



2022

Fiscal Year

CLEMSON
RURAL HEALTH

Impact Report

EXPANDING ACCESS AND IMPROVING EQUITY
IN RURAL SOUTH CAROLINA

ClemsonRuralHealth.org

A Message From Our Director



It has been an exciting time at Clemson Rural Health with the 2022 fiscal year being no exception. With the support of the South Carolina state legislature, governor's office, the Department of Health and Human Services, Clemson University, donors, and many community collaborators, our team has been able to reach more of our state than we previously thought possible. No matter how we grow and expand, our goal remains the same: to ensure that access to high quality health care and improved health outcomes are realized in every rural and underserved community in which we operate. This vision is being realized through our dedicated team, fixed and mobile infrastructure, technology applications, research, and commitment to communities who have experienced struggles in social determinants of health and historically poor health outcomes.

While the COVID-19 pandemic created its own unique health care needs in our state and the nation, it also highlighted the disparities and gaps in care that have existed for many years. These included everything from inadequate access to primary care, distance needed to be traveled to access a COVID test or vaccination, and challenges of nutritious food distribution to our most food insecure communities. As we transition out of the COVID-19 pandemic, Clemson Rural Health is collaborating with existing

***Ron Gimbel, Ph.D.,** arrived to Clemson as the Department Chair/Head, Public Health Sciences in July 2014 and held the position until July 2021 when he stepped off to serve as Director, Clemson Rural Health. Working with a talented leadership team, Dr. Gimbel is seeking to expand the university's leadership in rural health statewide.*

health care providers, communities, counties, and state partners to reduce premature death, reduce unnecessary hospitalization, promote health and wellness, help shape the future rural health professionals, and foster research in underserved and rural communities.

I hope as you read through this fiscal year 2022 Impact Report, you will get a sense of the impact and innovation of our work and are inspired to join our team, collaborate with us in health innovation, or support us however you can.

Warmly,

Ron Gimbel, Ph.D.
Professor and Director of Clemson Rural Health

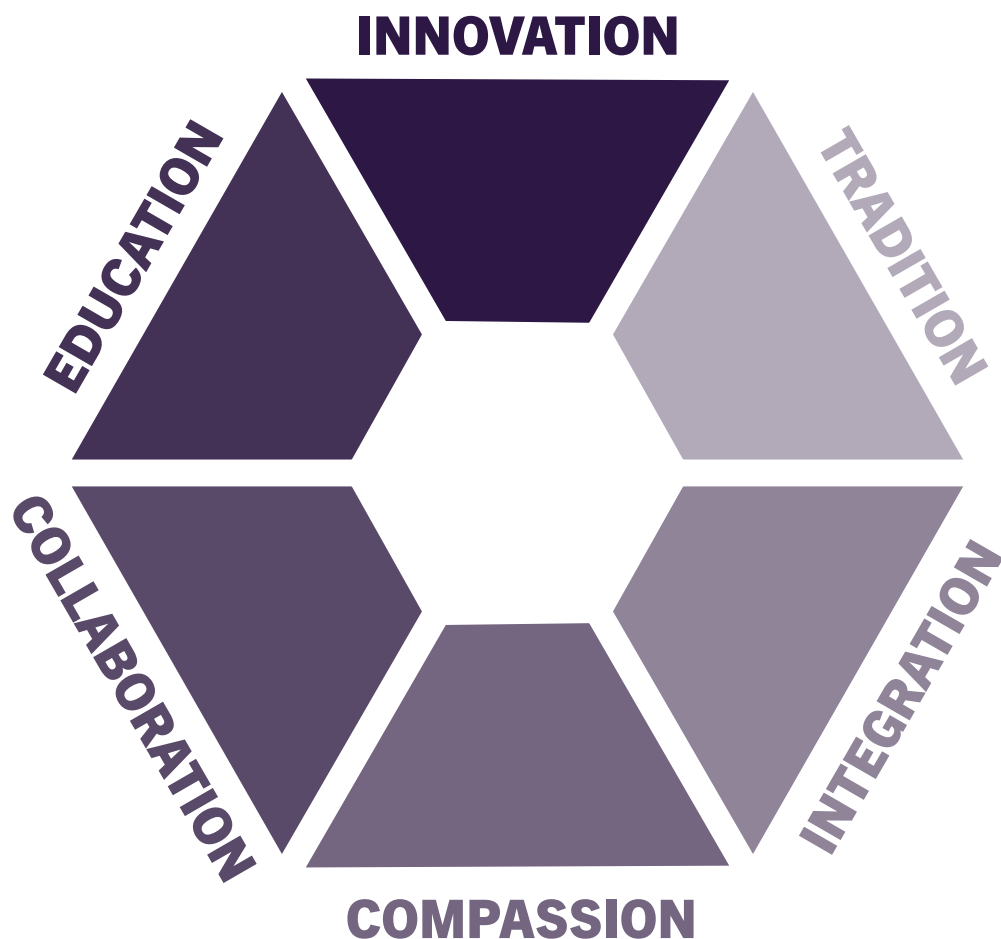
Mission

As part of Clemson University's land-grant mission, we work every day to reduce premature mortality, decrease preventable hospitalizations and promote healthy behaviors.

