ACTIVATE

ACTIVATE: a digital health model for health equity and chronic care coordination optimization

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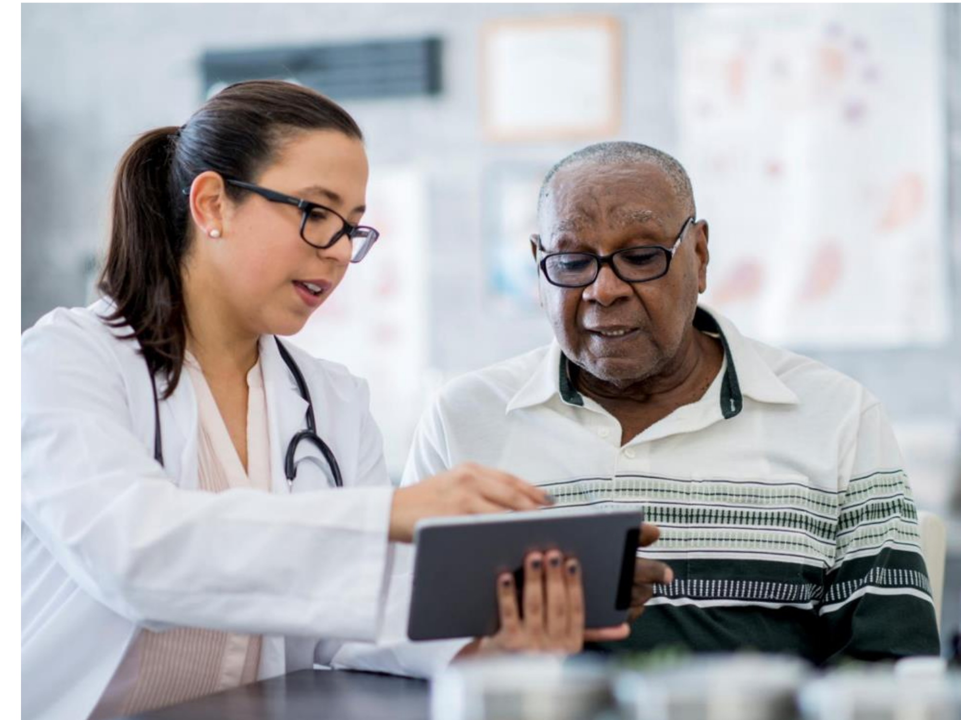
We Aimed to Address Community Challenges

- **Initially created to maintain continuity of health services for patients in California community health centers in rural and underserved communities during COVID-19**
- **Individual digital health barriers**
  - Individual access to broadband
  - Individual access to up-to-date computing devices
  - Individual access to remote patient monitoring devices
  - Individual digital health literacy
- **Clinics and provider network digital health barriers**
  - Clinic staff and providers with digital experience
  - Technology solutions optimized to the clinic environment
  - Digital health programs adapted to culture and setting
  - Complete and interoperable data
  - Technical assistance and support



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CITRIS AND THE BANATAO INSTITUTE

Overview

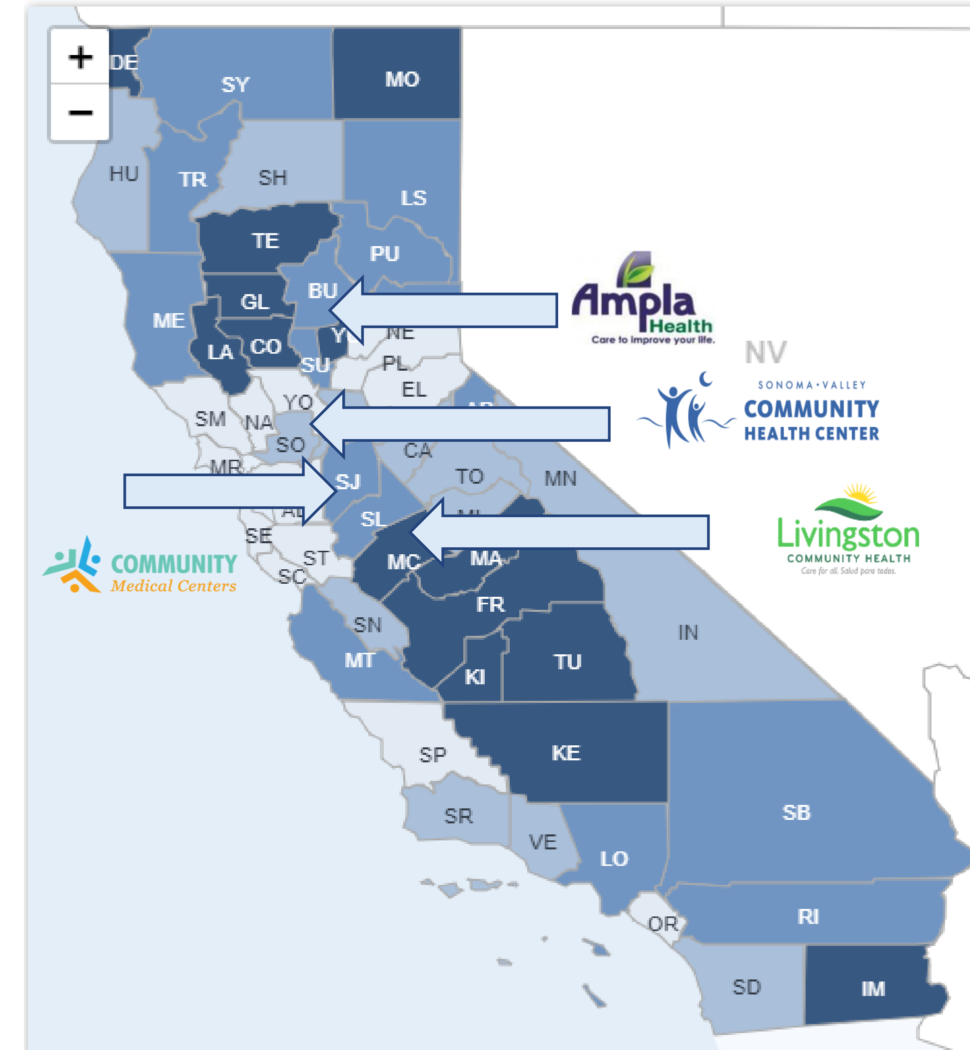
A uniquely co-designed and flexible platform for remote monitoring and care coordination in underserved communities

