

# Assessing Health Impacts of Natural Disasters in Puerto Rico for Promoting Resilience



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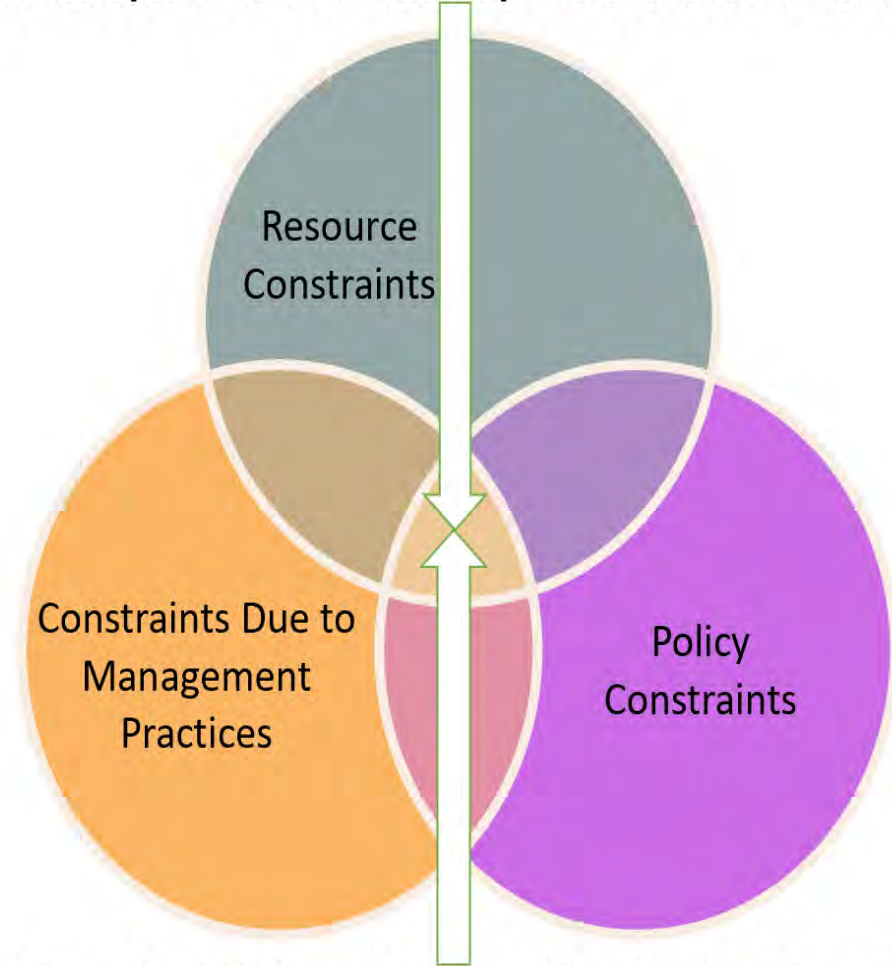
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## Catastrophic Public Health Impacts of Hurricane Maria



**Key Challenges for Building a More Resilient Health System in Puerto Rico**

Call 3 and Continuation Call: Public Health Disaster Research Award Webinar  
Public Health Disaster Research Award Program  
August 3, 2023



# Project Overview

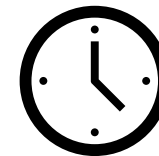
## Purpose

- Health system in Puerto Rico faces unique challenges in maintaining resilience and continuity during natural hazards or disaster events.
- Devastating impact of Hurricane Maria in 2017 exacerbated the strain on the healthcare system
  - Resource constraints (financial, human, and technical).
  - Management constraints (understaffing, inadequate coordination, poor communication)
  - Policy constraints (regulations or laws).
- We conducted interviews with patients, public health professionals, and emergency management personnel to gain deeper insights into the nature and extent of key public health management challenges following recent disaster events in Puerto Rico.



### Research Site

Puerto Rico



### Timeline

2022-23



# Research Questions

1

To what extent are these key challenges due to resource constraints?

2

To what extent are they due to management practices and policy constraints?

3

What are the actionable steps that can be specified to overcome these constraints for reducing mortality and morbidity risks during future disasters?