Vision

To improve individual and community health outcomes among underserved and rural communities throughout South Carolina by increasing access to quality health care and improving health equity through innovative, evidence-based approaches and strategic partnerships.

Guiding Principles



Clemson Rural Health is an academic component of the Clemson University College of Behavioral, Social and Health Sciences.



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Introduction

Executive Summary

Clemson Rural Health (CRH) continues to expand its reach throughout the palmetto state. During the 2022 fiscal year, the organization debuted exciting new partnerships, launched a rural health clinic (with another on the way) and continued to provide the high-quality and innovative health care that its patients have come to rely on. The purpose of this annual report is to illustrate the combined impact of each of the diverse initiatives led by the CRH team.

At its core, CRH provides clinical care to rural and underserved communities in South Carolina. This began in the early 1970's with the nurse practitioner-led Joseph F. Sullivan Center located in the heart of Clemson University's campus. The clinic eventually came to include a fleet of mobile health units capable of serving the upstate and midlands regions. As CRH expanded its locations and clinical care offerings years, there were many new innovative health care delivery methods extended to rural communities. These included telehealth carts installed in clinics and in low-income housing

communities, a new state-of-the-art mobile health unit and adding MyChart functionality for all CRH patients for ongoing, comprehensive care. To ensure that each of the projects and initiatives are not only effective, but also sustainable, CRH is committed to training and educating the future rural health workforce.

The collective impact of clinical care, innovation, and education allow Clemson Rural Health to provide leadership, expertise and on-the-ground support to the health care systems that serve South Carolina's rural communities. With the support of state legislators, partners, and collaborators, this work will continue to raise the health profile of the state for years to come.

Our History

The Joseph F. Sullivan Center opened as a nurse practitioner-led community clinic.

1978

The center obtained its first mobile health unit.

1995

The center expanded beyond the city of Clemson to serve the upstate of South Carolina through mobile health outreach.

1990

The center unveiled the world's first solar-powered mobile health clinic, used for statewide outreach.

2016

Two SUVs were added to the fleet to support mobile health outreach.

2018

The center was placed under the umbrella of the newly founded Clemson Rural Health.

2019

The first of two state-of-the-art mobile health units hosted its inaugural clinic and the Clemson Health Clinic at Walhalla received RHC status.

2022

Clemson Rural Health gained telehealth to increase access to care during the COVID-19 pandemic.

2020

The mobile outreach team joined the South Carolina Agricultural Workers Program to provide health care to seasonal farm workers.

2004

The Clemson Health Clinic at Walhalla officially opened its doors to the public as a Clemson Rural Health hub clinic.

2021

NEUTRAL BROKERS

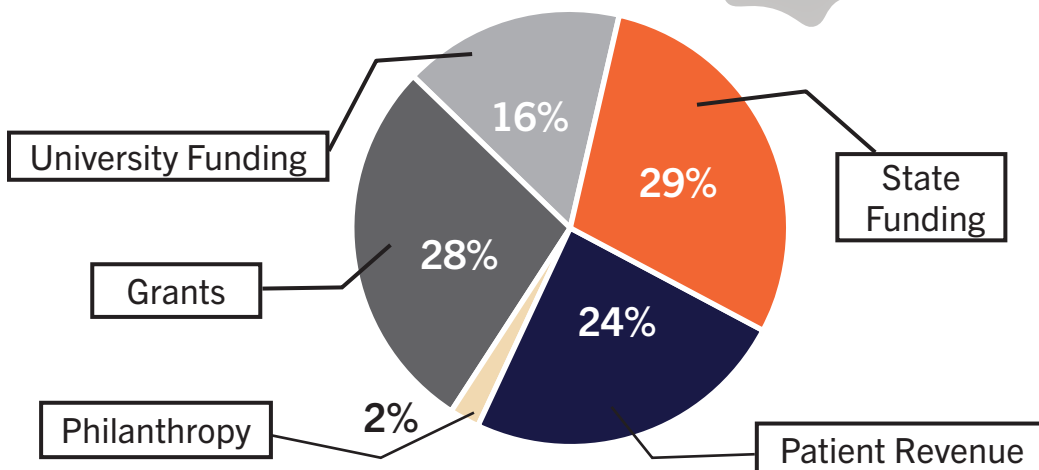
We partner and collaborate with over 190 key organizations, within and external to Clemson University, to deliver high quality healthcare services in underserved and rural communities.