A model Implemented in four California health centers.

Phased pre-post study (co-design, feasibility, pilot)

Demonstrated health outcomes in California's under-resourced settings

- Diabetes: Improvement of 3.5 points hemoglobin A1c
- Hypertension: Improvement by 20 points systolic blood pressure and 4 points diastolic



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Phase 1: Community Co-design Embedded with Agile Development Process

Provider

Community Health Worker

Medical Assistant Health Coach

Person

Digital Health Navigator

Nurse

Family Members and Carers

Care team + participant + community co-designers

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Platform

HIPAA-Compliant and Flexible

MyACTIVATE
Participant Dashboard

Remote
Participant Monitoring

MyACTIVATE
Pairing App

ACTIVATE
Server

ACTIVATE
Program Manager
Dashboard

Batch

HL7v2

Participants

Healthcare

PATIENTS

TEAMLETS

Tablet or
Smartphone

Virtual Visit
System

Electronic Health
Record System

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Phase 2: Technical Feasibility Assessment

- **Inclusion and exclusion criteria:**
  - Adults served in the FQHC
  - Diagnosis of diabetes mellitus with most recent hemoglobin A1c $\geq$ 8.0 (within 1 year)
  - Or diagnosis of essential hypertension with most recent blood pressure $\geq$ 140/80
  - Speak Spanish or English
  - No end stage or advanced disease
- **12 patients of health center recruited via phone call by health coach sequentially from list of eligible candidates**
- **Provided Bluetooth connected glucometer and/or blood pressure monitor, tablet with data plan if needed, ACTIVATE app, digital literacy assistance from digital navigator**
- **Assessed patient usage of technology, automatic transmission of data from devices, and accurate display of data in provider and health coach dashboard**

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Phase 3: Pre-post Pilot

- Pre- and post-intervention with outcomes included regularly collected hemoglobin A1c for participants with diabetes and blood pressure for those with hypertension
- Same inclusion criteria as feasibility phase
- Weekly 30 min program huddle with providers, health coach, digital navigator
- Health coaching enrollment visit and regular check-ins driven by patient and huddle (typically every 2 weeks)
- Health coach and digital navigator used ACTIVATE dashboard but health coach charted in E.H.R.
- Provider telehealth or virtual visits as appropriate
- ACTIVATE data integrated into E.H.R. for providers

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Combined Results from California Health Centers (n=243 who started monitoring)

Characteristic Number (%)	All Adults 18 to 64 years (n = 243)	Older Adult Subgroup 65 years and older (n = 43)
Age, mean (range)	55.2 (31 – 83 years)	70.1
Female at Birth	95 (60.1%)	27 (62.8%)
Hispanic or Latinx	216 (88.9%)	34 (79.1%)
Spanish Primary Language	178 (73.3%)	32 (74.4%)
Diabetes	195 (80.3%)	31 (72.1%)
Hypertension	151 (62.1%)	31 (72.1%)
Remote Patient Monitoring Measures Transmitted in 6 months, number	41,675	9,979

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Diabetes in Target Control: 3.5 point improvement in A1c (unpublished, rolling enrollment)

Pre-Post Measures	All Adults Target 7 – 8 %		Older Adult Subgroup Target 7.5 – 8.5%	
	Number of patients	Hemoglobin A1c % m (SD)	Number of patients	Hemoglobin A1c % m (SD)
Pre-enrollment	153	10.96 (1.89)	26	10.95 (1.55)
3-month[1]	153	7.89 (1.78)	26	7.47 (1.29)
3-month Change*		3.07 (2.72)		3.48 (2.19)
6-month [2]	89	7.57 (1.59)	16	8.28 (1.71)
6-month Change*		3.49 (2.50)		2.58 (2.38)

