



# **Long COVID: Research and Lessons Learned from the INSPIRE Study**

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# Outline

- INSPIRE Study
- Study Findings
- Lessons Learned
- Future Directions





# **Innovative Support for Patients with SARS-CoV-2 Infections (INSPIRE)**

# Innovative Support for Patients with SARS-CoV-2 Infections (INSPIRE)



- 6,000 Participants
- Included COVID+ and COVID-
- 8 Sites Across the US
- 18 Months
- Quarterly surveys
- Patient Portal Linkage

# Innovative Support for Patients with SARS-CoV-2 Infections (INSPIRE) Sites



# **Innovative Support for Patients with SARS-CoV-2 Infections (INSPIRE)**

**Funded by:  
Centers for Disease Control and Prevention**





# Key Study Findings

# Study #1: Symptom Profiles at Three Months

- 1,000 Participants (72% COVID+)
- Baseline and 3-months
- Most common 3-month symptoms:
  - Head/Ear/Eye/Nose/Throat (37%)
  - Constitutional/Fatigue (29%)
  - Musculoskeletal (20%)
  - Pulmonary (18%)

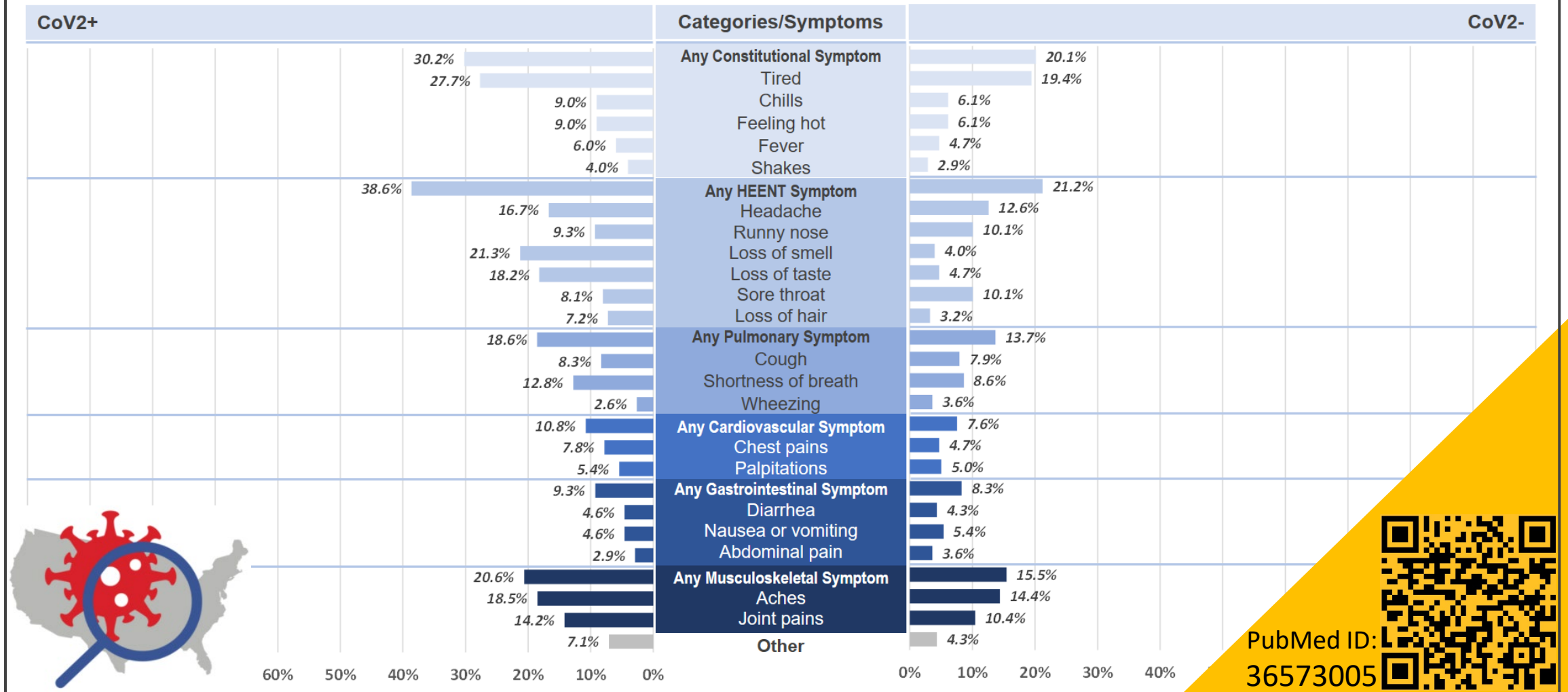


