

Safe and Effective Telestroke



Mid-Atlantic
Telehealth
Resource Center

Moderator and

Panelist



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Current Telestroke



LiOnNet

Maintaining Accountability through...

- Trust and relationships
- Data transparency
- Recognition
- Education
- Competition



Collaborative Work

- Needs assessment
- Satisfaction
- Key to Recognizing Stroke
- EMS Feedback and Documentation Review
- Stroke Outcomes
- Telestroke Accuracy
- Transfer guide
- SEFTA- infancy

Case Rep

Please complete the



Introduction

Continuous professional performance evaluations are important to the delivery of high level care regardless of the modality, in-person or telemedicine. An interesting metric to measure the accuracy of "diagnosis" of acute ischemic stroke during telestroke consults is underreported in literature. Therefore, how good is the diagnosis of stroke via telemedicine? Challenging this question, the accuracy of ischemic stroke diagnosis was investigated in a mature telestroke network.

Methods

IRB approved, non-human investigation. Eight telestroke partner hospitals provide discharge diagnosis of telestroke patients with a consult in the form of "Ischemic Stroke". Accuracy of diagnosis was analyzed by a neurologist and consultant. Data collection attempted to gather elements beginning from program

Patient Presentation

Penn State Hershey TeleStroke Family Guide



PENN STATE HERSEY
Milton S. Hershey
Medical Center

inspired together

OnNet

with years of associated acute stroke diagnosis of telestroke providers with less the attending demonstrated by via telehealth uses. Further hands exploration science and quality telehealth.

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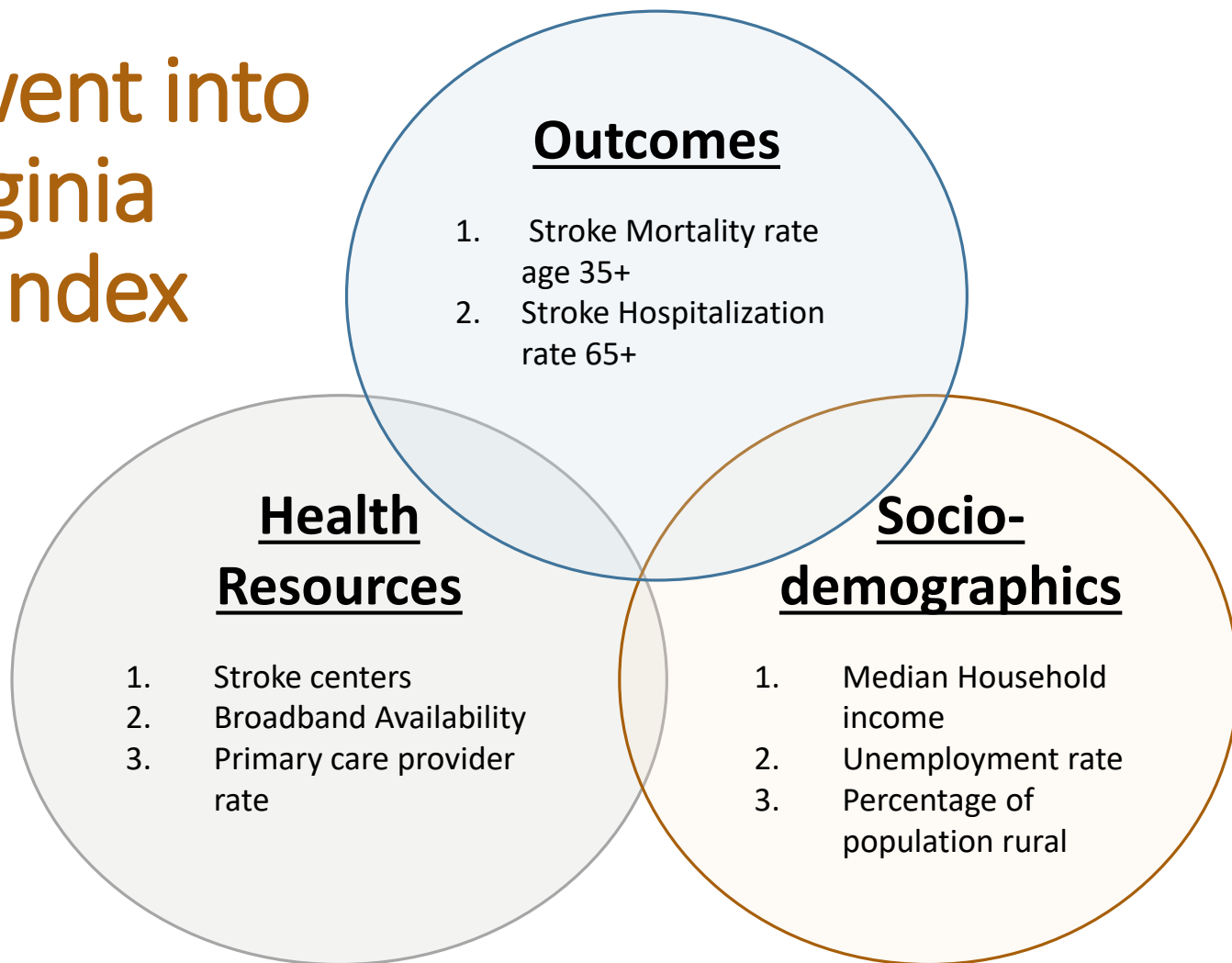
stroke coordinators that nger, Cindy Anderson, Masao, Miley Bowers, and Wendy Clifton

etails)

