Session # H6A

# Reducing emergency department utilization and improving health among clients with severe and persistent mental illness


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CFHA Annual Conference
October 17-19, 2019 • Denver, Colorado


CFHA COLLABORATIVE FAMILY HEALTHCARE ASSOCIATION

# Faculty Disclosure

The presenters of this session have NOT had any relevant financial relationships during the past 12 months.

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# Conference Resources

Slides and handouts shared by our conference presenters are available on the CFHA website at https://www.cfha.net/page/Resources_2019 and on the conference mobile app.

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# Learning Objectives

At the conclusion of this session, the participant will be able to:

- Describe the primary contributors to ED utilization for individuals with severe and persistent mental illness.
- Use population health approaches to identify barriers and assets to accessing healthcare and achieving health and well-being, and to determine populations on which to focus intervention efforts.
- Understand how fully integrated healthcare can improve health outcomes, reduce ED utilization and improve access to healthcare.

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# Bibliography


1. Enard, K. R., & Ganelin, D. M. (2013). Reducing preventable emergency department utilization and costs by using community health workers as patient navigators. *Journal of healthcare management / American College of Healthcare Executives*, *58*(6), 412–428.
2. Felker B, Yazel JJ, Short D: Mortality and medical comorbidity among psychiatric patients: a review. Psychiatric Services 47:1356-1363, 1996.
3. Miller, B.J., Paschall, C.B., Svendsen, D.P. (2006). Mortality and Medical Comorbidity Among Patients With Serious Mental Illness. *Psychiatric Services,* 57(10), 1482-1487.
4. Hibbard JH, Greene J, Sacks RM et al. Improving population health management strategies: identifying patients who are more likely to be users of avoidable costly care and those more likely to develop a new chronic disease. Health Serv Res. Epub ahead of print. 2016 Aug 22.
5. Matthews MR, Stroebel RJ, Wallace MR et al. Implementation of a comprehensive population health management model. Popul Health Manag. Epub ahead of print. 2017 Jan 18.


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# Learning Assessment

- A learning assessment is required for CE credit.
- A question and answer period will be conducted at the end of this presentation.

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# REDUCING EMERGENCY DEPARTMENT UTILIZATION AND IMPROVING HEALTH AMONG CLIENTS WITH SEVERE AND PERSISTENT MENTAL ILLNESS

ALLISON BRENNER
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OCTOBER 19, 2019

# OVERVIEW

- Objectives for presentation
- Brief overview of Cascadia Behavioral Healthcare
- Population health approach to care
- In depth look at emergency department (ED) utilization
- Demonstrate the utility of care coordination and panel management in integrated care model

# CASCADIA WHOLE HEALTHCARE

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BEHAVIORAL HEALTHCARE
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**501(c)3** non-profit

**900+** employees

**18,000** served/year

**4** counties Multnomah / Washington
Clackamas / Lane

**75+** locations

**4** health centers

**$70M** revenue

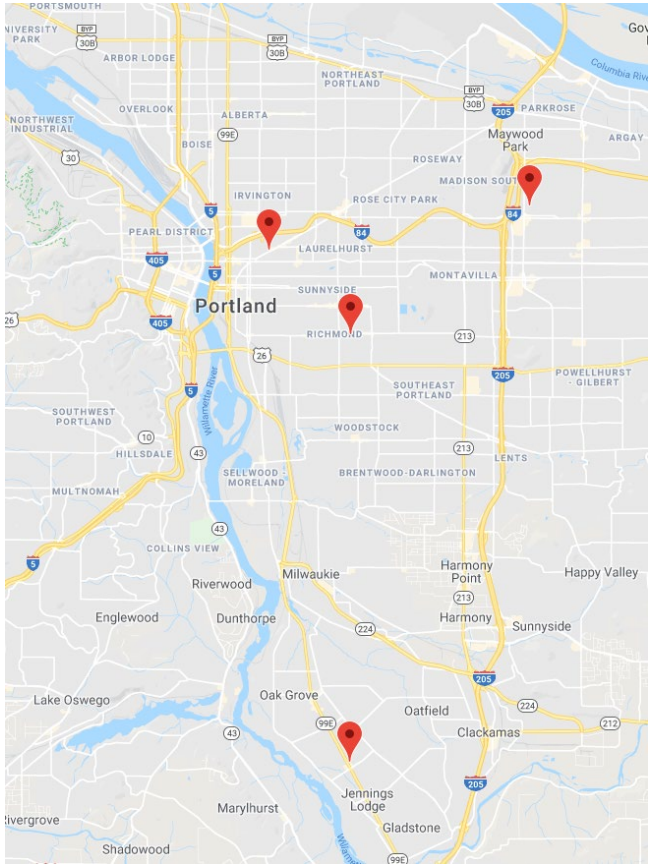
**750+** housing units

## MISSION

Cascadia Behavioral Healthcare delivers whole health care – integrated mental health and addiction services, primary care, and housing – to support our communities and provides hope and well-being for those we serve.

## VISION

We envision a future where everyone with a mental illness or addiction will receive integrated healthcare, experience well-being and have a full life in the communities in which we live.




# FOUR HEALTH CENTERS

Clackamas

Garlington

Plaza

Woodland Park

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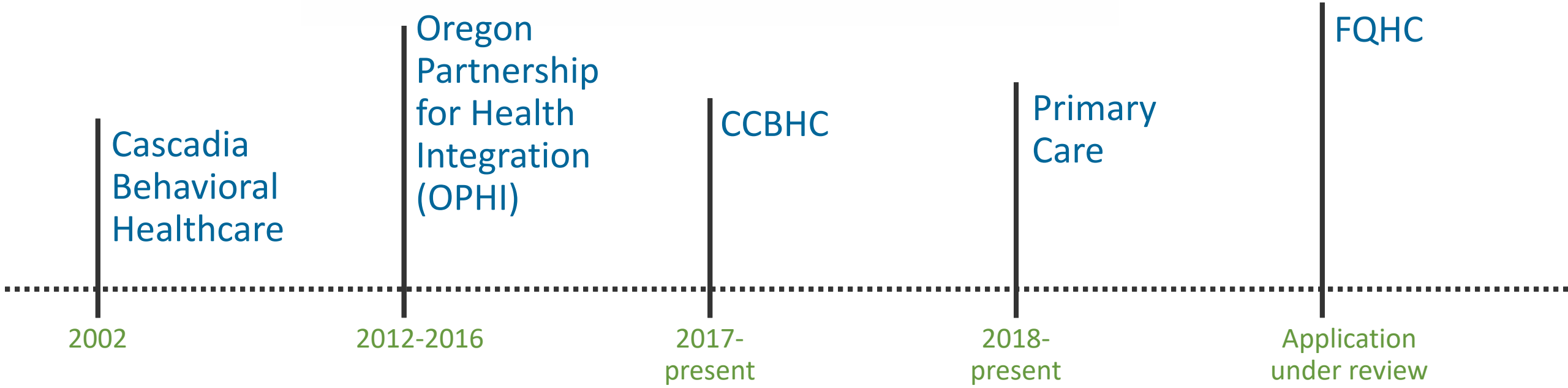


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# THE PROBLEM…

People with a mental illness die **20-30** years earlier than the general population

**~65%** of adults with a mental illness have at least one chronic condition

**1 in 5** adults with a mental illness have a co-occurring substance use disorder

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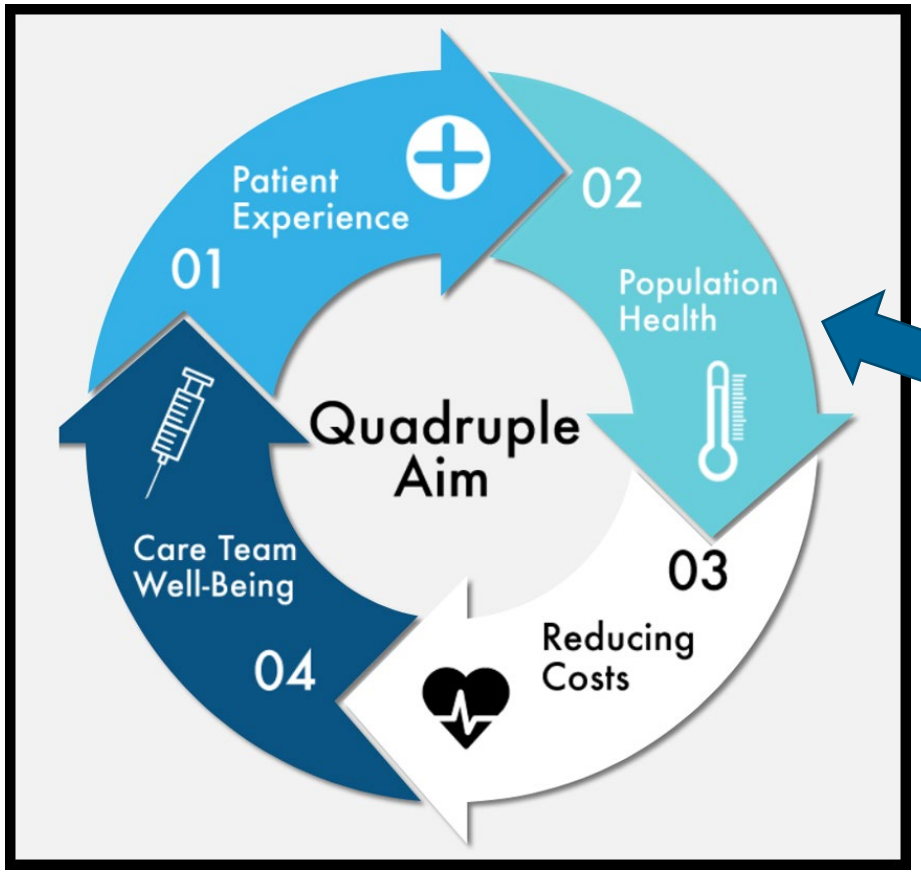
# THE SOLUTION




Population health is a critical part of the solution!

