USE OF DATA TO IMPROVE HEALTH OUTCOMES: ADDRESSING ED UTILIZATION AND IMPATIENT ADMISSION RATES

RENEE BOAK, MPH, CADCI
SENIOR DIRECTOR OF POPULATION HEALTH RESEARCH & INNOVATION

ALLISON B. BRENNER, MPH, PHD
DIRECTOR OF POPULATION HEALTH RESEARCH & INNOVATION

OVERVIEW

- Organizational overview
- Context
- Metrics and analysis
- Results
- Lessons learned
- Next steps

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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.

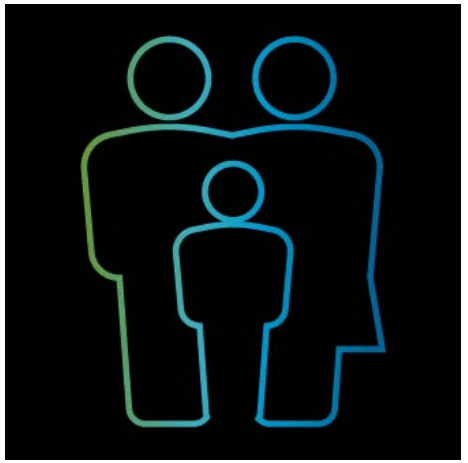
VISION

We envision a community where everyone benefits from whole health care, experiences well-being, and has a self-directed, connected life.

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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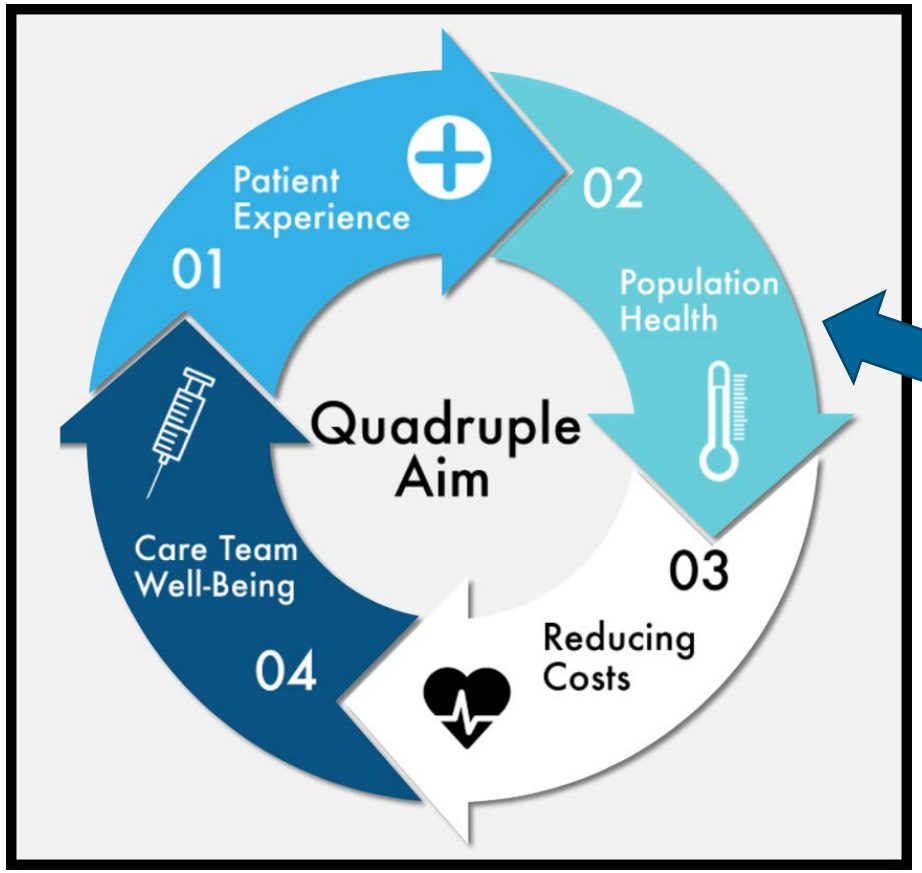
THE SOLUTION



Population health is a critical part of the solution!