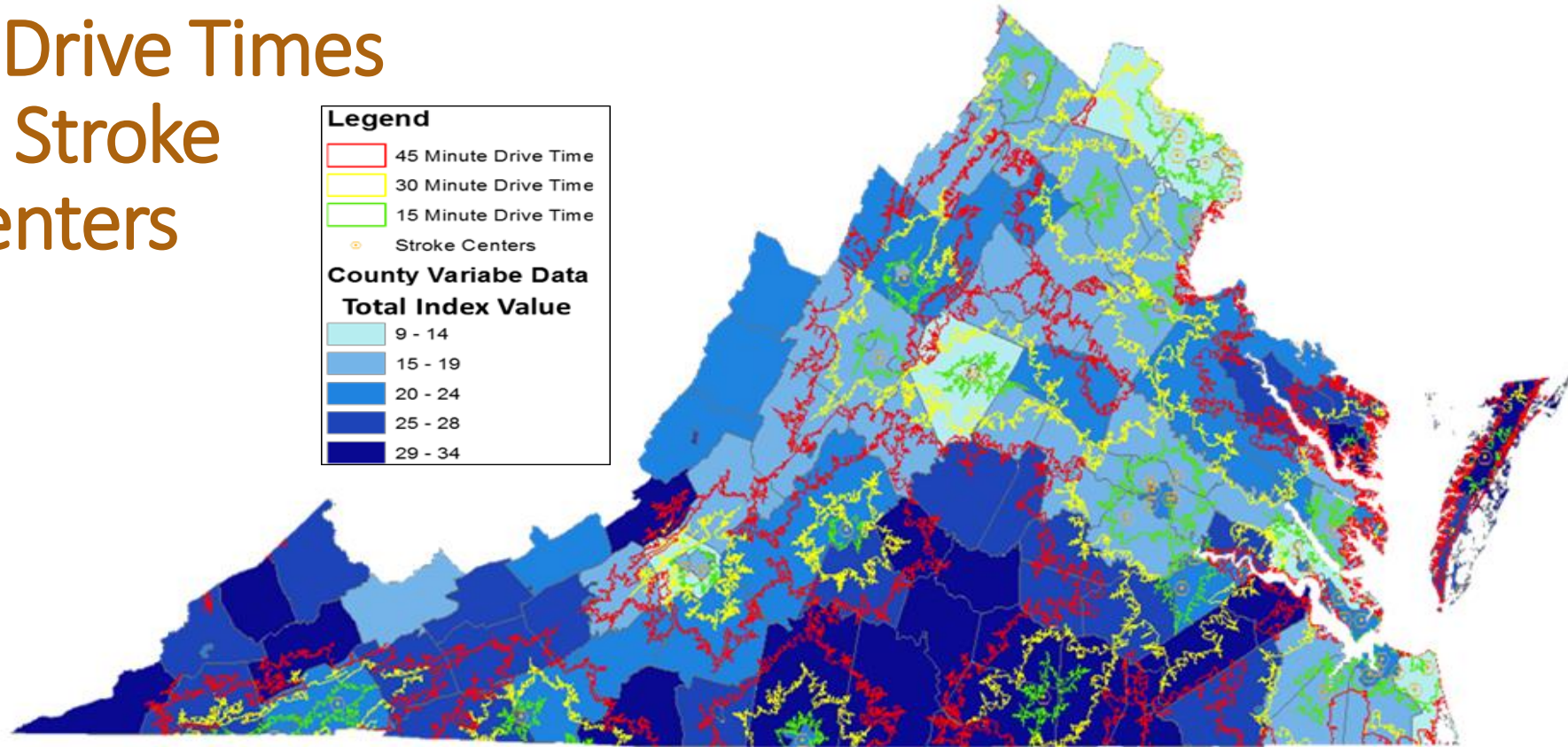


Bandwidth
Vendor & Equipment
C&P
Transfer
Reimbursement
Fee for service

What went into our Virginia Stroke Index



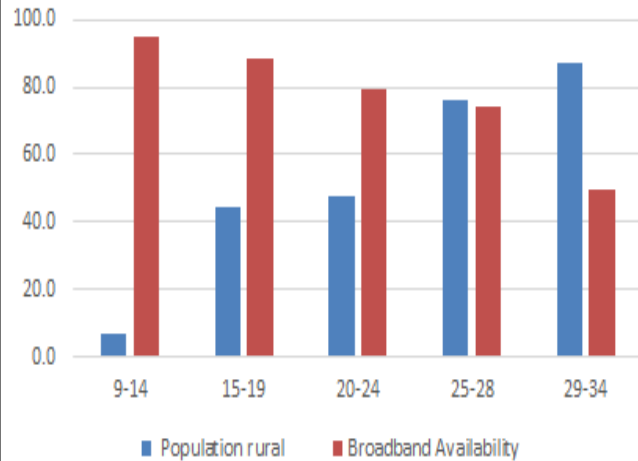
Stroke Burdens & Drive Times to Stroke Centers



What our Index showed and who is affected

| Index Sum Value | Population rural | Broadband Availability | Population Total | Number of Counties |
|-----------------|------------------|------------------------|------------------|--------------------|
| 9-14 | 7.2 | 94.9 | 2,657,989 | 15 |
| 15-19 | 44.3 | 88.5 | 2,757,083 | 38 |
| 20-24 | 47.6 | 79.3 | 1,684,905 | 37 |
| 25-28 | 76.2 | 74.4 | 490,866 | 23 |
| 29-34 | 87.4 | 49.4 | 357,041 | 19 |

Average Population Rural and Broadband Availability by Index Sum





Mobile and Future Telestroke

RE-AIM

Considering mobile telehealth
at VCU Health System

| Dimension | Barriers & Potential Challenges | Facilitators and Intervention Strengths | Keys to Moving Forward |
|----------------|---------------------------------------|---|---------------------------|
| Reach | <div>RE-AIM Framework</div> | | |
| Effectiveness | | | |
| Adoption | | | |
| Implementation | | | |
| Maintenance | | | |

R E A C H I M

Dimension & Example Questions

Reach

- Would these patients be willing to participate in a mobile prehospital telestroke program?
- What are the barriers you foresee that will limit the ability to successfully reach our target group?
- Do you have any ideas on how to overcome these barriers?

Effectiveness

- Do you think reducing time to treatment will help improve stroke outcomes?
- Is decreasing time to treatment by evaluating the patient during transport an appropriate outcome to target?
- Do you feel that prehospital evaluation of an acute stroke patient will decrease time to treatment?
- What are the potential negative unintended consequences that may result from mobile prehospital telestroke?

Adoption

- What characteristics of a mobile prehospital telestroke program would promote the organization to adopt the program?
- What do you think will be the greatest barriers to other sites or organizations adopting this program?

