



NATIONAL NETWORK *of*  
DEPRESSION CENTERS

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# NNDC Research Update Mood Outcomes Program

Carolyn Turvey, PhD  
October 2, 2020



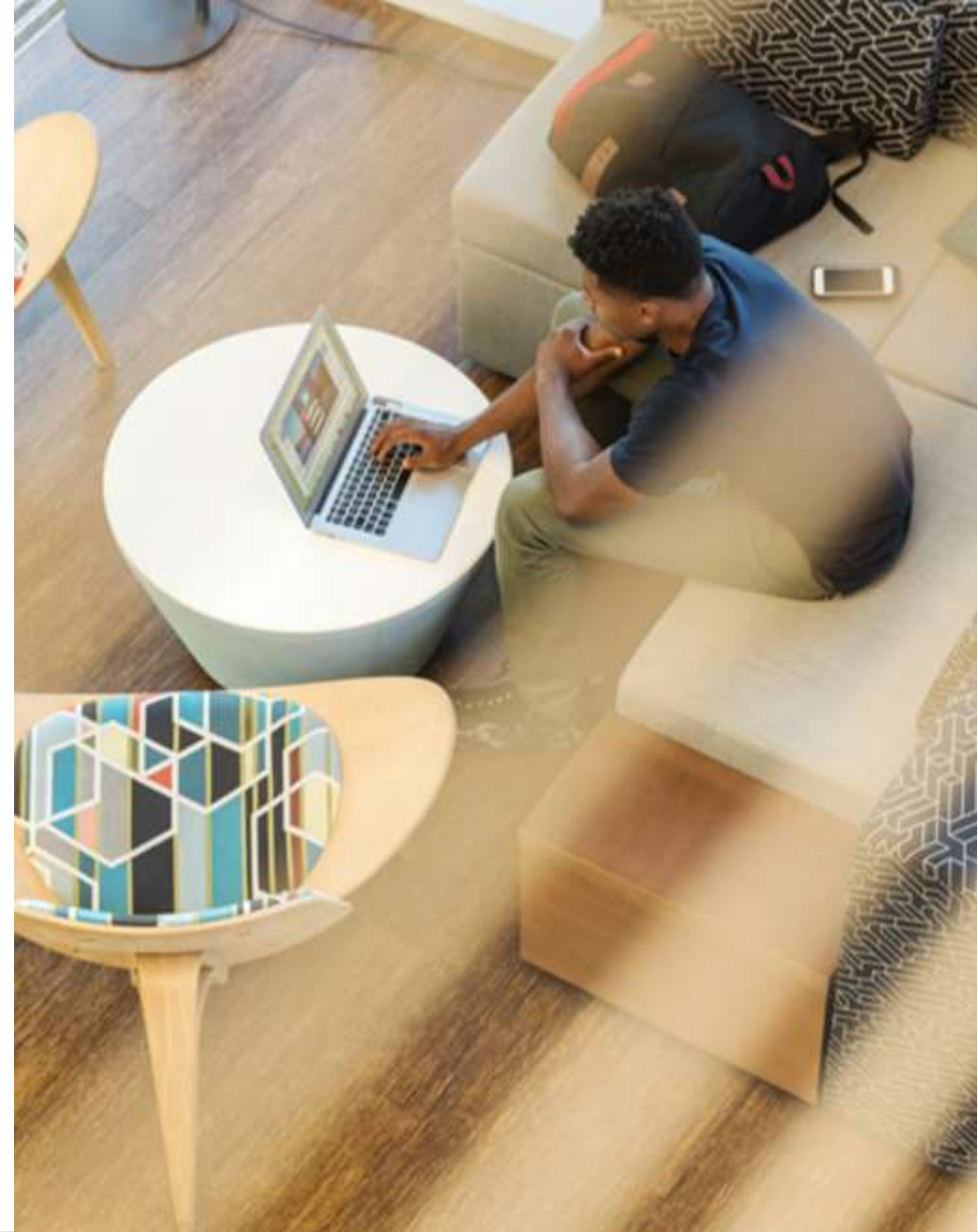
## Steering Team:

- David Katzelnick, MD - co-chair
- Peter Zandi, PhD - co-chair
- Bill Coryell, MD
- Ray DePaulo, MD
- John Greden, MD
- Dane Larsen
- Paresh Patel, MD
- Pat Rinvelt, MBA
- Carolyn Turvey, PhD
- Jess Wright, MD, PhD

# A Learning Health System

“...one in which progress in science, informatics, and care culture align to generate knowledge as an ongoing natural by-product of the care experience, and seamlessly refine and deliver best practices for continuous improvement in health and healthcare.”