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# POPULATION HEALTH

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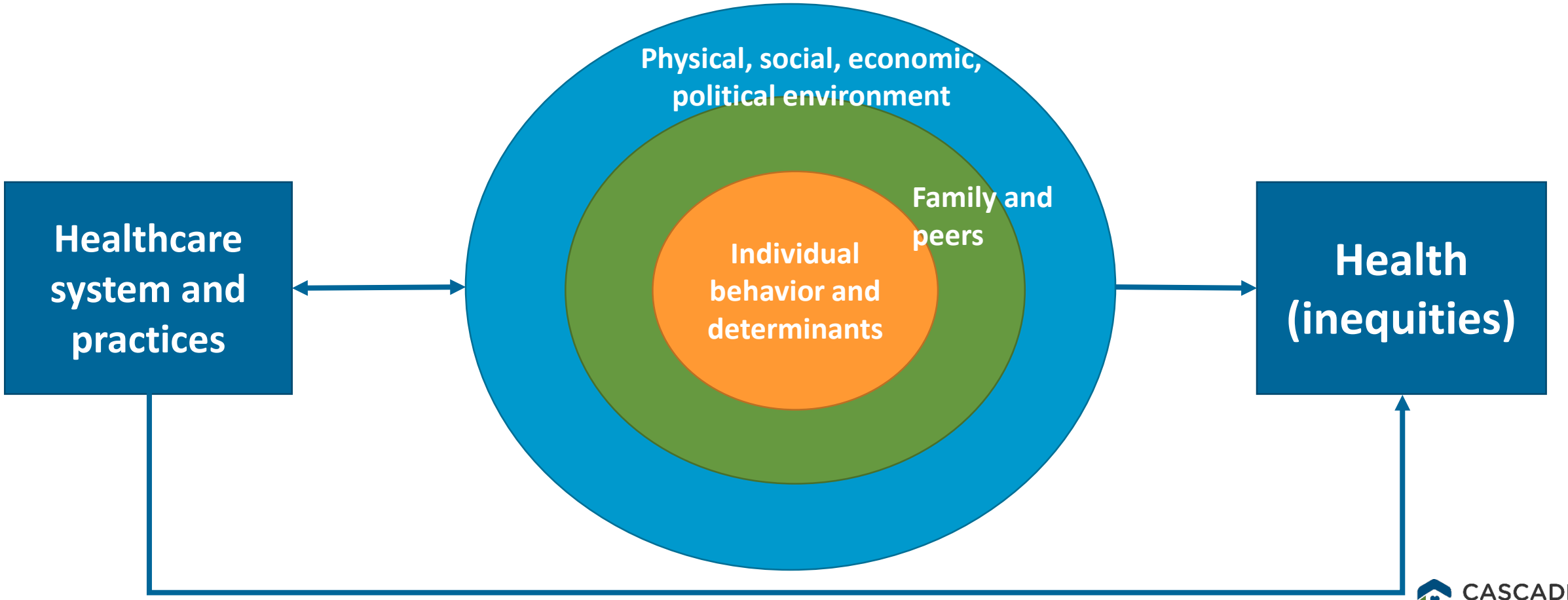
# POPULATION HEALTH

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# POPULATION HEALTH MANAGEMENT

"A variety of interventions tailored to patients based on their levels of risk, with the patients' risk level determining what interventions they are offered . . . with the goal of slowing the progression of risk in the patient population and at the same time to minimize the use of costly utilization, such as emergency department."
(Hibbard, Greene & Sacks, 2016)

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# POPULATION HEALTH MANAGEMENT

- Risk factors or segments
- Health outcomes
- Healthcare utilization


- Analytical modeling
- Predictive analysis

- Improved population-level health
- Patient engagement and satisfaction

- Translation into care delivery
- Intervention
- Evaluation

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# EMERGENCY HEALTHCARE

## Why do people go to the emergency department (ED)?

- They need emergency care!
- Lack of knowledge around alternatives
- Mental health challenges
- Transportation
- Social determinants
- Cost and access


**ED utilization:**

**A key indicator of population health, achievement of quadruple aim**

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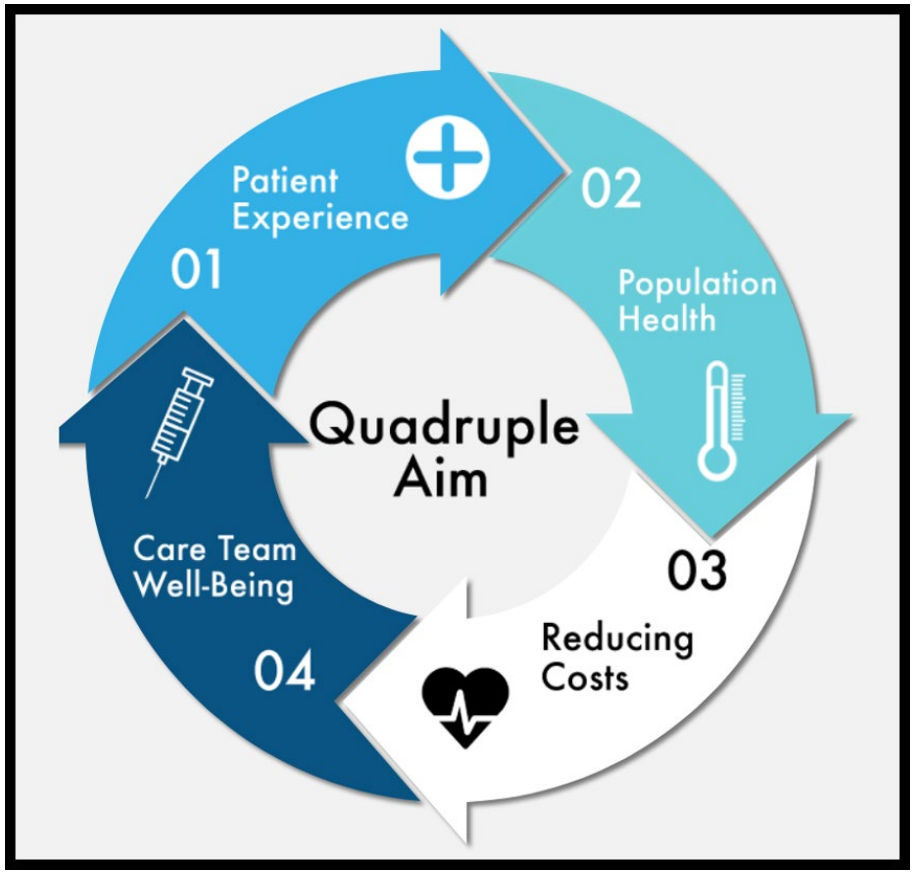
# QUADRUPLE AIM AND THE ED




01 Patient is more satisfied with care, higher health literacy and more trust in the system

02 Healthier population
Reduced need for emergency care

03 Prevention leads to better health and lower cost

04 Better integration, case management and care coordination

Reductions in ED utilization and need for emergency care

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# CASCADIA'S POPULATION

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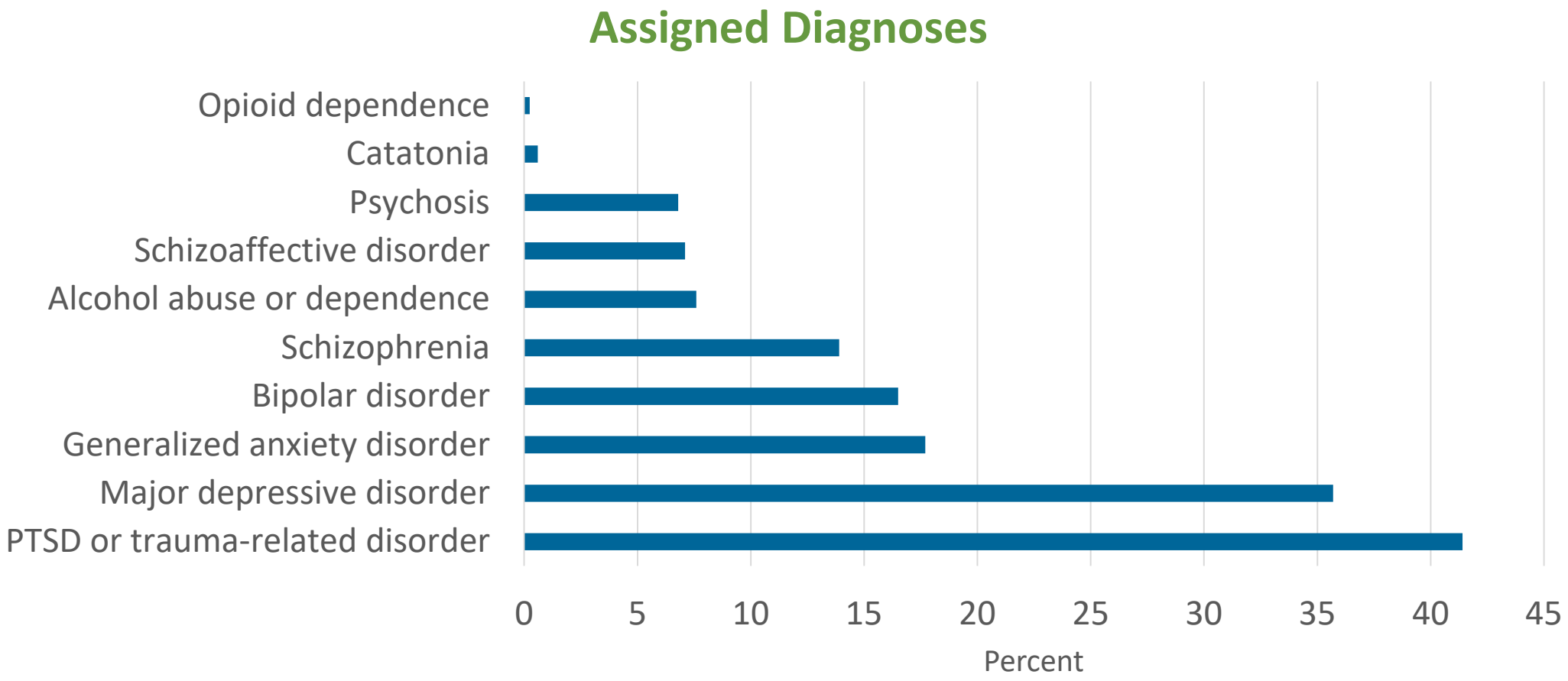
# MENTAL HEALTH DIAGNOSES