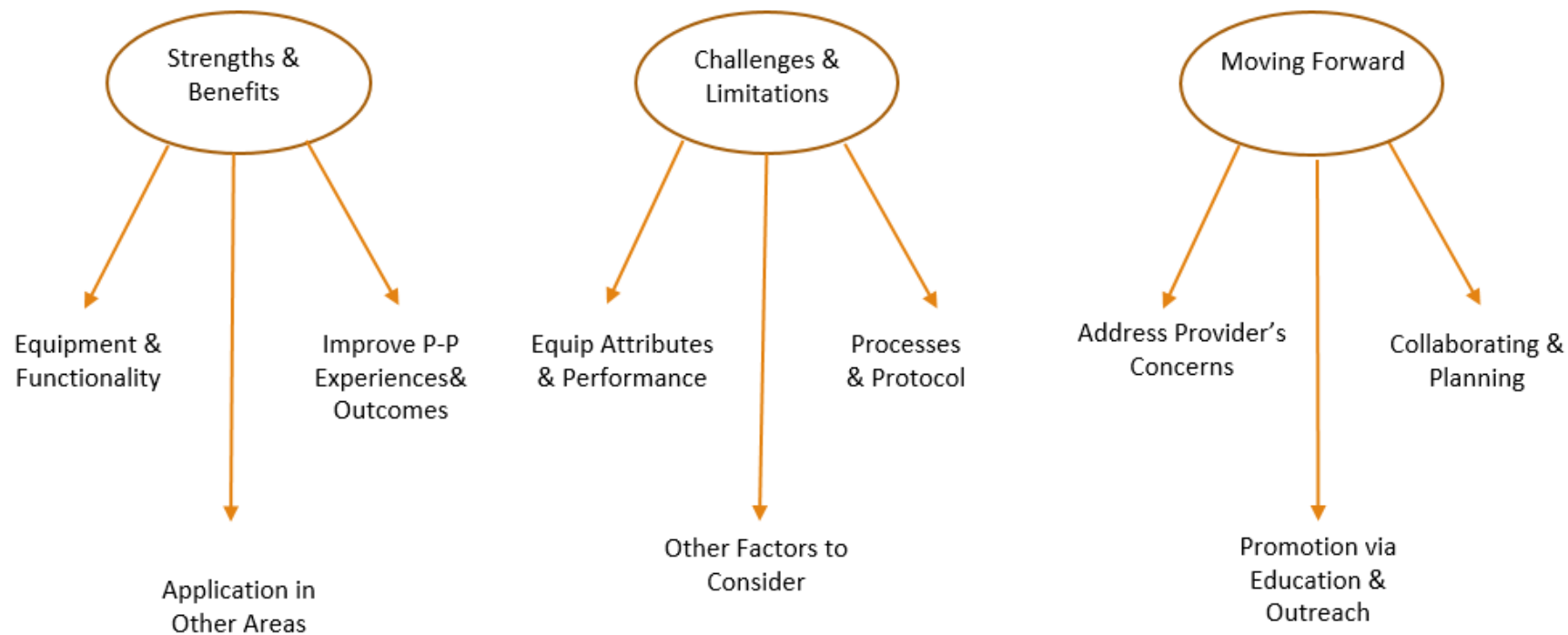
Implementation

- Who would be appropriate delivery agents (EMT vs. paramedic/ attending vs resident) for the intervention?
- What would encourage organization members to participate in prehospital telestroke study and use intervention strategies?
- What are some potential barriers to implementing a mobile prehospital telestroke program?

Maintenance

- Would EMS providers and physicians be willing to be trained to deliver the intervention to their communities?
- How likely will the protocol be maintained among participants indefinitely?
- Do you foresee mobile prehospital telemedicine to be used in other fields (i.e. trauma, emergency medicine, etc.)?

Qualitative Results: 3 Main Themes



iTREAT Improving Treatment with Rapid Evaluation of Acute Stroke via Mobile Telemedicine

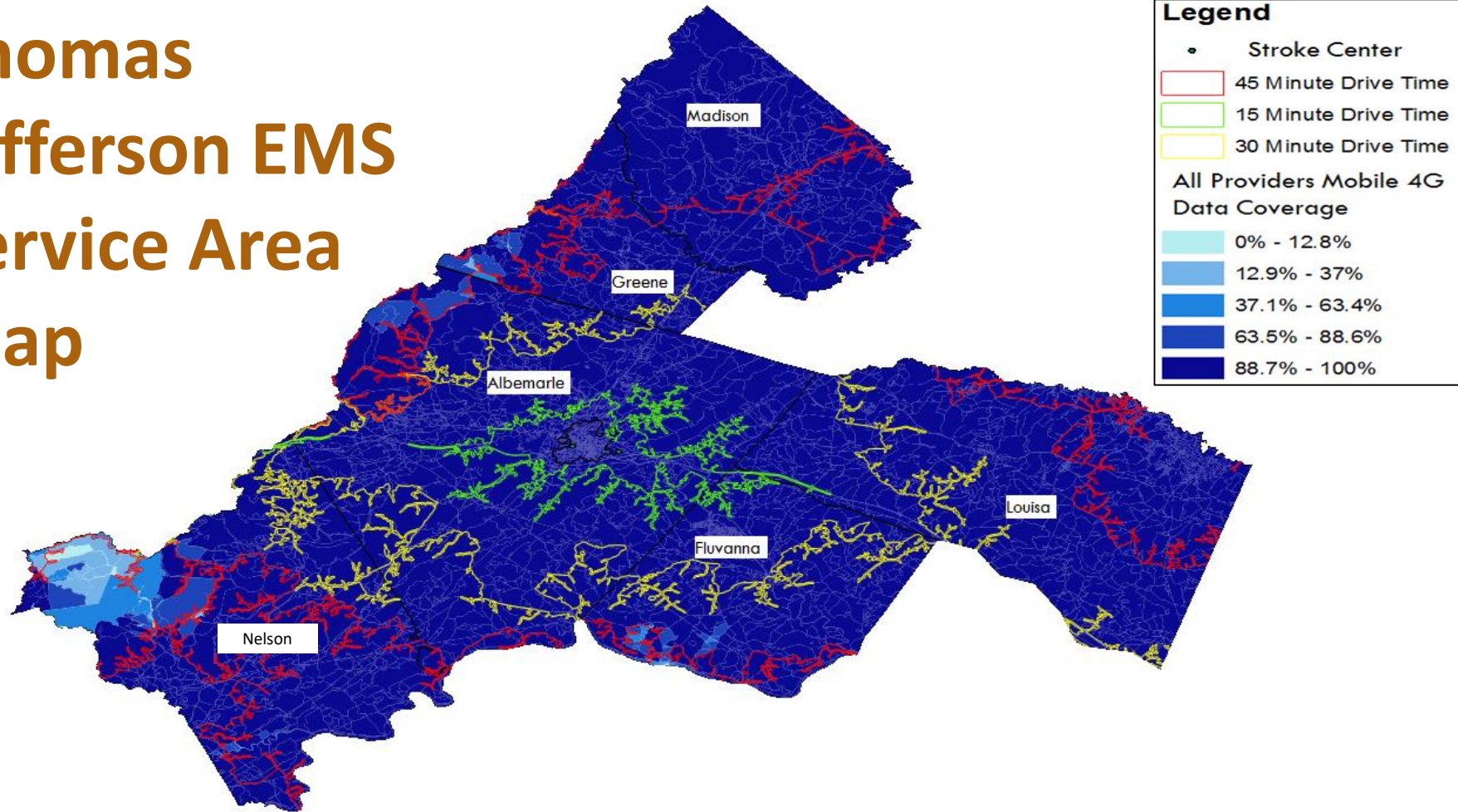
Ambulance-Based Neurological Assessment in Emergency Stroke Care



1. Apple iPad 2
2. iPad Protective case
3. JBL Speaker
4. Ram Mount
5. Cradlepoint Modem
6. Cradlepoint Antennae
7. Pelican Case
8. Verizon Wireless Plan
9. Cisco Jabber Video App



