

Telehealth Research & Report Series August 24, 2022, 10:00am-11:00am EST



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This webinar is being recorded.

The webinar recording and presentation will be available after the webinar.



Medical University of South Carolina





Palmetto Care Connections | www.palmettocareconnections.org

Telemedicine Research & Reports

- Bi-annual webinar hosted by PCC and co-sponsored by MUSC and SCTA
- Goal: Sharing innovative telehealth research and evaluation occurring across SC



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Agenda

- Provider and health system leadership perspectives on telehealth ambulatory expansion during COVID-19
 - Elizabeth Brown, PhD, MPA
- Use of health care utilization heatmapping to inform telehealth strategy
 - Kit Simpson, DrPH, and Ryan Kruis, MSW
- Telehealth and rural hospital finance
 - Dunc Williams, Jr., PhD, MHA

Elizabeth Brown, PhD, MPA

Provider and health system leadership perspectives on telehealth ambulatory expansion during COVID-19

Ambulatory Telehealth Approaches during COVID-19: Facilitators, Challenges, and Next Steps

Elizabeth A. Brown, PhD, MPA Assistant Professor Division of Healthcare Studies Department of Clinical Sciences College of Health Professions Medical University of South Carolina



Background

COVID-19, Policies, and Impact on Telehealth

- In early 2020, the Coronavirus Disease 2019 (COVID-19) pandemic forced healthcare systems to quickly adopt and adapt telehealth services.
- The United States (US) Department of Health and Human Services (DHHS) and Centers for Medicare and Medicaid (CMS) broadened telehealth services, permitting patients to see providers across state lines and reimbursing at in-person rates (Horwitz and Wiley, 2022).
 - CMS relaxed compliance requirements where providers could use video communication like Zoom and Skype with patients that may have been otherwise non-compliant (Calton, Abedini, & Fratkin, 2020).
- SC DHHS announced temporary policy changes promoting telehealth flexibilities during the COVID-19 Public Health Emergency (SC DHHS, April 29, 2022).
- At the Medical University of South Carolina (MUSC), ambulatory clinic volumes declined over 70% and rapid response to COVID-19 was initiated to meet demand and promote provider and patient safety (James & McElligott, n.d.).
 - Ambulatory telehealth visits jumped from 1% to 66% during the first three weeks of the pandemic.

Research Question and Study Aim



Research Question: Which program transformations went well and according to plan, and which programs had challenges?

Study Aim: Investigate how telehealth leaders, ambulatory care managers and providers, and leaders in compliance and finance (1) transformed ambulatory telehealth infrastructure and (2) characterized challenges, facilitators, and successes during the pandemic in relation to processes, patient access, and providers.





Methods – Research Design and Participants

Research Design

- Qualitative study using semi-structured key informant interviews
- Interviews via Zoom or Microsoft Teams, fall 2021
- Conventional content analysis (Vaismoradi, Turunen, & Bondas, 2013; Hsieh & Shannon, 2005)
 - Open coding of transcripts to identify themes
 - Flexibility exploration of participants' experiences
- Nonprobability purposeful snowballing sampling
 - Brainstorm knowledgeagble individuals to interview
 - Ask interviewee for suggestions for more participants
- Participants
 - Telehealth leaders and ambulatory providers
 - Leaders in finance and compliance



Methods – Data Collection

- Data Collection
 - Interview Guides w/ opened-ended questions and four modules
 - Verification of Activities
 - What transformations took place?
 - Successes
 - What went well during the implementation of COVID-19 responses?
 - Lessons Learned
 - What were some of the challenges and lessons learned?
 - Ending Questions
 - What advice would you give to other telehealth leaders and providers?
 - Follow-up or probing questions for clarification and to promote dialogue
 - Interviews lasted between 23 to 74 mins., with an average of 40.7 mins.





Methods – Data Analysis and Ethical Review

- Data Analysis and Coding
 - Interviews recorded and transcribed
 - Two coders met virtually for four months
 - Read and code transcripts individually
 - Write memo for each coded transcript
 - Develop (and refine) codebook (4x)
 - Switch, read, and code transcripts again to establish consensus
 - Discuss coding disagreements and emerging themes
- Ethical Review
 - Institutional Review Board (IRB) approved as Quality Improvement/Program Evaluation