PubMed ID:  
36573005





# Study #1: Symptom Profiles at Three Months



## Study #2: 3-month Persistent Fatigue and Symptoms by Variant

- 3,223 Participants at 3 months
  - 19% Pre-Delta
  - 50% Delta
  - 31% Omicron
- Assessed Organ-Based Symptoms and Fatigue



PubMed ID:  
36705268

## Study #2: 3-month Persistent Fatigue and Symptoms by Variant

Variant	Severe Fatigue	≥3 Symptoms
Pre-Delta	17%	28%
Delta	12%	22%
Omicron	12%	16%
<b>OVERALL</b>	<b>13%</b>	<b>21%</b>



PubMed ID:  
36705268

## Study #2: 3-month Persistent Fatigue and Symptoms by Variant

Variant	Severe Fatigue	≥3 Symptoms	Vaccination
Pre-Delta	17%	28%	18%
Delta	12%	22%	74%
Omicron	12%	16%	98%
<b>OVERALL</b>	<b>13%</b>	<b>21%</b>	<b>68%</b>



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# Study #3: Phenotypes and Symptom Trajectories

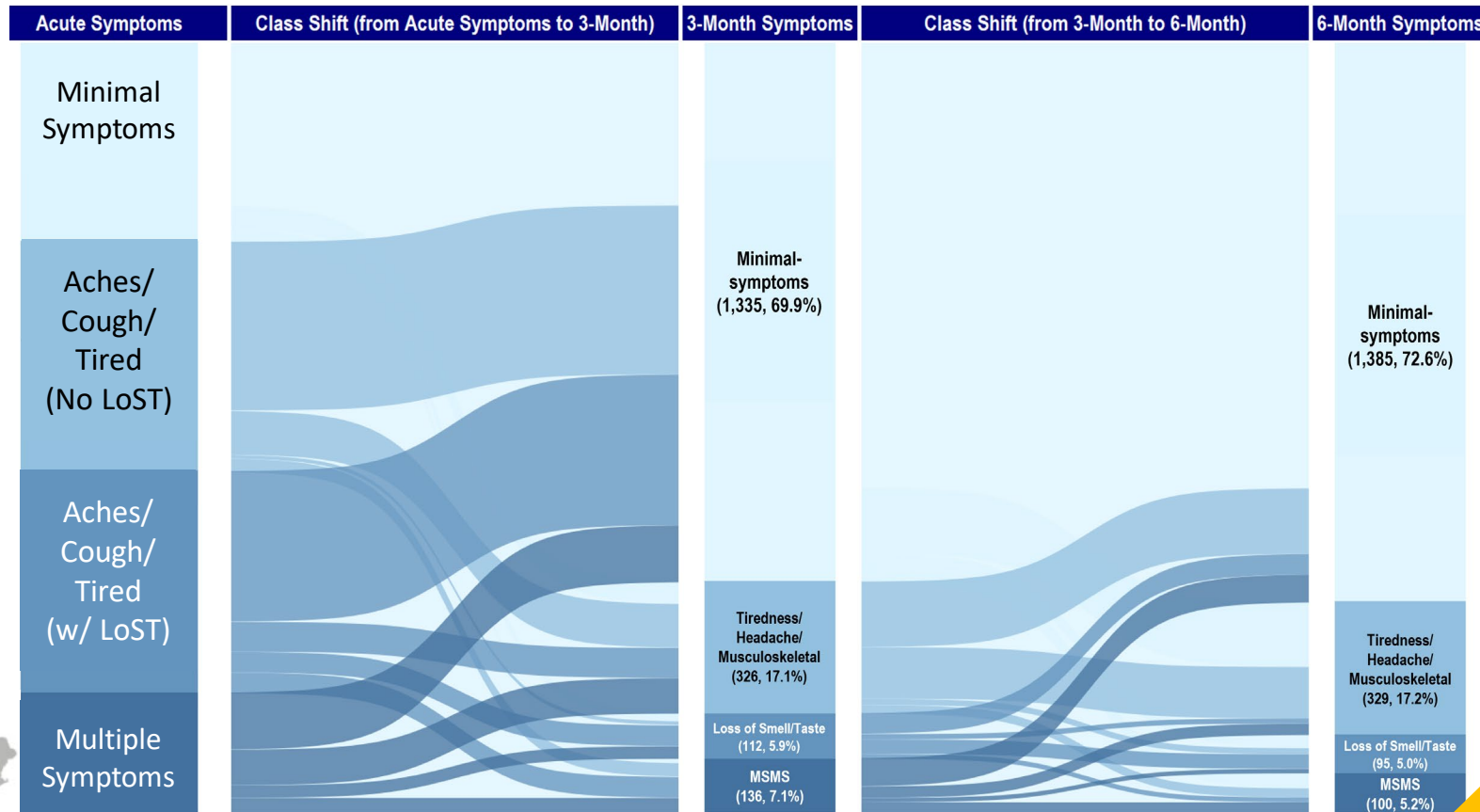
- 5,963 Participants
- Baseline, 3 month, and 6 month
- Multiple different phenotypes
  - Ranging from minimal to maximal symptoms