--Institute of Medicine



# Mood Outcomes Program

A learning health system to improve care for patients with depressive illness

## Key Program Elements:

- Promote measurement based care by collecting “vital signs”
- Provide decision support tools for clinicians to help them tailor treatment to the needs of their patients
- Facilitate quality improvement at the clinic and population level
- Support ongoing research and NNDC programs
- Supports both direct and local data collection



mood  
**outcomes**  
— NNDC

**CLINICIAN DASHBOARD**  
Delivers clinician support tools in real time to inform treatment plans

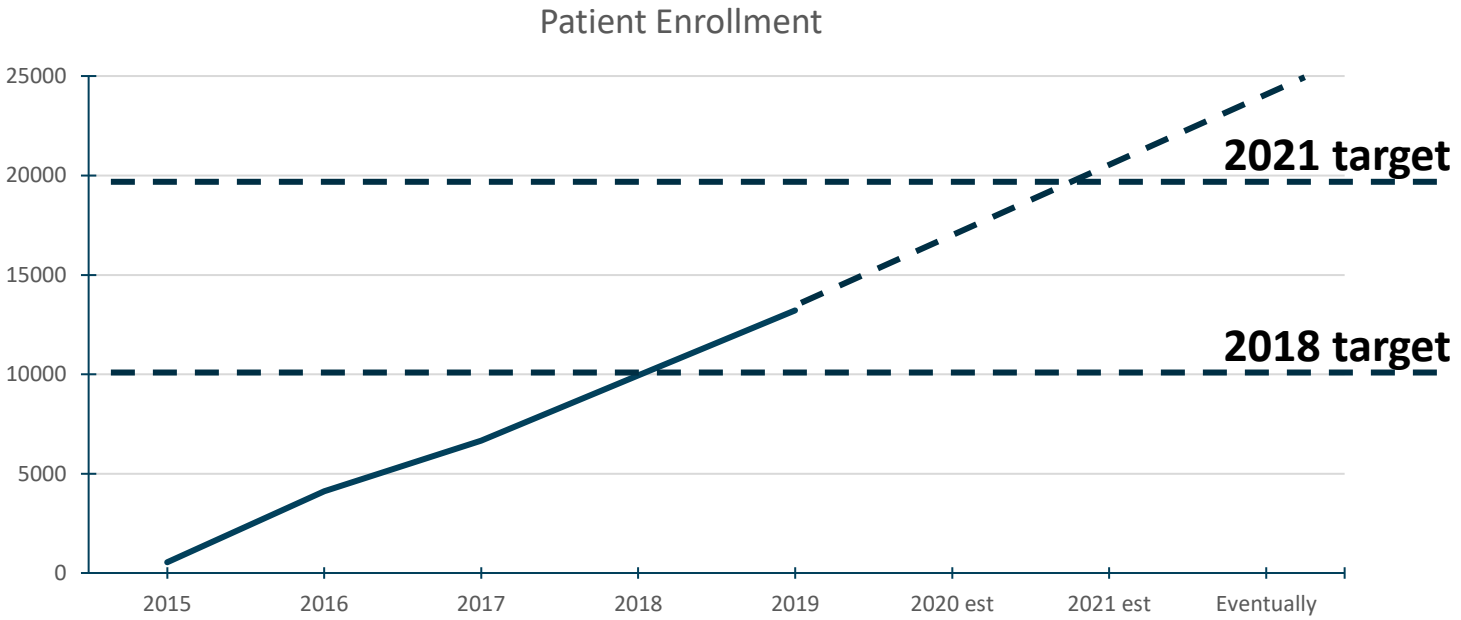
**REPORTING TOOLS**  
Generate aggregate data for clinic-wide assessment of care management strategies

**LONGITUDINAL DATA**  
Supports research at NNDC Member Centers

LEARNING HEALTH SYSTEM ENGINE

 **ALTARUM**  
INSTITUTE  
SYSTEMS RESEARCH FOR BETTER HEALTH

# Mood Outcomes Targets



### Mood Outcomes Targets by year-end

- 2016: 2,000+ patients Achieved!
- 2017: 5,000+ patients Achieved!
- 2018: 10,000+ patients Achieved!
- 2019: 12,000+ patients Achieved!

### Future Targets

- 2020: 16,000+ patients
- 2021: 20,000+ patients
- Next: 25,000+ patients

# Mood Outcomes Adoption

## In Discussion

Florida State

University of Pennsylvania

## Ready to Launch

Michigan State/Pine Rest

Emory University

University of Florida

## Data Collected

✓ University of Colorado  
Anschutz Campus

✓ Mayo Clinic

✓ University of Michigan

✓ University of Iowa

✓ University of Illinois  
Chicago

✓ Penn State University

✓ Ohio State University

✓ Medical University of SC

✓ Johns Hopkins

✓ University of Louisville

✓ University of Texas  
- Houston

✓ University of Texas  
- Austin



# Didn't See your site?

Mood Outcomes provides flexible data collection and submission options:

1. **Patient Portal** – connect to the NNDC system to collect & submit patient reported outcomes in real-time.
2. **Local collection** – use your existing Redcap, EMR, or other data system to collect & submit de-identified patient data quarterly (yes, even if you are collecting on paper!)
3. **Epic Integration** – take advantage of the Mood Outcomes measures built directly into Epic!

