USC School of Medicine
Rural Health Initiatives Overview

• Background
• The ICARED Program
• South Carolina Center for Rural and Primary Healthcare
BACKGROUND
Health challenges for South Carolinians

- An aging population
- Increasing rates of chronic illness
- A rural state
- A dwindling primary care workforce
Physicians in Rural SC

• In 29 of our 46 counties at least half of the population lives in a non-urbanized area

• 23% of our population lives in a rural county

• Only 10% of the physician workforce has their primary practice site in a rural county

Rural is defined as any county in which 50% or more of the population lives outside of an urbanized area, based on 2010 Census population counts.
• SC ranks 40th in US in primary care workforce
  – 77.5 PCPs/100,000 in SC vs. 90.1/100,000 US
  – 1.2 million in SC live in primary care shortage area
  – 25% of the state vs. national average of 19%
  – 5.6 PCPs/10,000 in rural vs. 10.8/10,000 for urban

• Median cost for medical school
  – nearly 16 times the cost forty years ago
  – Costs create disincentive to pursue primary care
An aging physician workforce

- 23% of the active physicians in SC are age 60 or older
- Physician’s work hours decline sharply after age 65
Physicians with an active license and active in the workforce by age group 2015

Insufficient numbers in the pipeline

Only 10% of the physician workforce has their primary practice site in a rural county

2025 pre-retirement cohort
% of physicians age 60+ in rural SC counties

<table>
<thead>
<tr>
<th>% age 60+</th>
<th>County</th>
<th>% age 60+</th>
<th>County</th>
<th>% age 60+</th>
<th>County</th>
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</thead>
<tbody>
<tr>
<td>27%</td>
<td>ABBEVILLE</td>
<td>27%</td>
<td>DARLINGTON</td>
<td>24%</td>
<td>MARION</td>
</tr>
<tr>
<td>31%</td>
<td>ALLENDALE</td>
<td>36%</td>
<td>DILLON</td>
<td>17%</td>
<td>MARLBORO</td>
</tr>
<tr>
<td>44%</td>
<td>BAMBERG</td>
<td>19%</td>
<td>EDGEFIELD</td>
<td>22%</td>
<td>MCCORMICK</td>
</tr>
<tr>
<td>24%</td>
<td>BARNWELL</td>
<td>39%</td>
<td>FAIRFIELD</td>
<td>21%</td>
<td>NEWBERRY</td>
</tr>
<tr>
<td>0 physicians</td>
<td>CALHOUN</td>
<td>30%</td>
<td>HAMPTON</td>
<td>21%</td>
<td>OCONEE</td>
</tr>
<tr>
<td>44%</td>
<td>CHEROKEE</td>
<td>28%</td>
<td>JASPER</td>
<td>22%</td>
<td>ORANGEBURG</td>
</tr>
<tr>
<td>28%</td>
<td>CHESTER</td>
<td>22%</td>
<td>KERSHAW</td>
<td>20%</td>
<td>SALUDA</td>
</tr>
<tr>
<td>19%</td>
<td>CHESTERFIELD</td>
<td>27%</td>
<td>LANCASTER</td>
<td>28%</td>
<td>UNION</td>
</tr>
<tr>
<td>0%</td>
<td>CLARENDON</td>
<td>27%</td>
<td>LAURENS</td>
<td>17%</td>
<td>WILLIAMSBURG</td>
</tr>
<tr>
<td>22%</td>
<td>COLLETON</td>
<td>50%</td>
<td>LEE</td>
<td></td>
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</tr>
</tbody>
</table>

This information is based on all active physicians who reported their primary practice was located in this county during their license renewal process, June 2015
Concentration of Total Physicians Per 10,000 Population in 2015

Counties in SC range from a low of 0 to a high of 79.3 Physicians per 10,000 county residents

- 40.9 to 79.3 (1)
- 20.9 to 40.9 (9)
- 14.9 to 20.9 (6)
- 8.9 to 14.9 (9)
- 1.6 to 8.9 (20)
- 0 (1)

* = Rural County

Total Number of Physicians in South Carolina = 10,422

This information is based on all Physicians with an active license to practice and a practice location in South Carolina as reported during the license renewal period ending 06/30/2015. This map does not include medical residents. County practice locations are those reported as the primary practice site. Rural counties are those where 50% or more of the population lives outside an urbanized area, based on 2010 census counts.