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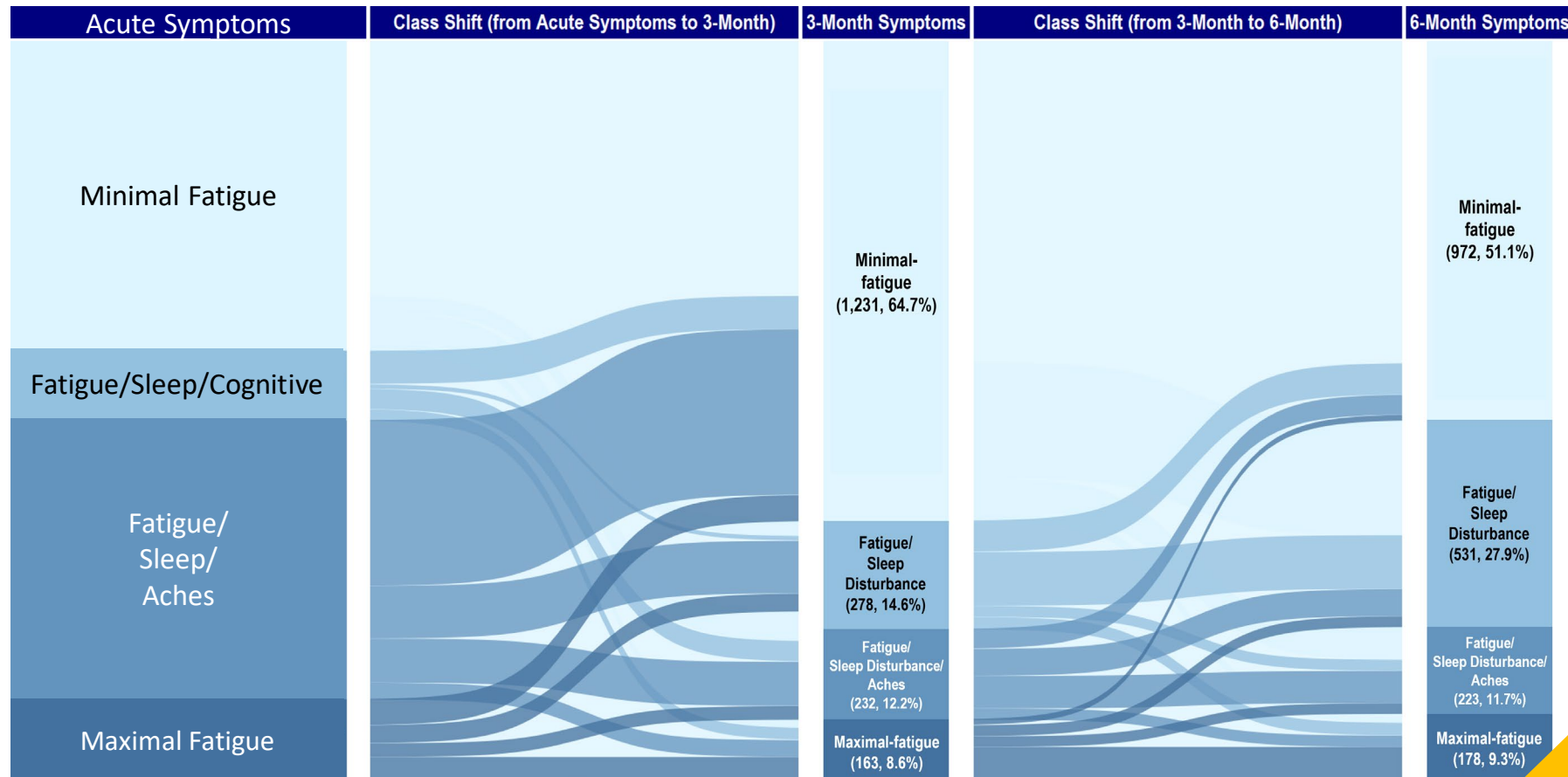