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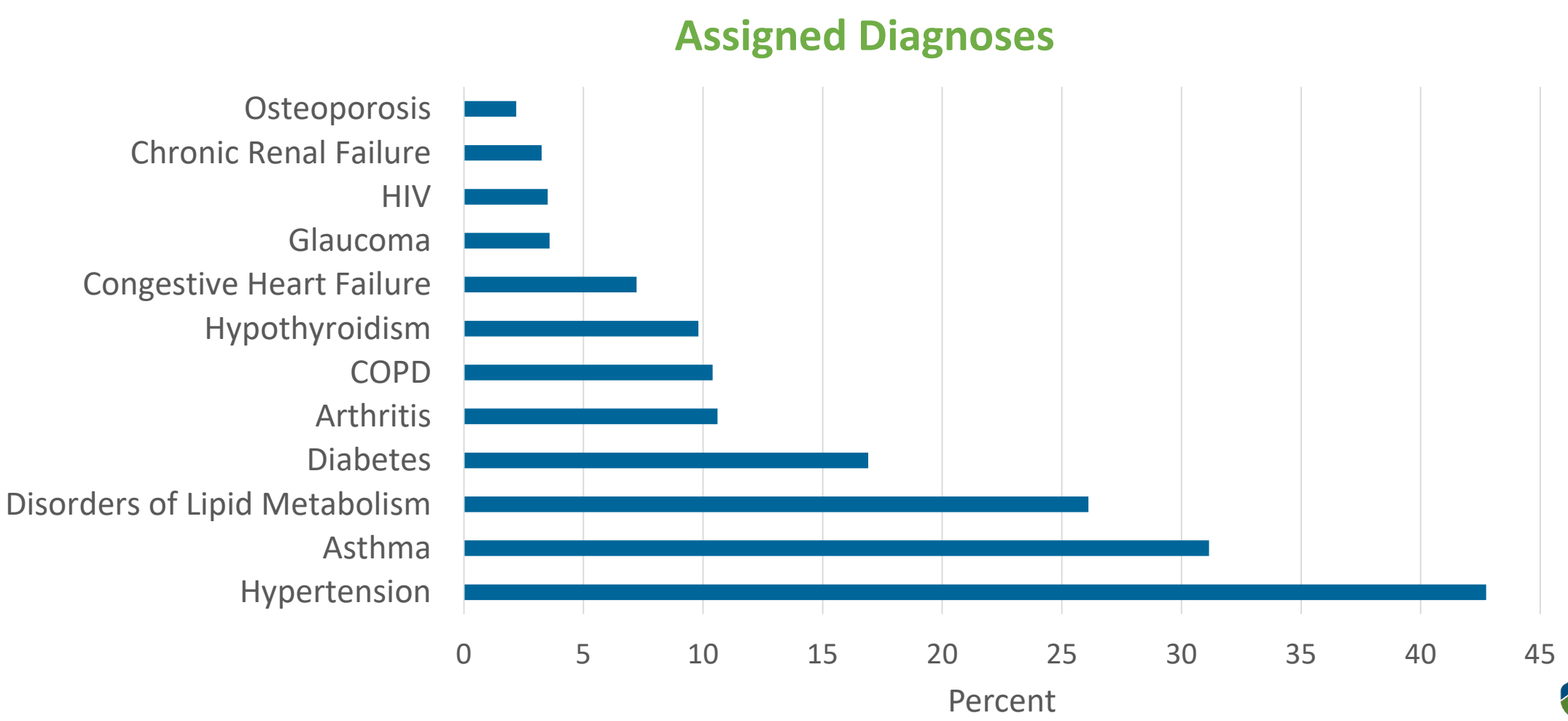
# PHYSICAL HEALTH DIAGNOSES

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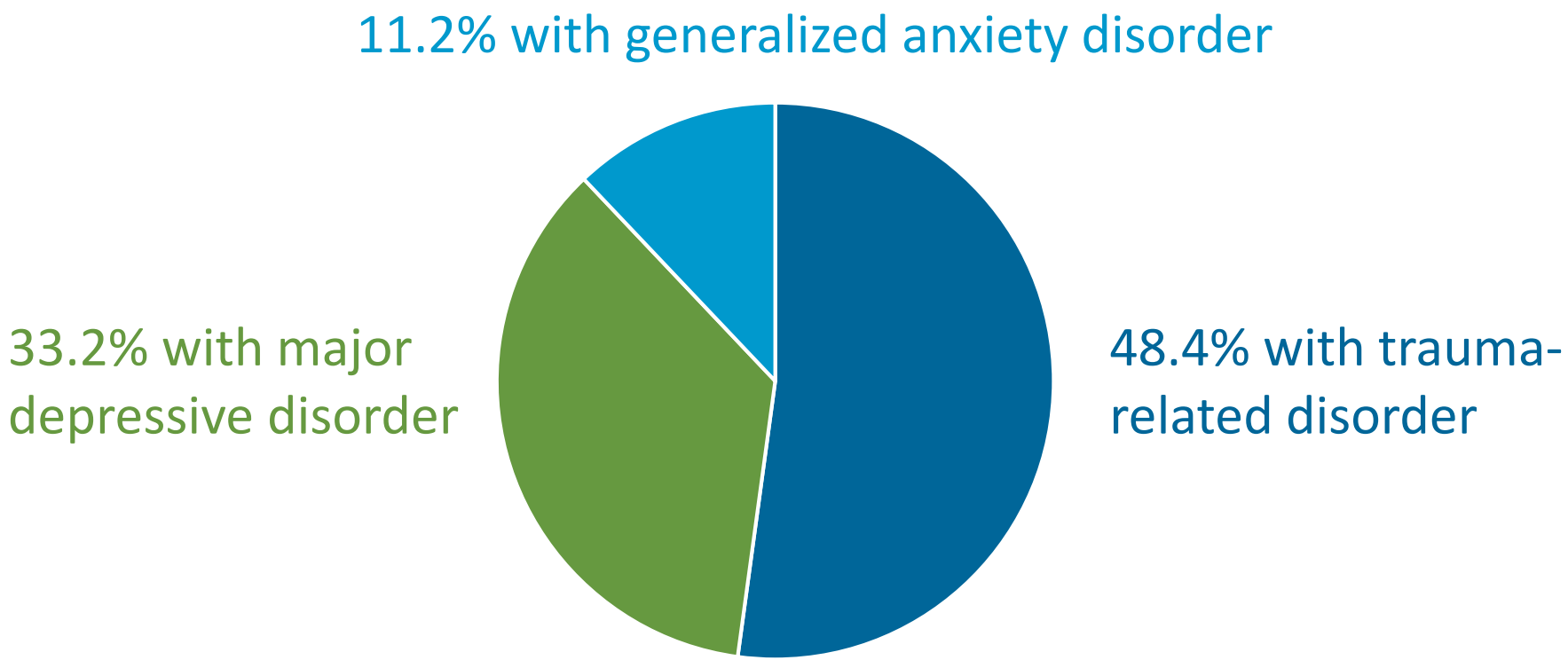
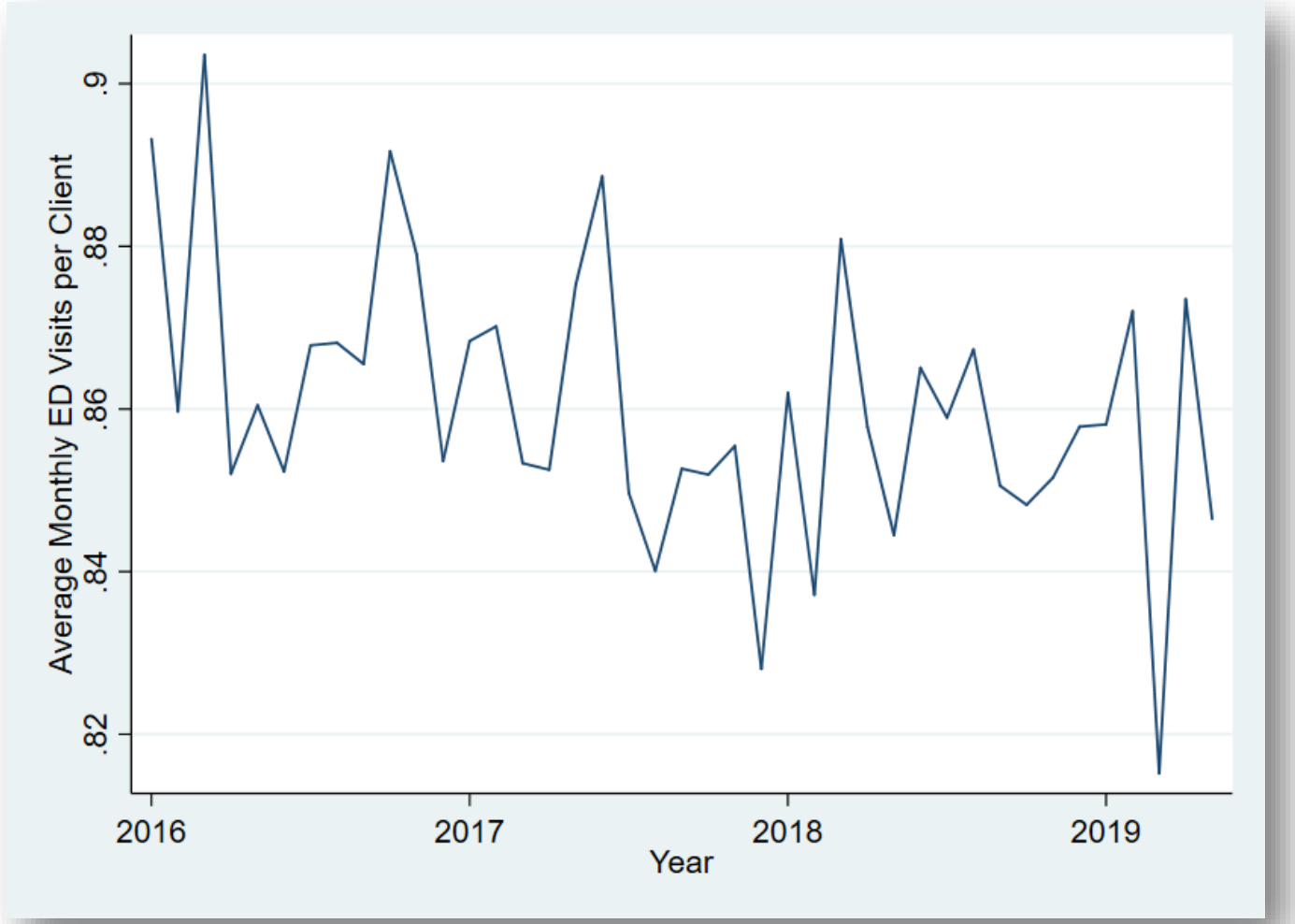
# CO-MORBIDITY WITH PSYCHIATRIC DIAGNOSES