Data Coordination Funding is available  
to assist with start-up & operating expenses.

Reach out TODAY to learn more and to get started!

# Getting Mood Outcomes Started in Epic



Leadership



Regulations



Technology

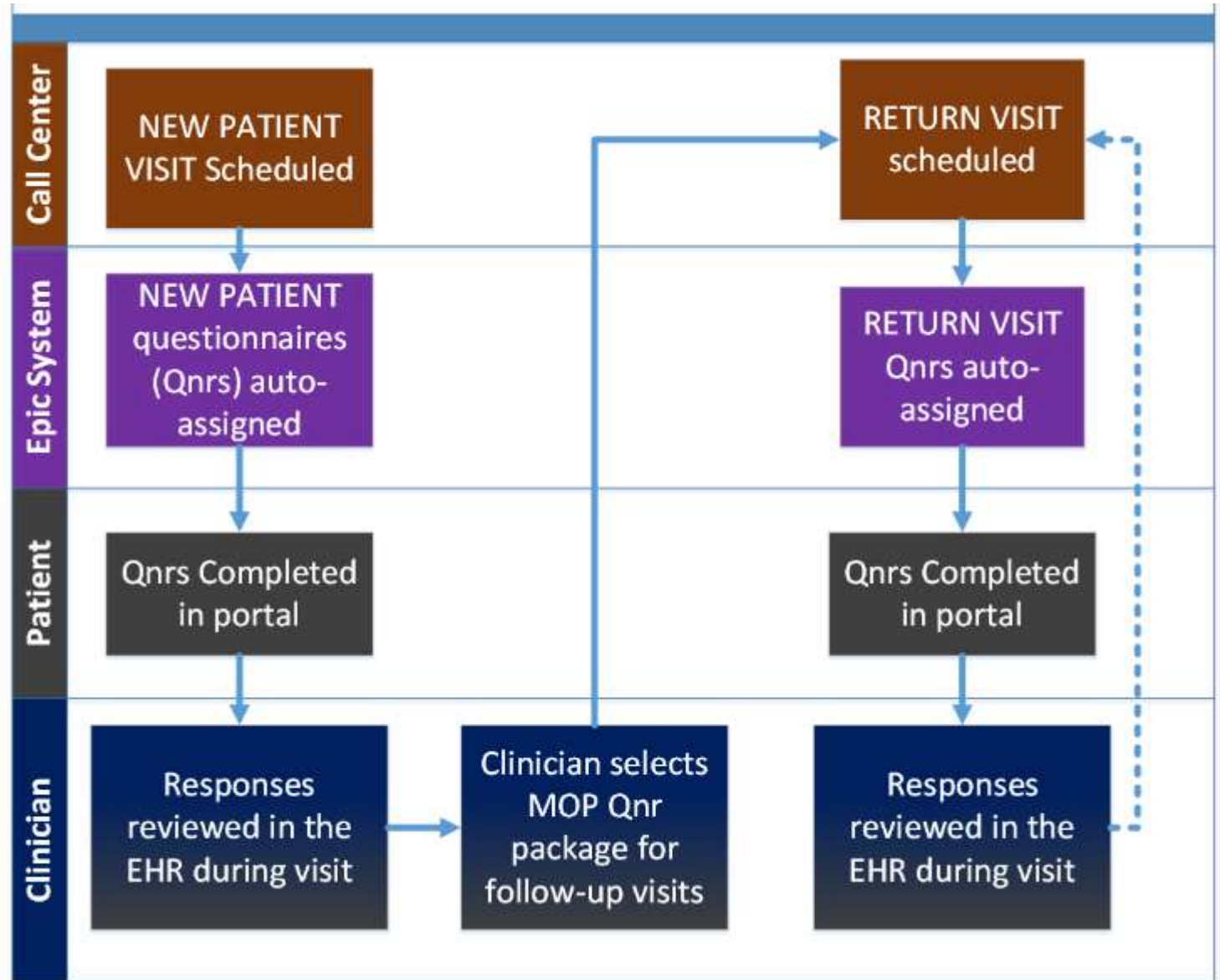


Training

The Mood Outcomes Steering Team is here to help!