Thomas Jefferson EMS Service Area Map

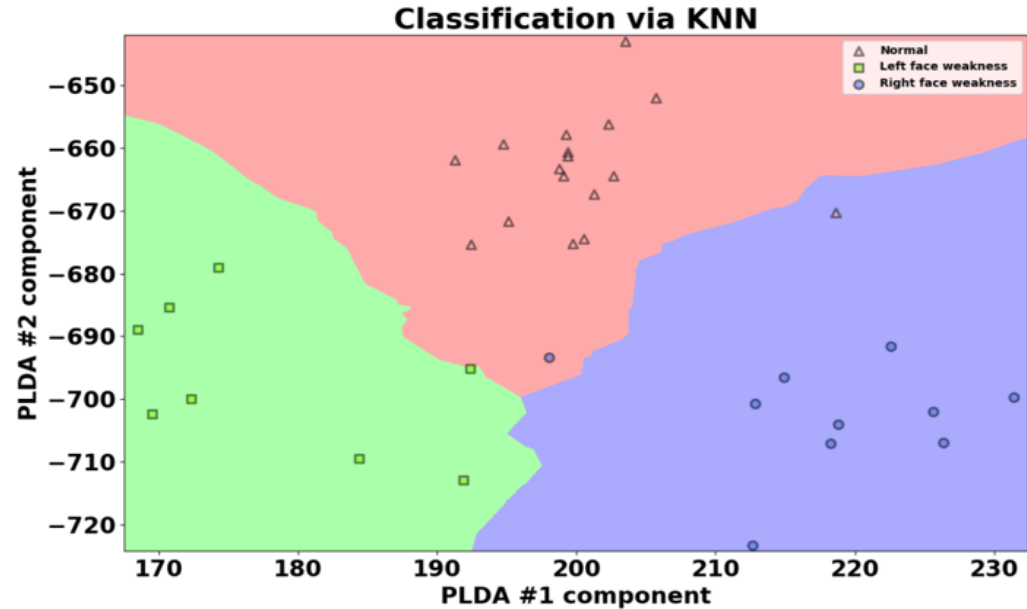


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Study Images

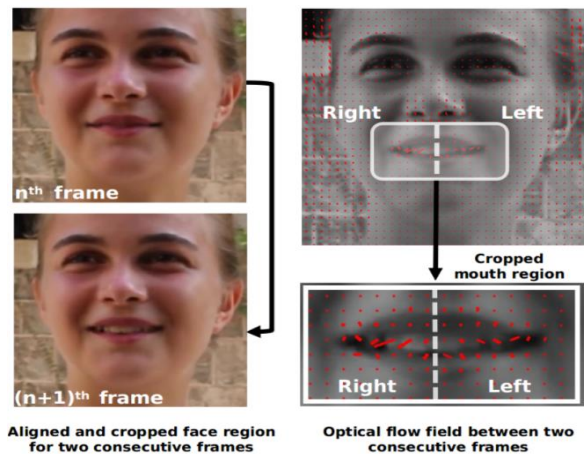


| Performance | |
|-------------|-------|
| Accuracy | 93.8% |
| Sensitivity | 95.8% |
| Specificity | 93.8% |



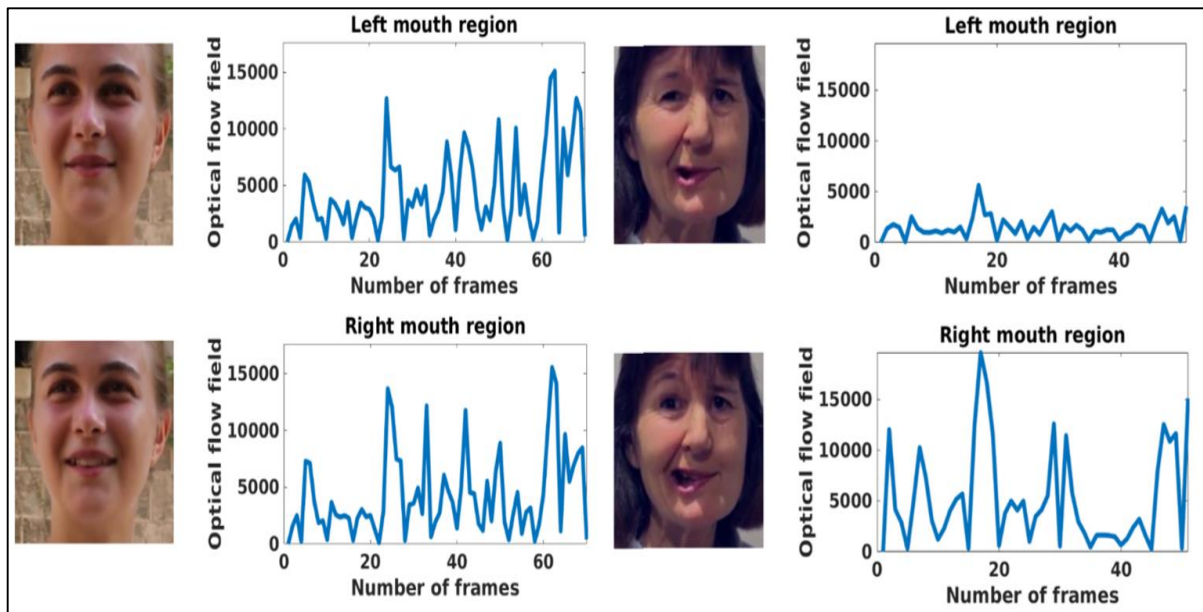
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Study Videos