Clemson Rural Health by the numbers.



Funding Sources



Clinical Care

Working to Improve Health Equity



Eradicating Hepatitis C

Clemson Rural Health has employed a novel approach to support the World Health Organization HCV elimination goals. Through the existing mobile health unit framework, a small team including a nurse practitioner, health educator and social worker were deployed to 15 community sites to screen 398 individuals. The sites were chosen to provide access to those at increased risk for HCV and its complications. At the mobile sites, the individual is tested through a point-of-contact finger stick and is given results within thirty minutes. If the patient tests positive for HCV, the nurse practitioner then provides treatment at no-cost to the patient.

**Clemson Rural Health,
I do believe, has saved my life.**

David L.
Hepatitis C Treatment Recipient

This year, 81 patients with HCV have been identified, with 52 on the path to full recovery. On July 1, 2022, CRH began including HIV point-of-care testing and PrEP services at the HCV clinic sites.



84 Clinics
3,776 Miles Travelled

Primary support for this work was funded by Gilead Sciences and the South Carolina Center for Rural and Primary Healthcare as part of the state's rural health initiative.

**34% of patients served by
Clemson Rural Health belong to
underrepresented minority groups.**

**Mobile health units reached
1,490 patients from July 1, 2021
to June 30, 2022.**

Building a presence in rural and underserved communities



Oconee County

After operating as a SCDHEC sponsored site for many years, the Clemson Health Clinic at Walhalla officially opened as a permanent Clemson Rural Health hub clinic on February 1, 2022. This bilingual clinic was strategically placed to fill a health care gap existing in the city of Walhalla, Oconee County and beyond. **This team of Clemson Rural Health providers have seen 1,687 patients, with 64% of those being uninsured, exposing the health care gaps present in the region.** The Walhalla clinic will also serve as the hub for the VeggieRX program, connecting rural communities to fresh produce and hands on nutrition education.



Orangeburg County

During the course of the 2022 fiscal year, Clemson Rural Health built a strong foundation for a new clinic in Orangeburg, SC. This clinic will allow Clemson Rural Health to expand the reach of fixed and mobile clinics to the collective 137 thousand residents of Orangeburg, Bamberg, Barnwell and Calhoun county. Made possible through a strategic collaboration with Regional Medical Center, Clemson Rural Health will work with providers in the area to promote health equity and improve health outcomes. The clinic is set to open fall of 2022.

Top Diagnoses

Hypertension
High Cholesterol
Prediabetes
Anxiety Disorder
Type 2 Diabetes



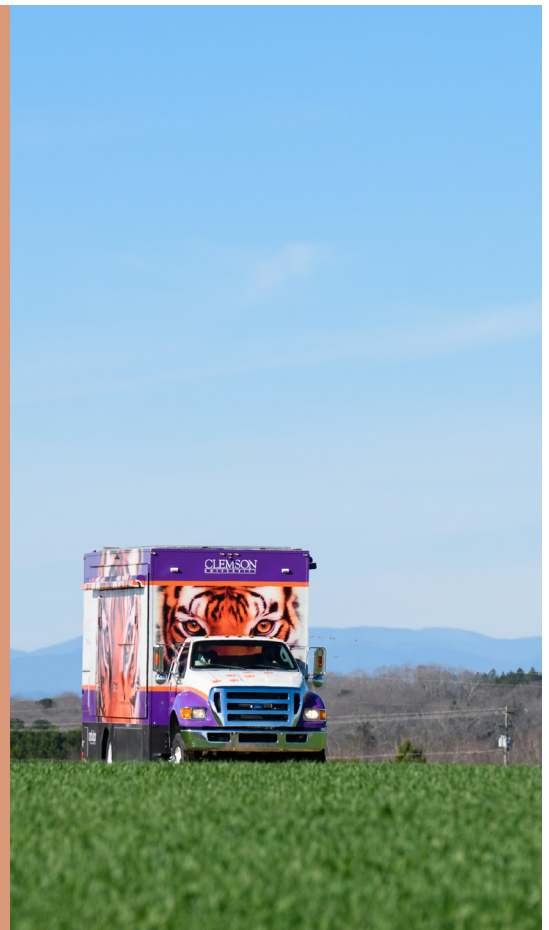
VeggieRX

The Clemson Health Clinic at Walhalla is committed to reducing the prevalence of diabetes through holistic clinical programs like VeggieRX. In collaboration with BlueCross BlueShield of South Carolina, FoodShare Pickens County and Feed & Seed Co., pre-diabetic and diabetic patients are enrolled to receive twelve free boxes of fresh produce over six months. Funded by the BlueCross BlueShield of South Carolina Foundation to support the goals of Diabetes Free SC, 111 Oconee County residents will be able to participate. Enrollment in the program includes access to fresh and local produce and monthly cooking demonstrations that present how to utilize the fruits and vegetable included in the box. Registered Dietitian, Brooke Brittain, also provides education regarding creating a balanced plate, appropriate serving sizes, reading food labels and counting carbohydrates. Over the next year, the program will be evaluated with pre- and post-measures of A1c, blood pressure, weight, BMI and more.