# Sample Epic Workflow

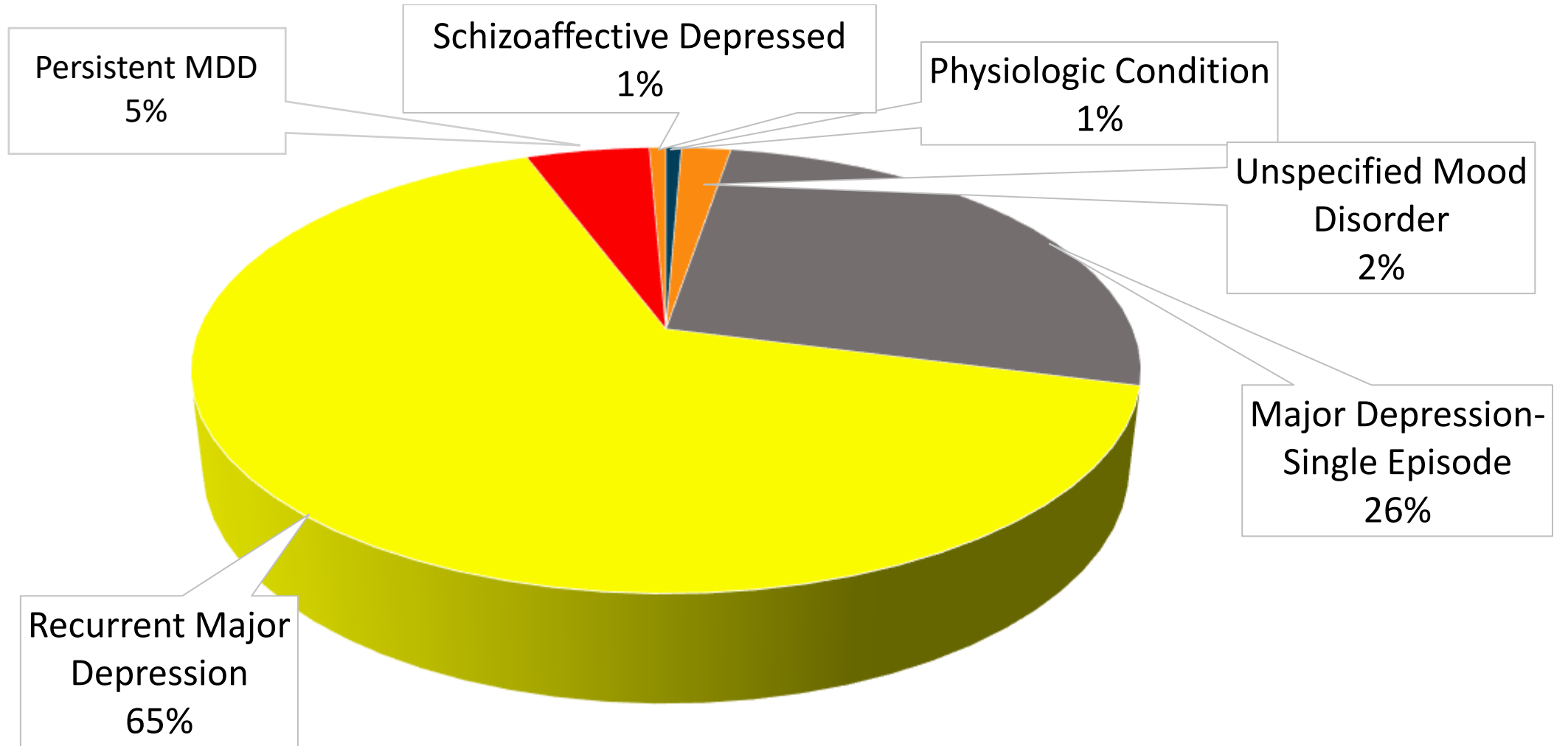


# MOOD OUTCOMES DATA

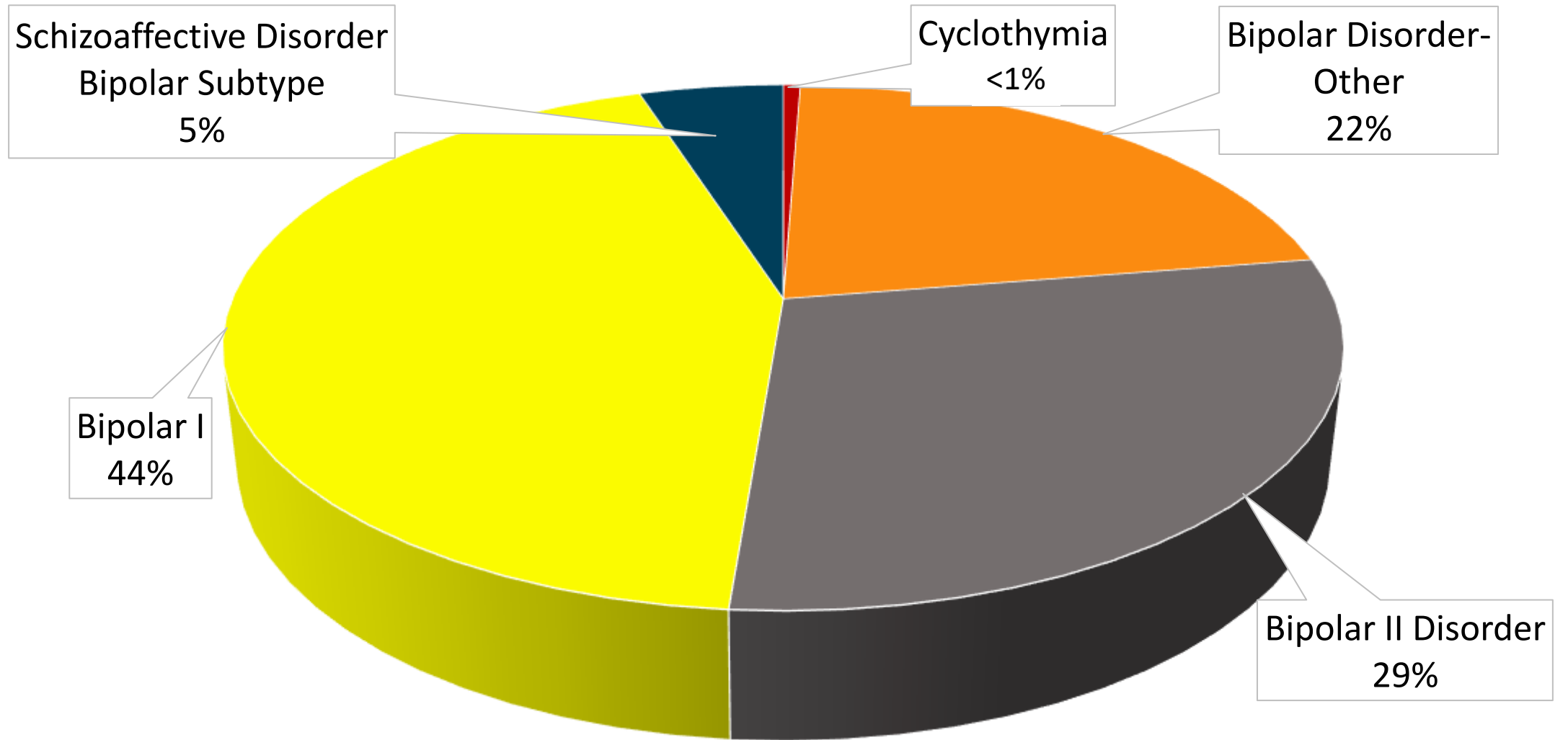
# Mood Outcomes Program Aug-2020 Data Freeze

	Bipolar Disorder	Unipolar Disorder
Number	1515	7442
Mean Age (SD)	42.3 (15.4)	40.4 (16.2)
% Female	64%	68%
Mean 1 <sup>st</sup> PHQ-9 (SD)	11.3 (7.6)	12.2 (7.0)
Mean 1 <sup>st</sup> GAD-7 (SD)	9.5 (6.6)	10.3 (6.3)
Any positive response on PHQ-9 question #9	31%	33%