[1] Glucose readings over months 1-3 were averaged and converted to A1c using the ADA eAG to A1c conversion calculator[4]
[2] Glucose readings over months 4-6 were averaged and converted to A1c using the ADA eAG to A1c conversion calculator[4]
*Indicates reduction in measure

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Hypertension in Target Control: 20 point improvement in systolic blood pressure (unpublished, rolling enrollment)

	All Adults Target below 130/80			Older Adult Subgroup Target below 140/90		
Hypertension	Number of patients	Systolic mmHG m (SD)	Diastolic mmHG m (SD)	Number of patients	Systolic mmHG m (SD)	Diastolic mmHG m (SD)
Pre-enrollment	70	151.46 (15.81)	82.61 (8.12)	20	156.55 (13.84)	78.05 (7.25)
3-month [3]	70	136.23 (16.64)	82.06 (9.88)	20	141.68 (15.41)	78.48 (9.91)
3-month Change*		15.23 (16.66)	0.56 (10.17)		14.87 (18.44)	0.43 (10.09)
6-month [4]	40	132.83 (16.52)	79.53 (9.73)	9	139.99 (13.41)	74.96 (6.50)
6-month Change*		19.51 (14.95)	4.34 (8.82)		17.56 (5.94)	5.04 (6.55)

[3] Blood pressure measures were averaged over month 3
[4] Blood pressure measures were averaged over month 6
*Indicates reduction in measure

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Patient Quotes

“I was very happy to see that someone worries about us and is checking up on the sick people… this program has motivated me a lot because before I was signed up for this program, well, I was checking my blood once a day, or sometimes once a week. Or once or twice a month, so, I didn’t have this check-in that I have now. And that’s motivated me, every day, every day, to see the numbers I get, and, sometimes I’m very happy, other times I don’t know why it shows a bit high...”

Patient 536144

“It has encouraged me to change my lifestyle because prior to ACTIVATE… I check my blood sugar… I didn't know the why behind it… But when I went to the Zoom classes and then I met [outreach worker] and [medical assistant health coach], and then they put it all together in perspective to me… it just made a world of a difference for me… It's making me want to do more, it's making me want to get better.”

Patient 805014

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Remote Participant Monitoring and Care Coordination Program

Program Toolkit

Digital Health Pathway Care Model
- RPM used by participants at home supported by Digital Health Navigator
- Self-management supported by regular sessions with Health Coach by phone and video
- Teamlet huddles to coordinate care
- Telehealth and/or in-person visits per usual care

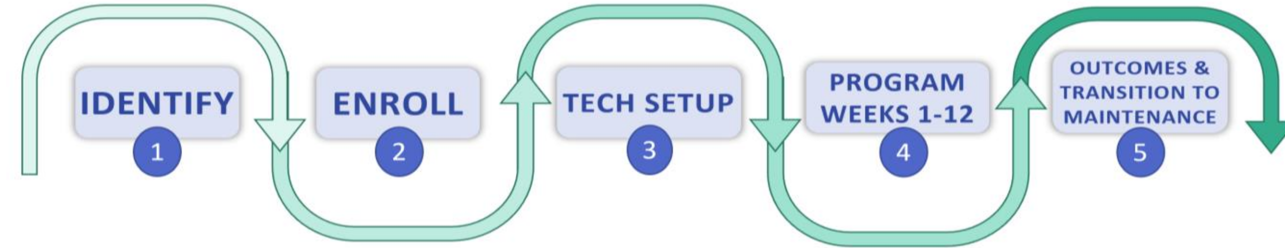
Planning
- Implementation checklist
- Budget template
- EHR health coach notes template

Training
- ACTIVATE platform training
- Health coach training
- Digital health navigator training

Outreach and Health Education
- Enrollment & readiness tool
- Patient device usage agreement template
- ACTIVATE flyers and videos

Evaluation
- Data use agreement for analysis and evaluation
- Outcomes data analysis template

Digital Heath Pathways



Implementation Tools

Part 5: Workflow - Identify to Tech Setup

This section is aimed at defining details for identifying patients for the program, steps for enrolling them, and logistics for their technology setup and education with the Digital Health Navigator.

IDENTIFY We've identified patient ACTIVATE inclusion criteria in collaboration with your health center providers. Now we need to create a list of patients for outreach, a plan for engaging them, and a way to manage the outcomes of this outreach.

Who will create the list of ACTIVATE eligible patients?	
How often will you refresh the list of eligible patients?	
Who will reach out to patients for recruitment?	
How many patients do you want to enroll weekly/bi-weekly?	
How often will they reach out to patients?	
How will you reach out to patients to offer them participation in the ACTIVATE program? (phone, text, email, during appointments)	
How will you manage the ouctomes and/or responses to the outreach?	

Self-Efficacy for Chronic Conditions - Managing Daily Activities – Short Form 4a
Please respond to each question or statement by marking one box per row.

	CURRENT level of confidence...	I am not at all confident	I am a little confident	I am somewhat confident	I am quite confident	I am very confident
1.	I can perform my household chores	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2.	I can go shopping and run errands	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3.	I can walk around inside my house	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	I can maintain a regular exercise program	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Educational Videos

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Questions and Discussion

contact: kkim@mitre.org

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