BlueCross® BlueShield® of South Carolina is an independent licensee of the Blue Cross Blue Shield Association.

Farmworker Outreach

During the summer and fall, Clemson Rural Health has the privilege of serving the seasonal workers and some of the large agricultural centers of the state. Funded through the South Carolina Primary Healthcare Association, a mobile health unit is sent to the participating farms to provide annual screenings, primary care services and health education. The mobile team travels around 500 miles a year to reach this rural and underserved population with no to low cost visits. One of the hallmarks of the program is its ability to connect patients who previously had no established primary care provider to affordable quality care. **In fact, out of 62 visits of seasonal workers to Clemson Rural Health, 41 were follow up appointments at the Clemson Health Clinic at Walhalla.** This continuity of care is invaluable for lifting the overall health outcomes for our state.



Supporting South Carolina Businesses

▼ In June, the newest Clemson Rural Health mobile health unit visited the Giti Tire manufacturing plant to participate in an employee health fair. The CRH team provided comprehensive health screenings for 40 employees.



▲ Paul Vinay receiving his blood pressure screening from health educator, Logan McFall.

“It is a great benefit to have [Clemson Rural Health] on site so that employees can come out and get a free health screening.”

Paul Vinay
EHS manager at Giti Tire

Worksite Wellness Screenings

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Employees spend over 2,000 hours a year in the workplace, making it a strategic target for improving access to health care. Clemson Rural Health uses its fleet of mobile health units to offer biometric health screenings to workplaces around the state in partnership with MUSC. These screenings not only demonstrate a culture of care, but also give employees an opportunity to discover or manage their health risk factors with our multidisciplinary wellness team. Overall, this programs fulfill Clemson Rural Health’s mission while boosting productivity and reducing cost of potential insurance claims for South Carolina employers.

Bike Race Screenings

In October, Clemson Rural Health participated in the Cooperative Bike Race visiting 12 of the state's 20 electric cooperatives to provide blood pressure screenings and heart health education to race participants and employees.

Out of the 217 participants who received a blood pressure screening, 94% read as higher than normal blood pressure with 13 in hypertensive crisis. Many patients reported to our health educators that they were not aware of their elevated blood pressure because they were not experiencing any noticeable symptoms. Through this collaboration, the Clemson Rural Health team was able to deliver vital health information to some of South Carolina's most essential workers.



▲ Clemson Rural Health team members provided life-saving screenings and with some participating in the race itself.

COVID Testing Partnership

Under the coordination of MUSC, Clemson Rural Health designated a dedicated staff to provide COVID-19 testing and vaccinations throughout the state. Over the last year, the team traveled to **69 locations** to ensure that individuals living in rural communities had equitable access to COVID-19 mitigation strategies.

Overall, the Clemson Rural Health COVID team **served over 11,000 South Carolinians** and supported South Carolina businesses, including Techtronic Industries, United Way, Converse College, the Kraft Heinz Louis Rich Plant, Marleylilly, and more, with COVID-19 testing and vaccinations.


217 Clinics
19,871 Miles Travelled



Photo by Kapri Kreps Rhodes

Participants biked a total of 648 miles over seven days to raise awareness for heart health at 19 South Carolina electric co-ops. The race honored Pee Dee Electric Cooperative's President and CEO Brian Kelley, who died of a sudden heart attack in 2017.



Screening Clemson's Faculty and Staff

After a hiatus due to the COVID-19 pandemic, Clemson Rural Health resumed its CU4Health screening program in February of 2022. This service allows Clemson employees to take charge of their health and wellness decisions and makes Clemson University a healthier place of employment. The screening includes a complete blood count, lipid panel, basic metabolic panel and complete biometric screening at no-cost to employees and their spouses covered by the South Carolina state insurance plan. **Since its resumption, 136 patients have been screened at the Joseph F. Sullivan Center.** 55% of the Clemson employees screened exhibited elevated cholesterol and 58% had elevated blood pressure. These employees then met with a health educator to discuss their results and create a plan for lowering their risk.



