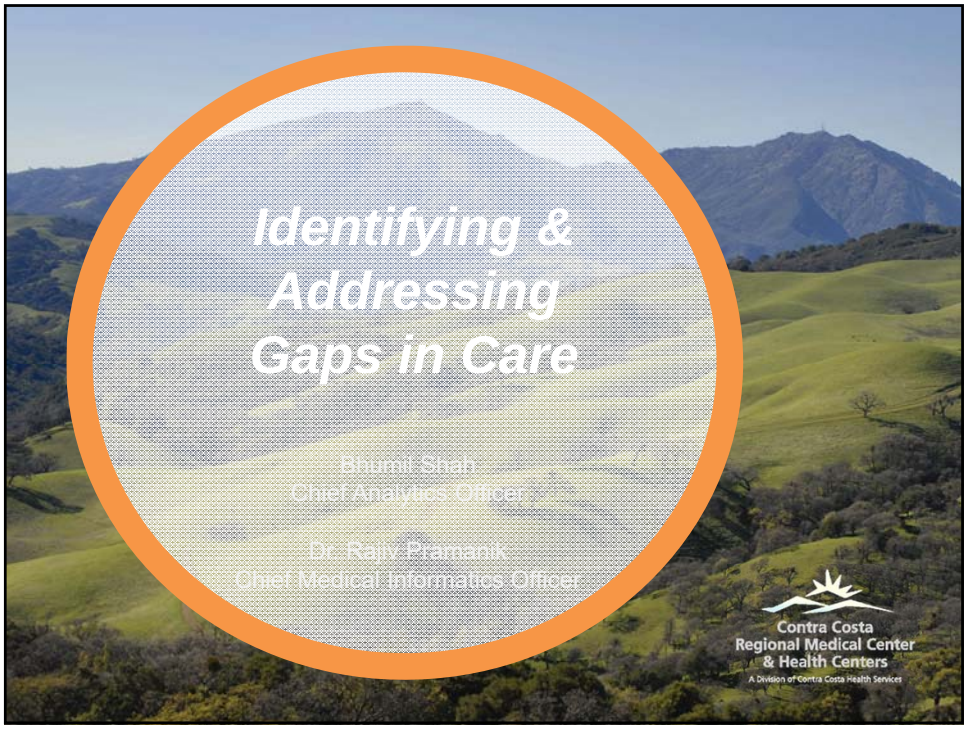


Contra Costa Health Services

- County owned Integrated Healthcare Safety Net System
- Complex data needs;
  - Health Plan caring for 180K patients working with multiple internal and external Delivery Systems,
  - Public Health arm with active Whole Person Care Pilot
  - Behavorial Health System
  - Homeless Division

2

Systems @ CCHS

Inpatient/ Ambulatory	Epic
Visualization	Qlik
Registry/Pop Health	Epic Healthy Planet
Data warehouse	SQL
Analytics	SSRS, QLIK
Behavioral Health	Epic
Jail	Epic
Public Health	Persimmony & Epic
HIE	EPIC, Sequoia Project, Care Quality
EMPI	Epic
eConsult / eReferral	Epic

3

What is Gaps in Care?

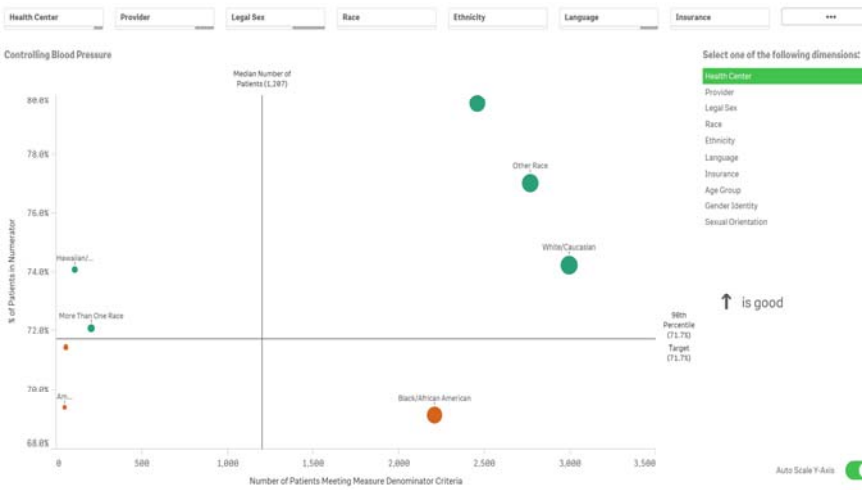
4

Why is it important?