Code Name	Definition
Goals/Strategy	Statements of the goals and strategy for telehealth. And factors that motivated the
	use/expansion of telehealth.
Process	Descriptions of the process changes, activities, or steps made to the existing telehealth
	infrastructure, that were made to adapt the telehealth services during COVID-19. May also
	include discussion of new processes and activities that did not exist prior to COVID-19.
	Captures timeline, order of activities, the roll-out, and pace of implementation for
	telehealth processes and activities.
Populations/Population	Statements or discussions related to the specific populations that telehealth services are
Health	reaching or intended to reach (e.g., rural, children, geriatric, disease population, etc.). Can
	include statements related to the intended purpose and outcomes for that population.
Success	Descriptions of how telehealth programs define success. Can include discussion of data and
	outcomes tracked, benefits, impact, and program "wins".
Governance &	Statements related to the decision-making process, leadership, organizational infrastructure
Infrastructure	and telehealth governance. Examples include decisions about: resource allocation of
	resources (e.g., carts); policies, stakeholder collaboration; centralized vs department level
	infrastructure.
Services	Capture specific references to clinical service lines, e.g. stroke, pediatrics, in-patient, etc.
Stakeholders	Discussions of the stakeholders at various levels involved in telehealth implementation and
	their roles. (e.g., patient, provider, leader, IT, government liaison, etc.)





Transformations and Key Changes - Facilitators

- Reimbursement changes
- Urgency and nimbleness
- Leadership support
- Stakeholder relationships
- Defined goals
- Ability to build off existing telehealth infrastructure
- Early decision to move to a standardized and simple telehealth platform

"We have implemented a central support team with our new platform, [omitted], that we've switched some of our providers over from [omitted] visits to [omitted] and we have provided that we're calling the telehealth central support team ant that has been incredibly successful for helping patients and providers connect because these nurses, our support nurses, are calling the patients pre-visit to triage them and then also help them get connected on these virtual platforms."

> "I feel like I spent the first ten years in telehealth trying to convince people that it could be done and then in like a week everybody had done it and they're like, 'Oh, yeah. It can be done.'"



Challenges

- While urgency and rapid pace were facilitators, the rapid adoption of telehealth created workload and workflow challenges.
- Balance between centralized decisions and individual service line workflow needs.

"I think we were changing the process every 24 hours at first for the first several weeks while we were inventing it...trying to figure out the operation, who has to do the connection on the patient." "The pace was brisk, to put it lightly. And it was at such a fast pace that I think we broke out of our normal processes."

"So continuation of the ease to access it, so, you know, when we first came on, we had some challenge of getting patients to connect with a link and get onto the system. We had to have them sometimes download apps that work better."



Successes

- Rapid transformation of the system to facilitate telehealth
- Hiring/Training of new Advanced Practice Providers (APPs)

"I think that is a big success is that we have managed to adapt our workflow with the telehealth so that patients aren't left out in the cold ."

- Education of providers new to telehealth
- Patient engagement and access

"And for me, on the efficiency side, I would say it [telehealth] makes my clinics more efficient because I can spend more time in person with people...I think it opened me up to trying to meet people where they are a little bit more."



Next Steps

- Determine appropriate mix of in-person and telehealth for patients
- Consider provider schedule mix of inperson and telehealth
- Examine and redesign some quick decisions to workflow & use of space
- Follow reimbursement policies, advocate for policy changes that support telehealth outside PHE

"I would assume that we need to work on a more sustainable way to reimburse for these visits, instead of saying. 'Well, we're going to reimburse while we're in a public health emergency.' Like it needs to be an investment to say, 'We will reimburse with these because this is the way healthcare is moving.'"

"The minute that reimbursements get removed or slashed, it will evaporate to zero because that was the primary barrier on the front end."





Discussion

- Feasibility
 - Given the ability to rapidly expand utilization of telehealth during COVID-19, it is a promising approach to deliver care to a wider audience than previously used.
- Sustainability
 - Telehealth services must overcome significant reimbursement and workflow issues to remain sustainable.
 - Health systems are seeking a sustainable balance between telehealth and inperson care going forward. All stakeholder groups must be involved.
 - Researchers should include patient experiences and determine if telehealth services are equitable and not contributing to health disparities.



Implications related to policy and practice

• Address reimbursement policies outside of PHE

- With the right supports in place (e.g., leadership, reimbursement policies, etc.), providers can offer quality care to patients, particularly to underserved communities.
- Identify and support vulnerable populations
 - Developing telehealth services to accommodate those who are homeless or speak English as a second language can improve access to care.
- Help provider shortages
 - Training more APPs to help support telehealth initiatives may increase access to providers and services.
- Decrease high healthcare costs and improve patient satisfaction
 - Patients may feel the benefit of telehealth with decreased costs. This may be especially for true for patients living with chronic conditions in rural areas (further distance from provider).
 - Our next steps are to explore patient perspectives concerning telehealth services.