**Of the 645 people with a diagnosis of hypertension…**



# MONTHLY TREND IN ED VISITS FOR CCBHC CLIENTS

Average monthly ED visits from 2016 to present

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# WHAT DO WE KNOW ABOUT OUR CLIENTS THAT VISITS THE ED?

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# METHODS

- Claims data from CCO partner (HealthShare)
  - Physical health ED visits
  - Dx
  - Recent healthcare visits
- Demographic, socioeconomic, health data from (EHR)
- **N= 2,647 shared clients**

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# MODELS OF ED UTILIZATION

Does ED utilization vary by important individual or healthcare-level factors?

- **Demographics**
- **Socioeconomics**
- **Health**
- **Engagement in healthcare**

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# ED UTILIZATION

**More complex than it may seem…**

**…are all ED-related outcomes the same?**

- Total number of ED visits, 2019
- ED-users vs. non-users
- High utilizers vs. everyone else
- High utilizers vs. all other ED-users

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# TWO PART MODEL: TOTAL ED VISITS



- Need
- Health literacy
- Haven't engaged in care


Dec 18
Feb 2
April 28
May 3
July 17
Oct 19

- More serious mental and physical health problems
- Barriers in access to care
- SDOH

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# RESULTS: TOTAL ED VISITS

## Part 1: Any visit vs. no visits

**The follow are associated with higher odds of visiting the ED:**

- Younger age
- Higher mental health level of care
- Stress/adjustment disorder
- COPD, chronic pain, high BP Dx in past 3 years

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# RESULTS: TOTAL ED VISITS

## Part 2: Number of visits

**The follow are associated with higher rates of ED utilization:**

- Younger age
- Higher mental health level of care
- COPD, chronic pain, high BP Dx in past 3 years

- Having a primary care visit in the past 6 months
- Having a diabetes diagnosis is associated with lower rates of ED utilization

# PREDICTING ED VISITS

- 36% probability of ED visit
  - 16% for level of care A/B outpatient
  - 31% for level of care C SPMI
  - 39% for level of care D (ICM)

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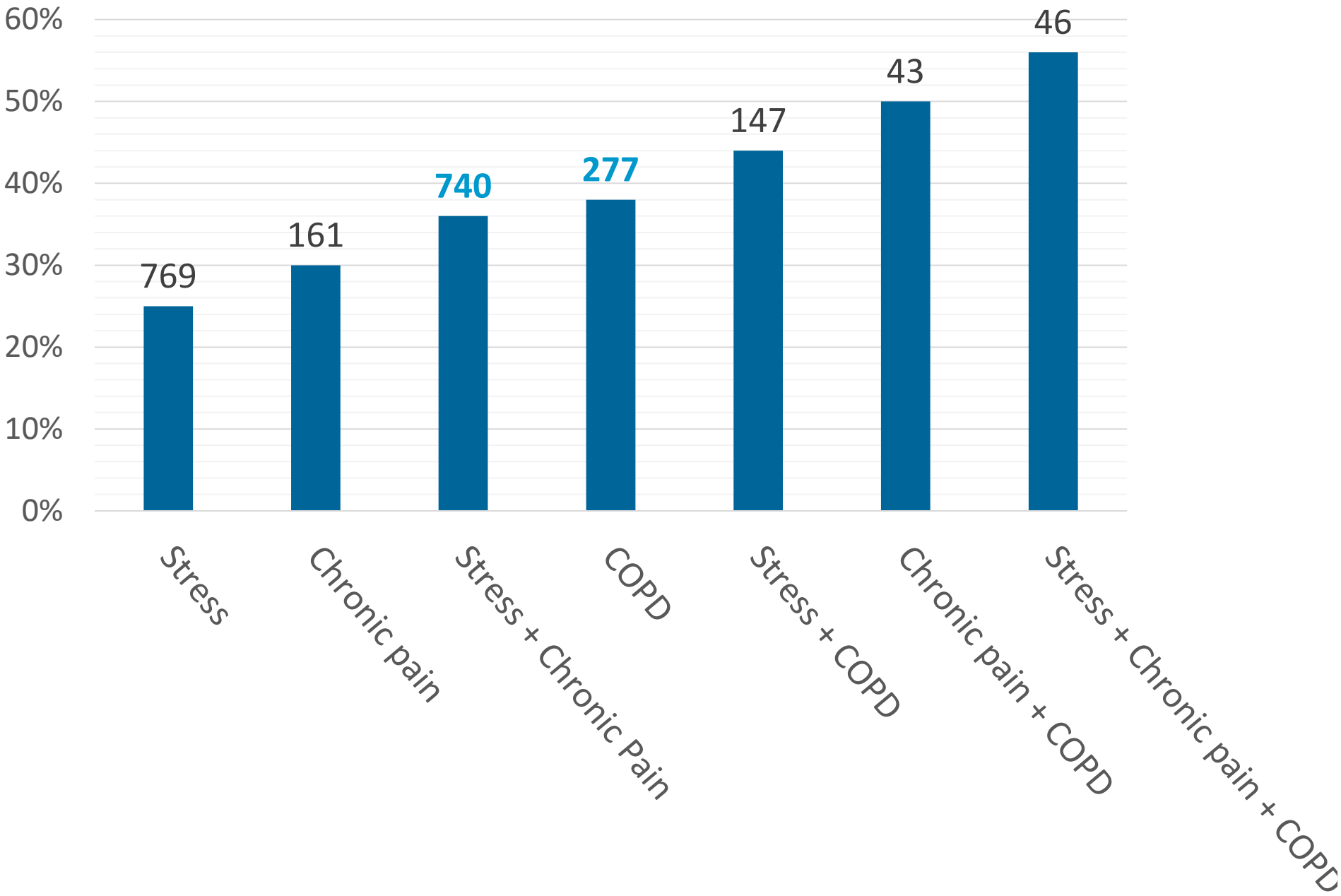
# Probability of Any Emergency Room Visit, Past 9 Months

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# PREDICTING RATE OF ED UTILIZATION


Mean rate of ED utilization = 2.25 visits in 9 month (among ED users)

- Range = 1.15-7.43

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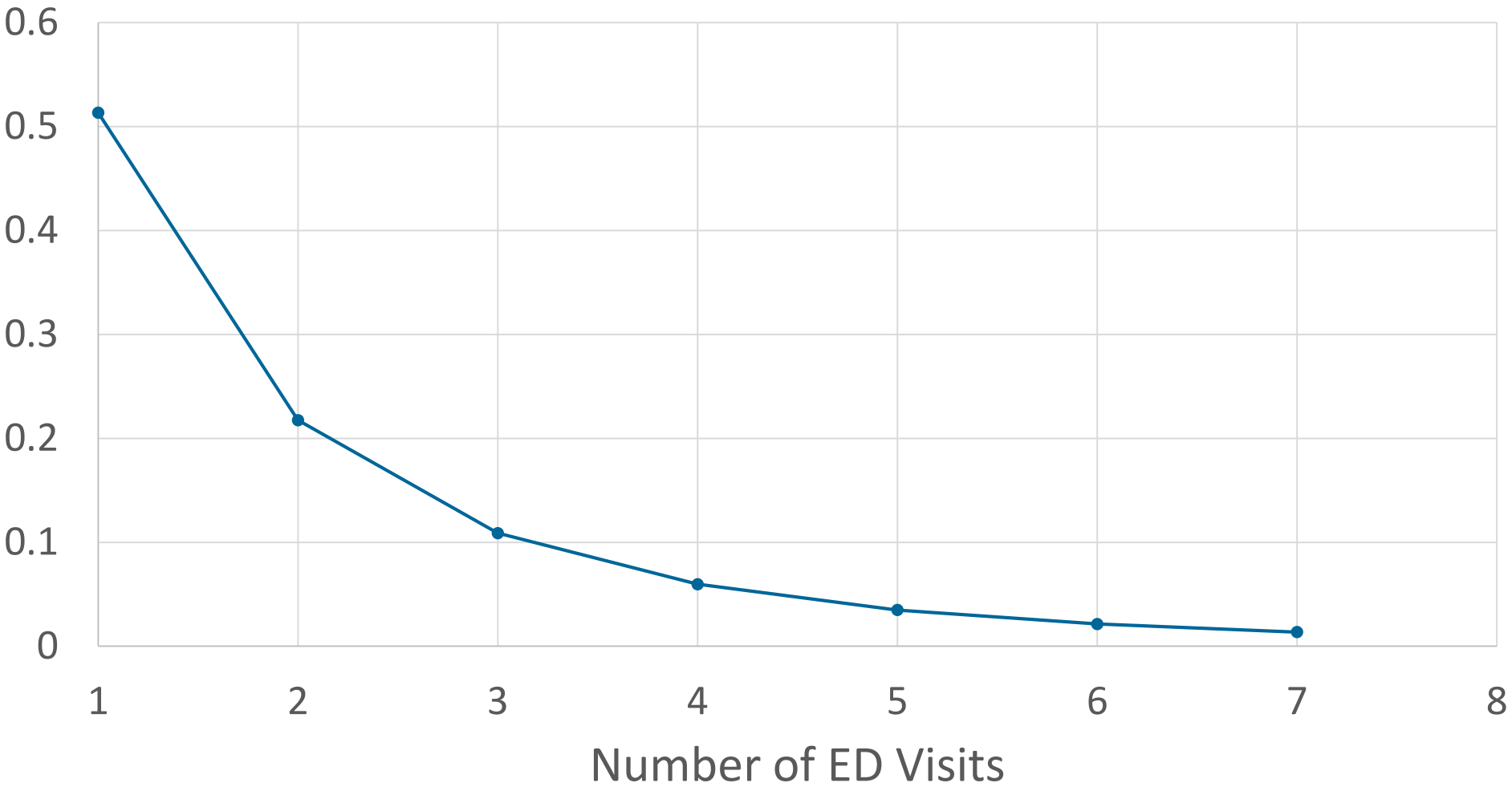
# Model Predicted Probability of ED Visits, for ED-users