This map was created by the Office for Healthcare Workforce Analysis and Planning, South Carolina AHEC, 2016.
Concentration of Family Practice Physicians Per 10,000 Population

Counties in SC range from a low of 1.0 to a high of 11.5 Family Practice Physicians per 10,000 county residents

- 7.0 to 11.5 (3)
- 5.0 to 6.9 (3)
- 3.0 to 4.9 (19)
- 1.0 to 2.9 (21)

Note: The ( ) shows the total number of counties with this range

UNIVERSITY OF SOUTH CAROLINA
Statewide Rural Health Initiatives

University of South Carolina
School of Medicine
THE ICARED PROGRAM
The ICARED Program provides

• Clinical services
  – Improve access to specialty services in rural areas.

• Practice support
  – CME and training opportunities underserved primary care practices

• A focus on innovative technologies
  – Incorporate new technologies into rural health

• Collaborations targeting challenging rural health issues
ICARED 2017

- Programs initiated in the ICARED grant would be continued
- We propose expanding program funding to allow for six additional practice sites.
- Subsequent slides will outline how the ICARED Program supports rural clinical practices
Continuing Medical Education

• Determine the CME needs of rural and underserved SC primary care practices

• Provide various education venues to satisfy these needs, including tele-education (noon conferences/grand rounds), CME programs, library access and subscriptions.
Onsite Subspecialty Support

- “Boots on the ground” subspecialists
- Dental, pediatric subspecialists, maternal fetal medicine, neurology, orthopedics, and adult cardiology.
- Current sites include Society Hill, Hartsville, Orangeburg, Sumter, Lancaster, Winnsboro, Aiken, Bamberg, and Florence.
- Expansions planned in addition to the 9 current ICARED sites
New Technologies

• Pilot programs in Orangeburg and Calhoun counties provide onsite pediatric echocardiography.
• Prevents unnecessary transfer and supports appropriate transport of neonates.
• Expand to other rural communities.
• Train physicians in rural settings using hand held ultrasound units.
Community Engagement

• The FoodShare Fresh Food Box program
• helps patients with Type 2 diabetes mellitus improve nutrition through fresh food access, affordability and nutrition education.
• Fresh produce delivered to participants in Orangeburg and Bamberg counties for $10 along with diabetes tele-education.
Expanded Sub-specialty Services

• Immunology Center will stage patients with hepatitis C disease and provide clinical advice on treatment.

• Remote heart failure monitoring program will be implemented for patients living in Sumter and surrounding counties

• Early cardiologist directed interventions can help avoid preventable hospitalization.
Academic Collaborations

• USC School of Nursing: Palliative care demonstration project
• USC School of Pharmacy: experiential teaching model in rural health, education for rural pharmacies; rural health pharmacy residency and pharmacy student internship.
• USC School of Public Health: study of primary care service delivery profile in South Carolina
• USC School of Social Work: practice level team training program in collaboration with SCORH
Percent of the Population in a Hotspot

High Need Areas:
- No Hotspot: 26%
- Adult Only Hotspot: 16%
- Child Only Hotspot: 2%
- Adult and Child Combined Hotspot: 57%

Rest of the State:
- No Hotspot: 8%
- Adult Only Hotspot: 8%
- Child Only Hotspot: 14%
- Adult and Child Combined Hotspot: 71%
Disease Hotspots of South Carolina
ICARED Sites

Current ICARED Site

Future ICARED Site

SC Hotspot
Family Medicine
Fairfield County

Family Medicine has scheduled over **9000** patients since January 2016 with a show rate of **77%**.

*Source: Narasimhan et al USC 2016*
Obstetrics and Gynecology
Orangeburg County

<table>
<thead>
<tr>
<th>Service Date</th>
<th>Patient Encounters</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2016</td>
<td>2</td>
<td>1. venous thromboembolism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. spont miscar; chtn; hx pre eclmp</td>
</tr>
</tbody>
</table>

- In Fiscal Year 2015-2016 there was an average consult rate of 1 patient/month from the Orangeburg Catchment Area
- 30 scans were completed over the year
Pediatrics
Cardiology
Orangeburg, Sumter, Lancaster, and Aiken County

• Show Rate 86%
• 78,938 Miles Avoided Averaging 4,386 miles avoided per month.
• Trained 39 med students and 19 residents

Narasimhan et al USC 2016
Pediatric Neurology has a 76% show rate and has saved patient a total of 8,514 miles since September 2015.
Pediatric Endocrinology has a show rate of **79%** and has saved patients **6,364** miles since April 2016.

