



THE WARREN ALPERT
Medical School
BROWN UNIVERSITY

Rhode Island STROKE SYMPOSIUM

RISTF: Improving Care on a Statewide Level

Gino Paolucci, DNP, NP

Co-Chair, Rhode Island Stroke Task Force

Neurovascular Manager, RI Hospital

Teaching Associate, Brown University Alpert Medical School

DISCLOSURE

- I have No relevant financial relationships to disclose
- My talk will not include any off -label discussion

RHODE ISLAND



"NEITHER A ROAD,
NOR AN ISLAND!"



NEW
YORK

CONNECTICUT

RHODE
ISLAND

NEW
JERSEY

ATLANTIC OCEAN

LONG ISLAND

Unique Accent

Drop Rs

Pahk Our Cahs

Insert Hs

Come up from the cellah,
suppah is done

Insert Rs

We have wicked awesome
idears



Illegal Corruption

Most Corrupt

Arizona

California

Kentucky

Alabama

Illinois

New Jersey

Georgia

New Mexico

Pennsylvania

Florida

Indiana

Rhode Island

Texas

Least Corrupt

Idaho

Maine

Massachusetts

New Hampshire

North Dakota

South Dakota

Vermont

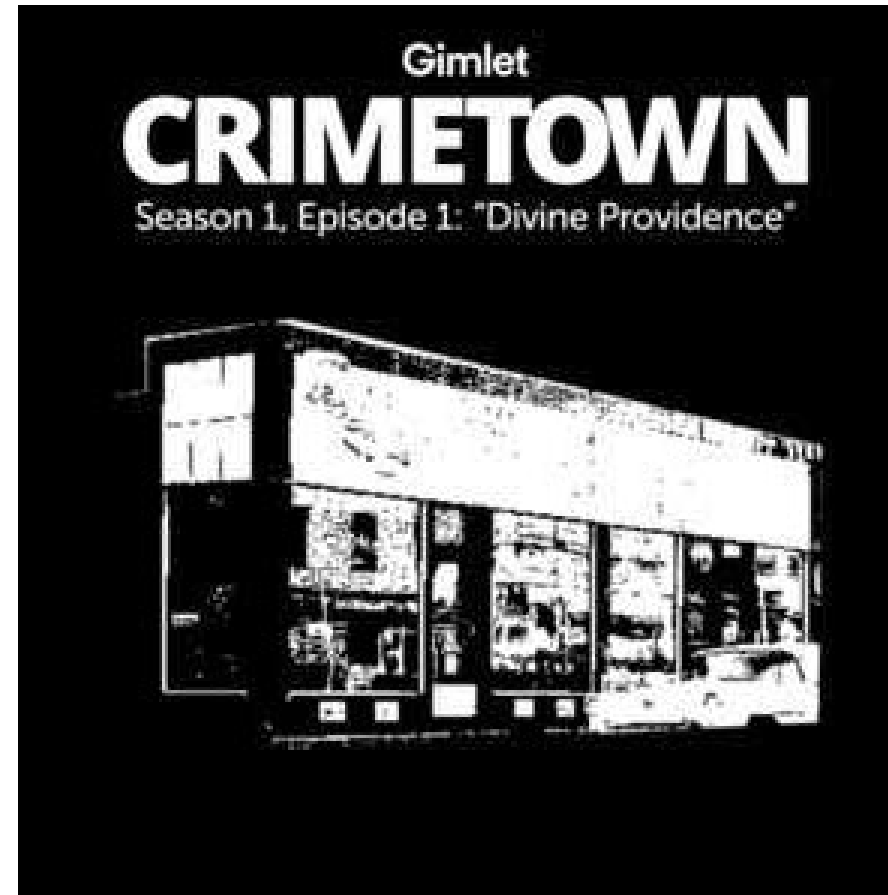
Michigan

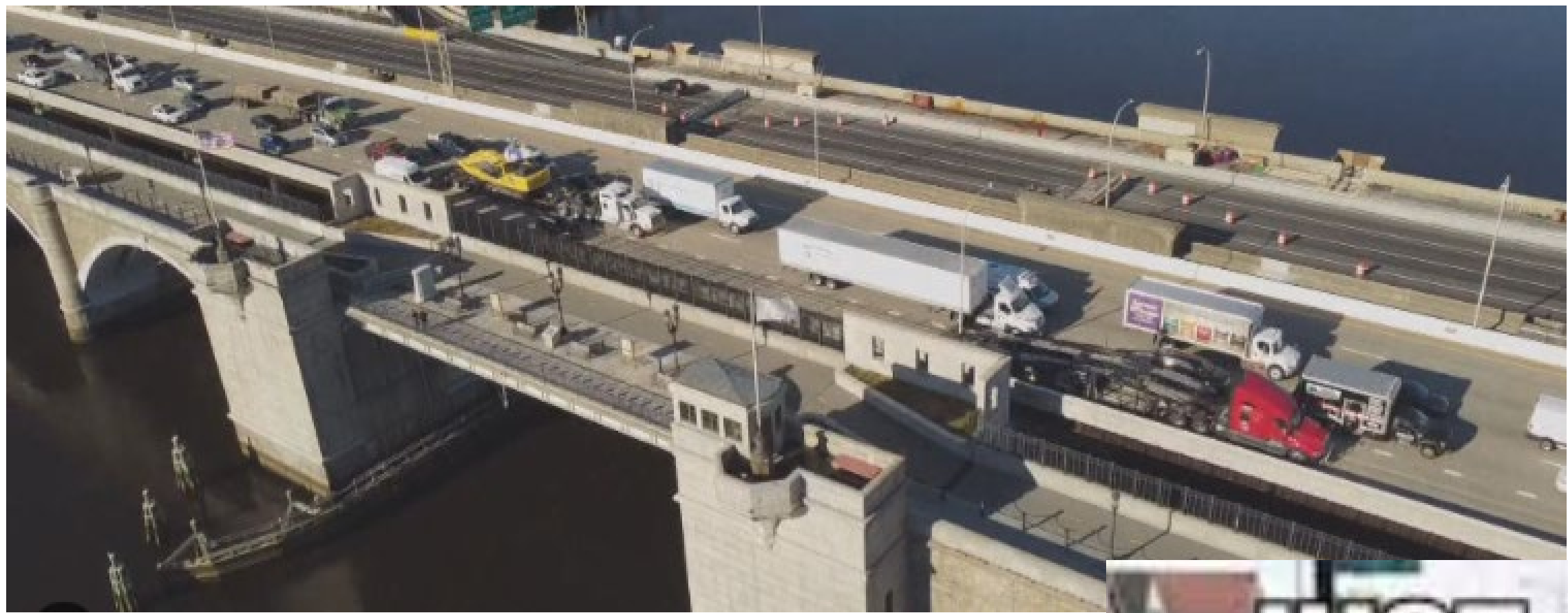
Oregon

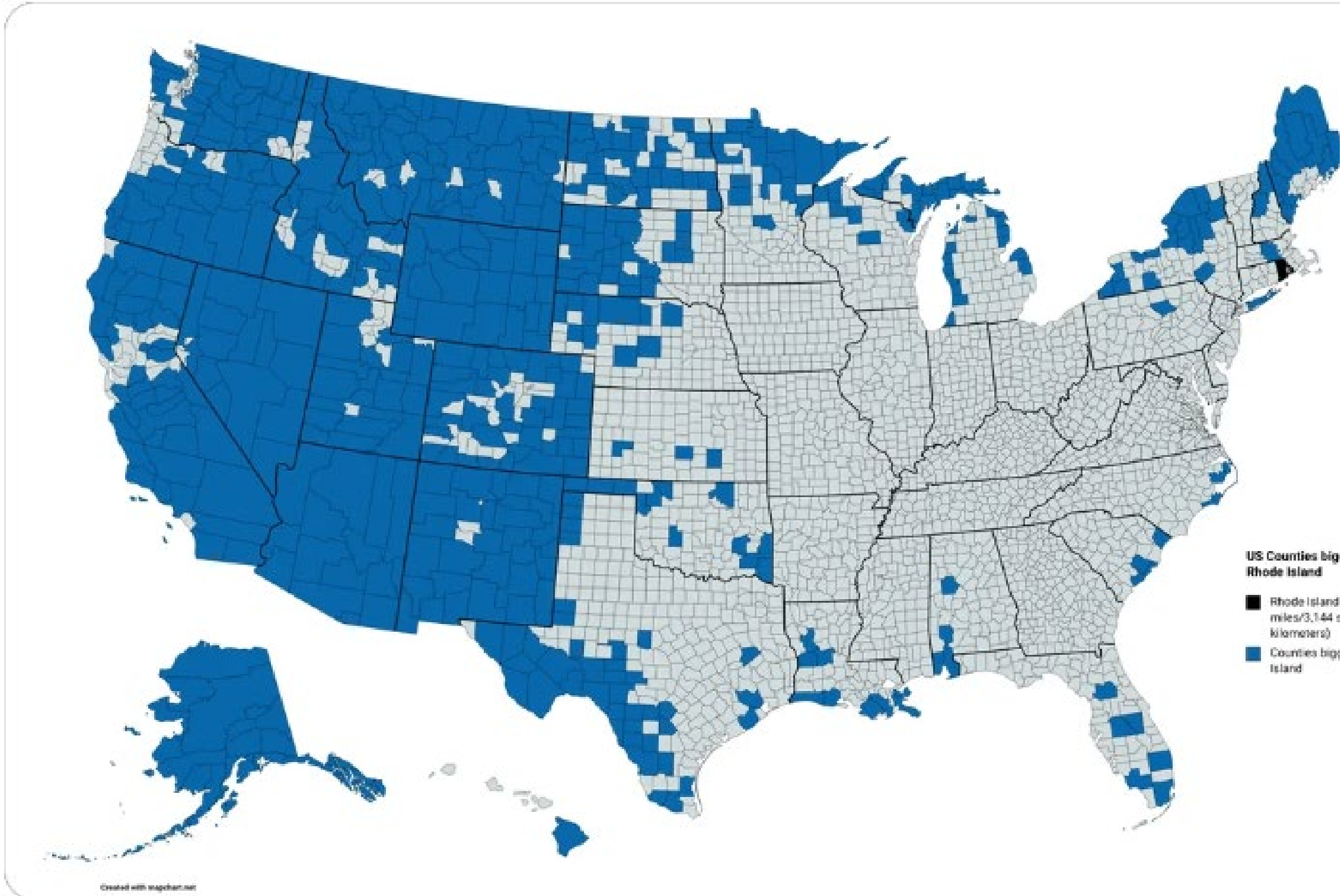
Hawaii

Maryland

Wyoming







Rhode Island

DRIVERS LICENSE

Class **DRUNK** License No. **1MORBEER**

Birthdate 1964

Expires Never

Sex	Size	Wt.	Eyes	Issue Date
M	FAT	330lbs	ROUND	01/31/1999

Restrictions: **Ernie the Giant Chicken**

PETER GRIFFIN

31 SPOONER STREET

QUAHOG, RI 00093

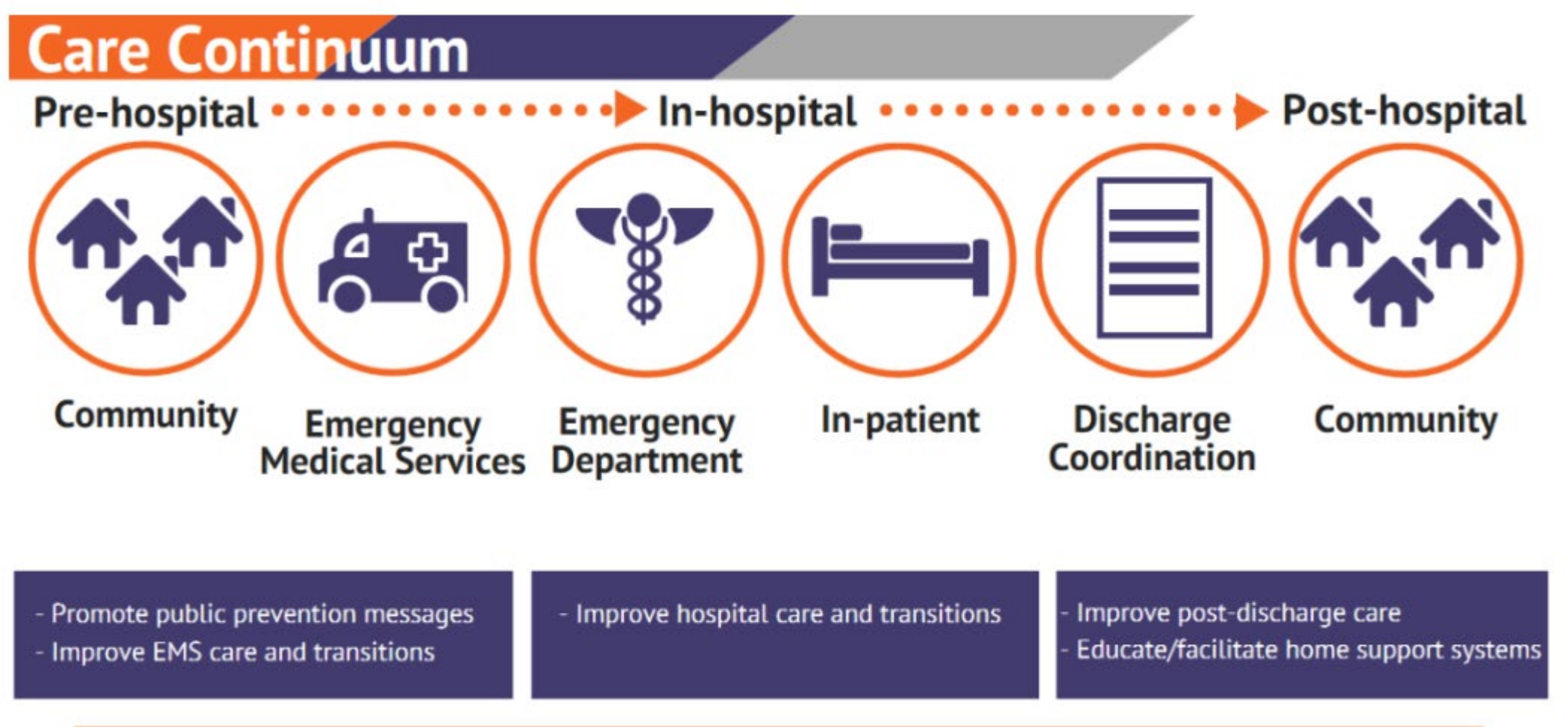
Peter Griffin



Rhode Island

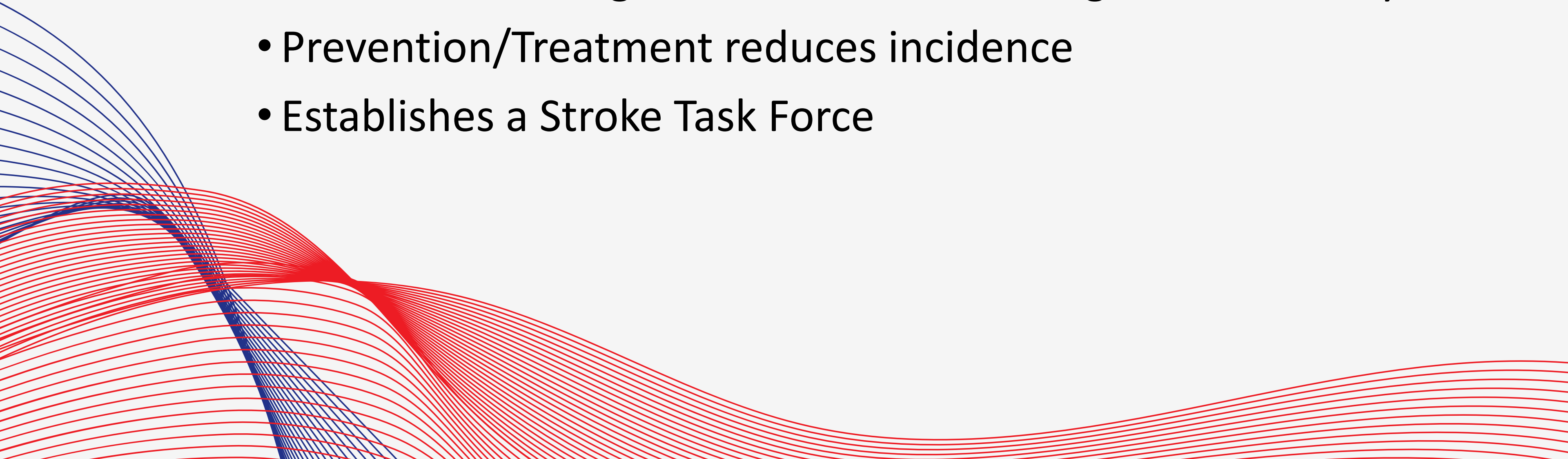


Stroke Systems of Care



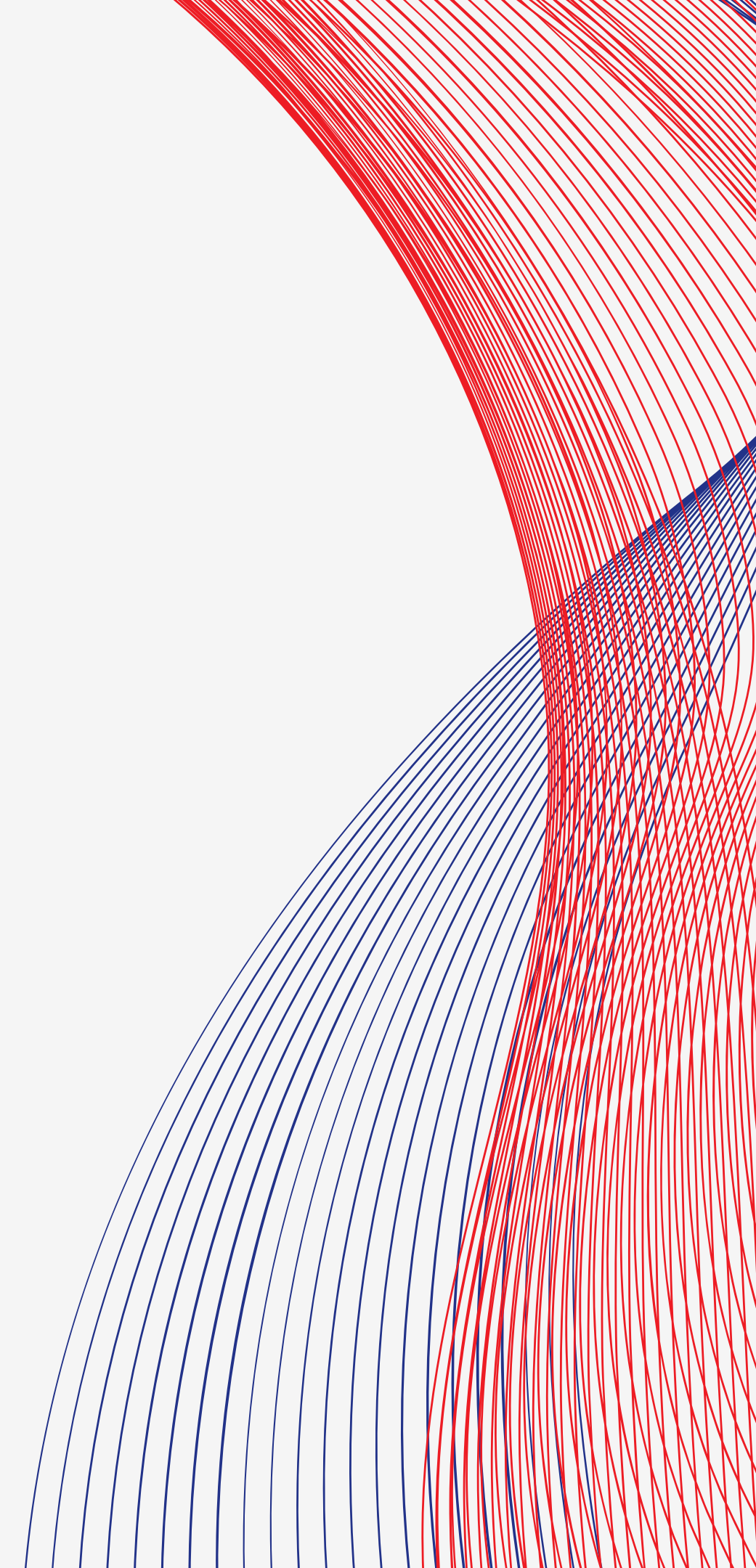


History/Background of the RISTF

- Created in 2005
 - Mandated by law in response to RIGL 23-78-1
 - Stroke Prevention and Treatment Act of 2009
 - Stroke is a leading cause of death and long-term disability
 - Prevention/Treatment reduces incidence
 - Establishes a Stroke Task Force
- 

Stroke Task Force

- Task force
 - Noun
 - A unit specially organized for a task



RISTF MEMBERSHIP

- Physicians Active in stroke Care
 - Neurology
 - Neuroradiology
 - Neurosurgery
 - Emergency Medicine
- RN/NP
- PA
- CSC Admin
- ASAB
- Public Health
- Rehab facility
- Quality Improvement Org
- American Stroke Assoc
- Stroke Survivor/Caretaker
- Minority Health Organization
- Currently have representative from ALL hospitals in RI

GOALS OF RISTF

- Identify/Monitor Stroke Incidence
 - Highest risk populations
- Publicize/disseminate findings
- Promote Collaborative statewide system of care
- Make recommendations for EMS stroke related care
- Work with PCPs to promote Primary Prevention of Stroke
- Collect and analyze data to determine trends
- Promote/share best practices