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DATA SOURCES

Why is a mixed methods approach important?

Know your audience!

<u>Sources</u>

- Electronic Health Records (EHR)
  - Credible (mental health, SUD)
  - Epic (primary care)
- Pre-Manage/Collective Medical
- Claims data
- Anecdotes from staff and clients

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WHO DO WE SERVE?

1. **How much do we *really* know about the collective population that we serve?**

   - Demographic and economic profile of clients
   - Behavioral and physical health conditions
   - Co-occurring illnesses or social circumstances

2. **What can the data tell us to improve client care and reduce cost?**

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THE APPROACH

POPULATION HEALTH

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WHAT DO WE KNOW ABOUT OUR CLIENTS THAT VISIT THE ED?

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WHY FOCUS ON ED UTILIZATION?

- **Cost**
  - An estimated $4.4 billion could be saved/year in the US if non-emergency care was treated outside of ED
- **Patient Care**
  - Quality care that is trauma informed and client-centered
  - Coordinated care
- **Health**
  - Prevention
  - Continuity of care
  - Complex medications

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OBJECTIVES OF RESEARCH

- Identify (sub)populations at increased risk for targeted outreach, tracking, intervention, education
- Predict patients with higher risk and provide targeted outreach and engagement efforts
- Address unmet needs that may contribute to ED utilization
- Advocate for resources and funding

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DESCRIPTION OF POPULATION

2,345 shared clients with at least 7 member months

- 57.4% Female
- 24.9% non-White (~12% Black/African American, 3% Hispanic/Latino, 2.5% Asian/Pacific Islander)
- 1.5% non English speaking
- 12.5% married
- 10.2% homeless

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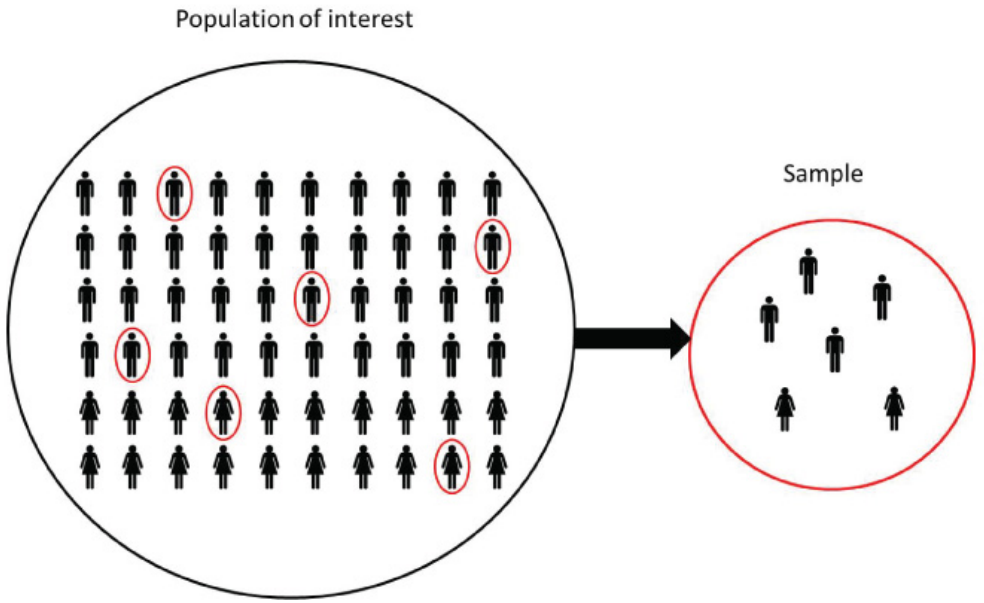
DESCRIPTION OF POPULATION

2,345 shared clients with at least 7 member months

Primary mental health diagnosis group:

- Bipolar disorders – 13.4%
- Depressive disorders – 33.4%
- Stress reaction/adjustment disorders – 32.8%
- Schizophrenia – 8.8%
- Schizoaffective disorders – 6.9%
- Other psychotic disorders – 4.0%
- Personality/impulse disorders – 0.6%



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DESCRIPTION OF POPULATION

2,345 shared clients with at least 7 member months

- Average # ED visits per individual = 0.90 (range 0-33)
- 36% of population had >=1 ED visit Jan-August, 2019
- 4.5% of population had >=5 visits (high utilizers)
- 81% of population had behavioral health visit in last 3 months
- 93% had primary care visit in last 6 months

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?