=

5

Address Disparities



6

Lasso Regression

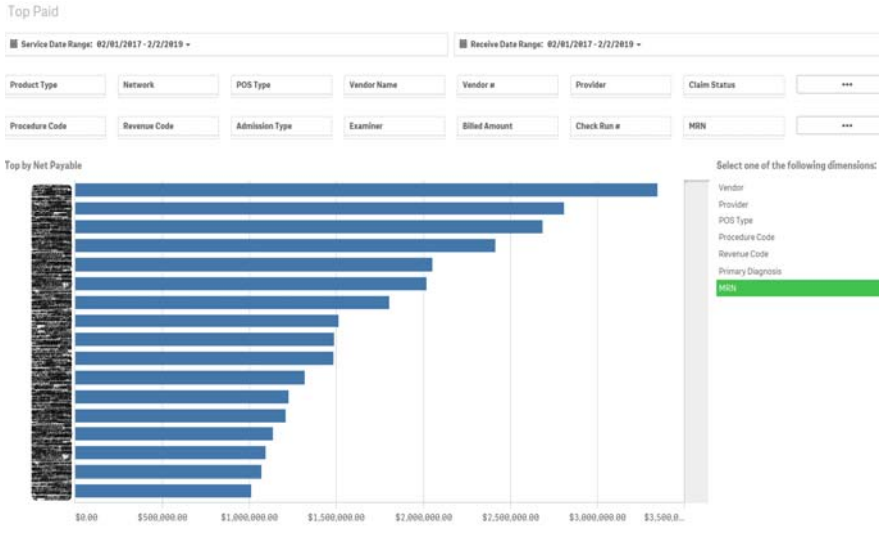
Odds ratios associated with predictors of PRIME measure 1.1.1 - SBIRT

1	2
(Intercept)	0.28
AGE_13-17	6.98
AGE_18-29	0.55
AGE_30-39	0.39
AGE_40-49	0.38
AGE_50-59	0.31
AGE_60-69	0.22
AGE_70-79	0.14
AGE_80+	0.08
RACE_Asian	0.68
RACE_Black/African American	1.07
RACE_Declined/Unknown	0.69
RACE_Hawaiian/Pacific Islander	0.94
RACE_White/Caucasian	1.15
SEX_M	1.44
LANGUAGE_Other	0.45
LANGUAGE_SPANISH	0.93
LANGUAGE_VIETNAMESE	0.84
GENDER_Male	1.53
GENDER_Unknown	1.19
SEX_ORIENT_Straight	0.92
CLINIC_Brentwood	0.85
CLINIC_Martinez	0.61
CLINIC_North Richmond	0.66
CLINIC_NULL	0.07
CLINIC_Pittsburg	0.85
CLINIC_West County	0.63
INSURANCE_CCHP Medi-Cal	1.05
INSURANCE_CCHP Medicare	0.88
INSURANCE_FFS Medi-Cal	1.02
INSURANCE_FFS Medicare	0.77
INSURANCE_Uninsured	0.94

Table 1: Logistic Regression Parameters

7

Address Cost



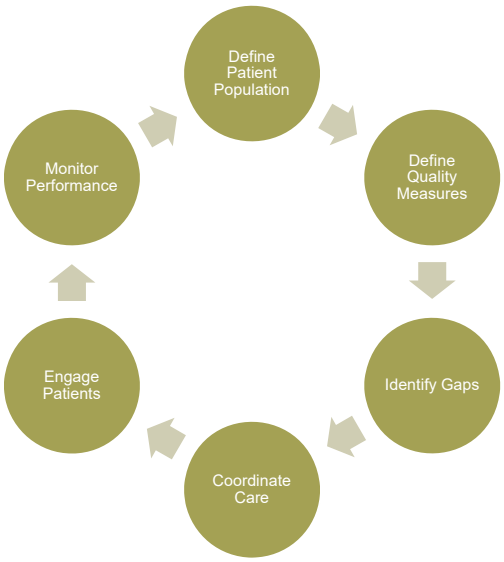
8

What causes Gaps in Care?

- Incomplete Data
- Lack of Care Coordination
- Lack of Patient Engagement
- Social Determinants

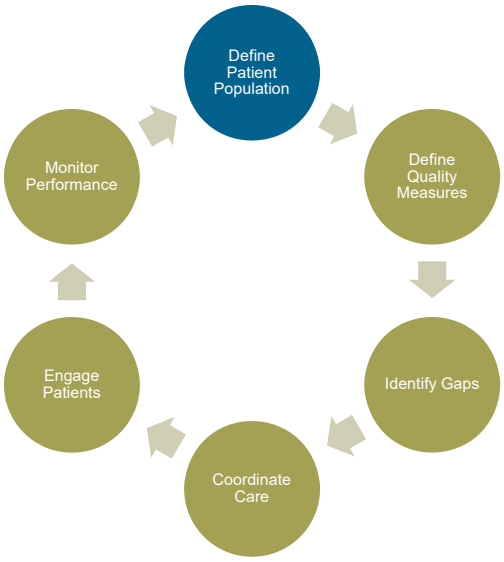
9

Managing Gaps in Care



10

Managing Gaps in Care



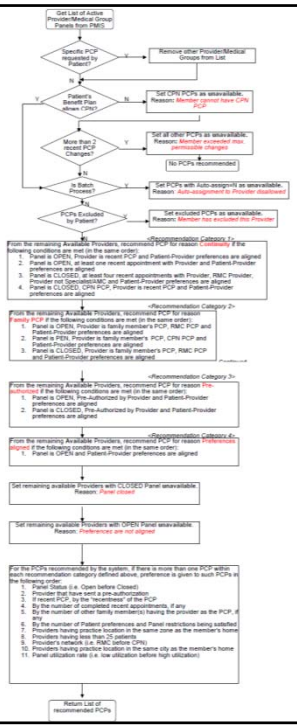
11

Define Patient Population

- Define Active vs Inactive patients
- Provider Attribution
- Build Disease Registries in EHR