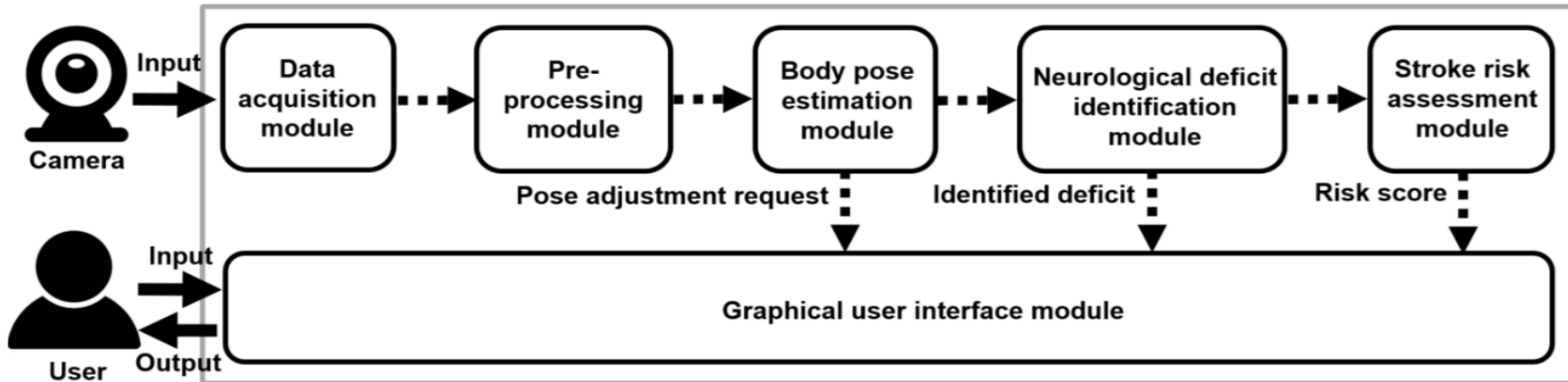
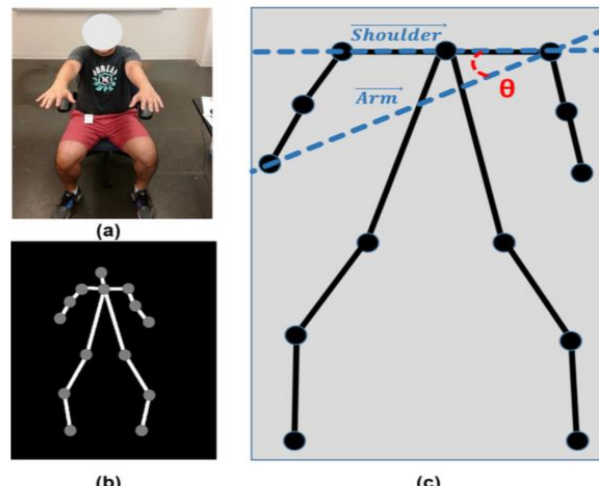
Performance

| | |
|-------------|--------|
| Accuracy | 83.9 % |
| Sensitivity | 83.8 % |
| Specificity | 89.2 % |



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Future Works





Contact Information

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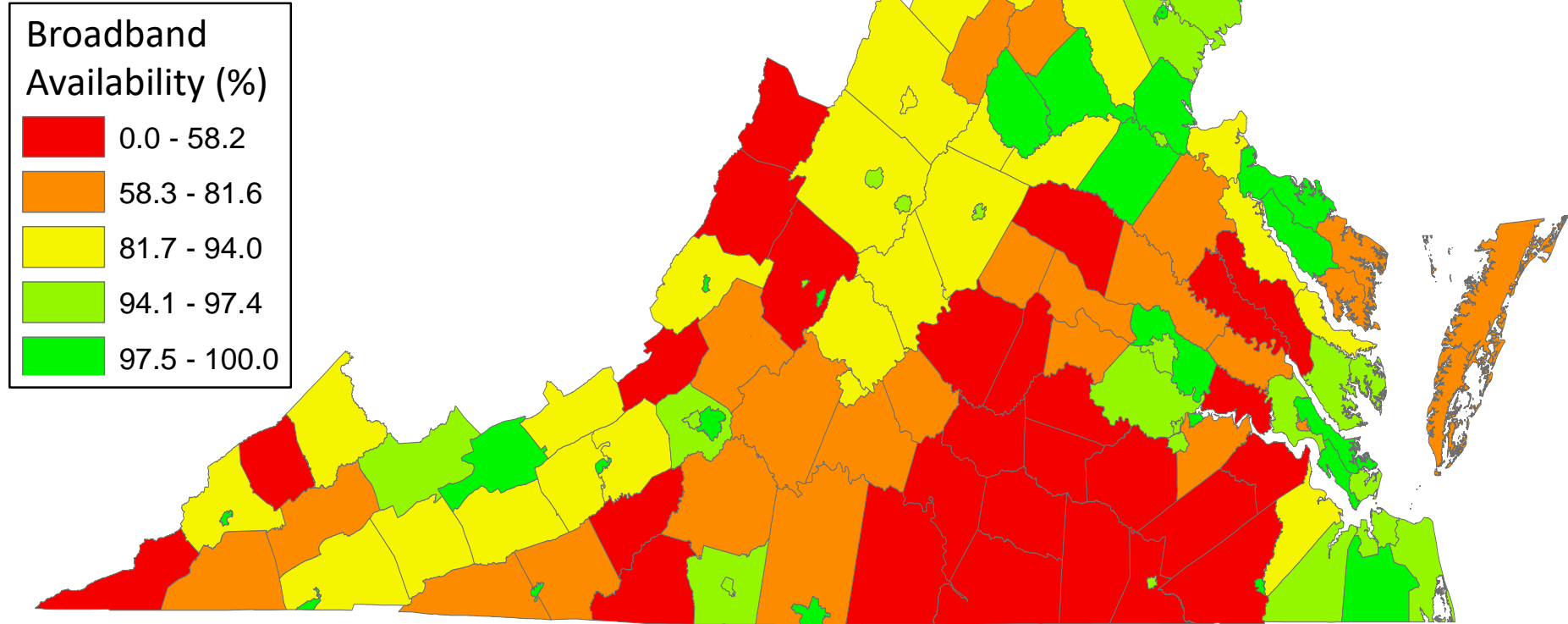
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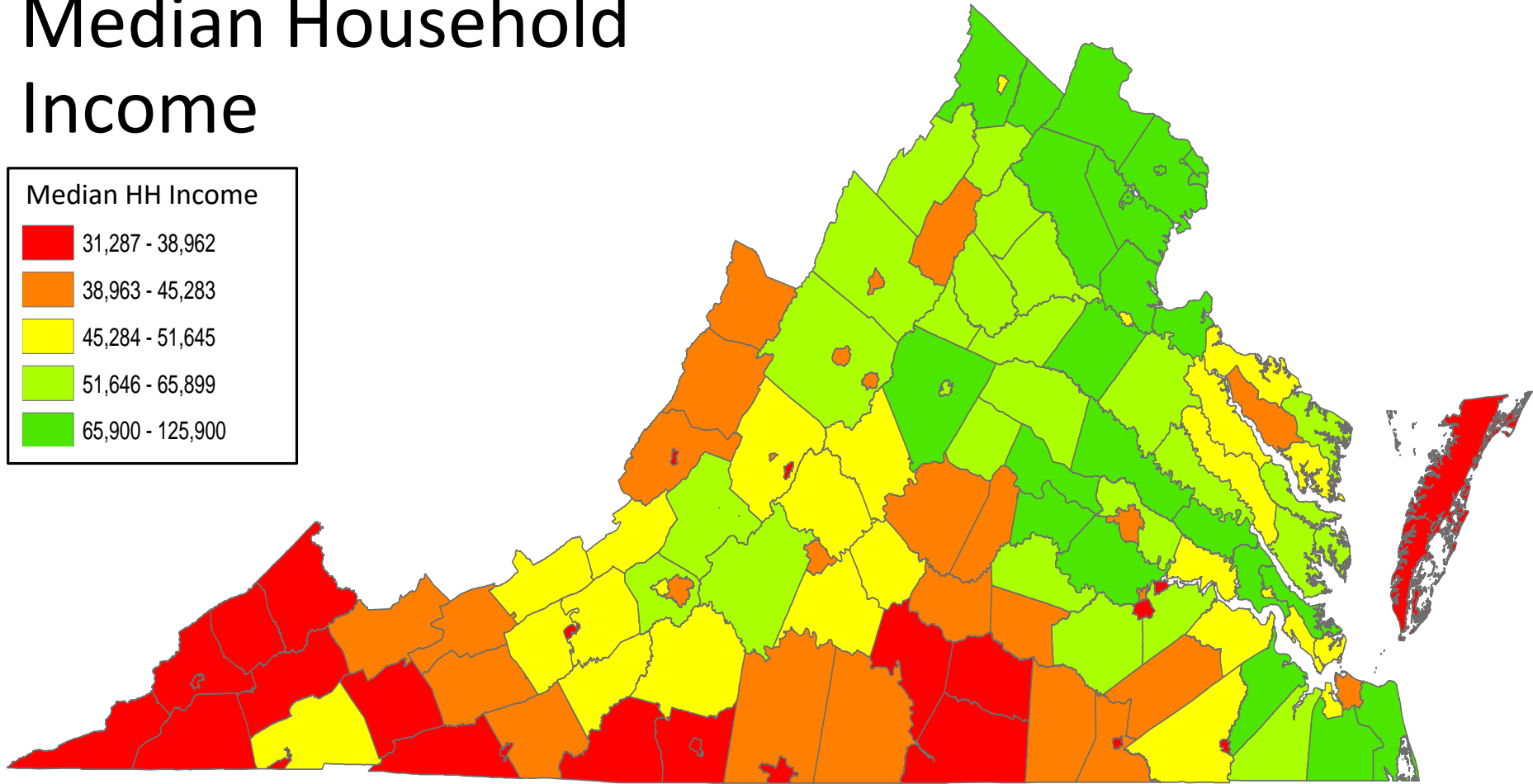
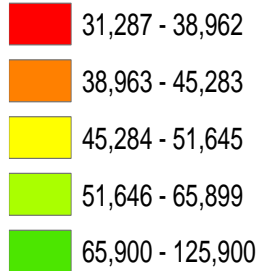
Omar Uribe: oau2yb@virginia.edu

