The What, How and Why of Telemedicine: a South Carolina Perspective

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Objectives

1. Understand the appropriate use of various telemedicine modalities
2. Describe how telemedicine can be integrated into a primary care practice
3. Appraise the impact of telemedicine on health outcomes
SC Telemedicine Act

- A 210, R234, S1035
- Introduced in the Senate on January 28, 2016
- Introduced in the House on March 8, 2016
- Last amended on May 4, 2016
- Passed by the General Assembly on May 25, 2016
- Signed by the Governor on June 3, 2016
SC Telemedicine Act

• What did it do?
  • * Defines “telemedicine” §40-47-20(52)
  • * Establishes a standard of care for physicians who establish the physician-patient relationship *exclusively* via telemedicine §40-47-37(C)
  • *Recognizes telemedicine as a way to establish the physician-patient relationship §40-47-113(B)

• What didn’t it do?
  • *Change the scope of practice for physicians or other licensees, including APRNs or PAs
  • *Change anything for a physician who establishes the physician-patient relationship other than exclusively via telemedicine
“Telemedicine” Defined

• §40-47-20(52)
• 'Telemedicine' means the practice of medicine using electronic communications, information technology, or other means between a licensee in one location and a patient in another location with or without an intervening practitioner.
Same Standard of Care

• A licensee practicing via telemedicine will be held to the same standard of care as licensee practicing traditional in-person medical care.

• Telemedicine providers will be evaluated according to the standard of care that applies to their area of specialty.

• A licensee shall not establish a physician-patient relationship by telemedicine pursuant to Section 40-47-113(B) for the purpose of prescribing medication when an in-person physical examination is necessary for diagnosis.

• Failure to adhere to the appropriate standard of care, whether in person or via telemedicine, exposes licensee to discipline by BME.
Telemedicine Medical Records

• A licensee who establishes a physician-patient relationship solely via telemedicine as defined in Section 40-47-20(52) shall generate and maintain medical records for each patient using such telemedicine services in compliance with any applicable state and federal laws, rules, and regulations, including this chapter, the Health Insurance Portability and Accountability Act (HIPAA), and the Health Information Technology for Economic and Clinical Health Act (HITECH). Such records shall be accessible to other practitioners and to the patient in a timely fashion when lawfully requested to do so by the patient or by a lawfully designated representative of the patient.
Considerations for Telemedicine

• §40-47-37(C) In addition to those requirements set forth in subsections (A) and (B), a licensee who establishes a physician-patient relationship solely via telemedicine as defined in Section 40-47-20(52) shall:
• (1) adhere to current standards for practice improvement and monitoring of outcomes and provide reports containing such information upon request of the board;
• (2) provide an appropriate evaluation prior to diagnosing and/or treating the patient, which need not be done in-person if the licensee employs technology sufficient to accurately diagnose and treat the patient in conformity with the applicable standard of care; provided, that evaluations in which a licensee is at a distance from the patient, but a practitioner is able to provide various physical findings the licensee needs to complete an adequate assessment, is permitted; further, provided, that a simple questionnaire without an appropriate evaluation is prohibited;
• (3) verify the identity and location of the patient and be prepared to inform the patient of the licensee's name, location, and professional credentials;
• (4) establish a diagnosis through the use of accepted medical practices, which may include patient history, mental status evaluation, physical examination, and appropriate diagnostic and laboratory testing in conformity with the applicable standard of care;
• (5) ensure the availability of appropriate follow-up care and maintain a complete medical record that is available to the patient and other treating health care practitioners, to be distributed to other treating health care practitioners only with patient consent and in accordance with applicable law and regulation;
Considerations for Telemedicine