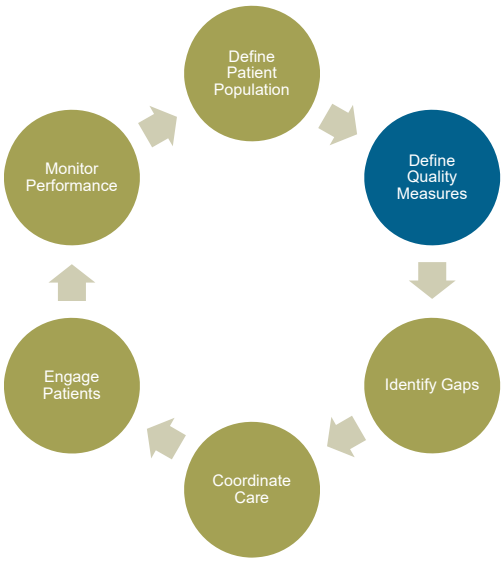
12

PCP Central System for Provider Attribution



13

Managing Gaps in Care



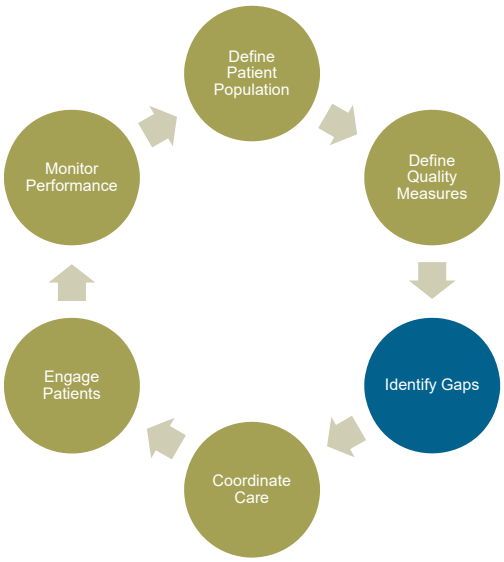
15

Define Quality Measures

- NQF Standards
- PRIME
- QIP
- NCQA
- UDS
- Outpatient Surgery
- Core Measures
- Meaningful Use
- CAHPS

16

Managing Gaps in Care



17

Data Aggregation

- EHR data - Inpatient & Ambulatory
- Health Plan Claims
- Filled Prescription PBM Claims
- Behavioral Health
- Foster Care
- Public Health Case Management
- Housing
- EMS
- Custody
- AODS
- Patient Experience
- CareEverywhere
- External Partners – Planned Parenthood, CAIR, etc.

18

Data Analysis

- Data Integrity
  - Quality, Completeness, Timeliness, Accuracy
- Metrics Programming
- Shared Data dictionary
- Data Validation
- Visualization with Qlik
- Risk Stratification
  - Prevention, Disease Management, Case Management
- Data Maintenance

19

Gaps in Care Score

Measure	Denominator Description	Numerator Description
Alcohol and Drug Misuse	Patients aged 12 and up as of reporting date, who were seen in primary care in the past 12 months.	Patients who received a full screening for drug or alcohol abuse using a standardized tool.
Breast Cancer Screening	Number of women aged 52-75, excluding those who have had both breasts removed.	Number of patients who received a mammogram in the past 27 months.
Cervical Cancer Screening	Number of women aged 24-64 as of the reporting date.	Patients who were screened for cervical cancer.
Colorectal Cancer Screening	Patients 51-75 years of age as of reporting date with a visit during the measurement period.	Patients with one or more screenings for colorectal cancer. Appropriate screenings are Fecal occult blood test (FOBT) during the year prior to the reporting date, Flexible sigmoidoscopy during the five years prior to the
Comprehensive Diabetes Care	Patients aged 18-75 as of the reporting date who have been seen twice for diabetes, been hospitalized for diabetes, or have received diabetes medication in the past 12 months. Patients with no diabetes diagnosis excluded if they have polycystic ovaries, gestational	Patients with no HbA1C on file in the last 12 months, or with a last HbA1C > 9.0
Controlling Blood Pressure	Patients 18 to 85 old who had at least one outpatient encounter with a diagnosis of hypertension in the first 6 months of the last 12 months.	Patients whose blood pressure (BP) was adequately controlled during the last 12 month measurement period based on the following criteria: Individuals ages 18 to 59 whose BP was < 140/90 mm Hg. Individuals
Depression Follow-Up	Patients aged 18 and up who were seen in primary care in the year prior to the reporting date. Patients excluded who have a pre-existing depression or bipolar diagnosis.	Patients who received a standardized depression screening and either screened negative, or if positive had an intervention plan pursuant to the screening documented on the same day.
Influenza Immunization	Patients age 6 months and up who were seen during the most recent flu seasons (from October 1 through March 31).	Patients who received a flu vaccination during that flu season, or before the flu season as early as August 1st.
IVD - Use of Antithrombotic	Patients aged 18 years of age and older with a diagnosis of ischemic vascular disease (IVD) in the past twelve months, or who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) in	Patients with an order for aspirin or another antithrombotic in the past 12 months.
Opioid Agreements	Patients age 18 and up with a current problem list diagnosis of Chronic Pain and a prescription for an opioid in the past 12 months.	Patients who have an Opioid Agreement and a Urine Toxicology test result on file in the past twelve months.
Tobacco Assessment and Counseling	Patients aged 18 and up as of reporting date, who were seen in primary care in the past 24 months.	Patients who were screened for tobacco use, and who either do not use tobacco, or received a tobacco-use intervention.