# Methods

**Study design: Survey and Interviews**

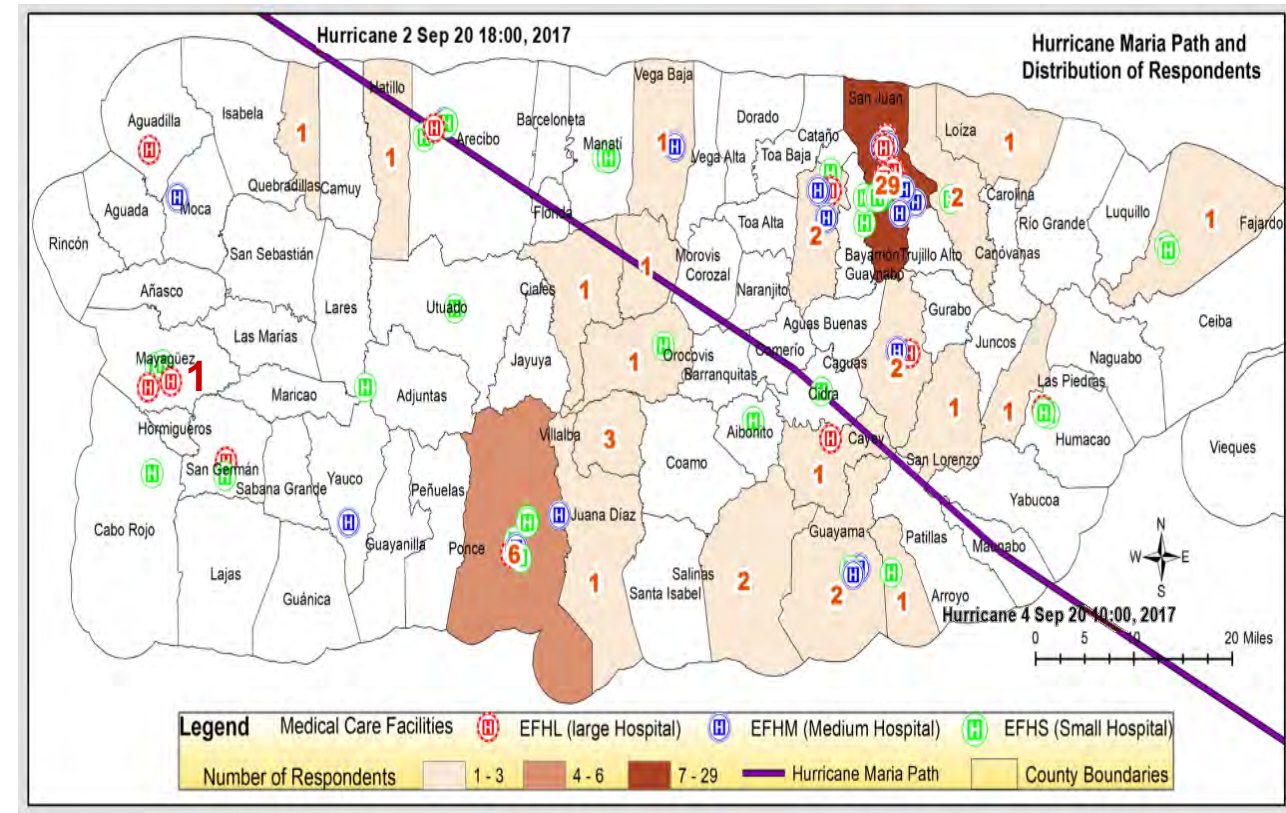
**Sampling design: Purposive sampling**

- Patients
- Nonprofit/ NGO/ Community organizations
- Public health professionals (doctors, nurses, pharmacists)
- Hospital utility services' operators
- Hospital management personnel
- Other relevant key informants

