Sy Saeed, MD, MS, FACPsych
Brody School of Medicine - East Carolina University & NC Statewide Telepsychiatry Program (NC-STeP)

John Graham, Ph.D.
NC Telehealth Network Association

Steve North, MD, MPH, FAAFP
Eleanor Health - NC
Sy Saeed, MD, MS, FACPsych

Professor and Chair
Department of Psychiatry and Behavioral Medicine
Brody School of Medicine - East Carolina University

Executive Director
North Carolina Statewide Telepsychiatry Program (NC-STeP)
NC Statewide Telepsychiatry Program (NC-STeP): Using Telepsychiatry to Provide Evidence-Based Care

Sy Atezaz Saeed, MD, MS, FACPsysch,
Professor and Chair
Department of Psychiatry and Behavioral Medicine
Brody School of Medicine - East Carolina University

Executive Director
North Carolina Statewide Telepsychiatry Program (NC-STeP)
At the conclusion of this session, the participant should be able to:

• State the demonstrated benefits of using telepsychiatry in mental health settings
• Identify the infrastructure needs to implement telepsychiatry services on a statewide level
• Describe how North Carolina Statewide Telepsychiatry Program (NC-STeP) is addressing problems in areas of access to quality (evidence-based) mental health services
Mental disorders are common

• An estimated 26.2% of Americans ages 18 and older (about 1 in 4) Americans have a mental disorder in any one year\(^1\).
  – 66 million adults, when applied to the 2018 U.S. Census residential population estimate.\(^2\)

• About 6 percent, or 1 in 17 (15.12 million), suffer from a serious mental illness\(^1\).

• Four of the ten leading causes of disability are mental illnesses—major depression, bipolar disorder, schizophrenia, and obsessive-compulsive disorder.

BHPs per 100,000 Population and Percent of Counties Without a Provider, by U.S. Census Division

<table>
<thead>
<tr>
<th>Census division</th>
<th>Psychiatrists</th>
<th>Psychologists</th>
<th>Psychiatric NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provider/100,000 population</td>
<td>% of Counties without provider</td>
<td>Provider/100,000 population</td>
</tr>
<tr>
<td>Overall U.S.</td>
<td>15.6</td>
<td>51</td>
<td>30.0</td>
</tr>
<tr>
<td>Metropolitan</td>
<td>17.5</td>
<td>27</td>
<td>33.2</td>
</tr>
<tr>
<td>Non-metropolitan</td>
<td>5.8</td>
<td>65</td>
<td>13.7</td>
</tr>
<tr>
<td>Micropolitan</td>
<td>7.5</td>
<td>35</td>
<td>16.8</td>
</tr>
<tr>
<td>Non-core</td>
<td>3.4</td>
<td>80</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Psychiatrists in rural U.S. counties per 100,000 population by Census Division
Psychiatrists per 10,000 Population North Carolina

Psychiatrists per 10,000 Population
(# of Counties)

- 0.90 to 11.2
- 0.60 to 0.89
- 0.33 to 0.59
- 0.01 to 0.32
- No Active Psychiatrists

State Total: 1,211 Psychiatrists
State Ratio: 1.23 Psychiatrists per 10,000 Population

Source: North Carolina Health Professions Data System, with data derived from the North Carolina Medical Board, 2013; US Census Bureau and Office of Management and Budget, March 2013.

Note: Data are based on primary practice location and include active, instate, nonfederal, non-resident-in-training MDs and DOs licensed in NC as of October 31, 2013 who indicate that their primary area of practice is psychiatry, child psychiatry, psychoanalysis, psychosomatic medicine, addiction/chemical dependency, forensic psychiatry or geriatric psychiatry. "Core Based Statistical Area" (CBSA) is the OMB's collective term for Metropolitan and Micropolitan Statistical areas. Here, nonmetropolitan counties include micropolitan and counties outside of CBSAs.

Produced by: Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

Map labels reflect the number of psychiatrists within the county.
North Carolina Distribution of Psychiatrists and Mental Health Services at the County Level

- 31 out of 100 counties in NC have no psychiatrists
- 63 counties have less than 1.9 psychiatrists per 10,000
- 13 counties have no active behavioral health provider (BHP)
- According to federal guidelines, 90 counties in North Carolina qualify as Health Professional Shortage Areas
Where can you go if you do not have access to community-based behavioral health care?

- In 2013, NC hospitals had 162,000 behavioral health emergency department visits.¹
- In 2010, patients with mental illness made up about 10 percent of all emergency room visits in North Carolina, and people with mental health disorders were admitted to the hospital at twice the rate of those without.²

---

1. NC Hospital Association
2. Study by the Centers for Disease Control
The majority of NC Emergency Departments do not have access to a full-time psychiatrist

- Currently, there are 108 hospitals with either single ED’s, or in some cases, multiple site ED’s across the state with varying degrees of psychiatric coverage.

- The majority of ED’s do not have access to a full-time psychiatrist.
How Long Does It Take to Place BH Patients From NC Hospital EDs?