- (6) prescribe within a practice setting fully in compliance with this section and during an encounter in which threshold information necessary to make an accurate diagnosis has been obtained in a medical history interview conducted by the prescribing licensee; provided, however, that Schedule II and Schedule III prescriptions are not permitted except for those Schedule II and Schedule III medications specifically authorized by the board, which may include, but not be limited to, Schedule II-nonnarcotic and Schedule III-nonnarcotic medications; further, provided, that licensees prescribing controlled substances by means of telemedicine must comply with all relevant federal and state laws including, but not limited to, participation in the South Carolina Prescription Monitoring Program set forth in Article 15, Chapter 53, Title 44; further, provided, that prescribing of lifestyle medications including, but not limited to, erectile dysfunction drugs is not permitted unless approved by the board; further, provided, that prescribing abortion-inducing drugs is not permitted; as used in this article 'abortion-inducing drug' means a medicine, drug, or any other substance prescribed or dispensed with the intent of terminating the clinically diagnosable pregnancy of a woman, with knowledge that the termination will with reasonable likelihood cause the death of the unborn child. This includes off-label use of drugs known to have abortion-inducing properties, which are prescribed specifically with the intent of causing an abortion, such as misoprostol (Cytotec), and methotrexate. This definition does not apply to drugs that may be known to cause an abortion, but which are prescribed for other medical indications including, but not limited to, chemotherapeutic agents or diagnostic drugs. Use of such drugs to induce abortion is also known as 'medical', 'drug-induced', and/or 'chemical abortion';

- * Since June 2016, only one request approved for C-II and C-III
Considerations for Telemedicine

- (7) maintain a complete record of the patient's care according to prevailing medical record standards that reflects an appropriate evaluation of the patient's presenting symptoms; provided that relevant components of the telemedicine interaction be documented as with any other encounter;

- (8) maintain the patient's records' confidentiality and disclose the records to the patient consistent with state and federal law; provided, that licensees practicing telemedicine shall be held to the same standards of professionalism concerning medical records transfer and communication with the primary care provider and medical home as licensees practicing via traditional means; further, provided, that if a patient has a primary care provider and a telemedicine provider for the same ailment, then the primary care provider's medical record and the telemedicine provider's record constitute one complete medical record;

- (9) be licensed to practice medicine in South Carolina; provided, however, a licensee need not reside in South Carolina so long as he or she has a valid, current South Carolina medical license; further, provided, that a licensee residing in South Carolina who intends to practice medicine via telemedicine to treat or diagnose patients outside of South Carolina shall comply with other state licensing boards; and

- (10) discuss with the patient the value of having a primary care medical home and, if the patient requests, provide assistance in identifying available options for a primary care medical home.

- (D) A licensee, practitioner, or any other person involved in a telemedicine encounter must be trained in the use of the telemedicine equipment and competent in its operation.

- (E) Notwithstanding any of the provisions of this section, the board shall retain all authority with respect to telemedicine practice as granted in Section 40-47-10(I) of this chapter.
What is Telemedicine?

Telehealth Use Cases, Relevant Modalities, and Investment Required

**Use Cases**
- Professional Consultation
- Diagnosis & Treatment
- Education & Engagement
- Ongoing Monitoring & Care Coordination

**Modalities**
- **Videoconference**
  - Need software, secure internet access for patients
  - Home and hospital-based technology

- **Asynchronous Store-and-Forward**
  - Need additional bandwidth, storage space
  - Can replace non-urgent phone calls and visits

- **Remote Device**
  - More expensive hardware investment
  - Used for high-risk patients in non-hospital site

- **Telephone**
  - Little tech investment, requires proper staffing
  - Used for pre-visit triage

- **Patient Portal**
  - High security needs require significant investment
  - Must integrate EHR

- **Mobile App**
  - Minimal hardware investment for providers
  - Complex security and data storage issues
Telehealth Medical Devices
Potential Telemedicine Uses

- Chronic disease management
- Post-discharge monitoring
- Expanded patient care access
- Ambulatory specialty care/resource efficiency
- Team-based care
- Population Health
- Remote critical care monitoring/consultation
- Direct to Consumer and e-Consultations
Challenges and Concerns