- Are the factors that distinguish people who use the ED at all the same as those that distinguish people who present to the ED 10 times per year versus 3 times?

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TWO PART MODEL: TOTAL ED VISITS

- Need
- Health literacy

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

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NUMBER OF ED VISITS

Part 1: Any visit vs. no visits

The following 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

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
- Primary care visit in the past 6 months

Note: a diabetes diagnosis is associated with lower rates of ED utilization

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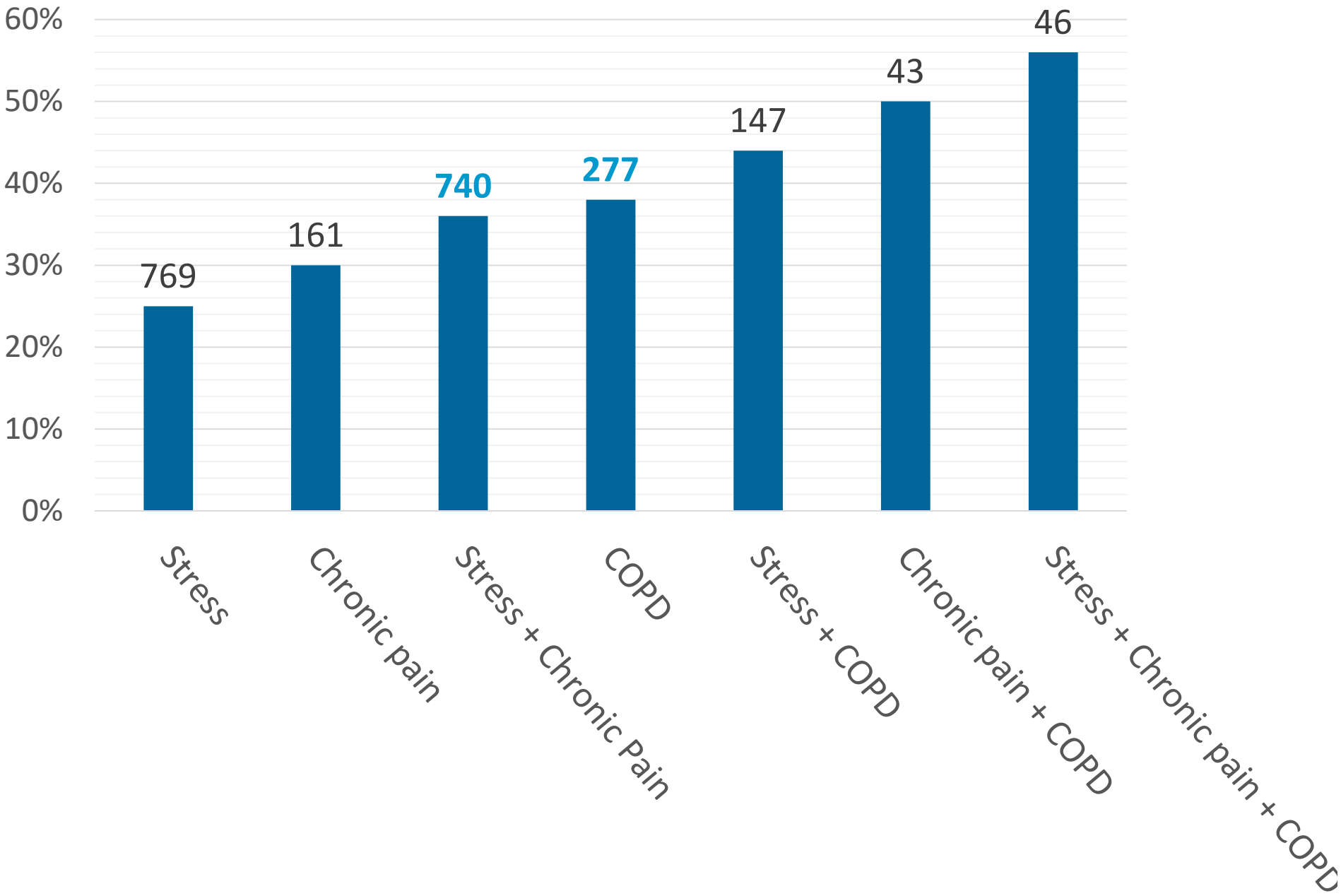
PREDICTING ED VISITS