CORPORATE SITES

Carolina Total Staffing Solutions
Giti Tire
GoodWill
Kraft Heinz Louis Rich Plant

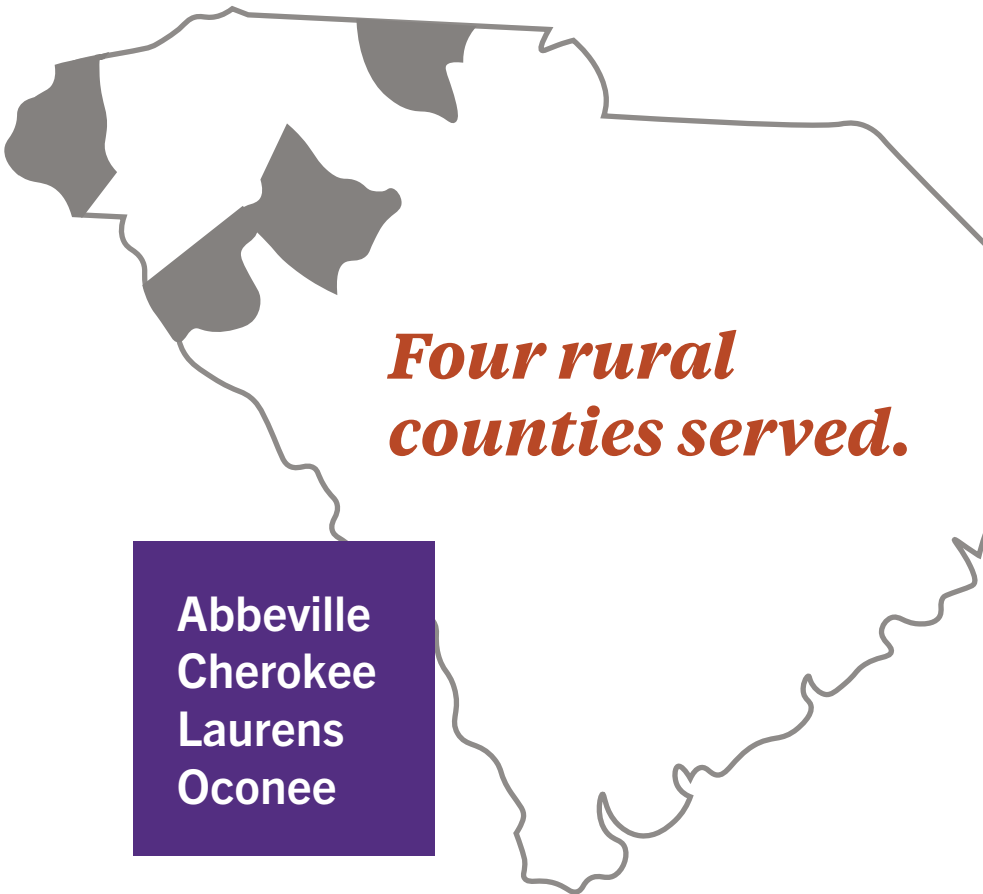
Michelin Conference Center
Piggly Wiggly
Techtronic Industries
Itron Inc.



Increasing Access to Mental Health

While accessible mental health care is a need in most of the state, it is exacerbated in rural counties and communities. Through grant funding by the Center for Rural and Primary Health Care, an interdisciplinary team has offered **59 counseling appointments** for insured and uninsured patients at the Clemson Health Clinic at Walhalla.

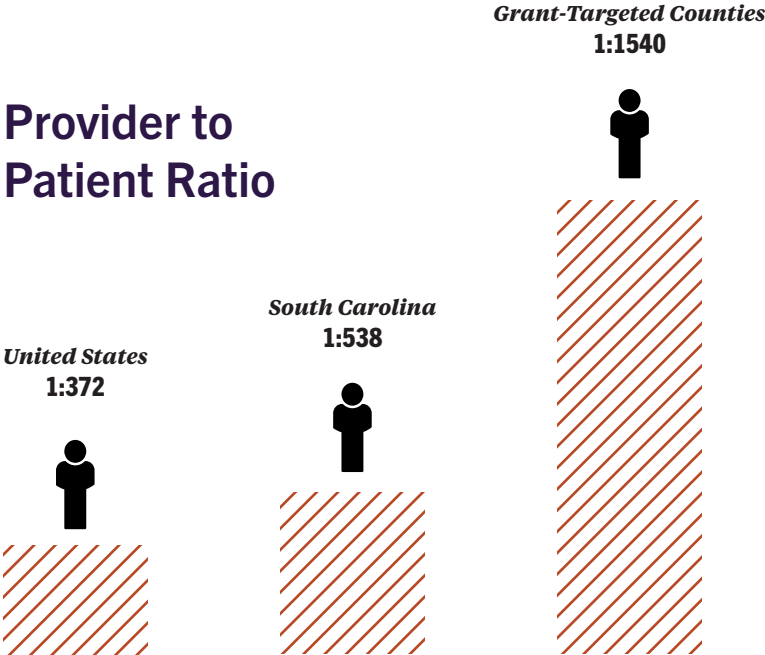
To increase reach even further, a licensed social worker-led team began providing services at strategic locations in Abbeville, Cherokee, Laurens and Oconee counties in March of 2022. These four counties served by Clemson Rural Health’s mobile mental health intervention were chosen because of their high demand for services and low supply of mental health providers. The patient to provider ratios in these counties are three times that of South Carolina and about five times the national average. **This program has referred 50 patients to receive necessary and sometimes life saving services at no cost**, with hopes to increase that number as the program continues.