• **Quality**
  - Provider credentials
  - Continuity of care
  - Efficacy

• **Appropriate use/clinical triage**
  - Adequacy of virtual exam
  - Patient selection

• **Limited payer reimbursement**
  - Medicare
  - Medicaid
  - Commercial

• **Effective implementation**
  - IT infrastructure
  - Clinical workflow
  - Licensing and credentialing
Cochran Review 2015

• Interactive telemedicine: effects on professional practice and healthcare outcomes

• Use of TM in the management of heart failure appears to lead to similar health outcomes as face-to-face or telephone delivery of care;

• TM can improve the control of blood glucose in those with diabetes.

• The cost to a health service, and acceptability by patients and healthcare professionals, is not clear due to limited data reported for these outcomes.
## Telehealth Services Offered in South Carolina

### Correctional Institutions and Jails*
- Intake health assessments
- Acute condition management

### Home Monitoring and Management
- Diabetic blood sugar
- Diabetic blood pressure
- Weight monitoring

### Hospital-based Consultations
- Hospitalist consultation for admissions
- Mental health
- Neonatology*
- Neurology
- Pediatric burn
- Pediatric critical care
- Pediatric orthopedics*
- Pediatric gastroenterology
- Intensive care unit patient monitoring
- ICU Innovations (quality improvement and educational outreach)
- Tele-EEG
- Telesstroke

### Outpatient Specialty Consultations in a Clinical Setting
- Dermatology (pediatric)
- Diabetes education
- General surgery (adult and pediatric)
- Genetics counseling*
- Endocrinology (pediatric)
- Ear, nose and throat (adult and pediatric)
- Healthy lifestyle counseling (pediatric)
- Infectious disease for obstetrics*
- Lactation support to clinics
- Maternal fetal genetics
- Maternal fetal medicine
- Mental health medication management
- Neurology*
- Nutrition (adult and pediatric)
- Opioid addiction management for obstetrics*
- Orthopedics
- Patient-child interactive therapy
- Pediatric development rapid triage service*
- Pediatric ENT*
- Post-stroke follow up*
- Sickle cell (pediatric)
- Social work
- Urology (pediatric)
- Weight management group visits
- Wound care*

### Outpatient Connections Directly to the Patient
- Asthma monitoring
- Asynchronous virtual visits for acute conditions*
- Diabetes home monitoring
- Home neonatal visits
- Post-trauma mental health symptom monitoring
- Video visits for acute and chronic conditions*
- Video visits for mental health counseling
- Video visits for lactation support*
- Video visits for prenatal visits*
- Video visits for weight management

### School-based
- Acute sick care and chronic disease management
- Mental health counseling, general
- Mental health counseling, trauma focused
- School-based telehealth education and adult programs*

### Skilled Nursing Homes
- Mental health*
School-based telehealth

School-based telehealth program
One of the fastest growing school-based telehealth networks in the nation

Number of South Carolina schools with telehealth capability*

*Services vary by county to include acute care and chronic disease management, mental health, group health education, and individual education plan consultations.

SOUTH CAROLINA Telehealth ALLIANCE
SC Telestroke

The SC Telehealth Alliance telestroke networks are providing expert stroke care coverage throughout the state.

* Some hospitals have chosen to use telestroke services from providers outside the Alliance.
Collaboration of South Carolina providers has become one of the largest telestroke networks in the country.

Telestroke Consults by Year
Greenville Health System, MUSC Health, Palmetto Health, Roper St. Francis
SC Telestroke

85% Telestroke patients remain in their community for treatment

Percentage of Patients Transferred to MUSC Health from McLeod Health hospitals: McLeod Cheraw, Dillon, Loris and Seacoast (lower is better)
SC Telestroke

MUSC Telestroke Network Time to Treatment Exceeds National Guidelines

Mean Door-to-Needle Time in Minutes (lower is better)

Ischemic stroke patients who receive intravenous rt-PA have better clinical outcomes. The current evidenced-based guidelines call for door-to-needle time within 60 minutes from ischemic stroke patient arrival and intravenous rt-PA within 3 hours of onset of ischemic stroke. The DTN time decreased dramatically after initial funding of the SCTA.