**Sample size: 62**

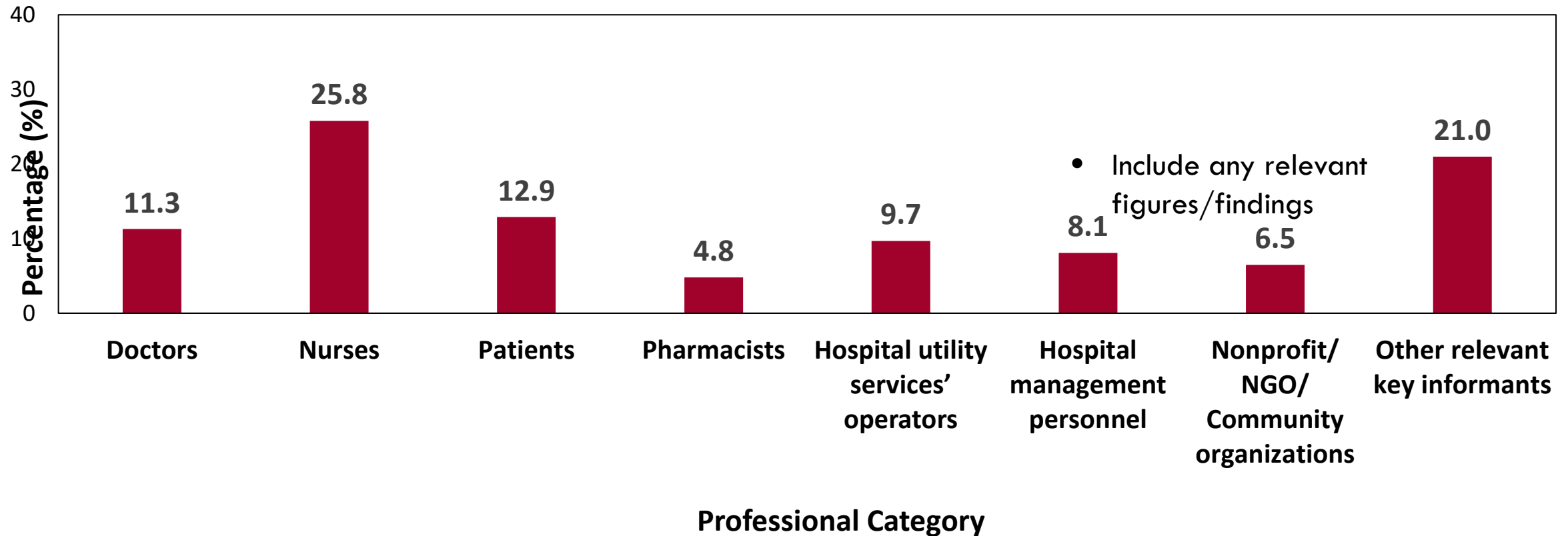
- Efforts made to represent the size and capacity of healthcare facilities and locational heterogeneity (socioeconomic and neighborhood characteristics, extent of hurricane exposures, etc.)