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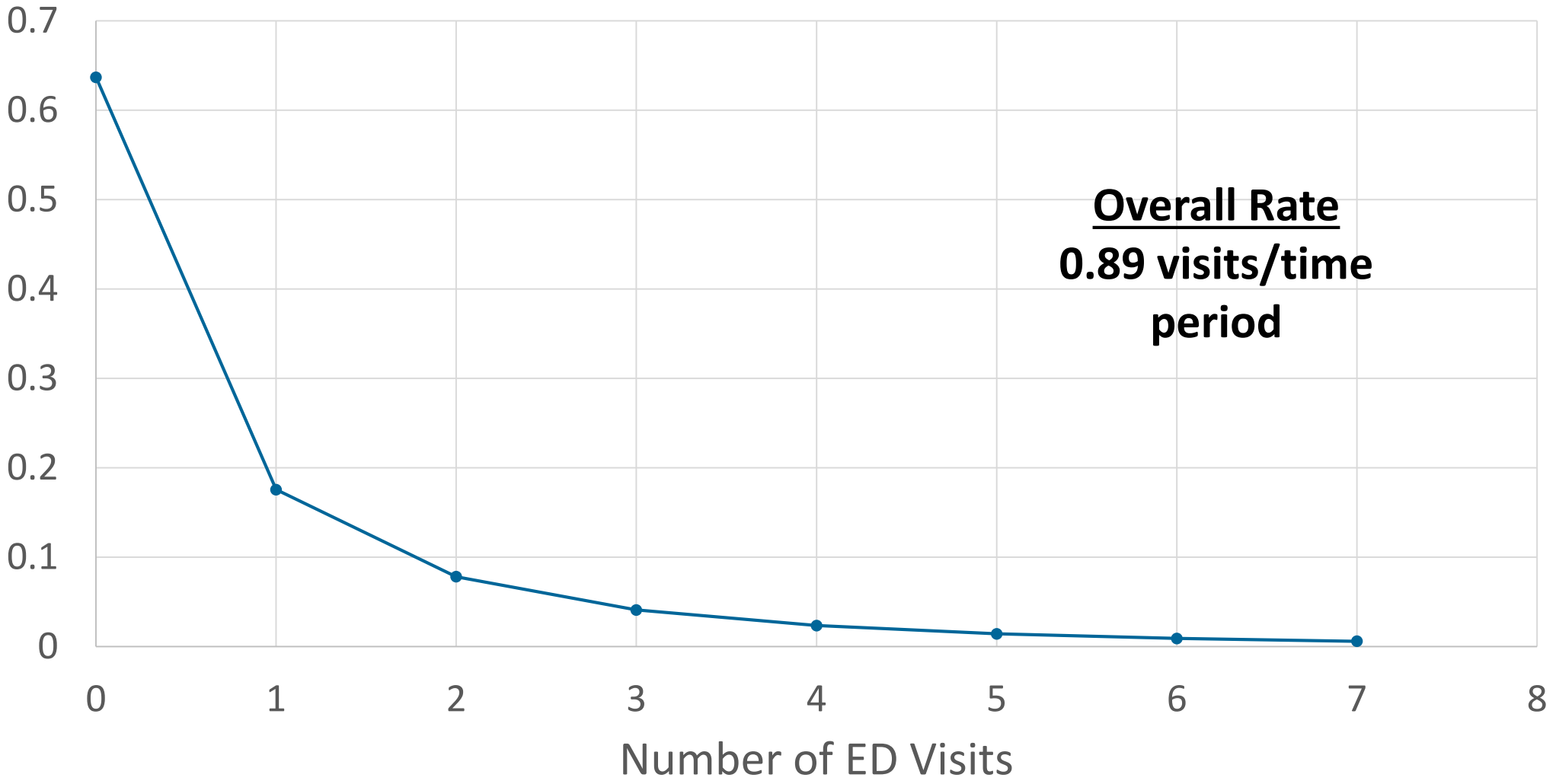
# Model Predicted Probability of Number of ED Visits for sample

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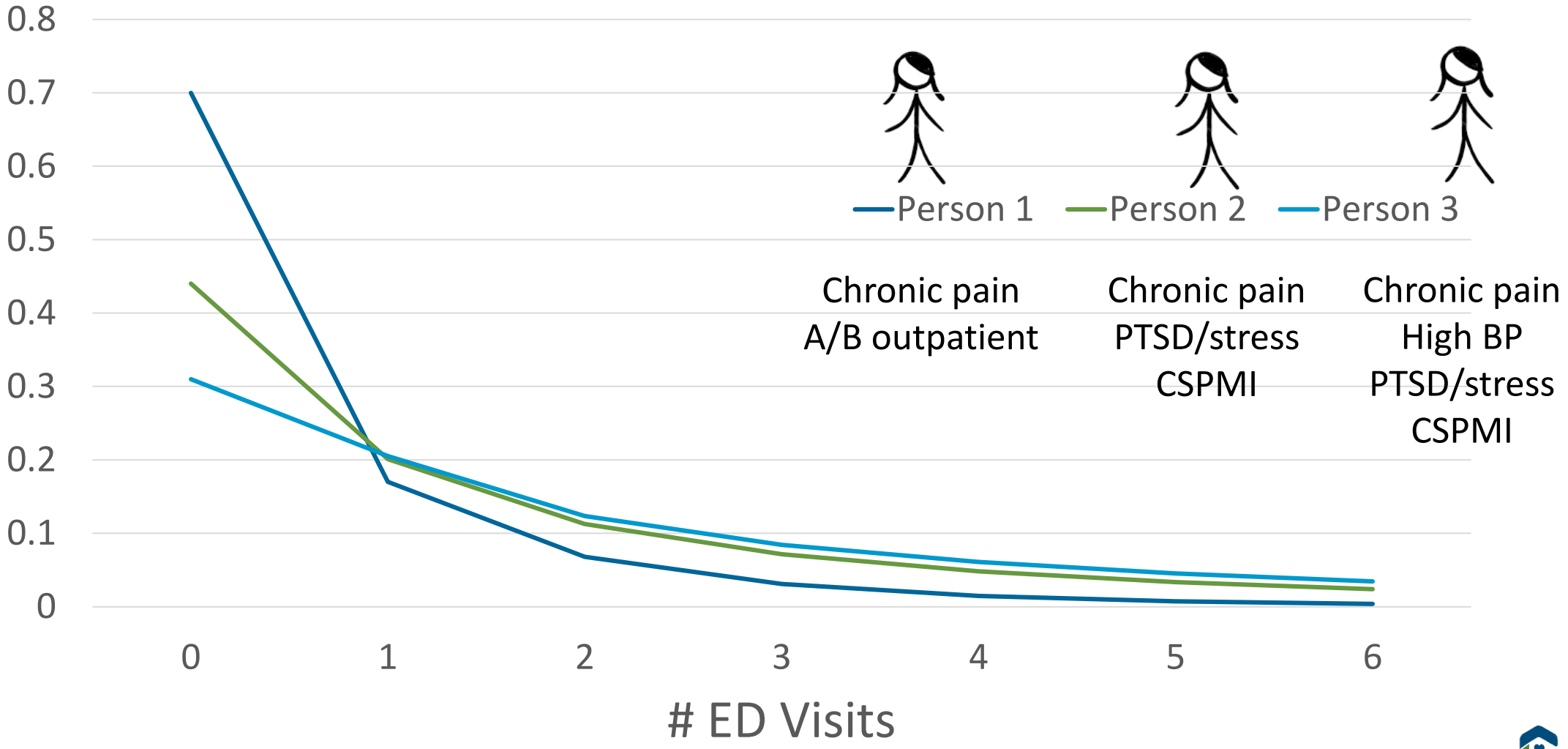
# Model Predicted Probability of Number of ED Visits for sample

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# SUMMARY

- Any ED visit vs. no visit related to mental and physical health and combination
  - Stress + chronic pain
  - COPD
- Number of visits more closely tied to physical health
  - These individuals might be sicker
  - Diabetes diagnosis associated with lower rates of ED utilization
- Rate of utilization doesn't seem to be associated with demographic factors
- But, several questions remain:
  - Are those individuals going to ED more frequently going because they need urgent care

# DATA INTO ACTION

- Prevention (especially for current ED users)
- Health literacy around when to use ED
- Targeted approaches for clients with stress/PTSD and chronic pain

# PANEL MANAGEMENT

1. Focus on prevention ⟶ **Panel management**

A set of tools and processes for population care that are applied systematically at the level of the care panel.