![Graph showing Mean Door-to-Needle Time in Minutes]

- National Average
- Initial SC Telehealth Funding

Years: 2008 to 2016
MUSC Outpatient Teleconsultation Volume

MUSC outpatient teleconsultation volume is up 68% from 2015 to 2016

MUSC Annual Number of Outpatient Consultations

- 2012
- 2013
- 2014
- 2015
- 2016

0 100 200 300 400 500 600 700 800 900 1,000
SC Department of Mental Health – Telepsychiatry program

SCDMH Telepsychiatry Consultation Program

32,500
The number of consultations completed by SCDMH telepsychiatry program since its inception
SC Department of Mental Health – Telepsychiatry program

SCDMH Telepsychiatry Consultations
Includes Hospital Emergency Departments, and Mental Health Centers and Clinics in SC

1,350
Total consultations provided per month between hospital emergency departments, and DMH mental health centers and clinics across SC
SC Department of Mental Health – Telepsychiatry program

**Telepsychiatry Patient Results**
- Lower rates of inpatient admission after 30 days (8% vs. 19%)
- Shorter lengths of stay (4.1 days vs. 6.2 days inpatient)
- Less likely to be admitted to the hospital (8% vs. 19%)
- More likely to remain in treatment at 90-day follow-up care (46% vs. 17%)

$3,320 Overall medical savings per episode of care

**Efficient use of hospital resources:**
- 70% of Hospital Administrators state the program is an efficient use of hospital funds
- 80% would recommend the program to other hospitals
- 60% would be interested in additional uses of the platform for other medical specialties
- 53% Reduction in Emergency Department Lengths of Stay (LOS)

**33% of patients recommended for release**
(discharge) the same day of consultation
TeleICU

Tele-ICU monitoring has potentially saved more than 140 lives in 2016.*

Tele-ICU Monitoring Continues to Expand Across South Carolina

Connected Hospitals:
- Anderson Medical: Anderson County
- Carolina Pines: Darlington County
- Kershaw Health: Kershaw County
- MUSC Health: Charleston County*
- Palmetto Health Tuomey: Sumter County
- Roper St. Francis: Charleston County
- Self Regional: Greenwood County
- Springs Memorial: Lancaster County

* Operations Center
SC Children’s Hospital Collaborative

Pediatric Critical Care Consultation to Emergency Rooms

30% reduction in Pediatric ICU admissions
Electronic Visits

- Asynchronous, electronic communication through a secure patient portal for treatment of a non-emergent clinical complaint
- Patients like the idea of getting care online
  - 74% of US patients would use telehealth services
- Use of telemedicine services is increasing
  - 7 million expected to use telemedicine services in 2018, from less than 350,000 in 2013
  - 90% of healthcare executives report their organization is developing or implementing a telemedicine program
E-visit Program

- Implemented at Medical University of South Carolina in December of 2015
- Program started with 5 e-visit conditions (sinus problems, vaginal discharge/irritation, urinary problems, rash, diarrhea)
  - has expanded to 28.
- Provided 1,266 E-visits since Go Live.
- To request an e-visit, patients must:
  - Be 18 years or older
  - Have been seen by an MUSC Health provider within the last 36 months (first 2 months was only available to MUSC employees)
  - Have a MyChart account (patient portal through EPIC)
  - Have a condition with an e-visit template available
E-Visits in a nutshell
Patients have the chance to review all information and make any changes before they submit their E-Visit.
Repying to the patient

MyChart Message

Subject
E-Visit Submission: Sinus Problems

Delivery
12/11/2015 11:01 AM

To: MUSC MYCHART E-VISIT PROVIDER POOL
From: Mary Mychart
Created: 12/11/2015 11:01 AM

New Message

Subject
RE: RE: E-Visit Submission: Sinus Problems

Delivery

To: Mary Mychart
Subject: RE: E-Visit Submission: Sinus Problems

Notify me if not read by: 12/30/2015

Mary,

I have reviewed your information and ordered Nasalcort for your Sinusitis. It is available at your preferred pharmacy. If you do not see any improvement, please contact Dr. Davis, your primary care physician.