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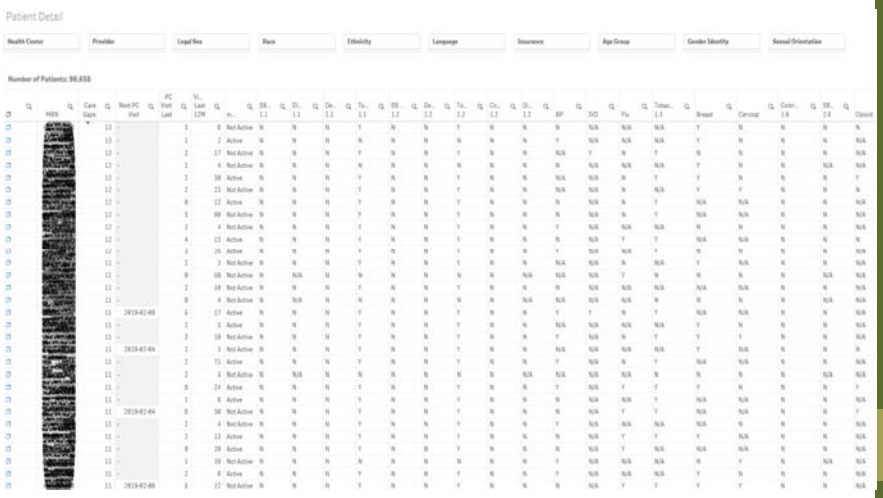
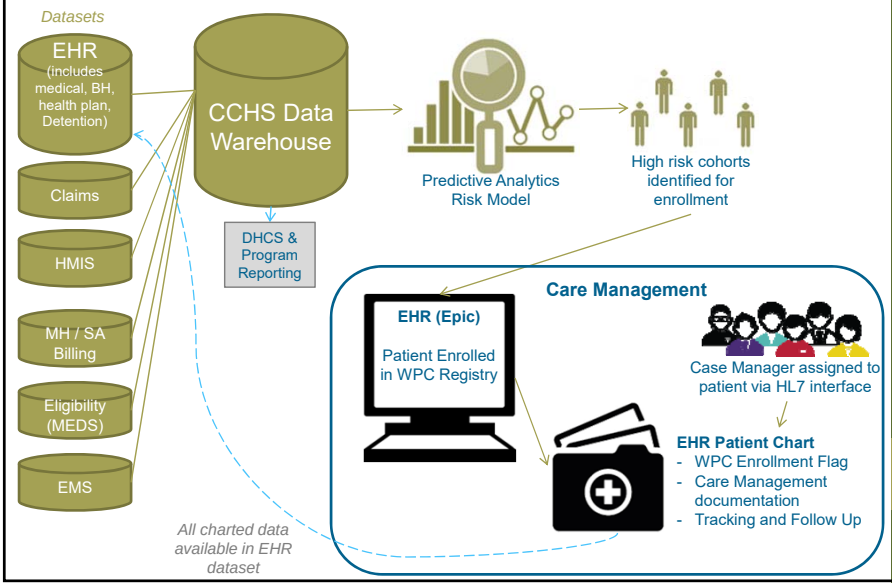
Gaps in Care Score



21

Risk Stratification



Whole Person Care Core Services

Financial, Employment, Legal
- Refer to Bay Area Legal Aid for direct legal aid
- Support educational and employment search needs
- Payee Management Services –CrissCross

Housing
- Direct clients to Coordinated Entry (CE) system
- Assist clients with securing housing who do not identify as Homeless and/or reluctant to access existing services
- Provide tenancy support education
- In coordination with H3 and CE programs, support recently housed clients when case management services are unavailable

Physical Health
- Connect patient to PCP, accompany to PCP visits
- Reinforce and educate on care instructions post visit, post-discharge
- Perform in-home medication review
- Communicate with PCP on discrepancies or care concerns
- Educate patient on how to navigate care system (myccLink, keeping appts, ED usage, etc)
- Assist and reinforce specialty care needs (referrals, dental, etc)

Transportation
- Provide transit vouchers for non-medical transportation needs
- Connect patients to existing transportation assistance resources to develop long-term transportation plans (CCHP, reduced fare passes, paratransit)