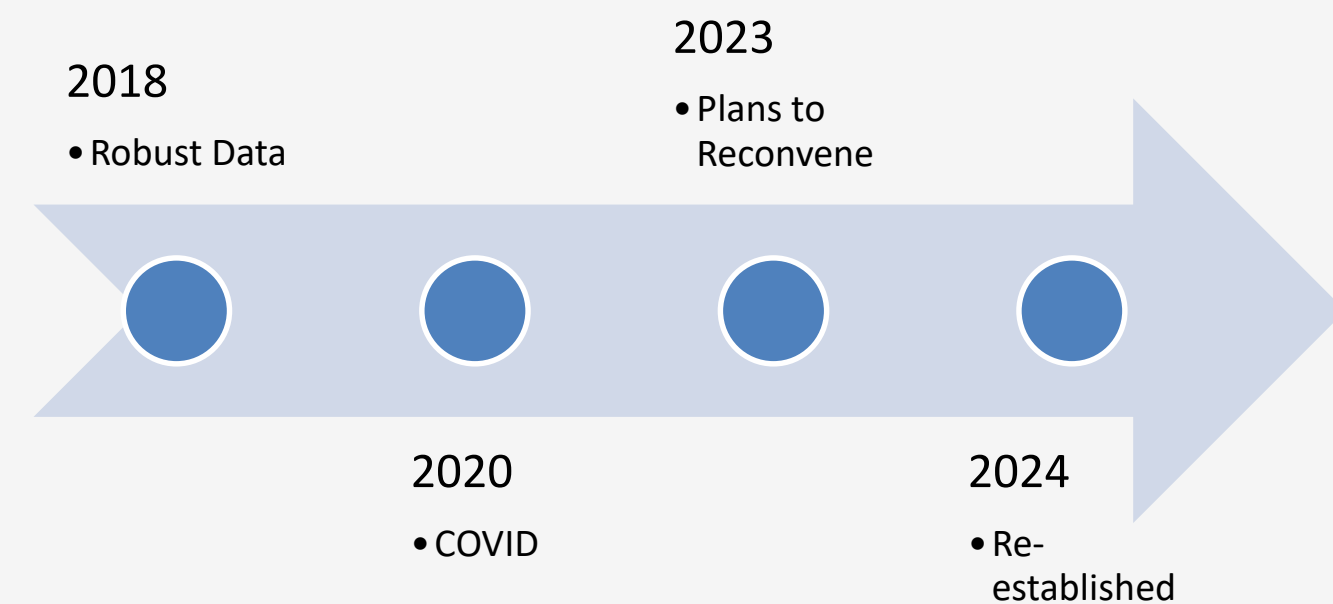
Accomplishment



- All RI hospitals participate in GWTG
- National Database
 - Performance feedback for CQI
 - Hospital Performance Achievement Awards
 - Clinical Tools
 - Professional/Patient Education
- All RI Stroke Hospitals agreed provide hospital level data
 - Identify and address strengths/weaknesses
 - Quality of Care Metrics
 - Racial/Ethnic Disparities

KEYS TO A SUCCESSFUL STROKE TASK FORCE

- Identify State Needs
 - Consider Population, geography
- Secure Health System Buy In
 - Especially EMS
- Access Data Systems for QI
- Recommendations built on Science
- Funded
- CHALLENGES in RI
 - \$\$
 - Currently Unfunded
 - DOH Assets but lack data



Keys to A Successful SSOC

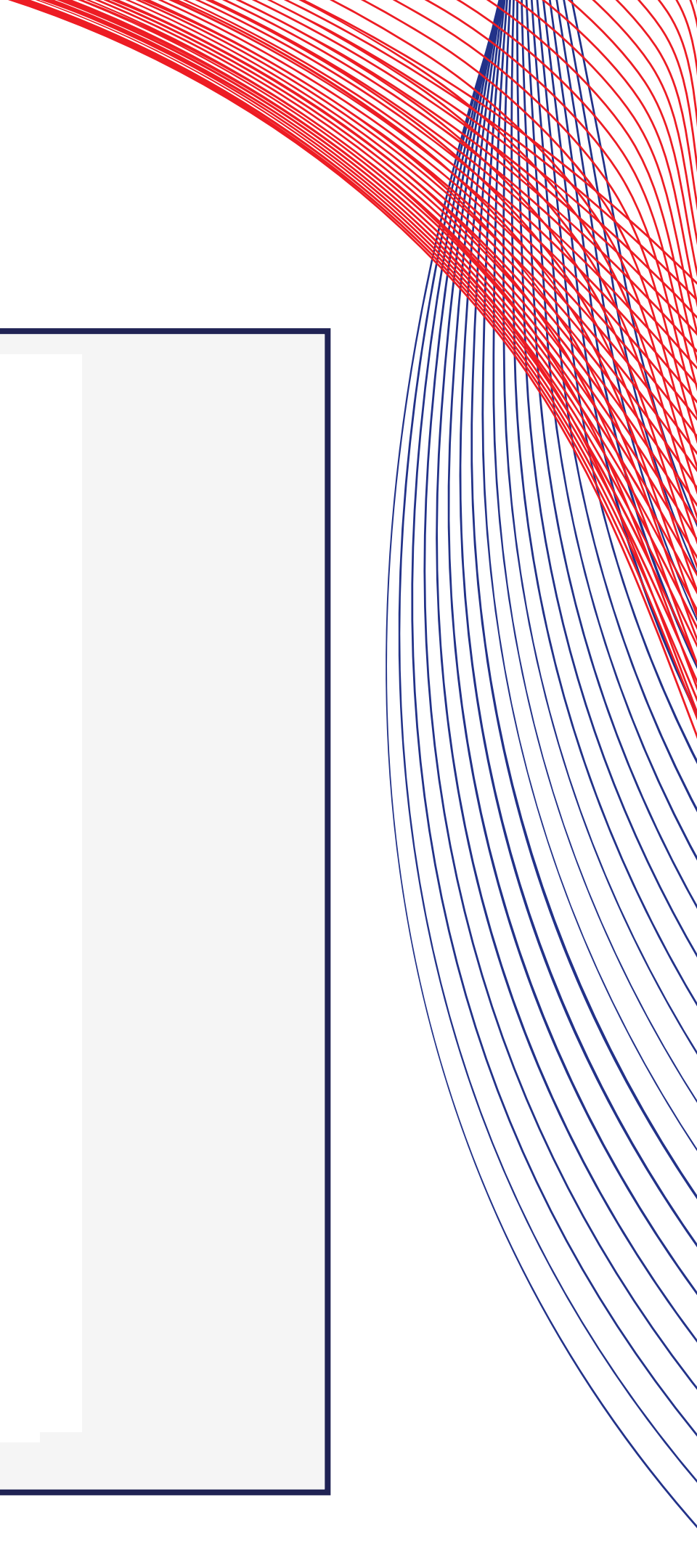
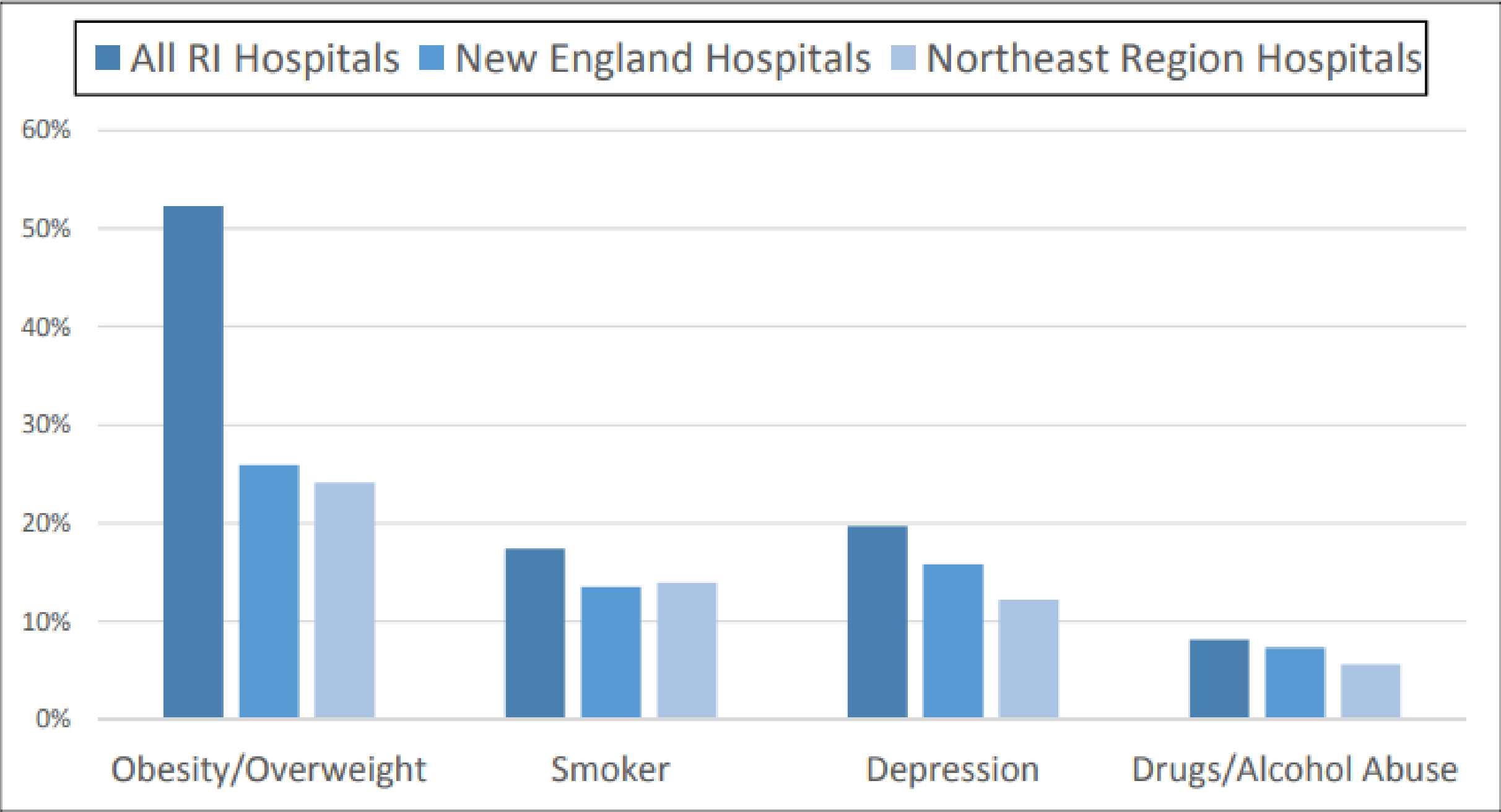
Prehospital