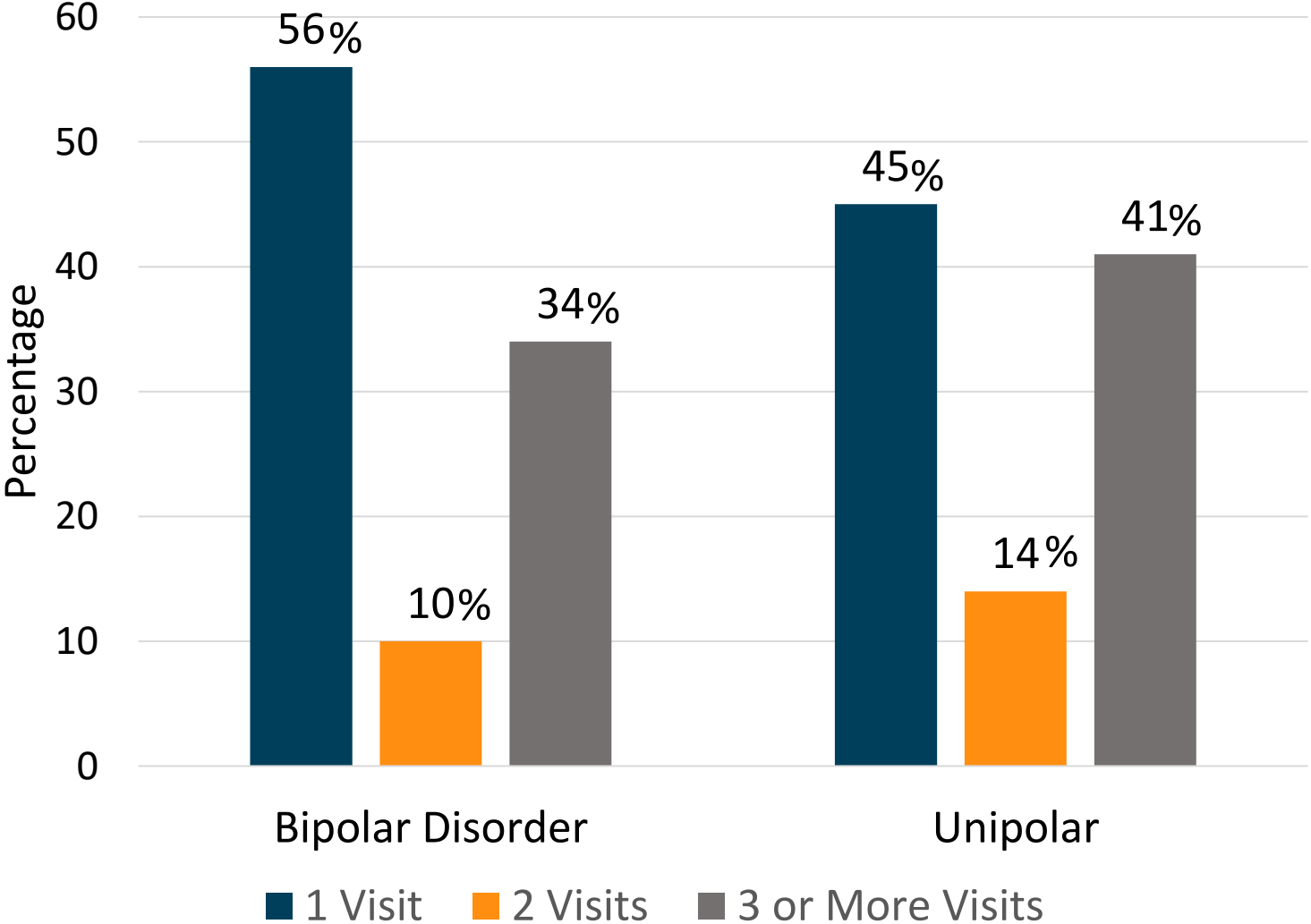
# Breakdown of Unipolar Depression Subtypes