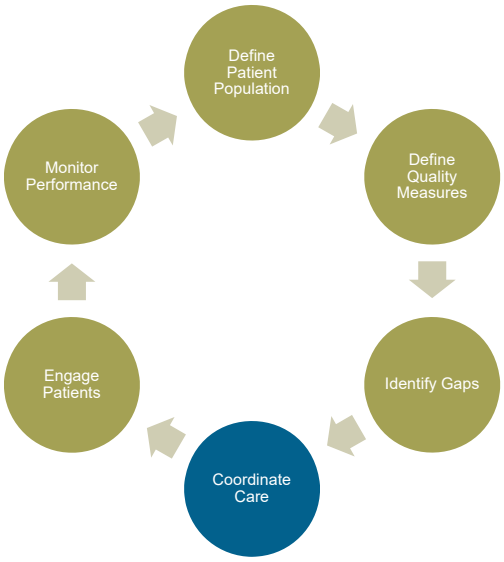
Food
- Assist client with obtaining food security through Cal Fresh applications, food pantry navigation

Social Services
- Partnership with EHSD to hire Social Workers and Eligibility Specialists into CMCT program
- Develop new data sharing agreement to collaborate on shared clients
- Direct line to identify and assist with securing and maintaining benefits/income (SSI, GA)

Behavioral Health
- Connect to Access Line to establish care with MH and SUD services
- Educate patient on how to navigate these systems
- Advocate with clinical providers involved in care
- Support patient with readiness to engage with services
- Open new Restoration Center

Foster Youth
- Coordinate medical and social services for foster youth on psychoactive medications

Managing Gaps in Care



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Care Coordination

- Care Team assignments
- Care Plans accessible across the continuum
- Health Maintenance tracking
  - E.g. Datalink for Eye Exam, Asthma Medication Ratio, etc.
- Care Gaps visible within provider workflow
  - E.g. Best Practice Alerts for Cervical Cancer Screening
- Tools to close care gaps within provider workflow
- Communication tools within CC/CM team and across teams
- Community Services Directory and Referrals to community partners

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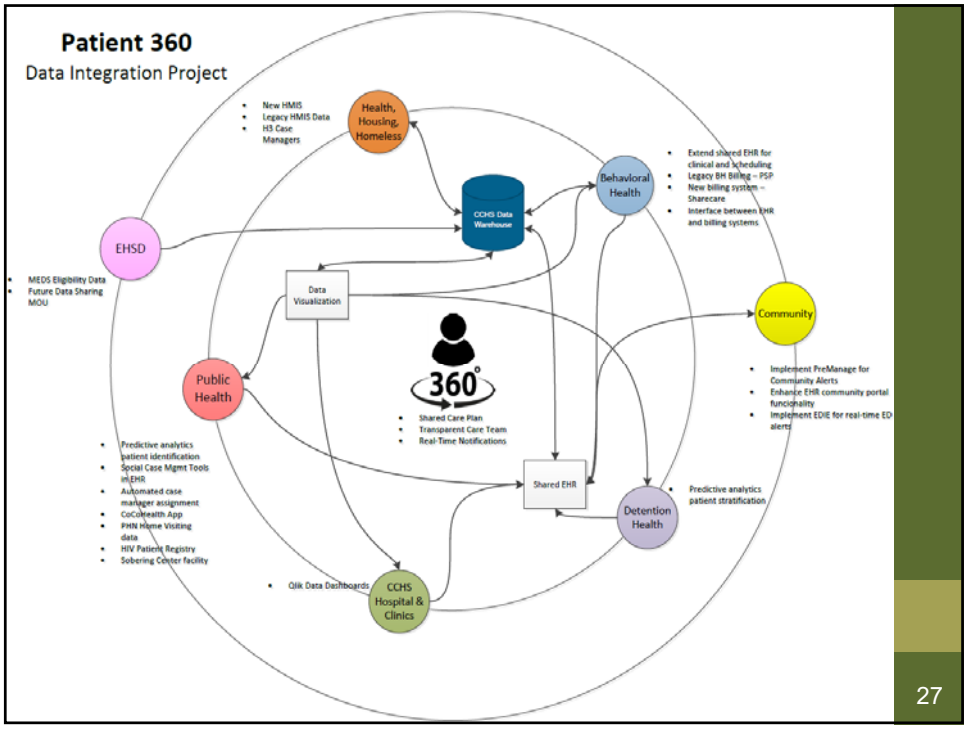
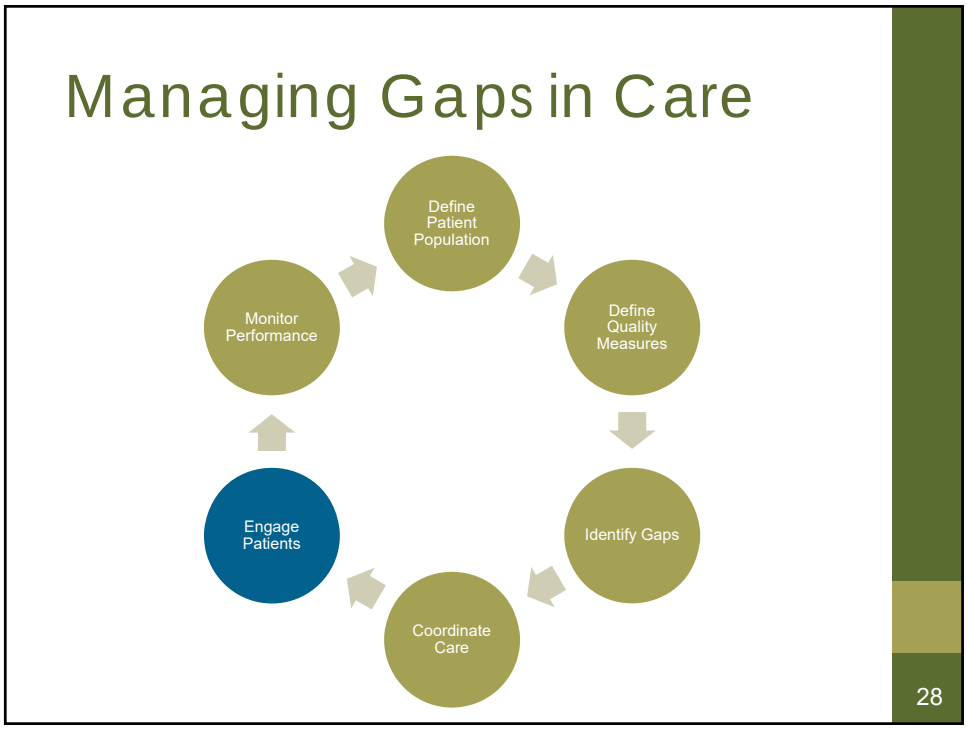