- SSOC Task Force
- EMS Assessment Protocols/Tools
- EMS Triage/Transport Guidelines
- Interfacility Protocols
- Prenotification
- Continuing Ed
- CQI

In Hospital

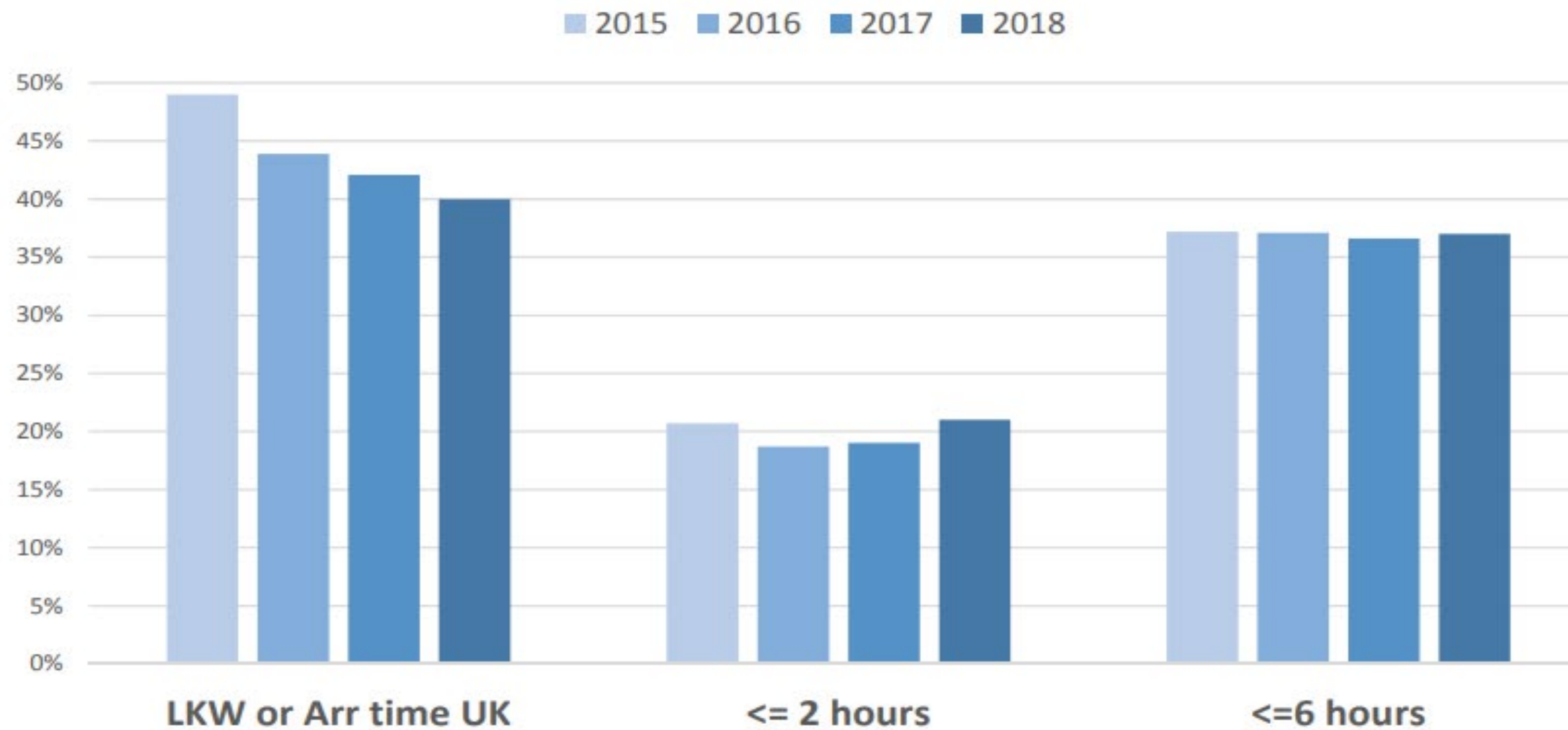
- Tiered Stroke Center Approach
- State CQI
- Data Reporting
- Certified CSCs, PSCs, ASRH
- Telestroke Program where appropriate