# Breakdown of Bipolar Disorder Sub-Types



# Percent of Visits by Diagnosis

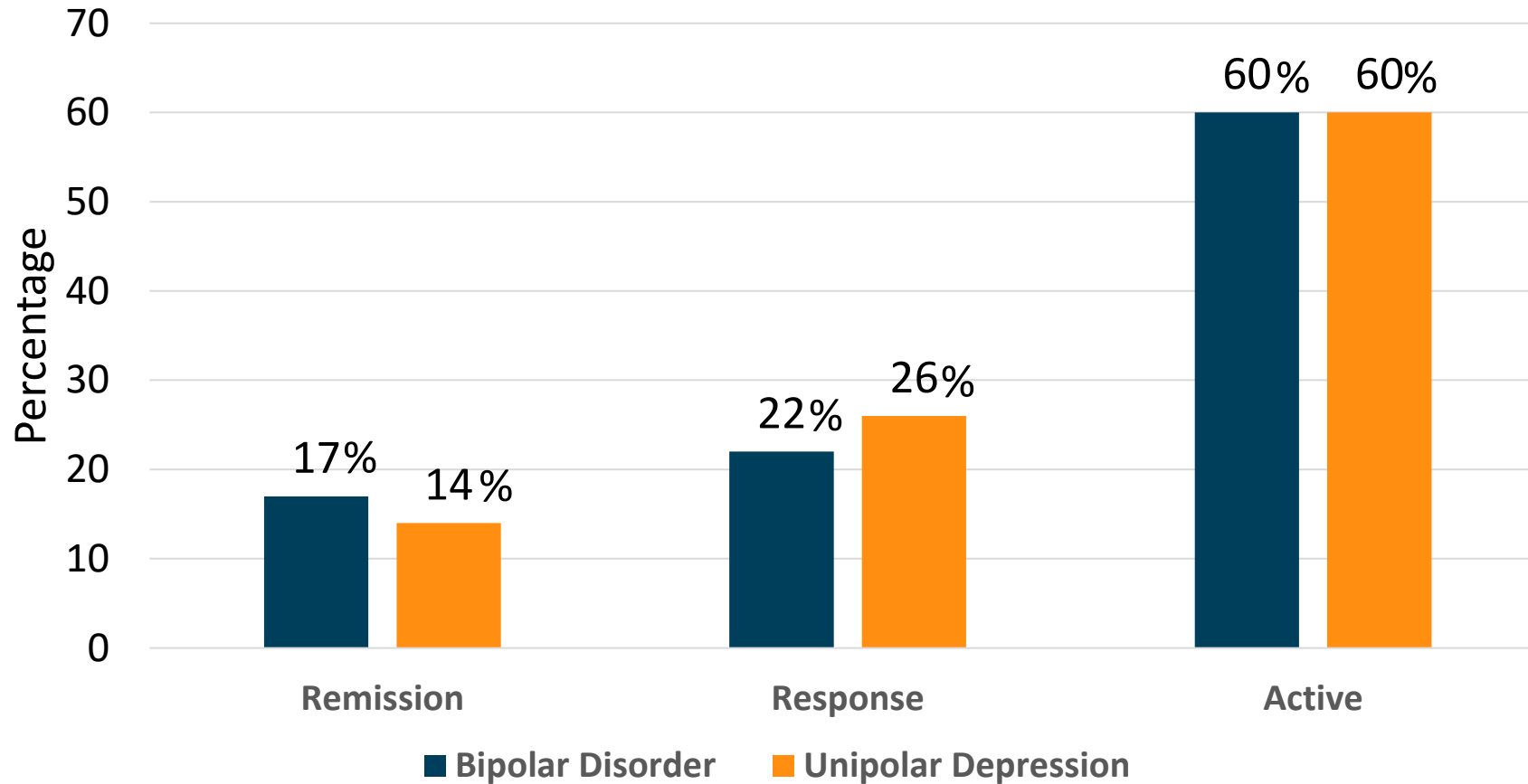


# Characteristics of Long-Term Follow-up

	Bipolar Disorder	Unipolar Disorder
Mean # Visits	3.2 Visits	3.7 Visits
Mean # Days Follow-Up	175.1 Days	221.4 Days
Maximum # Days Follow-up	1663 Days	1699 Days
* Mean (sd) decline in PHQ-9 for those $\geq 10$ at Baseline	-4.8 (6.9)	-4.6 (6.6)

\* population for long term follow-up is those with baseline phq-9  $\geq 10$  AND at least 1 follow-up visit