Four rural counties served.

Primary support for this work was funded by the South Carolina Center for Rural and Primary Healthcare as part of the state’s rural health initiative.

Provider to Patient Ratio





Fighting Cancer through Prevention

Best Chance Network

As a member of the Best Chance Network, **Clemson Rural Health** provided comprehensive cancer screening and education to **562 South Carolinian women**, including 206 screened for cervical cancer and 482 screened for breast cancer* during the 2022 fiscal year in 14 upstate community sites. These screenings identified 23 women at increased risk for cervical cancer, 79 women at increased risk for breast cancer, and ultimately 5 diagnoses of breast cancer. Clemson Rural Health nurses also provide case management for abnormal findings and ensures coordinated care for cancer treatment.

**Screenings based on age and guidelines.*

Nutrition

Each Friday, nutrition appointments with a registered dietitian are available for patients with chronic diseases. Appointments help to holistically manage high blood pressure, diabetes and more along with clinical intervention.

There are 220% more excess deaths due to cancer in South Carolina's rural counties than in its non-rural counties.

Source: National Center for Health Statistics, 2006-2015.

WISEWOMAN

Conducted alongside the Best Chance Network, WISEWOMAN is a CDC administered program to help women understand and reduce their risk for heart disease. After a cardiovascular risk screening, patients participate in six health coaching sessions concluding with a no-cost follow up screening. During the 2022 fiscal year, Clemson Rural Health saw **327 participants** with an **average reduction of total cholesterol 13.6%** among those who graduated from the program.

Innovation

Leveraging Health Technology

New Rural Telehealth Platform in Bamberg, SC



If [telehealth] had been in my life, I probably wouldn't be a double amputee.

Leslie Hayes
City of Bamberg Mayor Pro Tem

On May 19, 2022, the Clemson Rural Health team travelled to Bamberg, SC to participate in a telehealth focused health fair used to kick off a new virtual visit set up for the residents of Bamberg Villas. **Over 50 low-income housing residents participated in a telehealth demonstration** and toured the mobile health unit that will be stationed at the Clemson Health Clinic at Orangeburg. Bamberg Villas is the first location in a partnership with Palmetto Care Connections to provide virtual connections to primary care providers for those without transportation access to traditional health care.



Remote Patient Monitoring

Through a strategic collaboration with Palmetto Care Connections, Clemson Rural Health is building an innovation in remote patient monitoring program (iRPM). Beginning this year with the acquisition of a new telehealth platform powered by IronBow™, a virtual care platform to support RPM by Carium, CRH is poised to deploy iRPM pilot projects to improve access and outcomes in diabetes prevention, presurgical management of chronic disease, high-risk pregnancies, mental health and overall wellness.

Adding MyChart Functionality

In January, Clemson Rural Health gained MyChart functionality for its mobile and fixed clinic patients. This allows patients to view their results and receive ongoing support from a provider directly from their portal. **Currently, 3,032 patients are registered through MyChart giving an adoption rate of 39%.** In the upcoming year, Clemson Rural Health hopes to add online scheduling functionality to reduce further barriers to care in rural and underserved communities.

Over 1200 patients seen virtually during the 2022 fiscal year.

Expanding the Fleet

In the spring of 2022, Clemson Rural Health procured two additional full size mobile health units and a Ford F250 to support expanded efforts statewide. The new units will be used to complement clinical services, while the truck will be used to transport produce to address food insecurity and allow for hands on nutrition education offered by the CRH team. The diverse fleet offers a right-size approach to communities throughout the state, while remaining conscious of staffing needs and operating expenses.

These additions:

- Increase the number of appointment slots available each day.
- Allow for the effective isolation of COVID positive patients.
- Do not require a specialized driver and can seat up to seven team members.
- Provide dedicated lab space and fixed exam rooms for more complex appointment types.



Kristie Boswell, FNP-C, provides on the ground support for a variety of mobile health research projects. Most Clemson Rural Health clinicians are involved in at least one academic study.



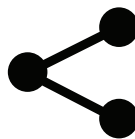
Engaging in and Fostering Multi-Disciplinary Research

Core to the central mission of Clemson Rural Health is the charge of engaging in and fostering clinical and translational research in underserved and rural communities of South Carolina. Research is the bedrock for informing policy and delivering evidence-based care that formulates best practices.