Patient 360
Data Integration Project
New HMIS
Legacy HMIS Data
H3 Case Managers
Health, Housing, Homeless
Behavioral Health
Extend shared EHR for clinical and scheduling
Legacy BH Billing – PSP
New billing system – Sharecare
Interface between EHR and billing systems
CCHS Data Warehouse
EHSD
MEDS Eligibility Data
Future Data Sharing MOU
Data Visualization
Community
Implement PreManage for Community Alerts
Enhance EHR community portal functionality
Implement EDIE for real-time ED alerts
360°
Shared Care Plan
Transparent Care Team
Real-Time Notifications
Public Health
Predictive analytics patient identification
Social Case Mgmt Tools in EHR
Automated case manager assignment
CoCoHealth App
PHN Home Visiting data
HIV Patient Registry
Sobering Center facility
Shared EHR
Predictive analytics patient stratification
Detention Health
Qlik Data Dashboards
CCHS Hospital & Clinics
27


Managing Gaps in Care
Define Patient Population
Define Quality Measures
Identify Gaps
Coordinate Care
Engage Patients
Monitor Performance
28

Engage Patients

- Outreach
  - Phone outreach tools
  - Online questionnaires for health risk assessment and social determinants
  - Birthday Letters
  - High Risk Notification

29

Birthday Letter Sample

CONTRA COSTA HEALTH SERVICES

HAPPY BIRTHDAY!

First Name Last Name
Address

September 7, 20

Dear First Name,

Happy Birthday!

Every year, we take the opportunity during your birth month to review your medical record for any overdue health tests or immunizations you need. These tests and immunizations may save your life. All of these services have already been ordered by me or someone else on your care team. Instructions on how and where to have them done are down below.

If you have questions or want to update your health record with any new information, such as a test you have already had, I recommend that you send a message to me and your care team on myccLink, our free secure website for patients. (If you don't have a myccLink account yet, signup instructions are at the bottom of this letter.) If you'd rather speak with a live person, you can contact your health home coordinator. If you have a question about a particular preventive test you can call the Advice Nurse unit at 1-877-661-6230 to obtain additional information. You can also schedule an appointment to see me using myccLink or by calling 1-800-495-8885. Both numbers are toll free.

Sincerely,
Dr. PCP
Primary Location

You Are Overdue for the Following Tests or Immunizations:

Labs
- Yearly Stool Test to Screen for Colon Cancer (FIT Test)
- Hepatitis C Screening - The US Preventive Services Task Force recommends that all adults born between 1945 and 1965 should have a Hepatitis C test at least once.
- HIV Screening - The US Preventive Services Task Force recommends that all adults should have an HIV test at least once.

Immunizations
- Shingles Vaccine
- Pneumonia Vaccine
- Flu (Influenza) Vaccine
- TDAP (Tetanus, diphtheria and pertussis) Vaccine

Imaging
- Ultrasound of the Abdominal Aorta to Screen for Aneurism for patients older than 65 with a history of smoking
- DEXA scan (bone density measurement)

Women's Health
- Mammogram
- Pap Smear

How to Get Any Services You May Need Done

- **Lab Tests**: You can drop in without an appointment at the labs located in the Martinez Health Center, Pittsburg Health Center and West County Health Center. You will need to schedule an appointment for our other labs in Antioch, Bay Point, Brentwood, Concord and North Richmond by calling 1-800-495-8885.

The tests you're due for don't require fasting. For lab hours and other information, visit cchealth.org/labs.