- 36% probability of ED visit
  - Range = 12%-84%
  - 16% for level of care A/B outpatient
  - 31% for level of care C SPMI
  - 39% for level of care D (ICM)

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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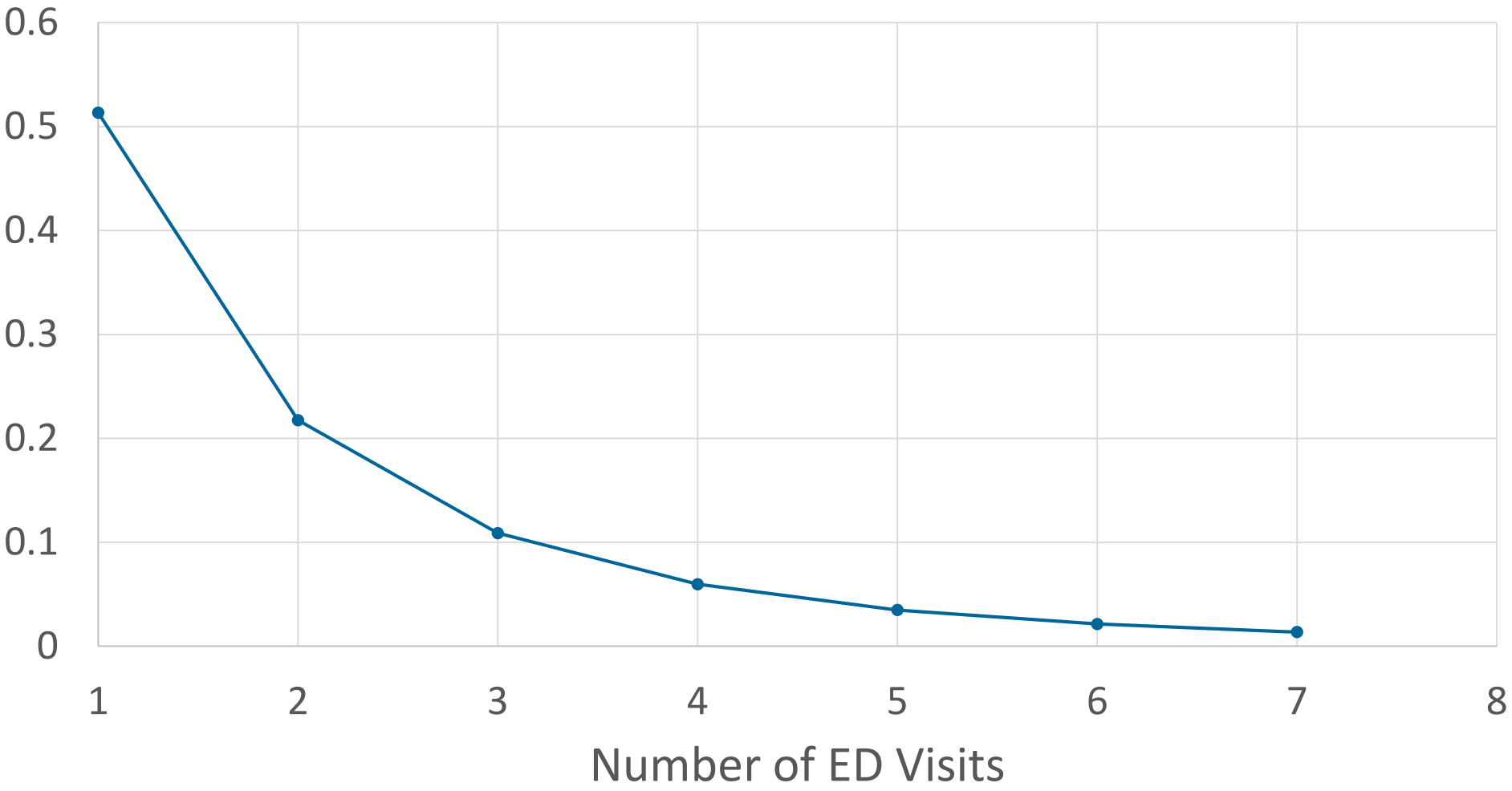
Model Predicted Probability of ED Visits, for ED-users