**Location of Stakeholder Interviews and Capacities of Healthcare Facilities in Puerto Rico**



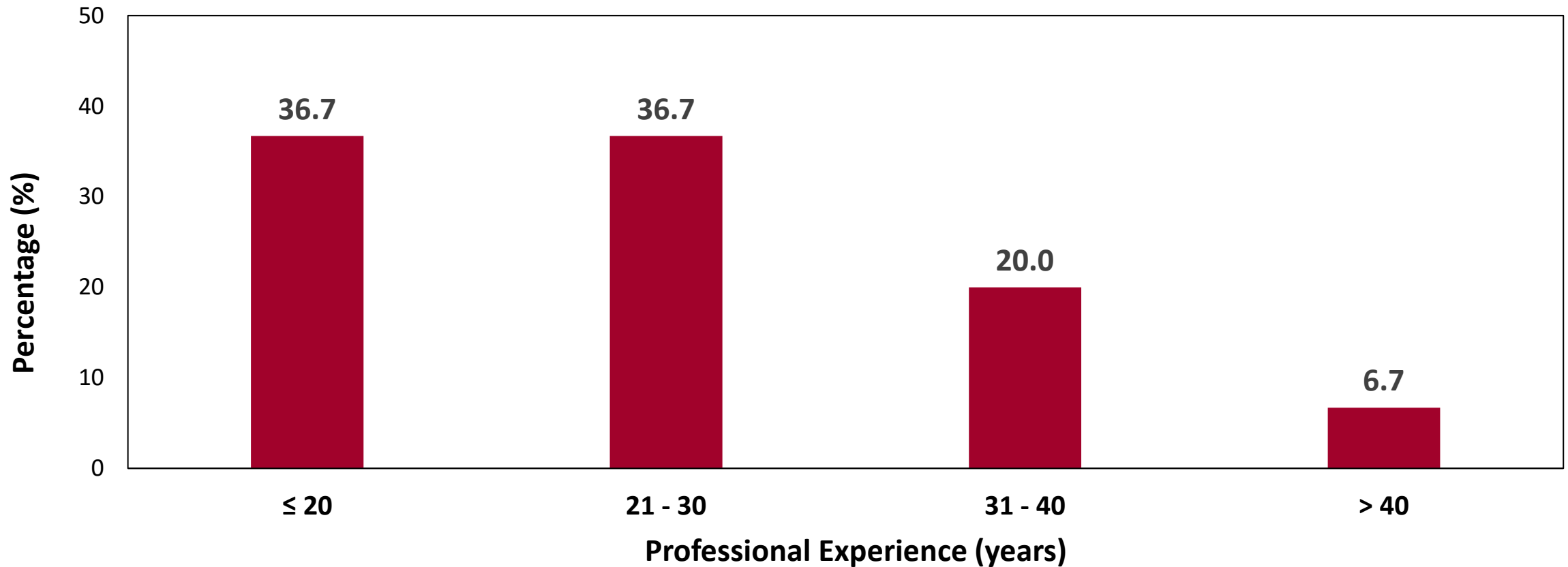
# Preliminary Findings

Distribution of Professional Category of Study Participants, Puerto Rico, January-April 2023



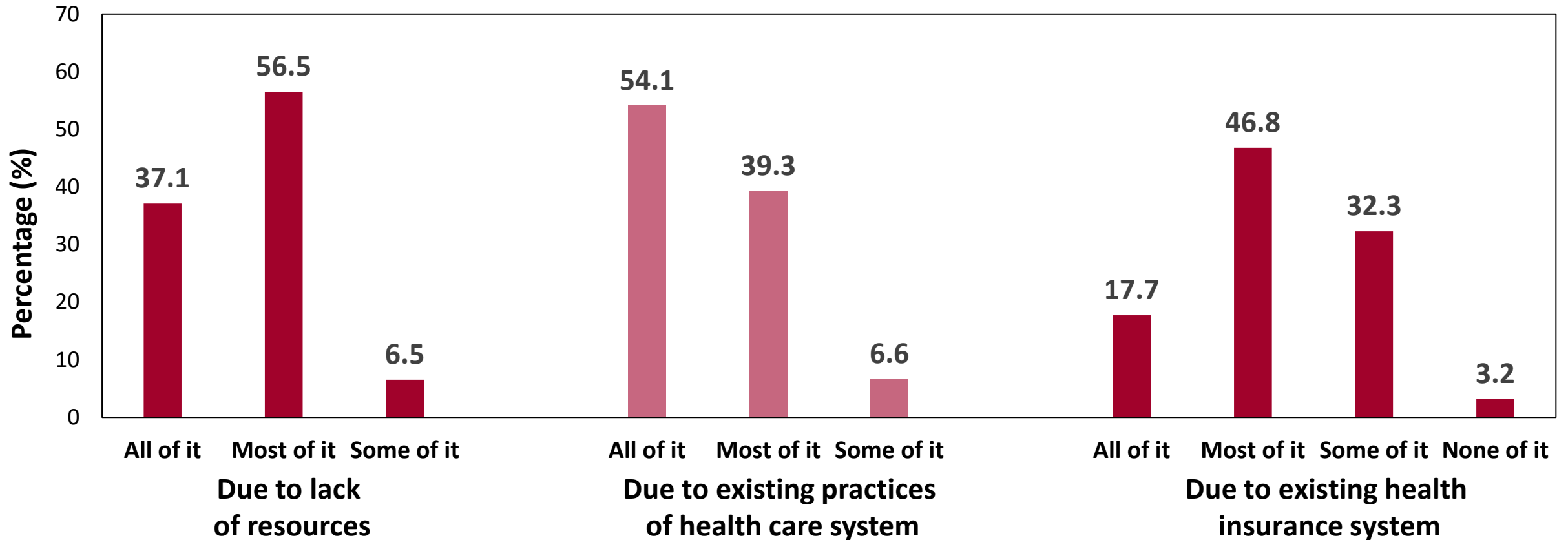
# Preliminary Findings

Distribution of Professional Experience of Study Participants, Puerto Rico, January-April 2023