The Power of Data- Populations



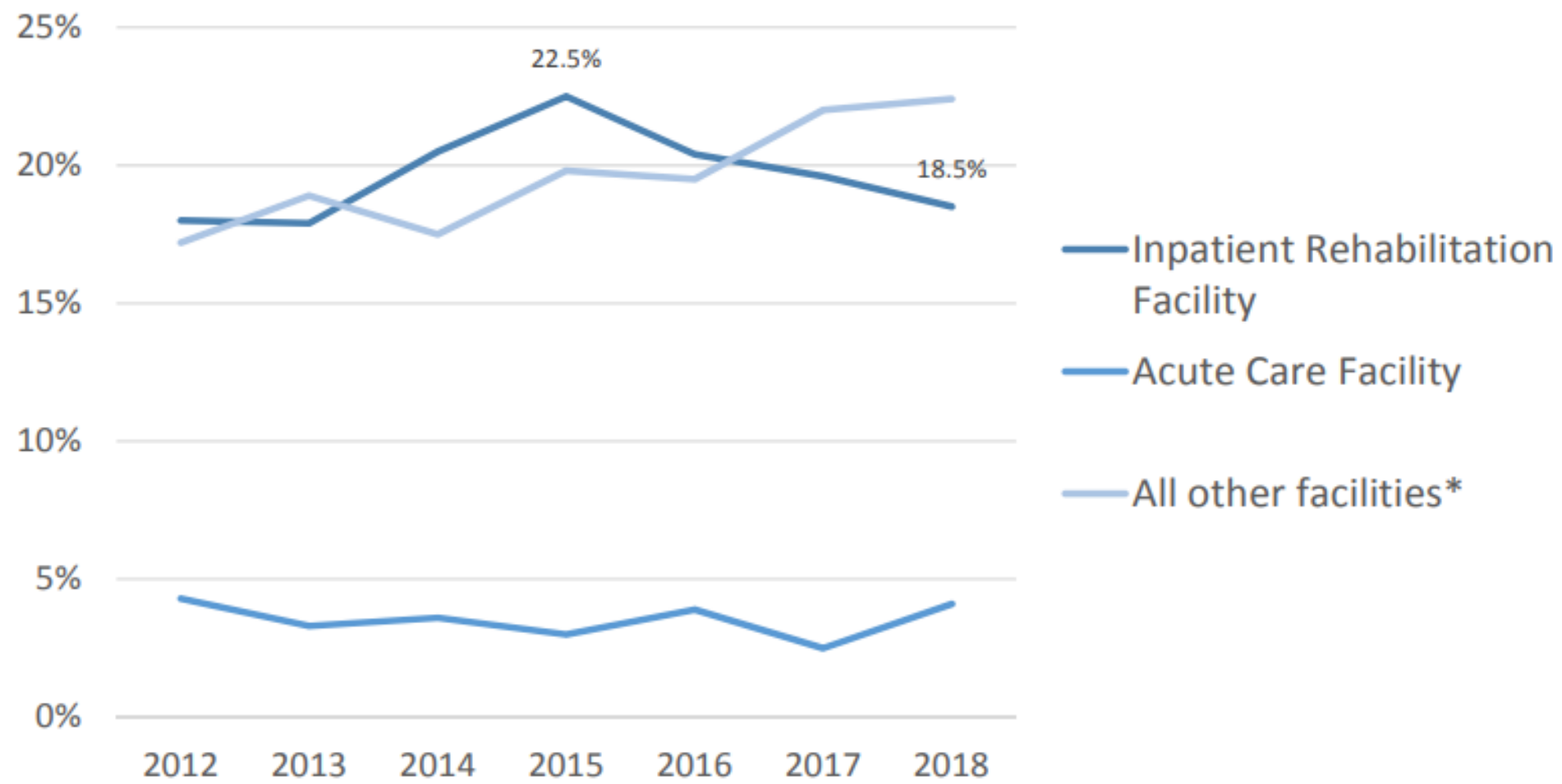
The Power of Data-Prehospital

LKW to arrival time



The Power of Data- Inhospital

Discharge disposition (II): facility type



Using Data to Facilitate Change

Door-in-Door-Out Best Practices

- Transport patients directly to CT for all acute stroke alerts
- The ability to call a stroke alert once an EMS notification is received, so the stroke team is ready upon the patient's arrival
- Educating EMS to bring the patient to the emergency department with IV access to facilitate advanced imaging like CTA and CTP
- Contacting neurology early in the process – before imaging are done and resulted
- Include DIDO data in monthly performance improvement meetings
- Consider a recognition process when the team exceeds DIDO targets
- Real-time support from the stroke team to the emergency department staff to help mentor rapid discharge a to higher level of care
- Identify time targets for the components necessary for rapid transfer like door to CT and EMS arrival to transition out of hospital
- Setting time targets for radiology to result CT, CTA, and CTP brain imaging
- Ongoing staff education regarding identifying symptoms associated with large vessel occlusions



Using Data to Facilitate Change

Door-to-Puncture Best Practices

- Having a dedicated resource nurse, float nurse, or an extra pair of hands to facilitate the treatment and transport of the patient throughout the initial phases of stroke care – CT, thrombolytics, endovascular
- If there are simultaneous stroke codes, after assessing the patients, prioritizing the patient most-likely to be eligible for interventional stroke treatment
- Not waiting for the physician before:
 - Transporting the patient to the location where the procedure will be performed (endovascular suite/Cath lab)
 - Having the patient on the table and their groin prepped for puncture
 - Complete patient/family consent, even via telephone while the physician is enroute to the hospital
- Stockpile thrombolytic in the CT scanner location
- Having the physician meet the patient while in the CT scanner to quickly determine if they're thrombectomy-eligible
- Provide feedback for staff, including data
- Prove what is possible to change minds and staff behavior
- Working dynamically rather than sequentially:
 - Not waiting for the nurse to give report before transporting the patient to IR, rather do it during transport or when patient is on the IR table
 - Allow anesthesia to watch the patient while the nurse and tech prepare the room