If you are due for a FIT colon-cancer screening, we have included a kit for you to use at home to collect a stool (poop) sample. After you've collected the sample, please mail it back to us promptly. There is no cost for mailing it to us. IF YOU HAVE HAD A COLONOSCOPY IN THE PAST 10 YEARS, DO NOT MAIL IN THE FIT STOOL TEST.

You can get the results of your tests by calling the advice nurse at 1-877-661-6230 or you can see them on myccLink, our free secure website for patients.

- **Immunizations**: You can have these done the next time you see your primary care provider or you can schedule an appointment with a treatment nurse by calling us toll free at 1-800-495-8885.

-**Imaging** (e.g. ultrasounds and mammograms). Please schedule in person or call:

Martinez, Contra Costa Regional Medical Center (925) 370-5320
West County Health Center (510) 231-9494
Pittsburg Health Center (925) 431-2370

- **Women's Health**: A pap smear is a screening procedure to check for signs of cervical cancer. Early detection saves lives. You can arrange to have a pap smear done at one of our women's health clinics by calling 1-877-616-8674.

Get Faster Healthcare Online - Sign Up For myccLink

Sign up for myccLink, our secure website for patients, and manage your health care at your own convenience. With myccLink, you can send messages to your primary care doctor, see test results online and request prescription renewals when you run out of refills.

Go online to myccLink.cchealth.org, click "Sign Up Now," enter the activation code below and the other information requested. If you need help, call myccLink support toll-free at 1-844-622-5465

Your myccLink activation code is:
MyChart Activation Code

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Engage Patients

- Inreach
  - Fit Flu Clinics
  - Registration
  - PCP
  - RNs

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Engage Patients

- Self Service
  - Patient Portal usage for secure messaging, appt scheduling, access to patient data
  - Virtual Care Tools (video visits, eConsults)
  - Effective delivery of educational content
- Patient experience monitoring

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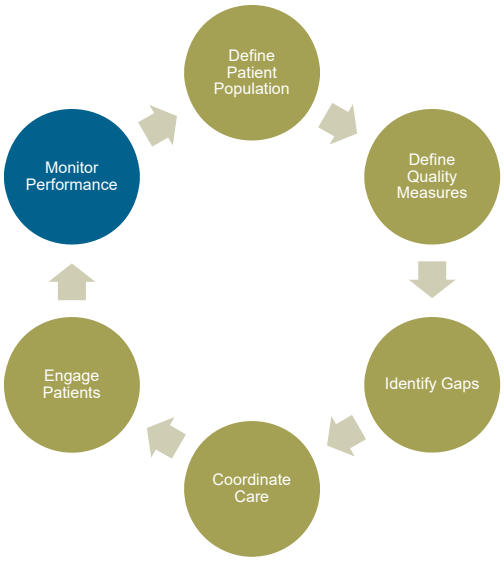
Managing Gaps in Care



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Monitor Performance

- Oversight Reports
- Provider level dashboards/scorecards
- Provider Communication and Education
- Weekly huddles

34

Aggregate View

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SBIRT Completeness

Behavioral Health Condition Screening (SBIRT, PHQ-9, DAST, AUDIT) (AMB3427)

This report incorporates 3 specific measures for SBIRT screening:
A. The % of empanelled - Patients 18+ with an SBIRT* done (refused or scored) in the last 12 months for selected Clinics
B. The % of Patient Visits in selected Clinics who had an SBIRT* completed (refused or scored) - both All and only those that were Due
C. The % of Secondary Screens (refused or scored) completed for eligible patients seen in selected Clinics with a positive primary SBIRT*
D-F. Detailed Patient data for sections A.-C. above (Only if "Include Patient Level Details?" is set to True)
**Patient has a CCHS PCP. Patient must either have been assigned to their PCP or seen by any CCHS provider in the past 18 months, or otherwise must have been a CCHP member as of the reporting date.
*SBIRT only counted if entered into a cclink Flowsheet or SmartData Element.

Includes patients empanelled and/or seen between 1/1/2019 to 1/31/2019 for All Clinics.
PCP(s): All PCPs
Specialty: Adult Medicine, Family Practice, Internal Medicine, Positive Health
Grouped by CCHP Financial Class: False
Patient Detail Included: False
Homeless Breakout Included: False

B. Patient Visits in selected Clinics who had an SBIRT completed (refused or scored) - both All and only those that were Due