Engaging in research means leading or co-leading novel and applied clinical and translational research projects. In FY 2022, our engagement focused on several projects including: exploring family nurse practitioner-led delivery of screening and treatment of infectious disease (Hepatitis C virus, HIV) in rural and underserved communities via mobile health units, medication assisted therapy, via mobile health units, in the care of patients with substance use disorder, telehealth-based birth control services in underserved and rural communities, dissemination and implementation research leveraging African American faith-based networks aimed at overcoming COVID-19 vaccine misinformation, designing and implementing rural mental health services leveraging licensed independent

social workers and licensed professional counselors operating from mobile health units, and others.

Fostering clinical and translational research means supporting the research of other investigators from universities across the state and nation. The support additionally extends to commercial clinical trials. This is a new role for Clemson Rural Health and in FY 2022 our team worked to develop foundational relationships, understand crucial infrastructure and planning, and is poised to support its first commercial FDA-approved, phase III, cancer detection biomarker study in fall 2022. The SC Clinical and Translational Institute of MUSC has advised Clemson Rural Health on getting started in fostering research.



Education

Building a Rural Health Workforce



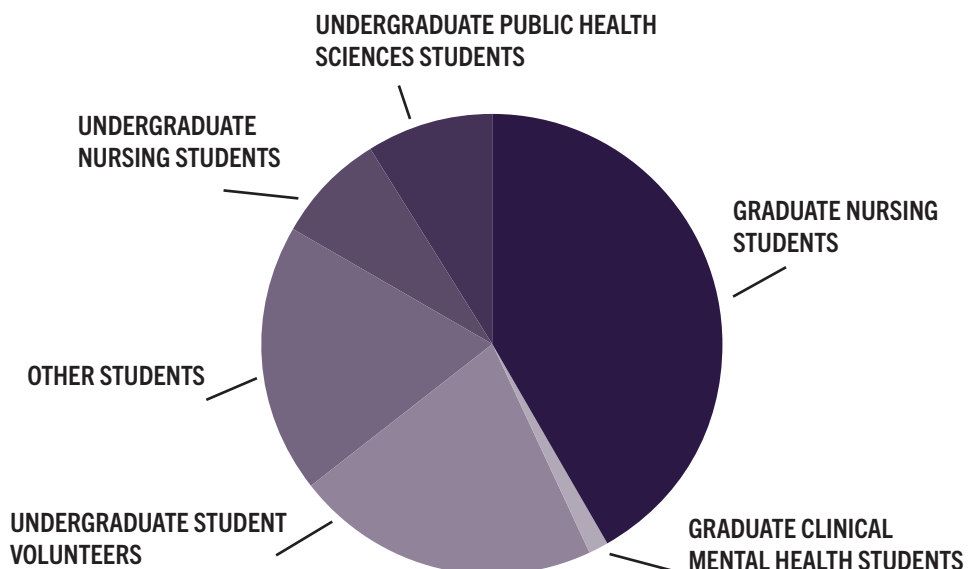
▲ Undergraduate and graduate students are supervised by clinical staff as they put new skills into practice.

Clinical Student Experiences

Each year, Clemson Rural Health opens its doors to Clemson students seeking clinical experience in a rural setting. Depending on their field of study, students are given opportunities to assist and shadow clinicians in fixed clinic settings and mobile health units. This year, 127 students assisted the Clemson Rural Health team.

One goal of these opportunities is to inspire the next generation of health care workers to choose to practice in rural and underserved areas.

Clemson students clocked in at 11, 593 total hours of clinical experience this year.





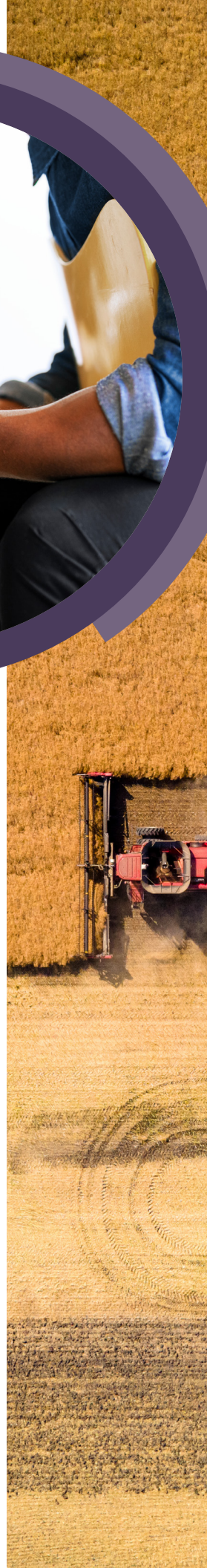
“70% of areas designated as primary medical health professional shortage areas were considered rural or partially rural.”