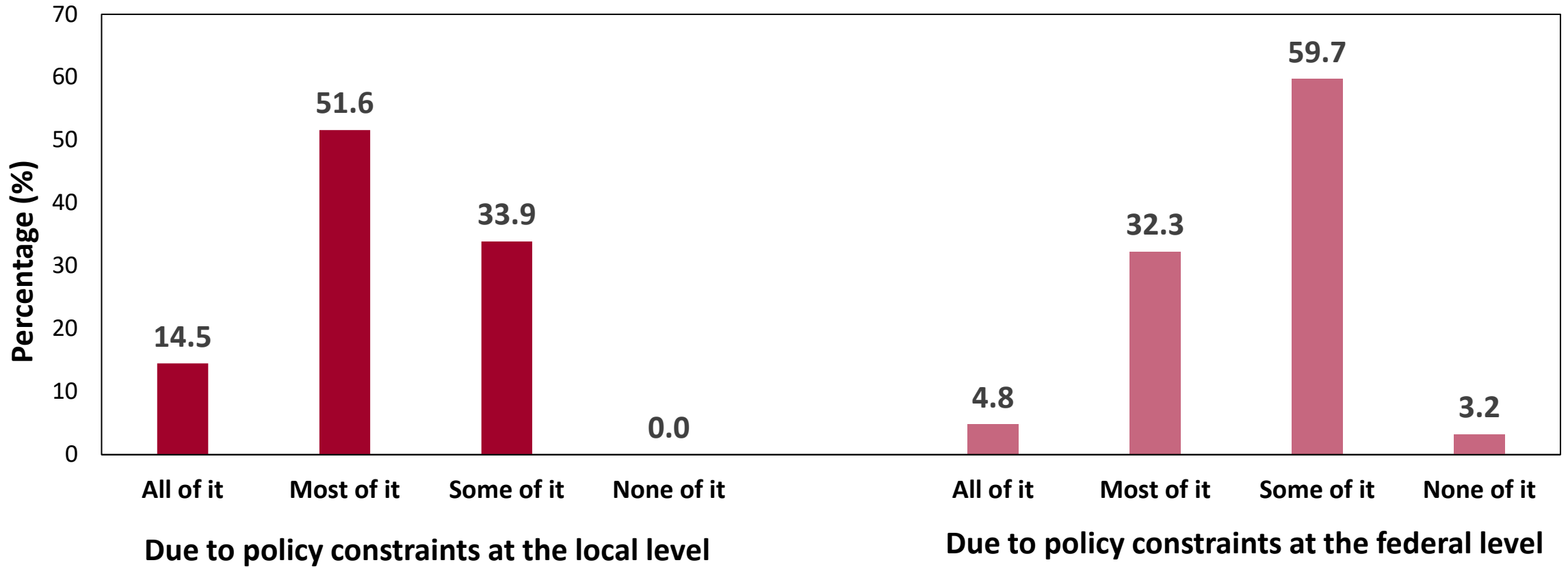
# Preliminary Findings

Opinions of Study Participants Regarding the Reasons for Disaster-Related Public Health Management Challenges, Puerto Rico, January-April 2023



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Opinions of Study Participants Regarding the Reasons for Disaster-Related Public Health Management Challenges, Puerto Rico, January-April 2023





# Public Health Implications



1

**Our findings indicate that high mortality and morbidity risks in the aftermath of Hurricane María in PR are primarily driven by resource constraints which are further aggravated by management practices and policy constraints.**

2

**The qualitative findings confirmed the challenges of providing effective health care amidst service disruptions, a shortage of human resources, and access to medical assistance.**

3

**Disruptions in utility services (electricity, water etc.) caused significant difficulties in providing effective health care; lack of resources and existing policy and management practices exacerbated these challenges.**

# Public Health Implication

1

Reforming the infrastructure for ensuring continuous electricity supply in health care facilities.

Hospitals can explore partnerships with solar companies in order to install solar systems in all health care facilities.

The government can extend tax incentives by encouraging installation of solar systems in hospitals with collaboration between hospitals and solar companies.



# Public Health Implication

2

Improving human resource management in the health care sector.

Engaging nurses in more advanced level health care activities.

Decentralizing healthcare delivery and enhancing emergency planning and preparedness.

# Public Health Implication

3

Easing policies from insurers regarding pre-authorization requirements during emergency.

Our findings have significant implications to build a conduit between the community, public health stakeholders, and emergency management agencies for laying down a foundation of a resilient health system in Puerto Rico.

# Acknowledgements

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Location of Stakeholder Interviews and Capacities of Healthcare Facilities in Puerto Rico