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Questions? Contact Information



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Kit Simpson, DrPH, & Ryan Kruis, MSW

Telehealth Utilization Heat Mapping to Drive Telehealth Strategy and Equity

Background

- MUSC is the administrative seat of the SC Telehealth Alliance (SCTA) and each year collaboratively develops a statewide telehealth strategic plan with wide involvement from all SCTA partners
- Over the last two years, the SCTA has been reorganizing its strategic plan to better communicate the value telehealth services are bringing the state.
- <u>https://sctelehealth.org/</u>

SOUTH CAROLINA Telehealth Alliance

Statewide Strategic Plan

Mission Improve the Health of all South Carolinians through Telehealth

ision

Telehealth will grow to support delivery of health care to all South Carolinians with an emphasis on underserved and rural communities. It will facilitate, coordinate, and make more accessible quality care, education, and research that are patient centered, reliable, and timely. Our state will become recognized nationally for telehealth that is uniquely collaborative, valuable, and cost-effective.

Statewide Strategic Plan

The Statewide Strategic Plan has been optimized to focus on service-oriented strategy domains with cross-outing support tactics in the areas of telehealth education, advocacy/awareness, technology, and outcomes. This enhanced format centers around our clinical services and allows us to rethink how our tactical support efforts can improve our telehealth program infrastructure and maximize value. The strategic plan is meant as a more enduring document, outlining strategies and goals for the next 2-5 years.

For inquiries contact: Sonya Ebeling – Manager, SC Telehealth Alliance Sonya@SCTelehealth.org



Telehealth Value-based Strategies: Serving the State

Hospital Support

Improve access to specialty care in SC hospitals

- Majority of hospitals in state served
- 60k+ lives impacted annually

Service Extension

Increase access to ambulatory specialty services in SC

- Doxy.Me SCTA instance (FQHC, DMH, RHC)
- Specialty care to patients' home and regional clinics

Primary Care Support

Manage high-need, high-cost patients

- Nutrition (RDs) and mental health support
- Collaborative care models
- E-Consult

Health Equity

Reduce health disparities across SC

- 100+ schools with focus on urgent care, asthma prevention, and mental health
- Increased access to care for pregnant/ post-partum women in crisis
- RPM for diabetes patients in FQHCs

Convenient Care

Expand access to urgent care / testing and improve convenience

- Asynchronous-first, highly accessible access to virtual urgent care (VUC)
- Facilitates statewide response to priority health care needs such as COVID and maternal health.

Business and Institutions

Deliver services directly to SC institutions

 Urgent and mental health services provided to Clemson and College of Charleston

Cost Avoidance

Demonstrate healthcare cost reductions

 Continuous monitoring of atrisk patients to reduce falls and other costly safety incidents



Background

- How can we make data informed decisions about deployment of telehealth to strategically address gaps in care and advance health equity?
- How can we demonstrate that telehealth is moving the needle in addressing access?
- How can we make these data easily digestible for broad stakeholder audiences as well as impactful for policy makers?

Healthcare Utilization Geographic Heatmapping

Beyonce YouTube Streams 2017 Demonstrating Fandom https://www.nytimes.com/interactive/20 17/08/07/upshot/music-fandommaps.html



Geo Telehealth Heatmapping Project

- Chose 3 initial value strategies to explore as proof of concept
- Goal: demonstrate gaps in access and/or patterns of care that might be mitigated by telehealth
- Use claims and other statewide data sources to really characterize the state
- Develop maps and tools that could inform SCTA strategic planning
 - Emphasis on data/maps translating to actionable programmatic changes and development



Value Strategy: Service Extension

<u>Goal:</u> Identify and map gaps in access to *specialty outpatient* care to demonstrate strategic deployment of services

Data Source: Medicare national data set

Methodology:

- > Identify outpatient specialty visits through CPT code filters
- > Calculate frequency of specialty visits per capita for each county
- > Stratify county utilization rates by quartiles for heat mapping
- > Calculate number of visits needed for counties to advance to next quartile

Service Extension

Increase access to ambulatory specialty services in SC



Specialty Utilization among Medicare Population in SC

Heat Map of Specialty Utilization Among Medicare Population in South Carolina



MUSC Medical University of South Carolina

Value Strategy: Hospital Support

Goal: Identify Gaps in Access to Specialty Inpatient Care

Data Source: Medicare national data set

Methodology:

- > Identify inpatient neurology specialty visits through CPT code filters
- Calculate the county demand for specialty visits as number of visits occurring by patient home address
- Calculate the county supply for specialty visits as number of visits occurring by county of service delivered
 - County demand County supply = In County Service Indicator
- > Stratify county utilization rates by quartiles for heat mapping
- > Calculate number of visits needed for counties to advance to next quartile

Hospital Support

Improve access to specialty care in SC hospitals



Inpatient Neuro "In-County Service Indicator"

- 2 years of Medicare data documenting inpatient neuro admissions by patient county (demand) per capita
- County hospital admissions per capita (supply)
- County demand county supply = in-county service indicator

Heat Map by Demand Indicator Quartile

4th Quartile (Top) 3rd Quartile 2nd Quartile 1st Quartile (Bottom)



Value Strategy: Convenient Care

Goal: Identify Gaps in Access to Virtual Urgent Care

Data Source: MUSC Virtual Urgent Database; CDC Social Vulnerability Index*

Methodology:

- > Identify frequency of virtual urgent visits performed per capita by zip code
- > Stratify zip codes utilization rates by quartiles for heat mapping
- > Calculate number of visits needed for counties to advance to next quartile
- Compare utilization heat maps to CDC social vulnerability index
 - > Developed a county → zip code conversion of social vulnerability index to better match utilization data



Convenient Care

Expand access to urgent care / testing and improve _____ convenience

Tri-County MUSC VUC Utilization & Social Vulnerability



Tri-County Virtual Urgent Care Visits

(darker = more VUC visits)

Tri-County Social Vulnerability

(darker = higher social vulnerability communities)



Fig. 1. Geocode maps comparing VUC visits and COVID-19 cases. VUC, virtual urgent care.

Lame, M., Leyden, D., & Platt, S. L. (2021). Geocode Maps Spotlight Disparities in Telehealth Utilization During the COVID-19 Pandemic in New York City. *Telemedicine journal and e-health : the official journal of the American Telemedicine Association*, 27(3), 251–253. https://doi.org/10.1089/tmj.2020.0297

Discussion

- Proof of concept mapping was informative and successful for strategic planning purposes
- Shared with SCTA advisory council and will inform fall strategic planning
- Used to inform efforts to ensure telehealth does not exacerbate disparities (e.g., digital literacy efforts; efforts to educate about availability of VUC, etc.)
- Developing tools and data files for for health systems and partners to do mapping of their own services
- Future directions...

 Additional Team Acknowledgements: James McElligott, Katie King, Mary Dooley, Sonya Ebeling, SCTA Advisory Council



Dunc Williams, Jr., PhD, MHA

Telehealth and Rural Hospital Finance



Rural Hospital Finances and Telehealth

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Agenda

Objective 1:

Describe recent financial and operational characteristics of SC rural hospitals compared to other US rural hospitals and all US hospitals

Objective 2:

Highlight some current and future areas of my research relative to rural hospital finances and telehealth



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Hospital Characteristics (Part 1 of 2) SC Rural vs US Non-SC Rural vs All US, 2016-2020

Summary: Compared to rural hospitals in other states, SC rural hospitals are less likely to be not-forprofit owned; generally larger, as measured by CAH status, beds, and discharges; and operate at higher occupancy levels.

	SC Rural Hospitals (n=27)	US (Non-SC) Rural Hospitals (n=2,174)	All US Hospitals (Rural and Non-Rural) (n=4,452)
Not for Profit	34%	55%	60%
For Profit	24%	10%	17%
Government Owned	42%	35%	23%
Critical Access Hospital (CAH)	16%	59%	30%
Beds	59	25	200
Discharge-equivalents, annualized	4,940	2,006	16,379
Discharge-equivalent per FTE	14	10	14
Cost per Discharge-equivalent	\$10,586	\$11,893	\$12,834
Occupancy	39%	32%	61%
Inpatient Length of Stay	4 days	4 days	4 days
Medicare Case Mix Index (CMI)	1.41	1.35	1.69



Hospital Characteristics (Part 2 of 2) SC Rural vs US Non-SC Rural vs All US, 2016-2020

Summary: Compared to rural hospitals in other states, SC rural hospitals reported lower profit margins, fewer days cash on hand, longer time to collect accounts receivable, and more total capital purchases but less HIT capital purchases.