Achieving Goals Through Legislation and Regulation

LEGISLATION



Establishes a Framework



Ensures a systematic Approach



Common Practices



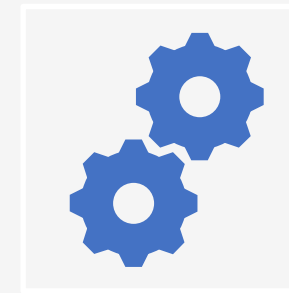
Ensures that regulations are in place



Mandates adherence



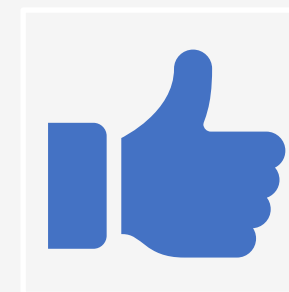
REGULATION



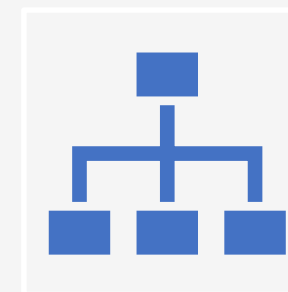
How we operationalize



Defines Specific Practice

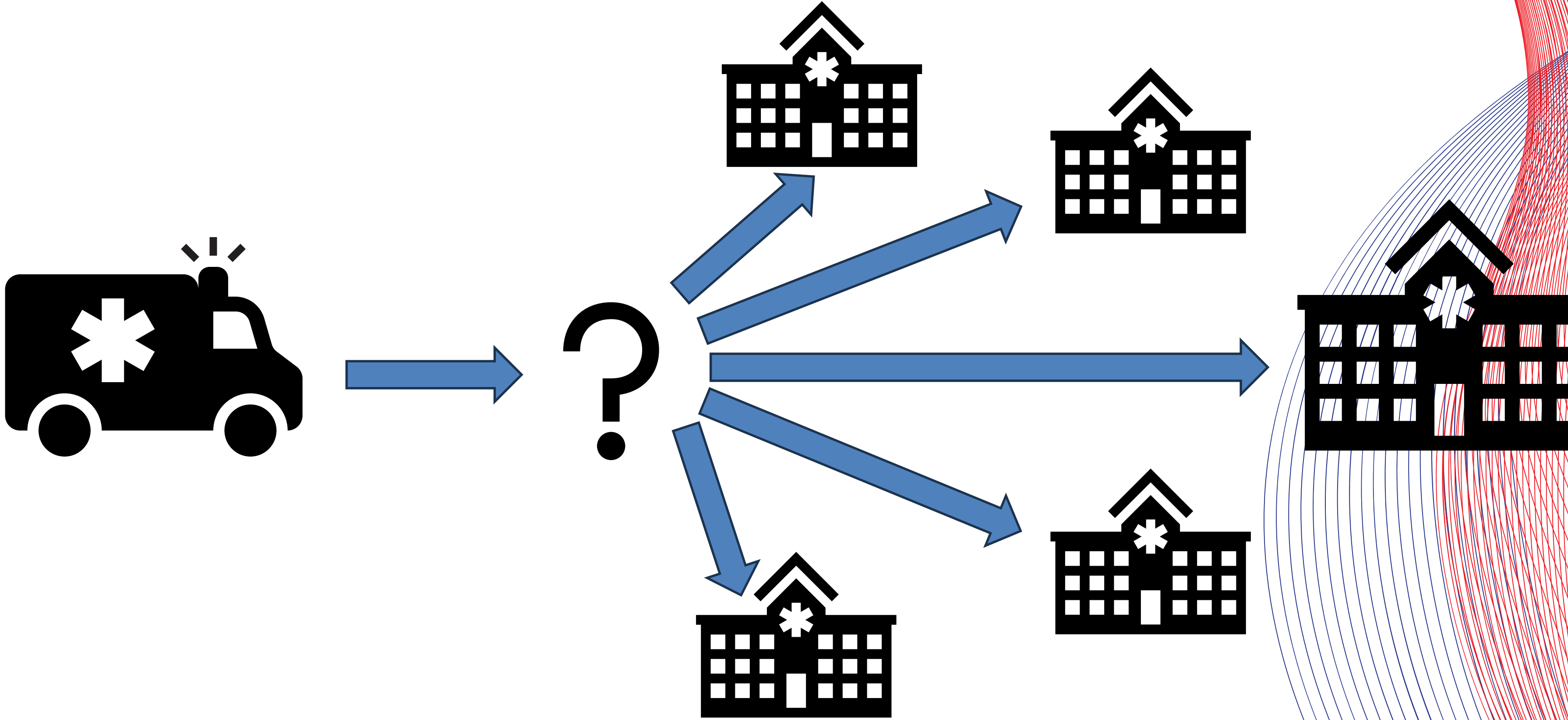


Easy to update



Adapts to specific needs of the state/region

Rhode Island Stroke System of Care



Legislative Process



- Stroke Prevention and Treatment Act 2009
 - Mandates Stroke Centers
 - Acknowledges differences in Centers capabilities
 - Recognizes CSCs
 - Mandates EMS system to ensure transport to SCs with “Appropriate Programs”
 - Stroke Assessment Tools
 - Protocols for with plans for Triage/Transport to appropriate CSCs, PSCs, ASRH
 - Mandates Participation in the RI Stroke Task Force



Regulatory Process

- RISTF: 2015
 - Recommended SST: LAMS
 - Easy, Reliable
- **Protocol 2016 Bypass LAMS ≥ 4**
 - **30 Min Radius**
 - MI/Trauma

REVIEW

Developing a statewide protocol to ensure patients with suspected emergent large vessel occlusion are directly triaged in the field to a comprehensive stroke center: how we did it

Mahesh V Jayaraman,^{1,2,3} Arshad Iqbal,⁴ Brian Silver,² Matthew S Siket,⁵ Caryn Amedee,² Ryan A McTaggart,¹ Gino Paolucci,⁵ Jason Rhodes,⁶ John Potvin,⁷ Megan Tucker,⁸ Nicole Alexander-Scott⁶

For numbered affiliations see end of article.

Correspondence to

Dr M V Jayaraman,
Department of Diagnostic
Imaging, Warren Alpert School
of Medicine at Brown
University, Rhode Island
Hospital, 593 Eddy Street,
Room 377, Providence,
RI 02903 USA

ABSTRACT

We describe the process by which we developed a statewide field destination protocol to transport patients with suspected emergent large vessel occlusion to a comprehensive stroke center.

INTRODUCTION

Embolectomy is now the standard of care for anterior

4200 licensed providers. The majority of agencies are fire based (52) or third service (16) municipal departments, with the remainder being private or college/university based. The Rhode Island Department of Health, Center for EMS, oversees all 95 agencies and providers. There is a single set of statewide EMS protocols which all providers must adhere to.

In conjunction with the Rhode Island Department of Health, the Rhode Island Stroke Task Force (RISTF) was established in 2004. The

Early Results of Field Stroke Triage (2016-17)



232 Patients

144 to Closest Primary Stroke Center

88 met bypass criteria to RIH



Time Metrics

7 min additional drive time

Scene to tPA FASTER in bypass group

- 50.2 vs 62.3 min

Scene to Arterial Puncture FASTER in Bypass group

- 93 vs 152 min

Ischemic Stroke

ORIGINAL RESEARCH

Field triage for endovascular stroke therapy: a population-based comparison

Mahesh V Jayaraman,^{1,2,3,4} Morgan L Hemendinger,² Grayson L Baird,^{1,5} Shadi Yaghi,^{2,4} Shawna Cutting,^{2,4} Ali Saad,^{2,4} Matt Siket,⁶ Tracy E Madsen,⁶ Ken Williams,⁶ Jason Rhodes,⁷ Richard A Haas,^{1,3,2,4} Karen L Furie,^{2,4} Ryan A McTaggart  ^{1,3,2,4}