- Typically used in primary care setting
- Helps physicians direct proactive care for patients

plan was created.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | DOC SM | BP DATE | BP/s | BP/d | LDL Date | LDL | A1c DATE | A1c | DIABETIC | SMOKER | DATE ASKED IF SMOKES |
| Patient A | NO | 2/21/2011 | 127 | 70 | 11/30/2010 | 93 | | | NO | NO | 11/20/2010 |
| Patient B | YES | 2/15/2011 | 110 | 55 | 2/15/2011 | 145 | 9/25/2010 | 11.3 | YES | YES | 2/15/2011 |
| Patient C | NO | 4/7/2010 | 158 | 87 | 4/11/2010 | 81 | 4/11/2010 | 6.7 | YES | NO | 3/15/2008 |
| Patient D | YES | 1/20/2011 | 148 | 95 | 12/14/2010 | 170 | 12/14/2010 | 8.9 | YES | YES | 12/12/2009 |
| Patient E | NO | 10/28/2010 | 129 | 72 | 12/10/2010 | 54 | 12/10/2010 | 9.6 | YES | YES | 3/30/2010 |
| Patient F | NO | 8/21/2010 | 125 | 88 | 4/20/2010 | 125 | | | NO | | |
| Patient G | YES | 6/24/2010 | 149 | 85 | 4/16/2009 | 102 | | | NO | NO | 12/2/2008 |
| Patient H | NO | 3/5/2011 | 147 | 90 | 3/5/2011 | 81 | 3/5/2011 | 12.1 | YES | NO | 3/5/2011 |
| Patient I | NO | 1/29/2010 | 120 | 64 | 2/3/2010 | 65 | | | NO | NO | 12/22/2004 |
| Patient J | YES | 1/5/2011 | 117 | 81 | 1/5/2011 | 112 | 1/5/2011 | 5.9 | YES | YES | 7/5/2010 |
| Patient K | YES | 7/24/2008 | 152 | 85 | 7/14/2008 | 157 | | | NO | | |

Most current date that blood pressure measured

Most current date that LDL cholesterol measured

Most current date that HbA1c measured

Indicates the most recent date patient was asked about smoking

# AN EXAMPLE OF A PANEL

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# INTERVENTION AT DAILY PRACTICE LEVEL

- Client tracking (panel) for engagement and re-engagement
- Using panel to Clinician able to see a pattern emerging quicker, ex: pt going to ed multiple times for cp/ htn/ anxiety. Connect with LMP to adjust rxs.

# SHARED HEALTHCARE COMMUNICATION

2. Focus on **prevention**

- Update patient care plans in EDIE (Emergency Department Information Exchange
  - Accurate treatment team contact information (mental health counselor, addictions counselor, psychiatrist, housing case manager, primary care provider, and care coordinator)
  - Current medication list (Psychiatric and physical health rx's.)
- Utilizing Collective Medical (PreManage) to assist treatment

# INTERVENTIONS

## 2. **Health literacy and education**

Posters and pamphlets on when to use emergency care vs. other sources of care

## WHY IT MATTERS TO SEEK THE RIGHT TYPE OF CARE

Accessing care at the appropriate location with a suitable Health Care provider can improve the services you receive, reduce the cost of care, and decrease the amount of time you spend waiting.

### Cascadia Primary Care:

(503) 674-7777
Monday to Friday, 8:30 AM to 5:00 PM

**Available at:**

10373 NE Hancock St, Suite 200, Portland, OR 97220

3036 NE Martin Luther King, Jr. Blvd.,
Portland, OR 97201

4212 SE Division St., Portland, OR 97206

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# Where to Go When You Need Care

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# I need care….

## ...Soon

### PRIMARY CARE

**When to see your Primary Care provider:**
**Illness or injury needs medical attention but it is not urgent**

- ◊ Sore Throats and Coughs
- ◊ Sinus Infection and Colds
- ◊ Earaches
- ◊ Fevers that respond to fever-reducing medications
- ◊ Pink Eye
- ◊ Minor cuts and burns
- ◊ Sprained Ankle

## ...Quickly

### URGENT CARE

**When to go to Urgent Care:**
**Illness or injury is not life threatening but you can't wait to see your Primary Care provider**

- ◊ Allergic reaction
- ◊ Broken bones and dislocated joints
- ◊ Severe flu or cold symptoms
- ◊ Cuts that need stitches
- ◊ Persistent diarrhea
- ◊ Ear Infection
- ◊ Rashes
- ◊ Animal or bug bites

## ...Now

### EMERGENCY ROOM

**When to go to the Emergency Room:**
**Severe Illness or injury that needs immediate attention**

- ◊ Chest pain that lasts two minutes or more
- ◊ Uncontrolled bleeding
- ◊ Sudden or severe pain
- ◊ Coughing or vomiting blood
- ◊ Sudden dizziness
- ◊ Difficulty breathing
- ◊ Loss of consciousness
- ◊ Seizures without a previous diagnosis
- ◊ Suspected poisoning or drug overdose

*Please note that this brochure is meant as a guide and for informational purposes only. The content is not intended to be a substitute for professional medical advice, diagnoses, or treatment. Illnesses and injuries need to be assessed on a case-by-case basis to determine the appropriate level and location of care.*

***If you are experiencing a medical emergency, call 911 for immediate assistance***

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# CASE STUDIES

## PATIENT A

- Without housing
- Complex medical and psychiatric diagnoses
- 28 ER visits in 1 month (mainly HTN, aggression, psychosis)
- Consultation resulting in change to psychiatric medications
- Weekly clinic visit for medication reconciliation
- Monthly visits to clinic, no ER visits within last year.

# CASE STUDIES

## Patient B

- No engagement with PCP in 8 years
- 4 ER visits within 48hrs
- EDIE care plan updated to include delusion of eviction
- Redirected to housing case manager
- Now engaged with PCP

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# NEXT STEPS

- Interventions for individuals with chronic pain
  - Extension of chronic pain pilot
  - Massage and APM
- ED panel in primary care

# Session Survey

Use the CFHA mobile app to complete the survey/evaluation for this session.

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**Join us next year in Philadelphia, Pennsylvania! Thank you!**

# EXTRA SLIDES

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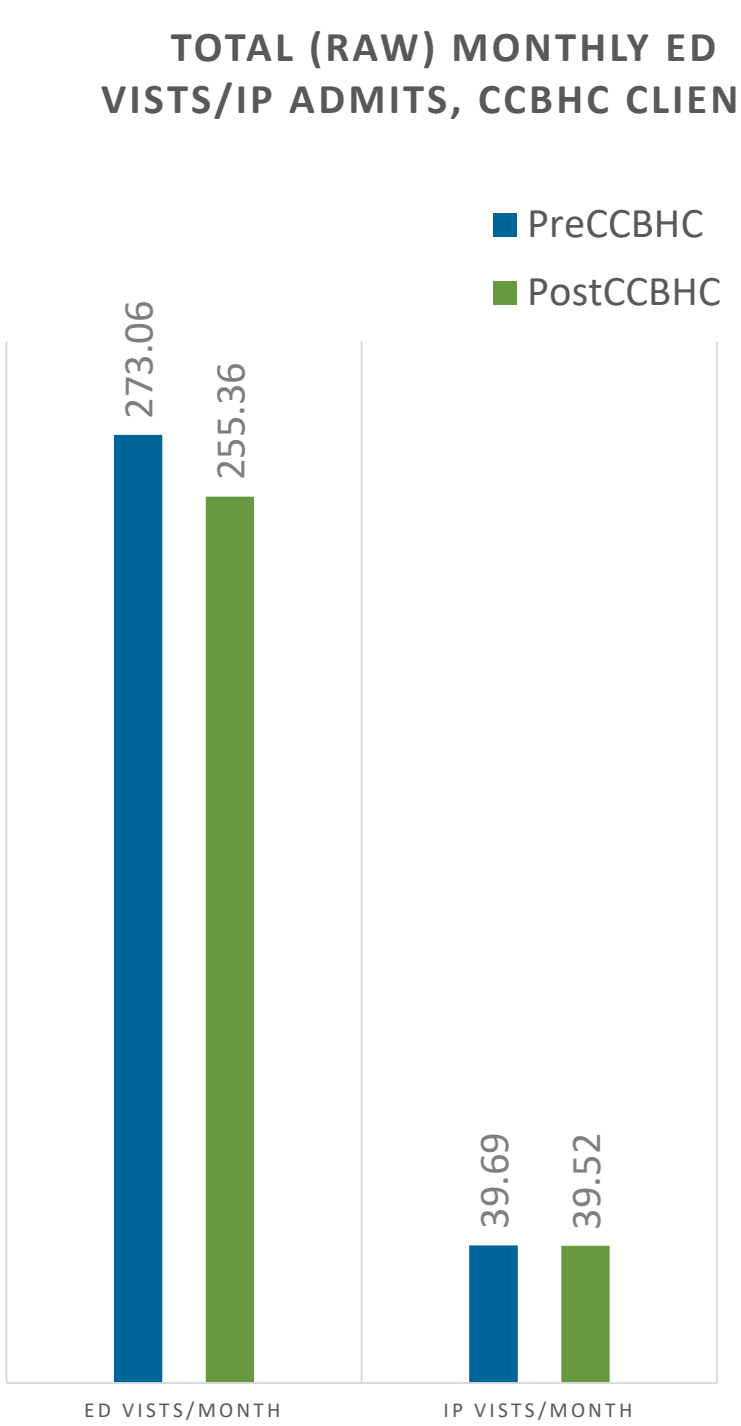


# TOTALS PRE- AND POST-CCBHC

- Small decrease in the number of average monthly ED visits before and after CCBHC
- Can this decrease be attributed to CCBHC demonstration project?