Report Period	Encounter Clinic Location	Unique Patients	All Patient Visits	All SBIRT Completed	SBIRT Due Visits	SBIRT Due Given	SBIRT Due Given %	SBIRT Due Declined	SBIRT Due Declined %	Alcohol Positive %	Drug Positive %	Depressed Positive %	Anxiety Positive %	PTSD Positive %
01/2019	ANTIOCH HEALTH CENTER	1,611	1,939	582	750	695	92.67%	52	6.93%	7.22%	10.31%	27.49%	0%	0%
	BAY POINT HEALTH CENTER	177	202	44	122	47	38.52%	4	3.28%	2.27%	4.55%	31.82%	0%	0%
	BRENTWOOD HEALTH CENTER	1,104	1,309	435	651	567	87.1%	36	5.53%	10.11%	6.67%	27.59%	0%	0%
	CONCORD HEALTH CENTER	666	724	204	268	227	84.7%	17	6.34%	7.35%	6.37%	27.45%	0%	0%
	CONCORD HEALTH CENTER 2	630	701	202	270	238	88.15%	25	9.26%	8.91%	9.9%	26.73%	0%	0%
	CONCORD WILLOW PASS WELLNESS	168	184	92	129	98	75.97%	6	4.65%	9.78%	16.3%	47.83%	0%	0%
	MARTINEZ HEALTH CENTER	1,983	2,329	717	1,151	895	77.76%	148	12.86%	8.23%	8.09%	21.48%	0%	0%
	MARTINEZ SPECIALTY CENTER	245	258	73	130	87	66.92%	12	9.23%	9.59%	5.48%	20.55%	0%	0%
	MILLER WELLNESS CENTER	933	1,107	297	375	335	89.33%	38	10.13%	10.1%	10.44%	28.62%	0%	0%
	NORTH RICHMOND HEALTH CENTER	541	619	182	253	239	94.47%	36	14.23%	11.54%	13.19%	23.63%	0%	0%
	PITTSBURG HEALTH CENTER	2,800	3,407	855	1,438	978	68.01%	107	7.44%	9.01%	9.24%	32.87%	0%	0%
	WEST COUNTY HEALTH CENTER	3,337	3,818	1026	1,407	1,182	84.01%	151	10.73%	8.77%	7.99%	28.46%	0%	0%
	Total for 01/2019	**14,195**	**16,597**	**4,709**	**6,944**	**5,588**	**80.47%**	**632**	**9.1%**	**8.77%**	**8.86%**	**27.99%**	**0%**	**0%**

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Birthday Letter Effectiveness

CONTRA COSTA BUSINESS INTELLIGENCE

Happy Birthday Letter Effectiveness (AMB4009)

This report is used to analyze the effectiveness of the Happy Birthday Letter at motivating patients to complete the interventions recommended in the letter which are based on their overdue health maintenance topics.

Letters sent from 1/1/2017 to 6/30/2018. Run at 2/4/2019 11:09:21 AM.

Health Maintenance Topic	Month	# with Reminder	% Completed in 30 Days	% Completed in 60 Days	% Completed in 90 Days	% Completed in 120 Days	% Completed in 150 Days	% Completed in 180 Days	Positive Results
	Jan-2017	8	12.5%	12.5%	12.5%	12.5%	12.5%	25.0%	
	Feb-2017	11	0.0%	0.0%	0.0%	0.0%	9.1%	9.1%	
	Mar-2017	9	0.0%	11.1%	11.1%	11.1%	11.1%	11.1%	
	Apr-2017	8	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	
	May-2017	28	3.6%	7.1%	7.1%	10.7%	10.7%	10.7%	
	Jun-2017	37	0.0%	2.7%	5.4%	8.1%	10.8%	10.8%	
	Jul-2017	24	0.0%	4.2%	4.2%	4.2%	4.2%	4.2%	
	Aug-2017	19	0.0%	0.0%	5.3%	5.3%	5.3%	10.5%	
	Sep-2017	25	4.0%	4.0%	4.0%	8.0%	8.0%	8.0%	
AAA Screen	Oct-2017	25	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

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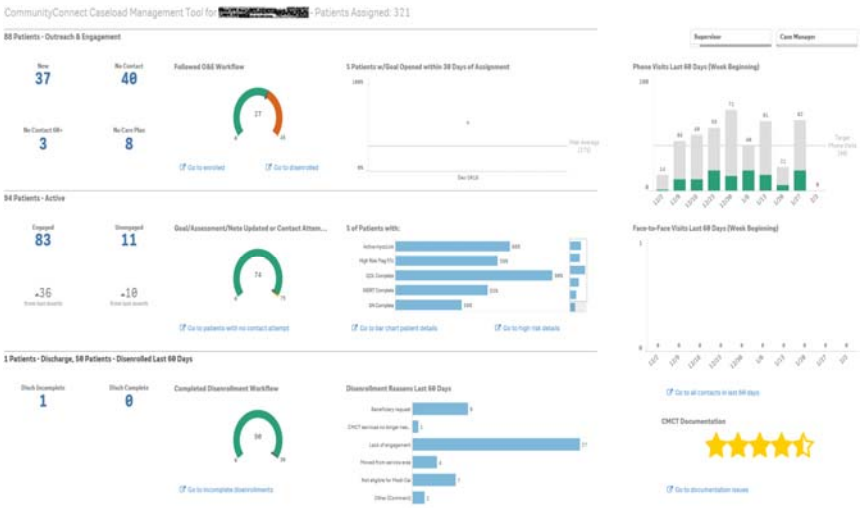
Case Manager Effectiveness



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Future State

- Incentive programs for behavioral modification
- Expand Data sources
  - E.g. patient reported outcomes
- Develop and align alternative payment models to support data measurement
- Address barriers
  - E.g. transportation

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