Broadband Availability

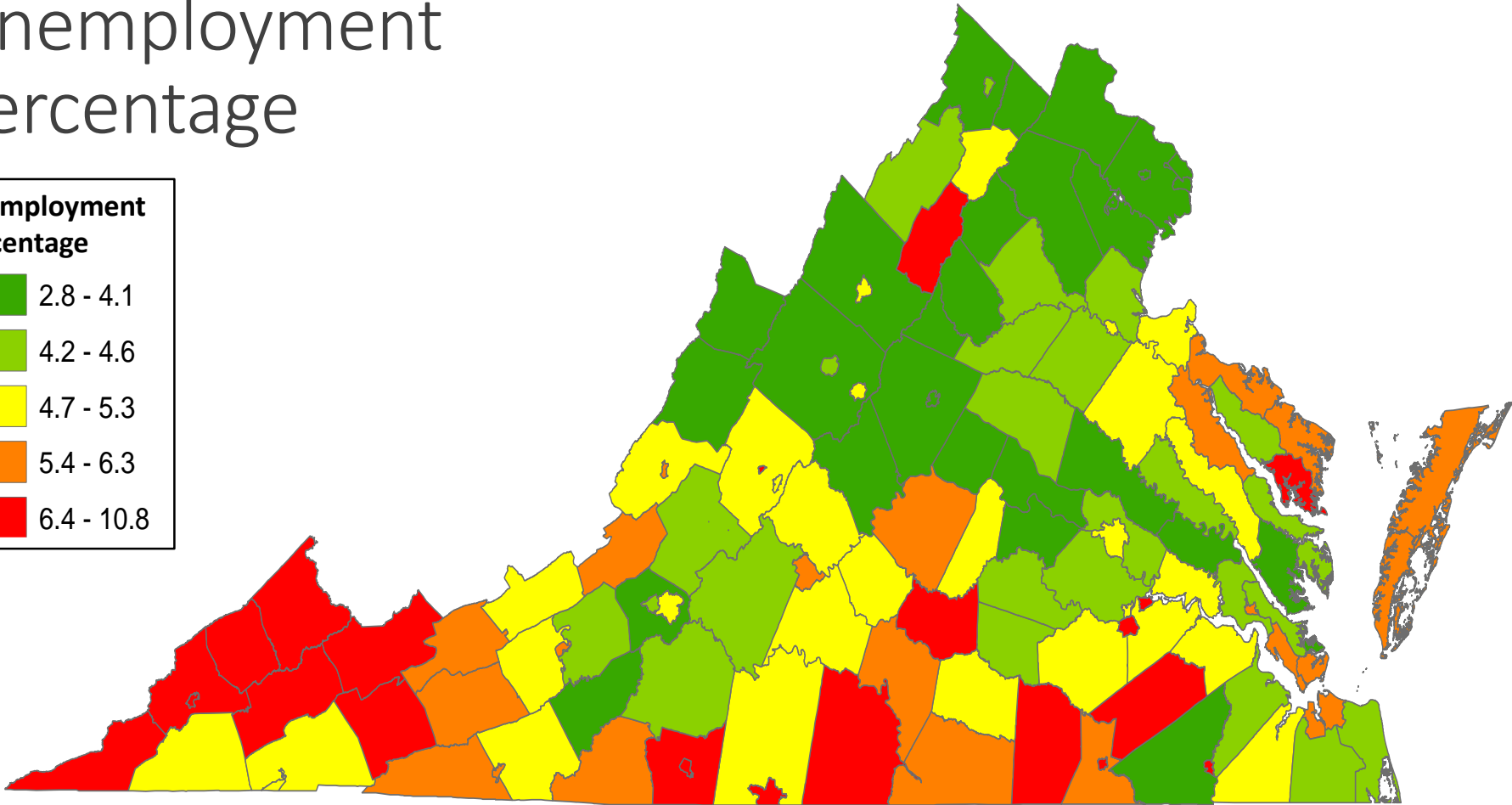
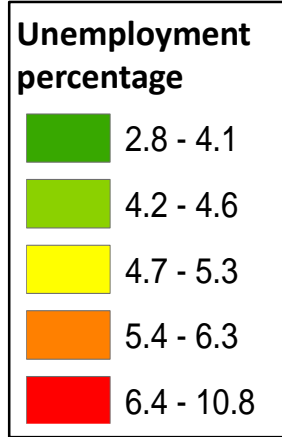