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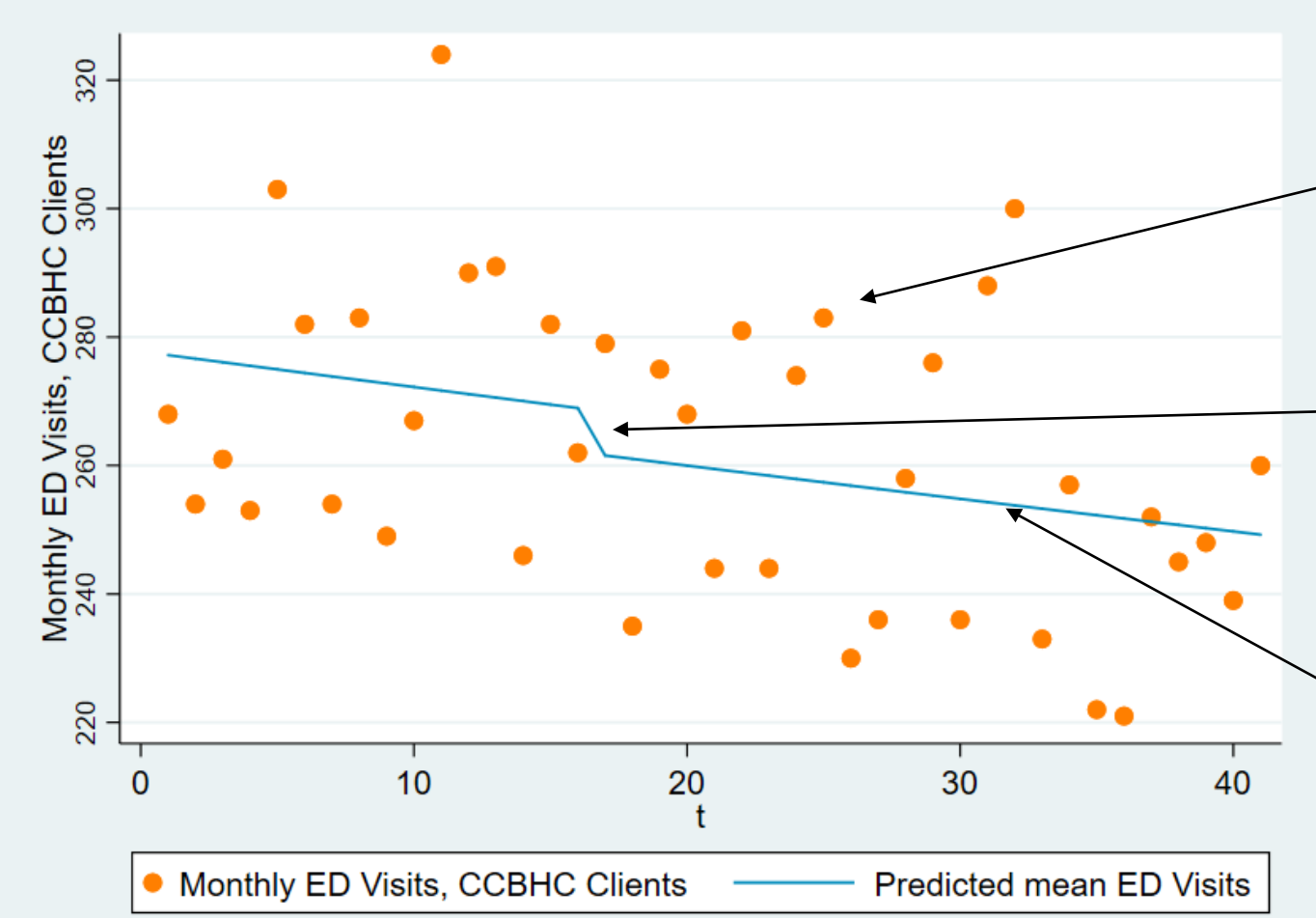
# METHODS

- Interrupted time series analysis
  - Autoregressive Integrated Moving Average (ARIMA)
  - Maximum Likelihood Event Count Time Series Analysis

# CCBHC CLIENTS: TOTAL MONTHLY ED VISITS




Model-predicted values for monthly ED visits among CCBHC clients

April 2017

Smoothed prediction line

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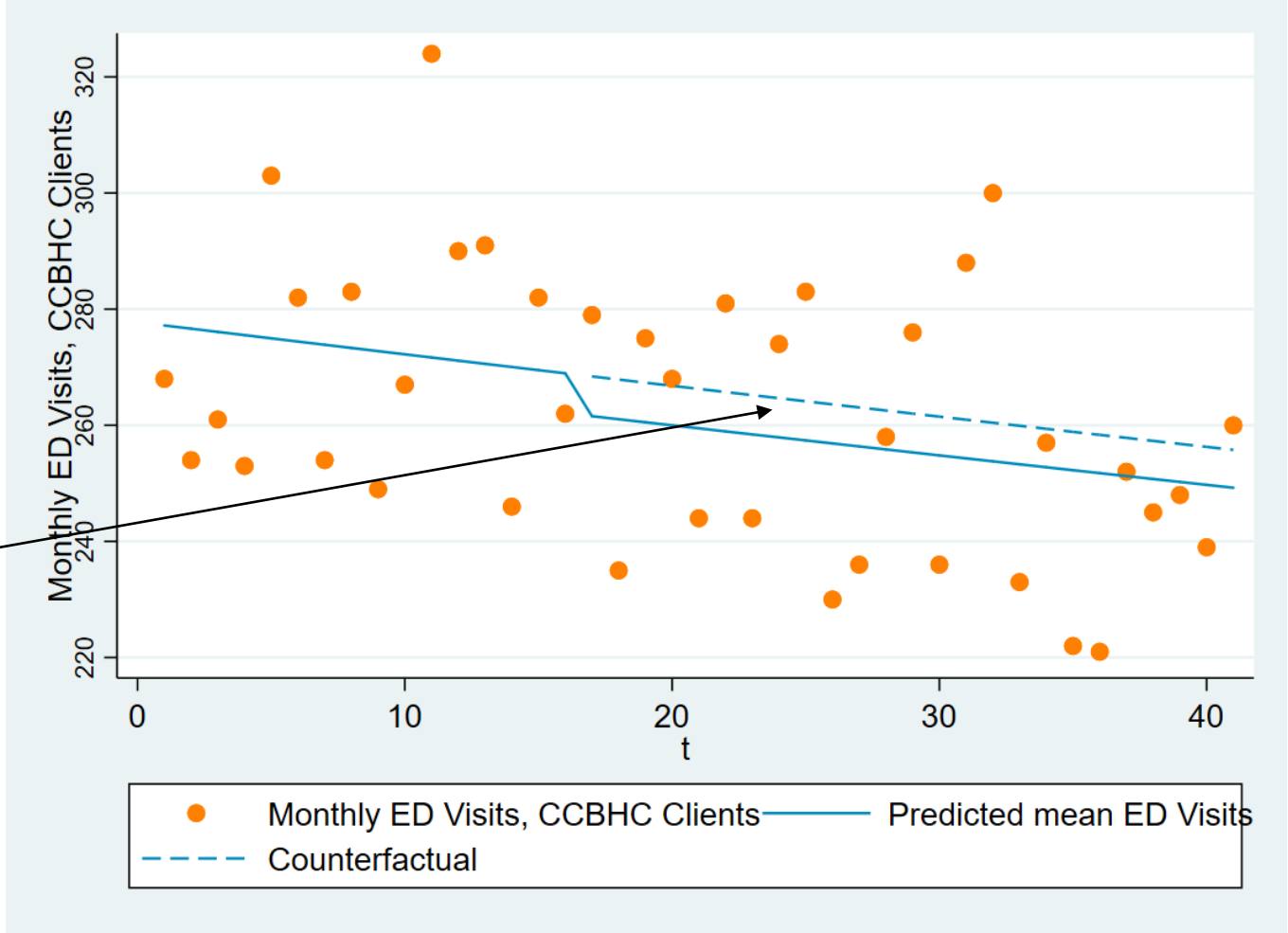
# CCBHC CLIENTS: MONTHLY ED VISITS WITH COUNTERFACTUAL

Model that includes a counterfactual for predicted outcomes if CCBHC had not occurred

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# WHAT IS POPULATION HEALTH?

- Study of the health of a population, patterns and distribution of risk and promotive factors
- Understanding how social, psychological, economic, environmental and political factors influence health and health inequities of a population

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# NEXT STEPS

- Are people using the ED 1+ times sicker?
  - Do they get admitted after ED?
  - Do they have more co-occurring chronic conditions or other health risks (BMI, smoking status, medication use)?
- Why are people going to primary care more likely to have higher rates of ED utilization?
- Application to panels in primary care
- Care coordination around blood pressure
- How can we better support clients with stress disorders and chronic pain?
  - Chronic pain pilot

# POPULATION WE SERVE

**Age** 42

46% **male** (sex)

1.8% **non-English speaking**

3% **veteran**

Monthly **income** $708/month (25$^{th}$ percentile = $1)