	SC Rural Hospitals (n=27)	US (Non-SC) Rural Hospitals (n=2,174)	All US Hospitals (Rural and Non-Rural) (n=4,452)
Total Margin	-0.1%	3.2%	5.6%
Operating Margin	-0.5%	1.3%	4.5%
Days Cash on Hand (DCOH)	35 days	84 days	30 days
Days in Net Accounts Receivable	53 days	49 days	47 days
Average Salary + Benefits per FTE	\$81,548	\$82,323	\$84,378
Capital Purchases - Health Information Technology (HIT)	\$61,554	\$73,050	\$455,607
Capital Purchases - Land	\$34,489	\$38,015	\$101,360
Capital Purchases - Buildings	\$370,792	\$219,706	\$1.1mn
Capital Purchases - Total	\$2.7mn	\$1.3mn	\$11.2mn



Average Hospital Profits by Year



Key Message: SC rural hospitals (red line), when compared to rural hospitals from other states (blue line) and all US hospitals (green line), reported lower profits most years.



Average DCOH by Year



Key Messages: Prior to 2020, SC rural hospitals generally reported fewer DCOH than other US rural hospitals but similar DCOH to the average of all US hospitals. In 2020, SC rural hospitals reported closer DCOH to other US rural hospitals.



Average Spending Relative to Revenue (Size-Adjusted) by Year



Key Messages: Compared to other hospitals, SC rural hospitals spent similar proportions on salaries and benefits. Interestingly, over the past decade Administrative and General (A&G) expenses grew as proportions across all hospitals; SC rural hospitals spent higher proportions than the other groups.



Implications of Findings

- Understanding the financial and operational performance of SC rural hospitals is relevant for
 - policymakers (e.g., state and federal)
 - key decision-makers at hospitals (e.g., board members, executives, and providers)
 - patients who receive care in these communities



Agenda

• Objective 1:

Describe recent financial and operational characteristics of SC rural hospitals compared to other US rural hospitals and all US hospitals

Objective 2:

Highlight some current and future areas of my research relative to rural hospital finances and telehealth



The Financial Performance of Rural Hospitals Providing Emergency Department Telehealth An Evaluation of the University of Mississippi Medical Center's (UMMC) TelEmergency Program



MS Rural Hospital Closures & Mergers by TelEmergency Participation

TelEmergency Site	Hub	*
	Open	
	Closed, but reopened	+
Not a TelEmergency	Open	
Site	Closed	×
	Closed, but reopened	+
	Closed, but converted	
	Merged then closed	•
	Merged	•



Preliminary <u>Results:</u>

- <u>21 TelEmergency</u> <u>Hospitals:</u>
 - 2 Closed
 - 1 Merged
 - I Merged then Closed
- <u>52 Similar Non-</u> <u>Participating Hospitals:</u>
 - 10 Closed
 - 4 Reopened
 - 3 Converted to Sub-Acute
 - 8 Merged
 - 2 of 8 Merged then Closed



TelEmergency Motives

Motives		<u>Benefits</u>		Barriers		<u>Solutions</u>
 Maintain or bolster access to ED care within rural communities. Enhance quality of ED care provided within 	 Loc Tel pro Inc and 	cal ED care remained in all communities using Emergency without a reduction in the volume of care ovided. creased access to EM-trained, board-certified physicians d specially-trained NPs.	Α.	Scope of NPs previously limited to physician oversight within 15 miles.	i.	UMMC obtained a waiver of this requirement for TelEmergency from relevant MS
rural communities	 Action 	hieved a high-degree of satisfaction from patients and spital administrators. ¹⁸				oversight authorities.
3. Stabilize financial performance at financially fragile rural MS hospitals.	• Lo	ng-term sustainability of most sites.	Α.	Historically, telehealth reimbursement was	i.	A 2013 MS state- level telehealth parity law expanded
a. Cut rural ED expenses	• By	coordinating ED care through the hub, fewer physicians		restrictive,		telehealth
(e.g., physician staffing,	we	ere staffed.		particularly for ED		reimbursement
inventory	• The	e lelEmergency inventory protocols decreased		care.		across all payers.
management).		necessary inventory neid.				
CAH reimbursement	• IIII	re which eased concerns for CAH reimbursement				
CATTembursement.	car	anges.				
4. Mitigate financial investment	• Lo	ng-term sustainability of most sites.				
by UMMC to	• Sta	abilizing access to ED care through TelEmergency was				
achieve prior objectives.	one	e reason UMMC did not have to make substantial capital				
	inv	vestments to acquire those rural hospitals which may				
	hav	ve otherwise closed.				
	• Leo	d to better downstream population health management.				



Implications

Results may benefitPolicymakers (federal & state)

Telehealth reimbursement, grant funding, consolidations/affiliations

Hospital Leadership and Boards

Telehealth implementations, consolidations/affiliations, financial performance



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- The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS or the U.S. Government.



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