Median Household Income

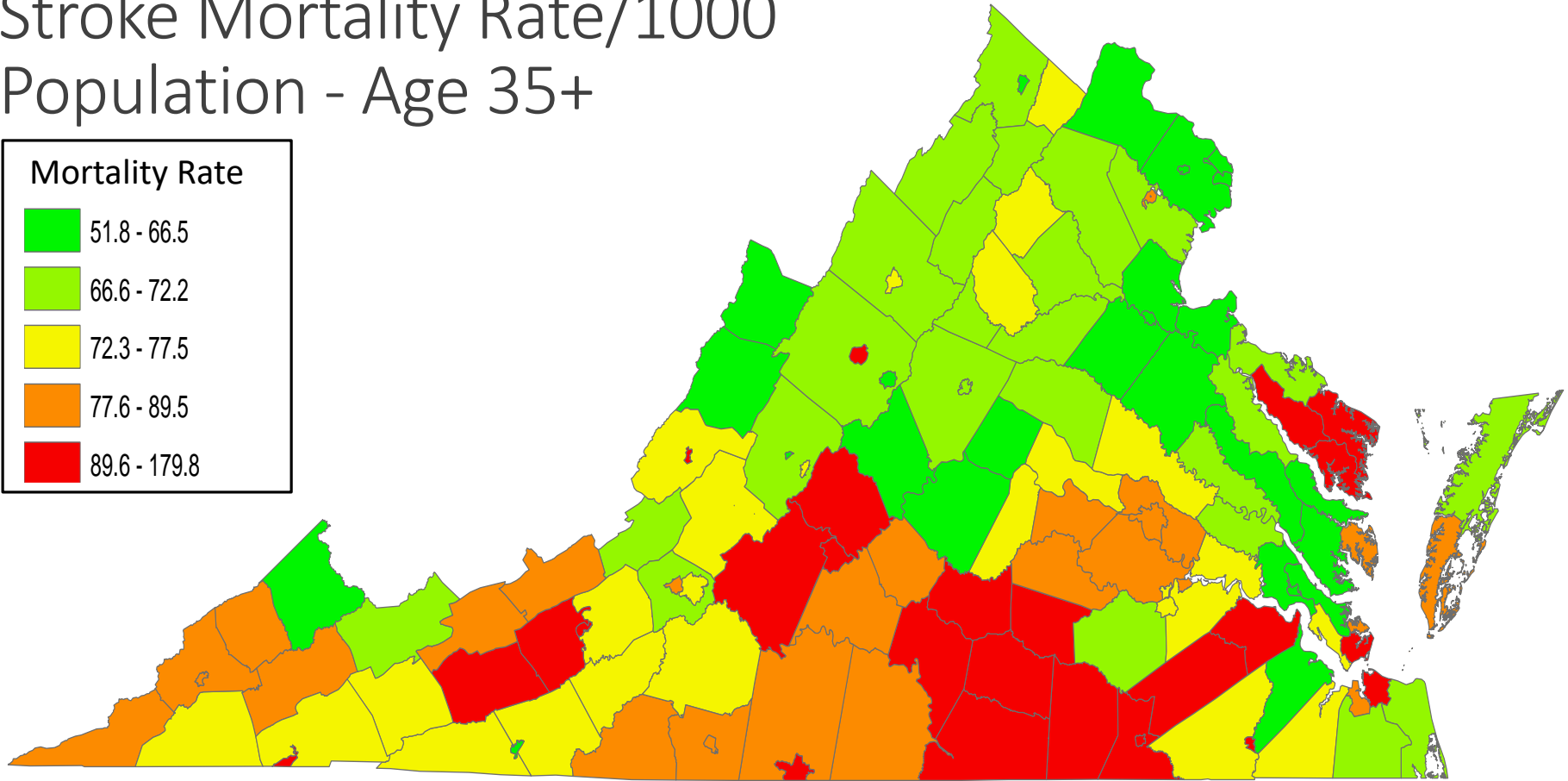
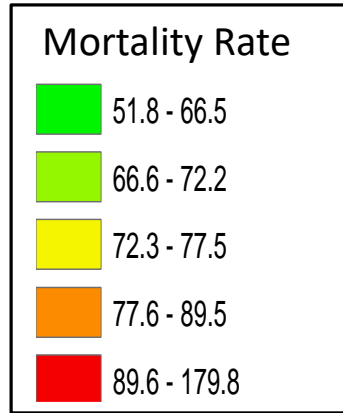
Median HH Income



Unemployment Percentage

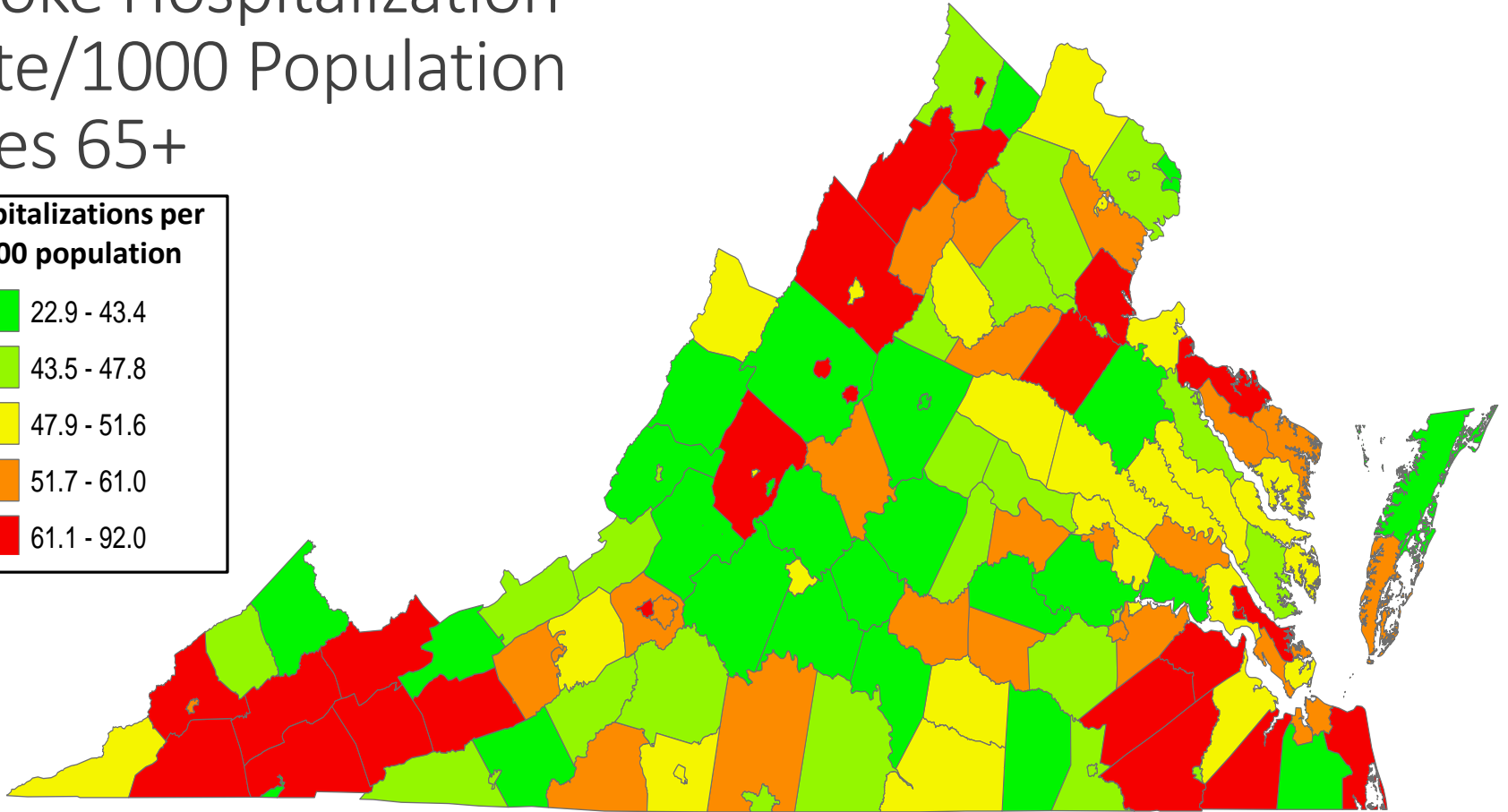
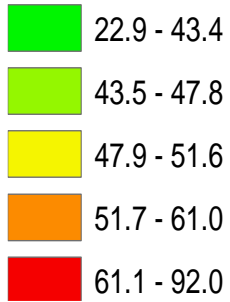