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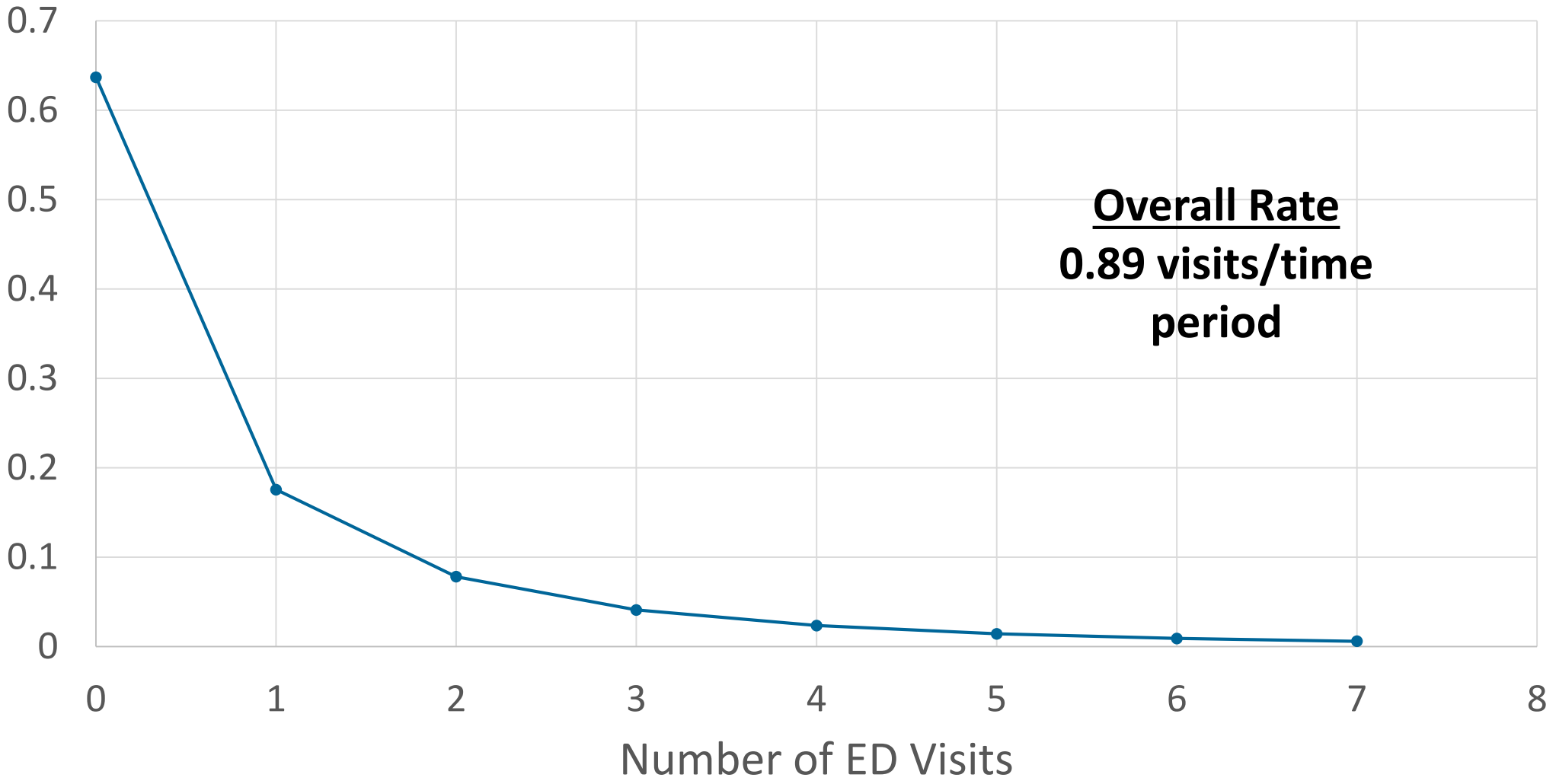
Model Predicted Probability of Number of ED Visits for sample