# Study #3: Phenotypes and Symptom Trajectories



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# Study #3: Phenotypes and Symptom Trajectories



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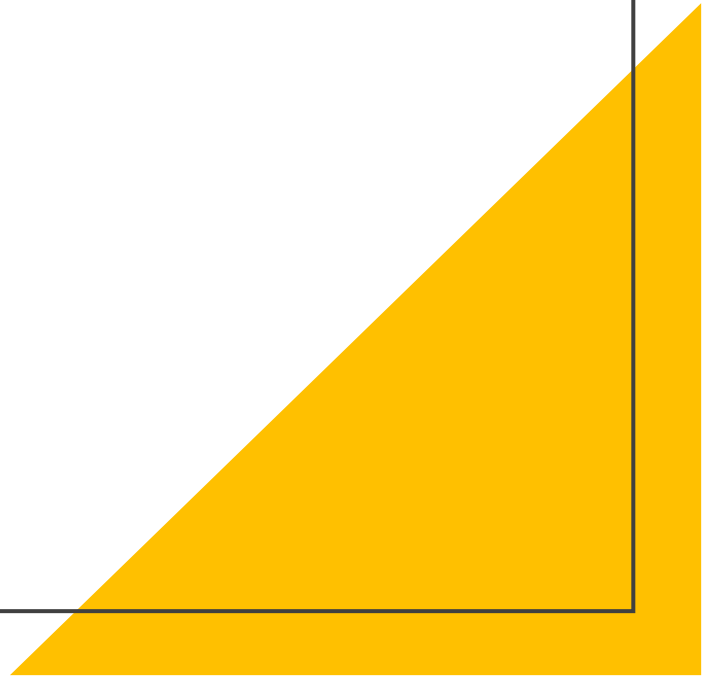
# Lessons Learned