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**Pediatric Endocrinology Show Rates**

- **April 2016**: 18 patients scheduled, 16 patients seen
- **May 2016**: 12 patients scheduled, 10 patients seen
- **June 2016**: 8 patients scheduled, 6 patients seen
- **August 2016**: 16 patients scheduled, 14 patients seen
- **September 2016**: 12 patients scheduled, 10 patients seen
- **October 2016**: 18 patients scheduled, 16 patients seen
- **November 2016**: 12 patients scheduled, 10 patients seen

**Pediatric Endocrinology Miles Avoided**

- **April 2016**: 0 miles avoided
- **May 2016**: 200 miles avoided
- **June 2016**: 600 miles avoided
- **August 2016**: 800 miles avoided
- **September 2016**: 1,000 miles avoided
- **October 2016**: 1,200 miles avoided
- **November 2016**: 1,400 miles avoided

*Narasimhan et al. USC 2016*
Pediatric Pulmonology has a show rate of 74% and has saved patient a total of 27,548 miles since January 2016.
Pediatrics
Developmental
Orangeburg County

Developmental Pediatrics has a show rate of 67% and has saved patients 516 miles since February 2016

*Narasimhan et al USC 2016*
Pediatrics
Nephrology
Orangeburg County

• Pediatric Nephrology started in November 2016
• Show rate of 75% with a total of 1440 miles avoided
• 1 medical student was trained in the first month
Psychiatry has scheduled 48 adult, child, and geriatric patients with a show rate of 79%.
Future Directions

• Continued funding and successful outcomes from the ICARED model allows for:
  – Continued expansion to areas of need
    • Example: Pee-Dee
  – More comprehensive services
    • Additional subspecialties based on community need
    • Examples: Pediatric subspecialties, Dental
  – Expansion **through collaboration**
    • Example: Develop services to Upstate SC in partnership with GHS and USC-G
SC Center for Rural and Primary Healthcare

• 2016-17 Proviso 33.27 directed the USC School of Medicine to establish the Center

• Mission: Support and develop rural and primary care education, delivery, and sustainability in South Carolina through clinical practice, training and research.
SC Center for Rural and Primary Healthcare

• Operated out of USC School of Medicine
• Supported by consulting Advisory Committee comprised of key state stakeholders
• Collaborative working relationships
  – SC DHHS
  – SC Office of Rural Health
  – SC AHEC
  – SC publically-affiliated educational institutions
Core Objectives

- Support rural and underserved healthcare providers
- Improve diversity and distribution of SC rural health workforce
- Research to inform strategy, investment and health policy related to SC rural and primary healthcare
- Provide programs giving access to specialized services
- Promote collaboration among state rural health entities
- Increase and enhance rural health professions and interprofessional education.
Current Initiatives Part 1

• Establish and staff Center
• Detailed analysis of SC rural health care resources
  – Develop up-to-date data warehouse of public-use data to be utilized by providers, policy makers, and educators to alleviate SC health disparities
• Rural practice information hub
  – rural clinicians can collaborate, interact, and exchange best practices.
  – provide enhanced clinical information and continuing education services
Current Initiatives Part 2

• Develop Rural Health Fellowship
• Rural Practitioner/Staff Development and Practice Enhancement seed grant program
• Expand USC School of Medicine rural clinical training sites at rural practice sites in the SC Midlands or Pee Dee region
• Rural Residency Program development in Sumter, SC
Current Initiatives Part 3

• Statewide Rural Practice Scholarship and Loan Repayment Program for Medical Students, Advanced Practice Registered Nurse and Physician Assistant students.

• Rural Pharmacy Extension Service
  – Consultation and practice support on challenging pharmacotherapy issues, medication safety information, evidence-based recommendations for safe, high-value medication use.
Primary Care Workforce Chain

Community

Recruitment programs
Community programs

Interested prospects
Recruited prospects

College 4 Years

Medical School 4 Years

Residency 3 years

Rural Practice

Debt reduction or repayment

Recruitment programs
Cost reduction
Scholarships

Recruitment and Retention programs
Practice support
Payment reform

Practice support
Payment reform

University of South Carolina
Proposed New Initiatives

• Rural health clinical track
  – Develop rural track for residents in Winnsboro

• Expand research center
  – Increase capacity for research output

• Pilot accelerated medical education track
  – Collaborate with regional partners testing accelerated education track. 3 years medical school, 3 years residency, 3 years FQHC/RHC
Funding overview

• Presently these programs are funded through the following 2016 Provisos:
  – Proviso 33.21: Health Outcomes Plan
  – Proviso 33.27: Rural Health Initiative
Thank you

We welcome your questions