# PHQ-9 Status at Last Follow-up

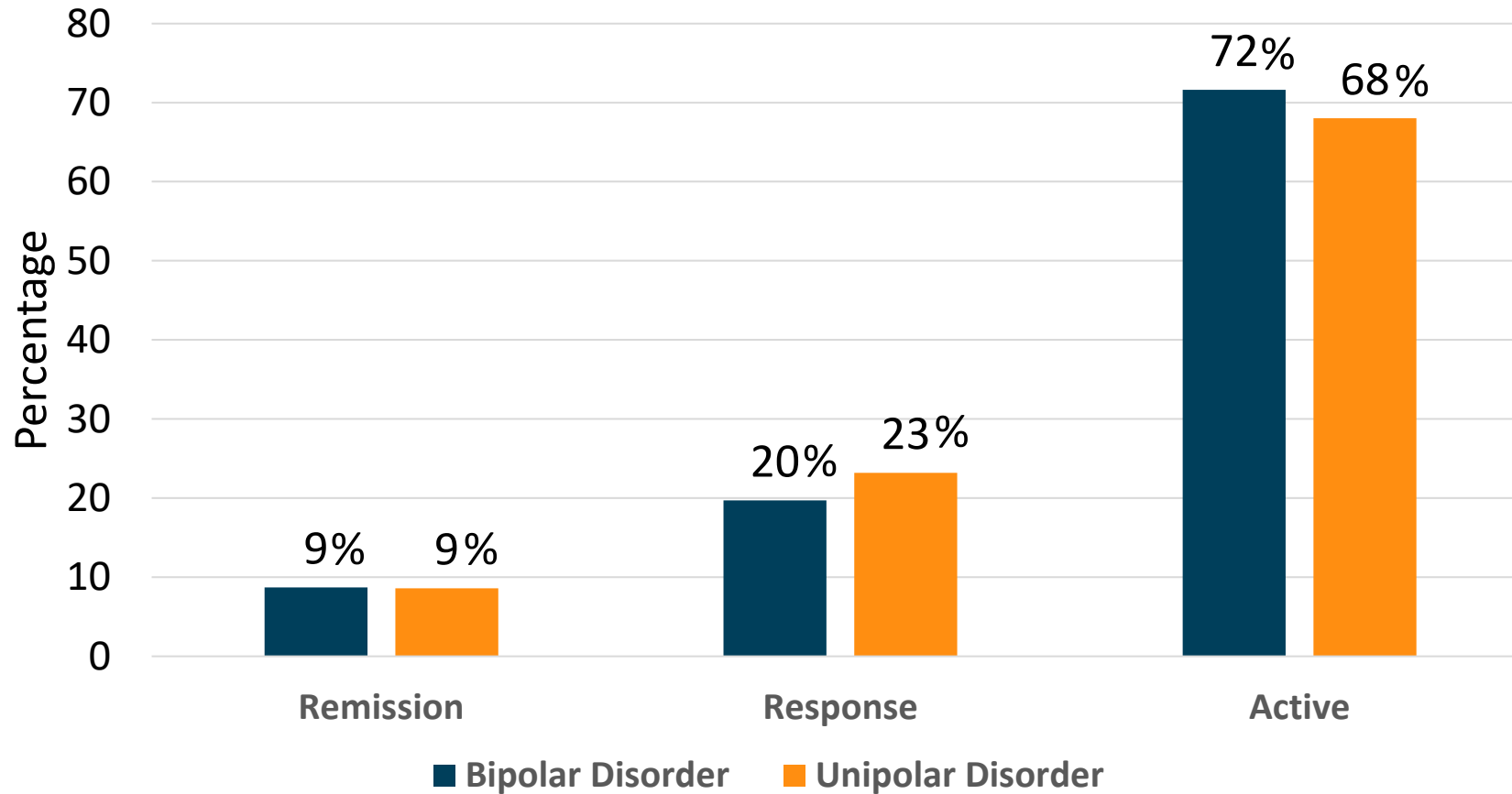


## Notes:

- Active  $\geq 10$
- Response 5-9
- Remission 0-4
  
- population for long term follow-up is those with baseline phq-9  $\geq 10$  AND at least 1 follow-up visit



# GAD-7 Status at Follow-Up

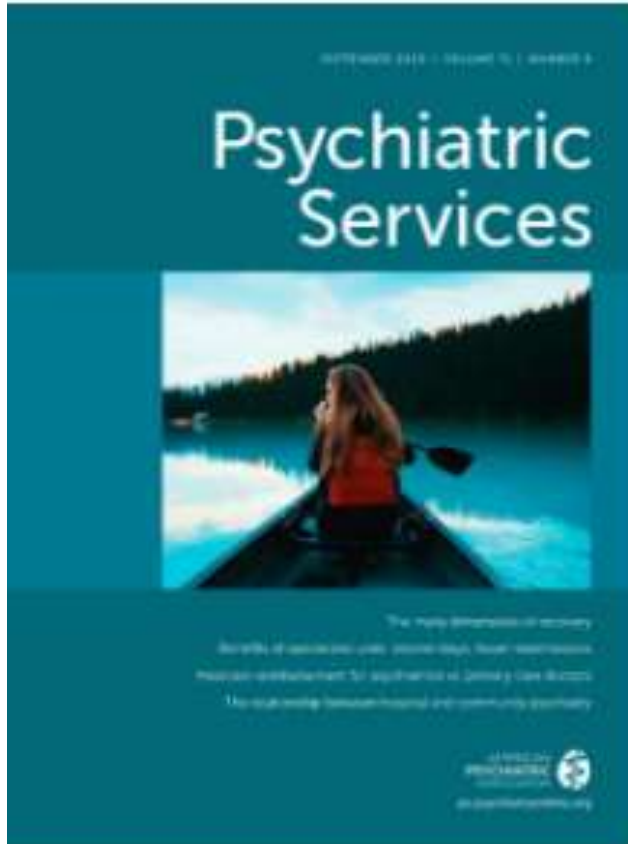


## Notes:

- Active  $\geq 10$
- Response 5-9
- Remission 0-4
  
- population for long term follow-up is those with baseline phq-9  $\geq 10$  AND at least 1 follow-up visit

# First Mood Outcomes Publication

## May 2020



### Development of the National Network of Depression Centers Mood Outcomes Program: A Multisite Platform for Measurement-Based Care

Peter P. Zandi, Ph.D., Yu-Hsun Wang, M.D., Paresh D. Patel, M.D., David Katzelnick, M.D., Carolyn L. Turvey, Ph.D., Jesse H. Wright, M.D., Ph.D., Olusola Ajilore, M.D., Ph.D., William Coryell, M.D., Christopher D. Schneck, M.D., Constance Guille, M.D., Erika F. H. Saunders, M.D., Sophie A. Lazarus, Ph.D., Valeria A. Cuellar, M.D., Sudhakar Selvaraj, M.D., Ph.D., Patricia Dill Rinvelt, M.B.A., John F. Greden, M.D., J. Raymond DePaulo, M.D.

# Future Developments

**Expanded Data Model** to accept additional elements characterizing patients, treatment, and course:

- Additional Demographic Variables
- Comorbidity (e.g. Problem List)
- Treatment Indicators

**Standard Epic Extract** to populate Expanded Data Model



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## CONTACT US

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