# Lessons Learned



- Moving Target



# Lessons Learned



- Moving Target
- Cross-over

# Lessons Learned



- Moving Target
- Cross-over
- Complex Condition

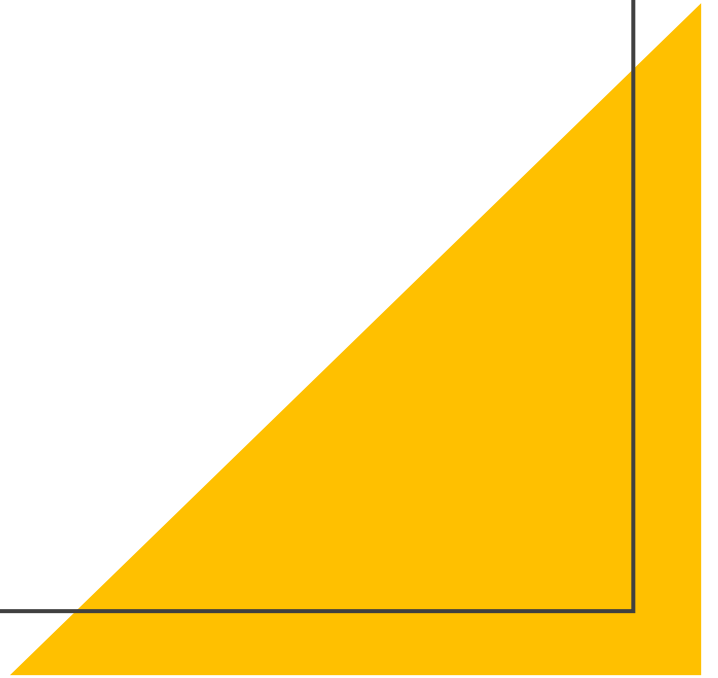




# **Future Directions**

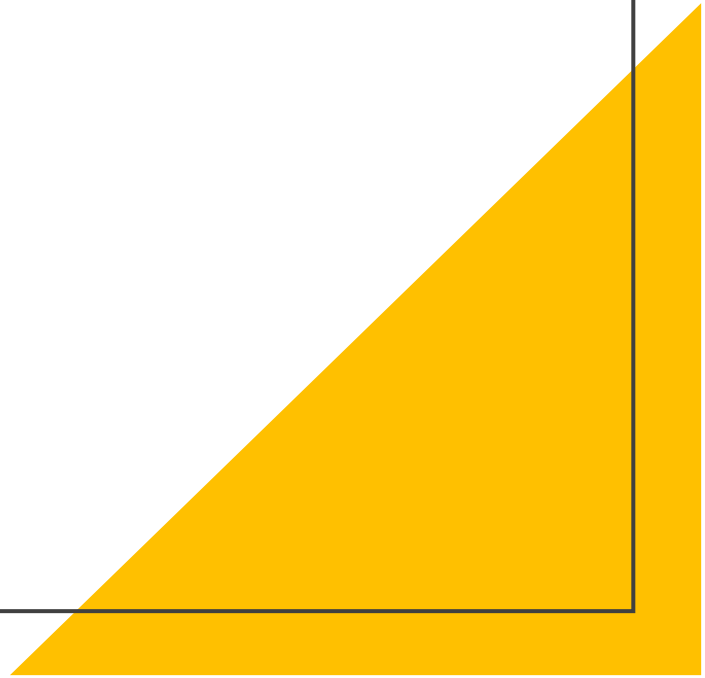
# Future Directions

- Increased engagement of participants



# Future Directions

- Increased engagement of participants
- Improve understanding of complexity



# Future Directions



- Increased engagement of participants
- Improve understanding of complexity
- Examining disparities in outcomes

# Future Directions



- Increased engagement of participants
- Improve understanding of complexity
- Examining disparities in outcomes
- Better understand individual and economic impact



# INSPIRE Group Core and Site Investigators

**Rush:** Robert Weinstein, MD; Michael Gottlieb, MD

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Full List of  
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# Thank You!

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