Source: Council on Graduate Medical Education, 2022

Building Connections with Historically Black Colleges and Universities

Clemson Rural Health is committed to collaboration with South Carolina HBCUs. In FY 2022, early success was realized with faculty from South Carolina State University, a land-grant university located in Orangeburg. SCSU faculty members joined Clemson faculty in sponsored research proposals and are now working with Clemson Rural Health in building the upcoming

diabetes program with RMC Orangeburg. Looking ahead to FY 2023, this commitment will expand undergraduate and graduate student clinical experiences for HBCUs and increase collaboration in research.



Moving Forward

Diabetes Care Across the Lifespan

Late in the fiscal year, Clemson Rural Health, along with the Regional Medical Center Orangeburg, were awarded a Women's Health Initiative grant funded by the BlueCross BlueShield of South Carolina Foundation, an independent licensee of the Blue Cross Blue Shield Association, to support the goals of Diabetes Free SC in Orangeburg, Bamberg, Barnwell, and Calhoun counties. Collectively, the team is building a regional life-cycle diabetes program for women from middle adolescence through late adulthood. The program will be multidisciplinary in nature and address the unique needs of each major life stage. A primary focus of the program will be on interactive

TOP THREE COMMUNITY HEALTH CONCERNS

According to the RMC/Tri-County Health Network Community Health Needs Assessment Report 2019.



Diabetes



Obesity



High Blood Pressure

health education, nutrition, individual and group health coaching, technology application, and other evidence-supported interventions. The program will also serve as a hub for related clinical and translational research on diabetes in women.

*Registered Dietitian,
Brooke Brittain,
gives a sugar model
demonstration at the
Ollie Johnson Memorial
I-95 Health Fair in
Santee, South Carolina.*





Connecting South Carolina through Hub Clinics

In delivery of its 2019 founding mission, Clemson Rural Health is installing “hub clinics” in strategic locations across the state. The hub clinics will help close “gaps in care”, enhance chronic disease management and primary care, expanded preventive health screenings, partner on social determinants of health projects, integrate healthy food solutions with clinical care, support SC businesses through workplace-focused health events, build and expand a diverse rural health workforce, and bring clinical and translational research into communities that have not had access previously.

The hub clinics support decentralizing assets into high-need counties and communities where a team can collaborate with existing health care providers to improve health care access and outcomes. All hub clinics will include a multidisciplinary healthcare team, a dedicated mobile health unit, and connection to a common electronic health system and rural virtual care platform.

In FY 2022, our first hub clinic, the Clemson Health Clinic at Walhalla, earned federal designation as a rural health clinic. We also acquired a space for our second hub, the Clemson Health Clinic at Orangeburg, scheduled to open in fall 2022. Planning for future hub clinics is underway.

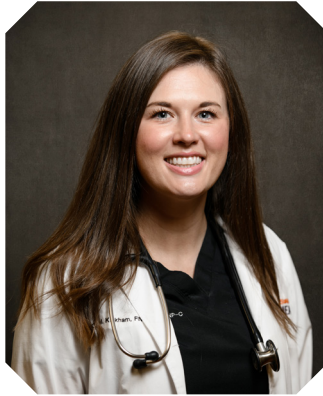


Meet the Team

Clemson Rural Health Leadership



Brooke Brittain, MS, RD, LD, CHES, CLC,
Associate Director, Food and Nutrition Security



Caitlin Kickham, MS, APRN, FNP-C
Associate Director, Clinical Operations



Christy Gibson
Business Manager



David Hatch
Associate Director, Health Administration



Dianna Colvin, MPH, MSW, CHES
Director of Communications



Kathleen Cartmell, Ph.D., MPH
Cancer Prevention and Smoking Cessation Lead



Leslie Hossfeld, Ph.D.
Professor & Dean, College of Behavioral, Social and Health Sciences



Mary Beth Johnstone, Ph.D.
Director of Research Support



Michelle Deem, DNP, APRN, FNP-BC
Associate Director, Clemson Health Clinic at Walhalla



Ron Gimbel, Ph.D.
Professor & Director, Clemson Rural Health



Thomas Kickham, DO
Medical Director



Will Mayo, MS, MPH, APRN, FNP
Assistant Director, Joseph F. Sullivan Center

Thank you to each of our 2021-22 community collaborators!



Clemson Rural Health Locations

CLEMSON HEALTH CLINIC AT WALHALLA

200 Booker Drive
Walhalla, SC 29691

JOSEPH F. SULLIVAN CENTER

101 Edwards Hall
Clemson, SC 29634

CLEMSON HEALTH CLINIC AT ORANGEBURG

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