Regulatory Process

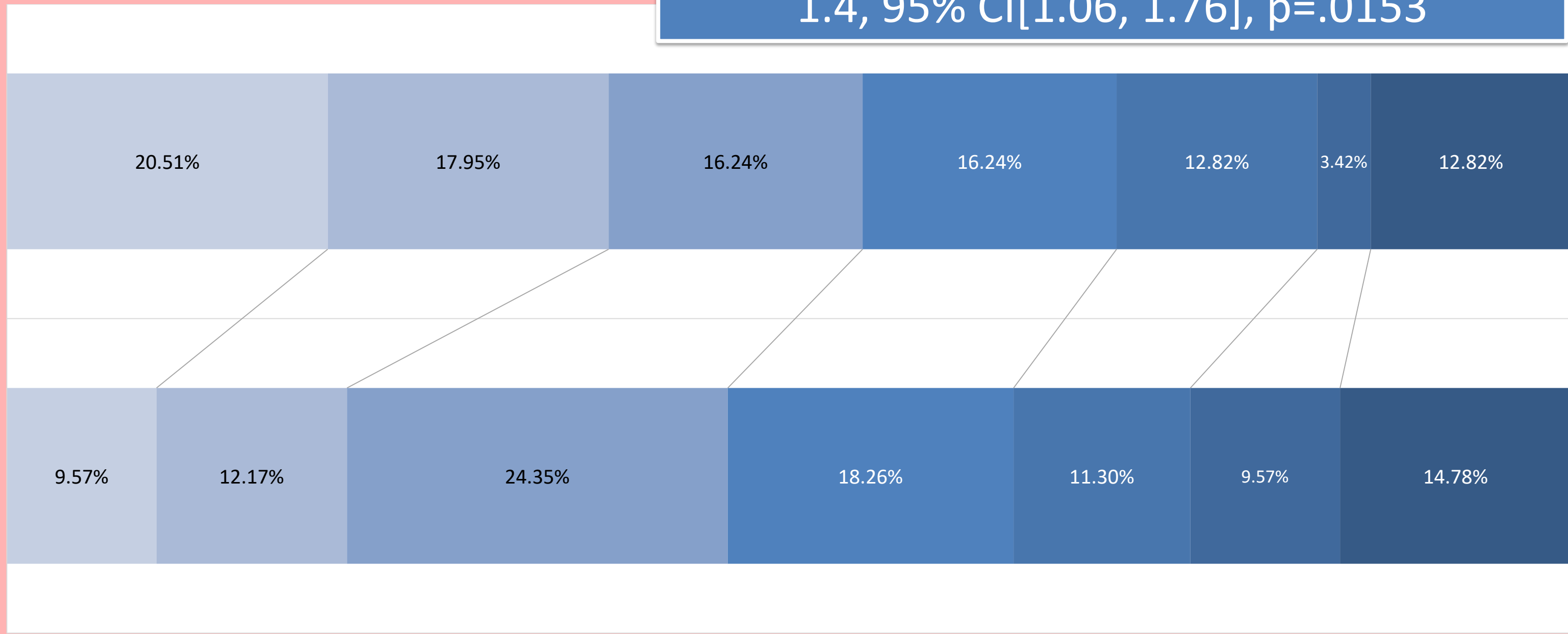
- RISTF: 2015
 - Recommended SST: LAMS
 - Easy, Reliable
 - Protocol 2016 Bypass LAMS ≥ 4
 - 30 Min Radius
 - MI/Trauma
- RISTF 2020
 - Recommended Elimination of Radius → ASAB Added the Protocol

Clinical Outcomes at 90 days, Matched Pairs

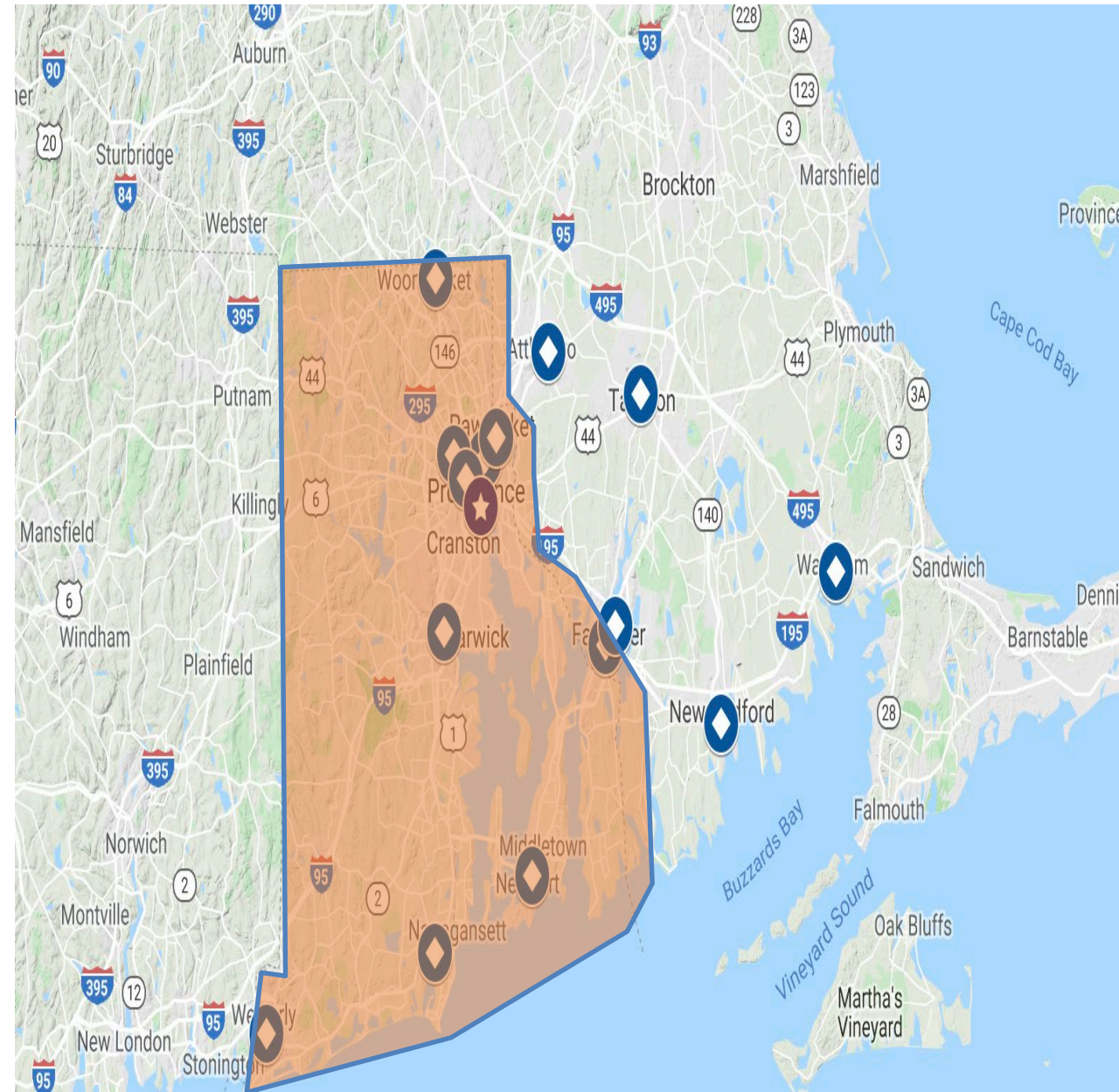
OR for shift towards less disability in State 1:
1.4, 95% CI[1.06, 1.76], p=.0153

Field Triage to
CSC

Closest
Hospital first



Excluding those with pre-existing disability



References

- Sheridan, M., Rhode Island Stroke Task Force Presentation (2023).
- Sheridan, M. Rhode Island Stroke Task Force Progress Report (2023).
- Rhode Island Stroke Task Force 2018 Data Report (2018).
- Centers for Disease Control. Strategies for Building and Improving State Stroke Systems of Care (2022)
- Connecticut Stroke Registry Stroke Data, 2024



gpaolucci@lifespan.org