Dr. Chaney

----Message----
From: MYCHART, MARY
Sent: 12/11/2015 11:01 AM EST

Accept and Send
Cancel
Trend Over Time

Selected Range
661
Fiscal Year to Date
1,000
Since Go-Live
1,266

Repeat Patients
14.4%
Retrospective Chart Review (N=661)

Age Breakdown Males to Female

Mean Age: 45.18 (SD 12.97)

Gender: 72.8% women
27.2% men

Retrospective Chart Review (N=661)
Insurance Coverage

- 71% Blue Cross
- 17% Blue Shield
- 6% Managed Care
- 2% Medicare
- 2% Medicaid
- 2% Self Pay
- 2% Tricare

**Median Response Time**

- 55 min
- 7 am – 7 pm:
  - 55 min.
- 7 pm – 7 am:
  - 101 min

**Average time for provider to complete an e-visit**:

- 7 minutes
BJ3  Marty, I am not sure if you want to include this but I found this information on Tableau
Bright, Jessica, 4/19/2017
<table>
<thead>
<tr>
<th>Most Common Patient Complaints</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Sinus Problems</td>
<td>236</td>
<td>35.7%</td>
</tr>
<tr>
<td>Urinary Problems</td>
<td>125</td>
<td>18.9%</td>
</tr>
<tr>
<td>Vaginal Discharge/Irritation</td>
<td>66</td>
<td>10%</td>
</tr>
<tr>
<td>Flu (Influenza)</td>
<td>44</td>
<td>6.7%</td>
</tr>
<tr>
<td>Rash</td>
<td>32</td>
<td>4.8%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Most Common Provider Diagnosis</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute sinusitis</td>
<td>173</td>
<td>26.2%</td>
</tr>
<tr>
<td>Dysuria</td>
<td>96</td>
<td>14.5%</td>
</tr>
<tr>
<td>Vaginal Irritation</td>
<td>52</td>
<td>7.9%</td>
</tr>
<tr>
<td>Acute bronchitis</td>
<td>27</td>
<td>4.1%</td>
</tr>
<tr>
<td>Rash</td>
<td>20</td>
<td>3.0%</td>
</tr>
</tbody>
</table>
Retrospective Chart Review (N=353)

- 62.8% received during office hours
- 94.3% charged for visit
- Documented follow-up within 2 weeks of e-visit
  - 91.0% had no documented f/u
  - 5.7% seen in office visit
  - 3.3% email/telephone/e-visit
Patient Survey-Immediate (N=149)

- 83.2% women
- 15.5% Men
- Age
  - 18-34 years
    - 19.5%
  - 36.9 years
    - 43.6%
  - > 55 years
    - 36.9%
Patient Survey-Immediate (N=149)

- Was easy to complete?
  - 77.2% Strongly Agree
  - 21.9% Agree

- Was provider able to address problem?
  - 76.3% Strongly Agree
  - 19.3% Agree

- How likely to use again?
  - 76.9% Definitely Will
  - 13.2% Probably Will

- Would you recommend to others?
  - 94.7% Yes
Patient Survey-Immediate (N=149)

Last Time Saw PCP (%)

Where Would Receive Care if E-visit Unavailable (%)

- PCP Office
- ED/Urgent Care
- Nowhere
Patient Survey-One Week (N=79)

- 94.2% women
- Age
  - 25-44 years
    - 34.6%
  - 45-64 years
    - 63.4%
  - >65 years
    - 2.0%
- Has the problem improved?
  - 94.2%
- Have you been seen by a medical provider since your E-visit for the same problem?
  - 96.2% No