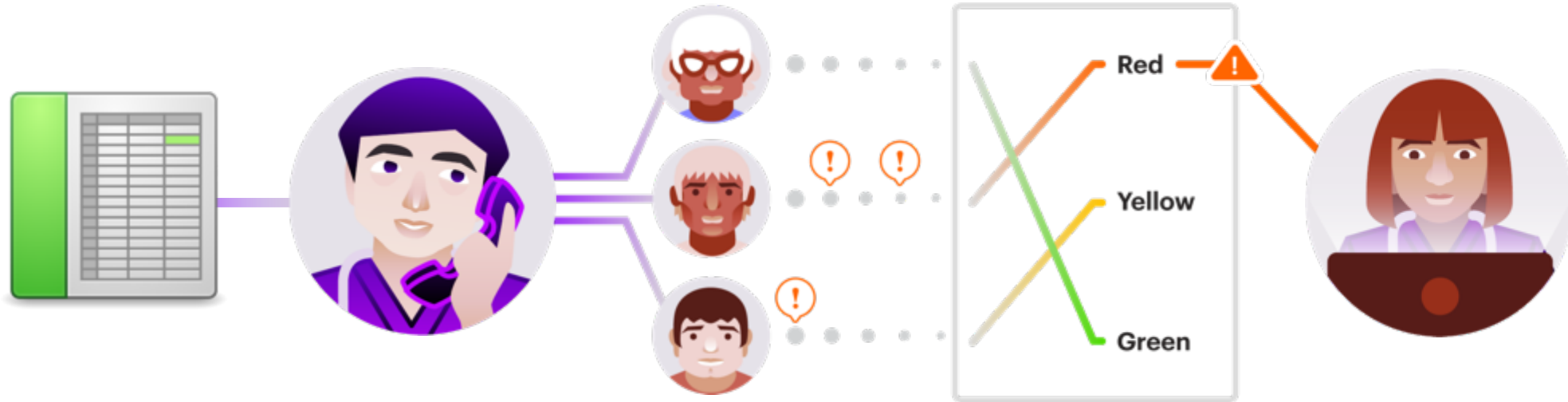
Partner List Provided

- PHI encrypted in transit and at rest
- HIPAA-trained, SOC 2-verified staff, technology, & protocols

Enrollment

- TCPA-compliant outreach (limited to three attempts)
- HIPAA-compliant identity confirmation
- HIPAA & TCPA-compliant consent capture (all recorded)
- Patient educated & reminded to keep PHI & phone access private

Patient Interaction

- HIPAA & TCPA-compliant duplicate consent capture (stored for audit)
- Reminder of purpose & ability to opt out & revoke consent
- Limited PHI (e.g. name, phone number, and single question about symptoms)

Messaging & Stratification

- HIPAA-compliant (safe harbor) encrypted data transmission, storage, & access
- TCPA enforcement: patients cannot receive automated messages without confirmation

Care Management

- PHI encrypted in transit and at rest between CareSignal and Partner team

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