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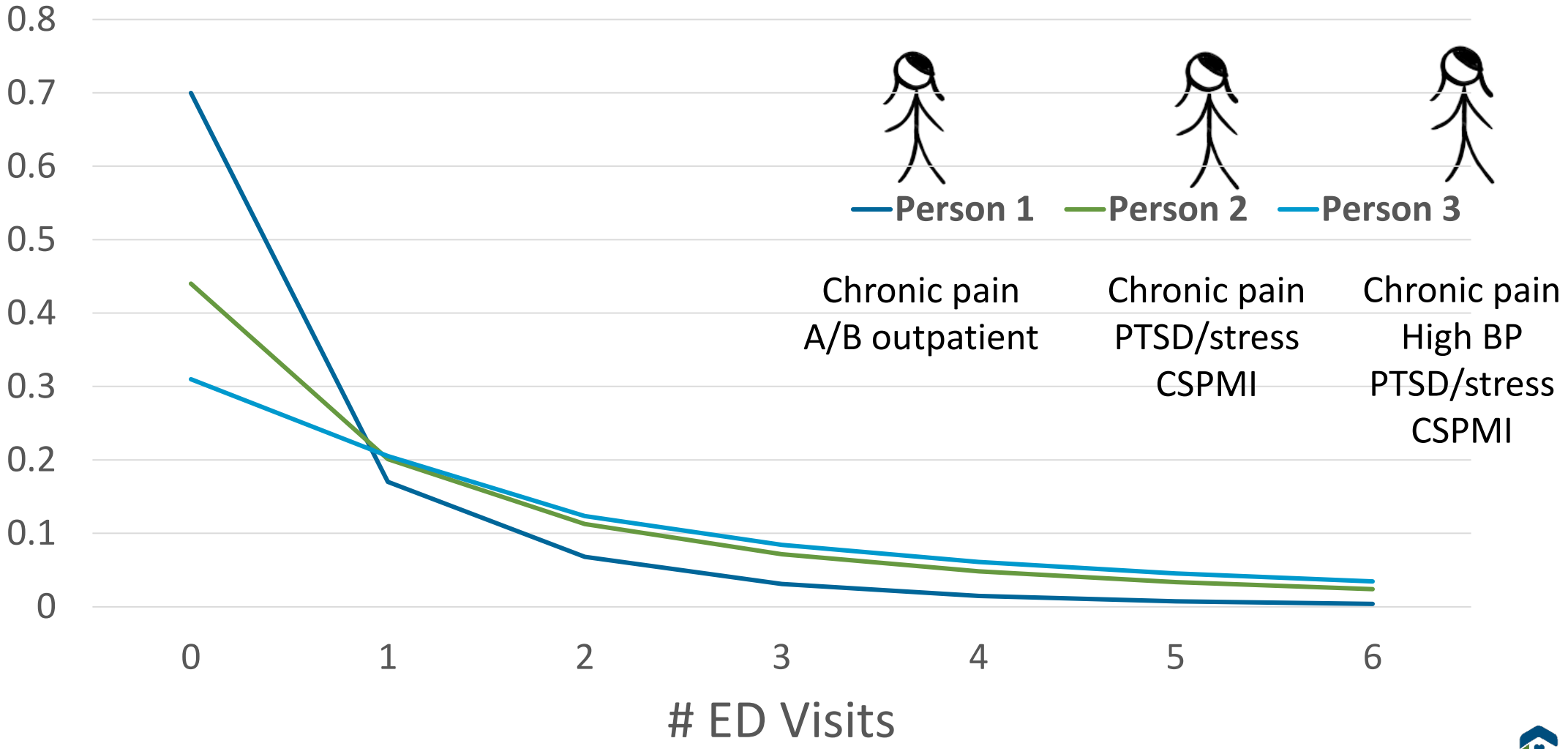
Model Predicted Probability of Number of ED Visits for sample