Stroke Mortality Rate/1000 Population - Age 35+



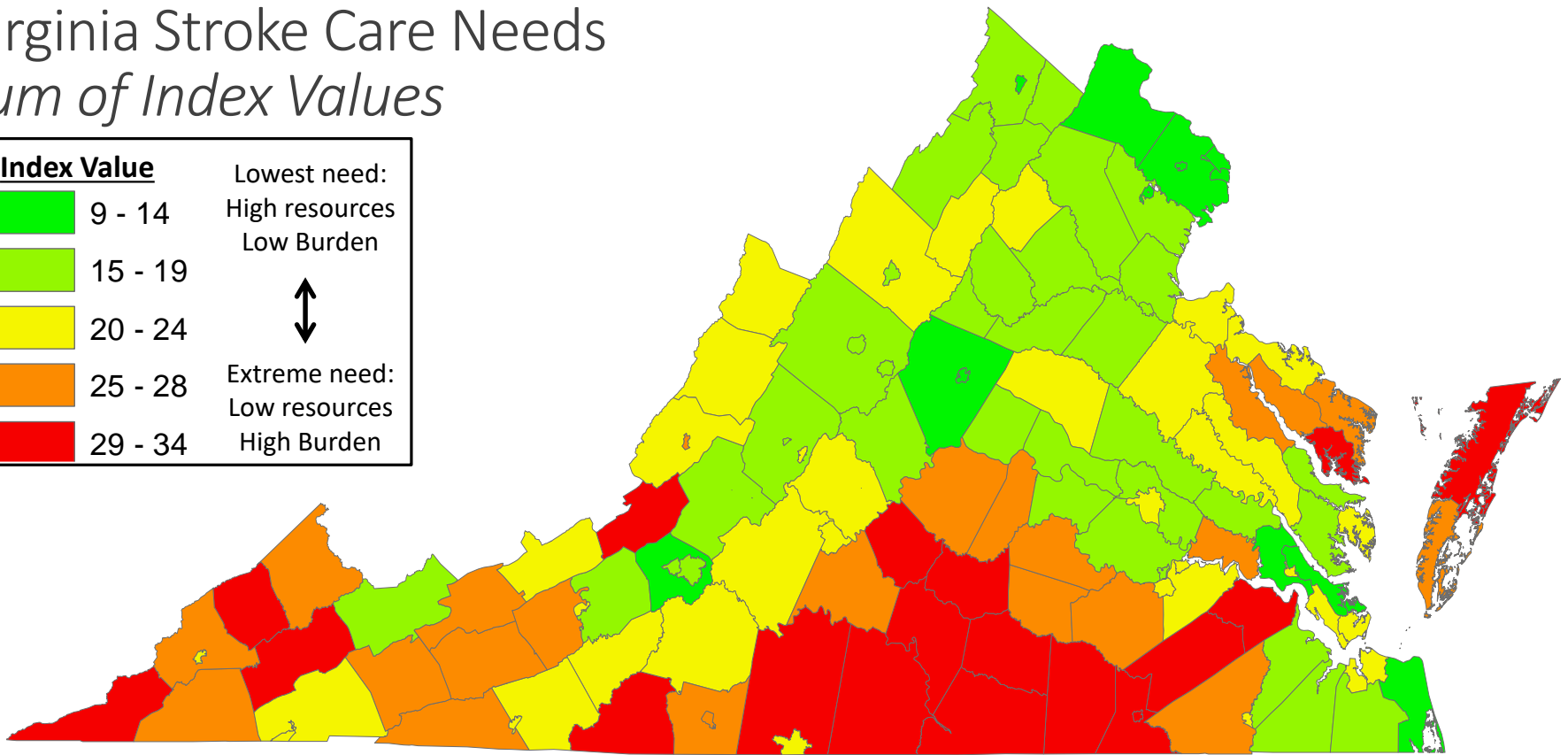
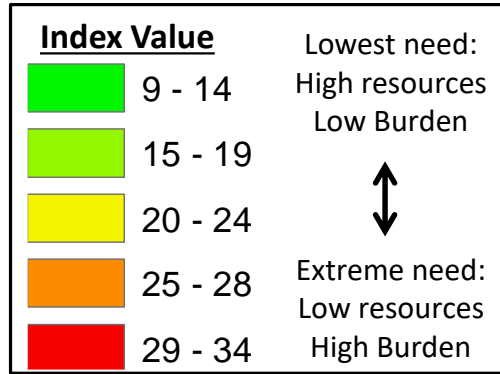
Stroke Hospitalization Rate/1000 Population Ages 65+

Hospitalizations per 1000 population



Virginia Stroke Care Needs

Sum of Index Values



Red indicates that the burden of stroke (hospitalizations and mortality) is high, demographic challenges are high and resources available to ameliorate the burden of stroke are low.