61% <HS or HS **education** and 13% college degree

12% **married**

12% not stably housed or **unhoused**

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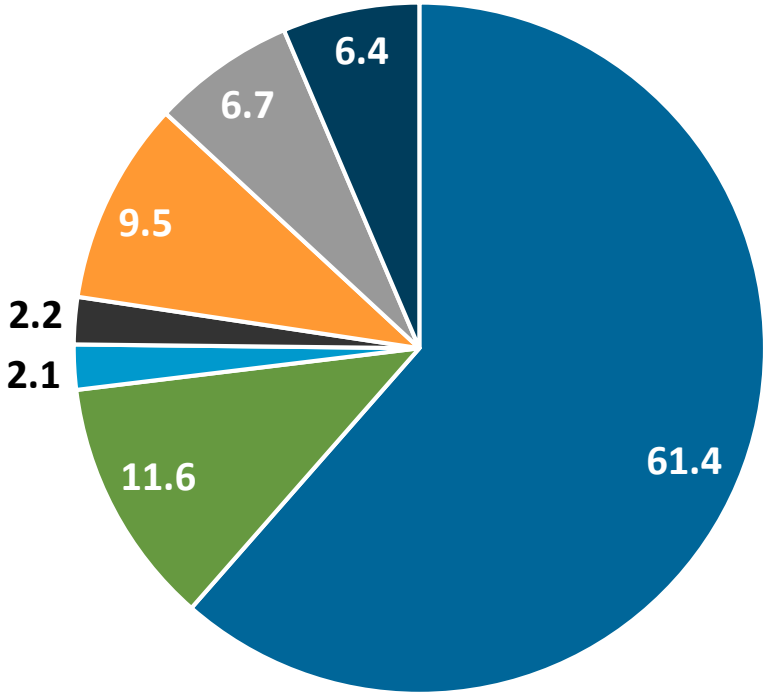
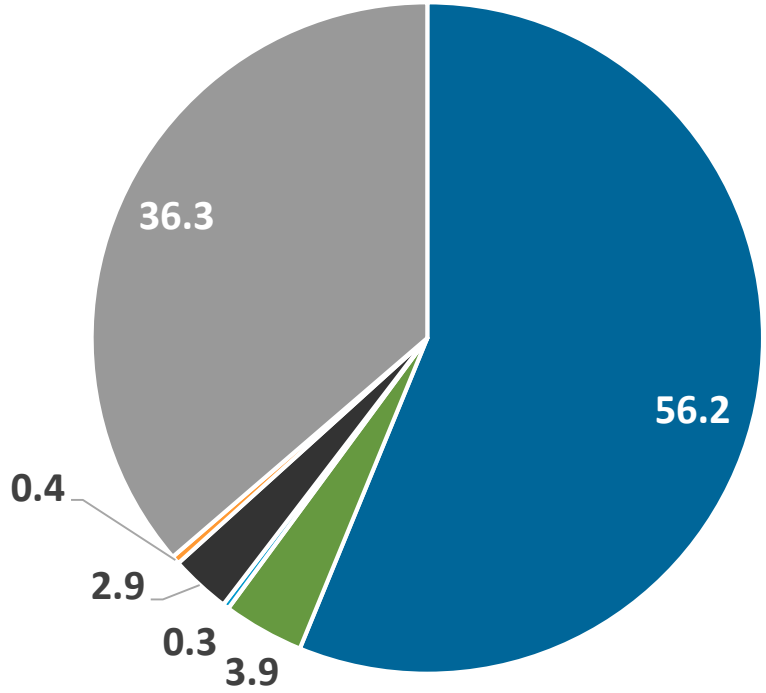
# DEMOGRAPHICS

## Race




- White
- Black
- Asian/PI
- American Indian/Alaskan Native
- Multiracial

## Ethnicity




- Non-Hispanic
- Hispanic (unknown)
- Cuban
- Mexican
- Puerto Rican
- Missing

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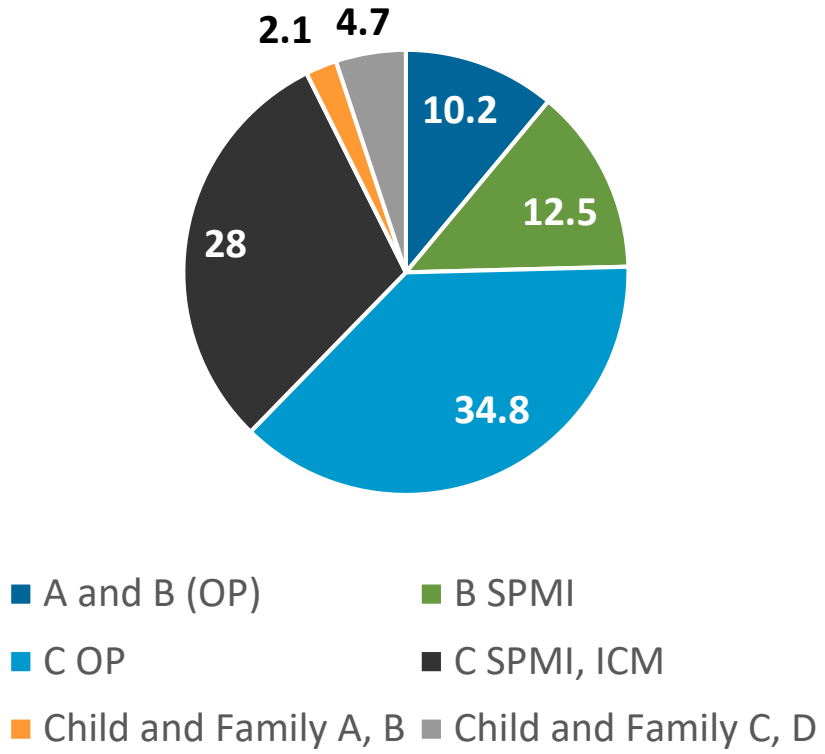
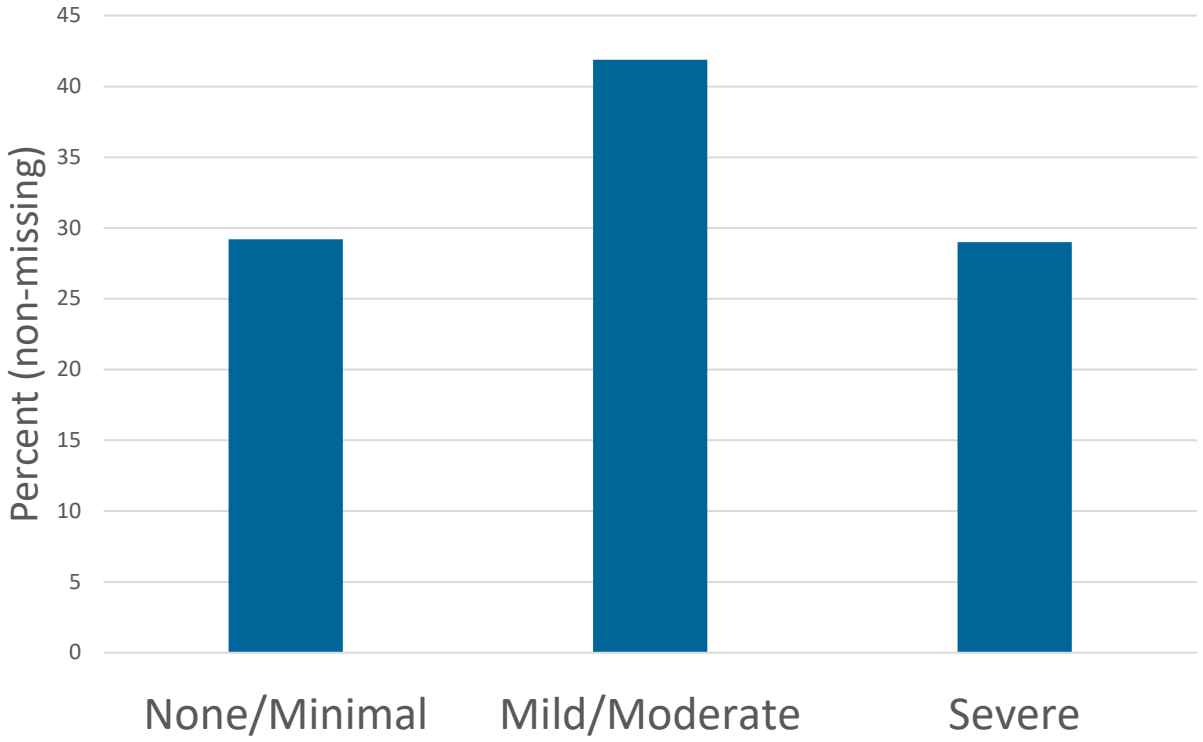
# HEALTH SERVICES AND HEALTH

## Mental Health Level of Care

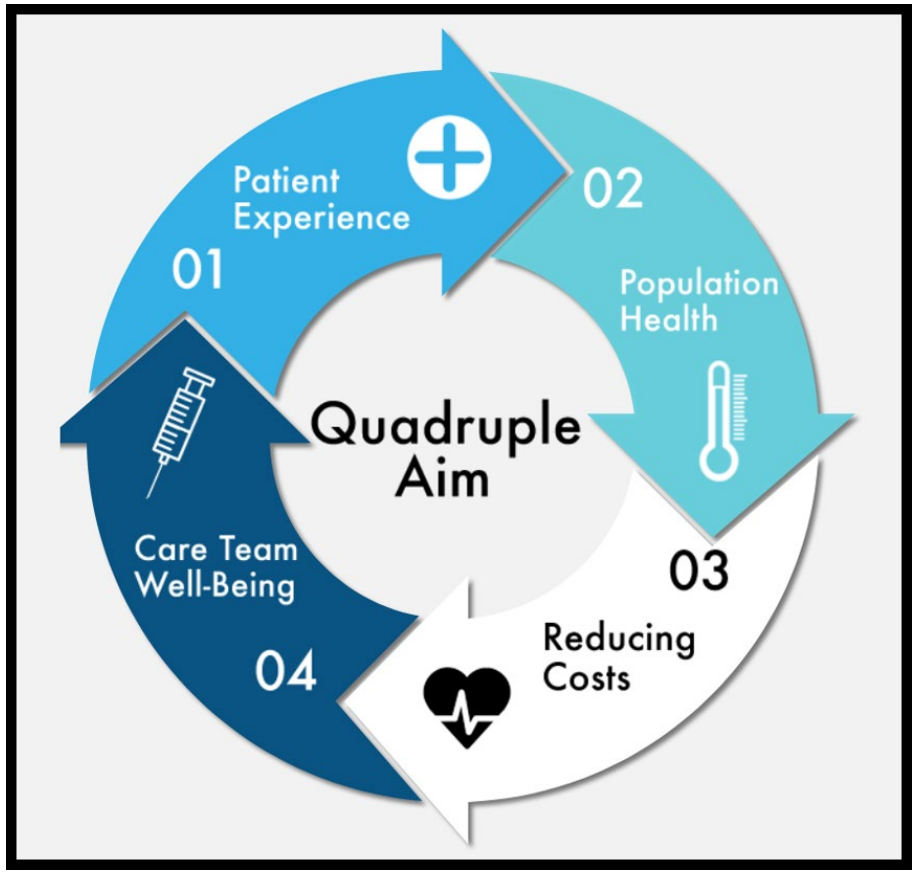



## PHQ9/A Clinical Scores




CASCADIA BEHAVIORAL HEALTHCARE
WHOLE HEALTH CARE™

# THE SOLUTION




- Berwick et al., 2008 developed framework for providing high quality and high value care
  - Coordinated, quality, trauma-informed care
  - Reduced morbidity and mortality
  - Prevention
  - Team based care