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SUMMARY

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

Part 3: Research to Innovation: Translating Data into Improvements in Quality and Cost of Care

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INNOVATION

Our goal is to translate analyses into improvements in:

- Quality of care
- Improved health outcomes
- Reduced costs
- Provider well-being

DESIGN HOLISTIC PROGRAMS TO ADDRESS THE INTEGATED NEEDS OF THE POPULATION

DATA INTO ACTION

- Focus on prevention (especially for current ED users)
  - Chronic disease self-management
  - Managing blood pressure
  - Coordinating primary healthcare
- Focus on health literacy around when to use ED and services provided by primary care
- Targeted approach for clients with stress/PTSD and chronic pain

CHRONIC PAIN PILOT PROGRAM

~100 individuals targeted based on our data demonstrating strong associations between chronic pain and ED utilization

- Group therapy
  - Evidence-based curriculum
  - Gentle exercise and yoga, 1 hour per week
- Integrated medical supports
  - Care coordination and medication reviews based on best practices for pain management
- Chair massage
  - Once every 4 weeks

Assessments and metrics tracked regarding depression, anxiety, pain, quality of life

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NEXT STEPS

- Application to panels in primary care
- Care coordination around blood pressure
- How can we better support clients with stress disorders and chronic pain?
- Engage in primary and secondary prevention efforts

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QUESTIONS

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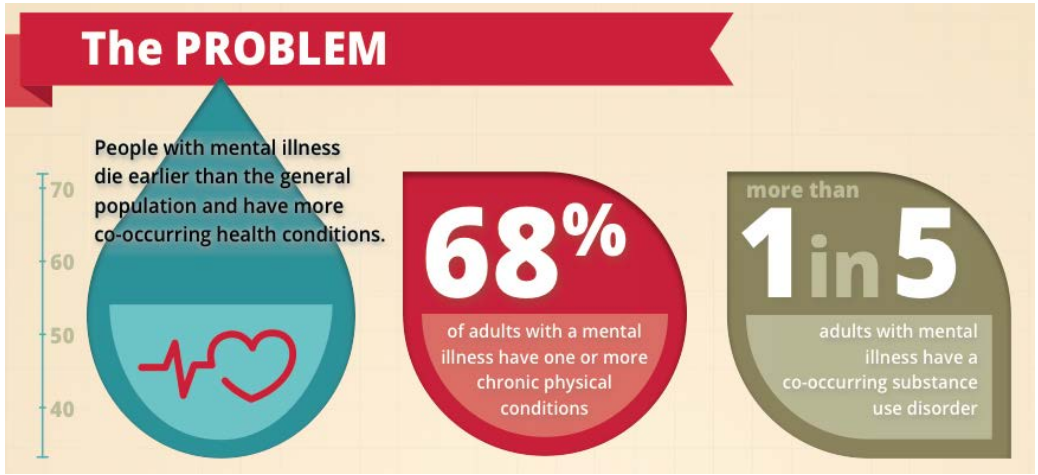
THANK YOU

DISCUSSION QUESTIONS

- How are you currently using data?
  - Clinical?
  - Financial?
  - Utilization?
- What is your degree of confidence in data validity?
- What are your sources of data?
- What barriers do you experience in accessing data?

THE PROBLEM…

People with a mental illness suffer **higher morbidity** and have **over twice the risk of mortality** from all causes than those without a mental illness



For example…

Individuals diagnosed with a **mental illness die from diabetes at around 3 times the rate** of those without a mental illness diagnosis

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