Average ED Length of Stay (ALOS) for Admitted Behavioral Health Patients

- Community Hospital (Non-Psych): 14
- Non-acute Facility: 16
- Community Psychiatric Unit: 27
- State ADATC: 33
- State Psychiatric Hospital: 78

Source: NCHA ED Tracker. 2012 Data.
Telepsychiatry is defined in the statute as the delivery of acute mental health or substance abuse care, including diagnosis or treatment, by means of two-way real-time interactive audio and video by a consulting provider at a consultant site to an individual patient at a referring site.
Demonstrated Benefits of Telepsychiatry
Saeed SA, Diamond J, Bloch RM. (2011)

- ↑ access to mental health services
- ↓ geographic health disparities
- ↑ consumer convenience
- ↓ professional isolation
- ↑ recruiting and retaining MH professionals in underserved
- Improved consumer compliance.
- Improved education of mental health professionals.
- Improved coordination of care across mental health system.
- Reduction of stigma associated with receiving mental health services.
Connected Health (Saeed and Anand, 2015)

- Telemedicine
  - Specialty teleconsultation
  - Telecare
  - Remote monitoring
  - Distance learning
  - Multidisciplinary care

- Telepsychiatry

- Health Information Technology
  - Electronic Health Records
  - Practice management systems
  - Clinical decision support
  - e-Prescriptions
  - Alerts/reminders
  - Digital imaging/PACS

- Consumer Health Informatics
  - Personal Health Records
  - Health web sites
  - e-Visits
  - e-Journals
  - Virtual health/support communities

East Carolina University Center for Telepsychiatry
NC-STEPI
Potential Barriers to the Implementation of Telepsychiatry Services in Mental Health Settings

- Inherent personal or organizational resistance to change
- Reimbursement
- Licensure
- Credentialing
- Privacy considerations unique to telehealth
- Legal (regulatory, liability, prescribing, etc.)
- Costs associated with infrastructure
Developed in response to Session Law 2013-360.

- G.S. 143B-139, 4B
- Recodified as G.S. 143B-139.4B(a)(1b) by Session Laws 2018-44, s. 15.1, effective July 1, 2018
If an individual experiencing an acute behavioral health crisis enters an emergency department, s/he will receive timely specialized psychiatric treatment through the statewide network in coordination with available and appropriate clinically relevant community resources.
Quality Management and Outcomes Monitoring

- All participating clinical providers:
  - Participate in a Peer review process
  - Meet quality and outcome standards
• Support all the Health IT functions required of NC-STeP
• The portal is a group of separate but related technologies that serves as the primary interface through which data is reviewed and created regarding patient encounters, including:
  – Scheduling of patients and providers
  – Exchanging clinical data for patient care
  – Collection of encounter data to support the needs of network managers and billing agents and to support timely referrals
Workflow for the Portal

1. ED physician requests a tele-psychiatry consult
2. ED staff transfers patient data from hospital EHR to the Portal via Direct Message and C-CDA
3. ED nurse logs into the Portal, confirms patient data, and submits to psychiatric provider work queue in the Portal
4. Provider reviews patient data, conducts tele-psychiatry consult, and documents the results in the Portal, which sends the results to the hospital EHR
5. ED physician reviews tele-psychiatry consult results and determines best course of action
6. ED nurse discharges patient and closes the encounter
• 57 hospitals in the network. 53 live.
• 39,533 total psychiatry assessments since program inception
• 5,420 IVCs overturned
  – Cumulative return on investment = $29,268,000
    (savings from preventing unnecessary hospitalizations)
• Eight Clinical Provider Hubs with 53 consultant providers
• Administrative costs below industry standard
• Over 32% of the patients served had no insurance coverage
NC-STeP Status as of January 1, 2020

Provider Hubs
1. Carolina Behavioral
2. Mission
3. Cone Health
4. Novant
5. Cape Fear
6. Old Vineyard
7. UNC Johnston
8. ECU
Percent of Patients by Discharge Disposition

Jul-Sep 2019
- Home: 47%
- Transfer: 47%
- Admit: 5%
- Other: 21%

Apr-Jun 2019
- Home: 36%
- Transfer: 42%
- Admit: 1%
- Other: 21%

Jan-Mar 2019
- Home: 30.6%
- Transfer: 33.8%
- Admit: 4.7%
- Other: 0.2%
IVCs –
By Release Status

- **Jan-Mar 2019**
  - IVCs - percent not released: 57.5%
  - IVCs - percent released: 42.5%

- **Jul-Sep 2019**
  - IVCs - percent not released: 38%
  - IVCs - percent released: 62%

- **Apr-Jun 2019**
  - IVCs - percent not released: 36%
  - IVCs - percent released: 64%

East Carolina University
Center for Telepsychiatry
NC-SteP
Number of IVCs and IVCs Turned Over by Year

- 12 MONTH PERIOD Jan-Dec 2018 44% Turnover
  - Number of IVCs: 3099
  - Number of IVCs Turned Over: 1366

- 12 MONTH PERIOD Jan-Dec 2017 43% Turnover
  - Number of IVCs: 2413
  - Number of IVCs Turned Over: 1043

- 12 MONTH PERIOD Jan-Dec 2016 37% Turnover
  - Number of IVCs: 1125
  - Number of IVCs Turned Over: 858

- 12 MONTH PERIOD Jan-Dec 2015 24.5% Turnover
  - Number of IVCs: 3090
  - Number of IVCs Turned Over: 713

- 12 MONTH PERIOD Jan-Dec 2014 23% Turnover
  - Number of IVCs: 3099
  - Number of IVCs Turned Over: 1125

Legend:
- Red: Number of IVCs Turned Over
- Blue: Number of IVCs
NC-STeP Charge Mix – Project to Date
Service Dates: October 1, 2013 – September 30, 2019

- Blue Shield, 5.58%
- Commercial, 5.82%
- LME/IPRS, 2.04%
- LME/MCOS, 24.15%
- Medicaid, 4.19%
- Medicare, 18.43%
- Other, 7.19%
- Self-pay, 32.60%
<table>
<thead>
<tr>
<th>Entity</th>
<th>Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients and Families</td>
<td>Evidence-based care closer to home. Reduced distress/disability, functional improvement, quality of life, gainful employment, etc.</td>
</tr>
<tr>
<td>Communities</td>
<td>Better &quot;citizenship”, reduced homelessness, crime reduction, more self reliance, etc.</td>
</tr>
<tr>
<td>NC-Medicaid, MCOs, and other Third-Party Payors</td>
<td>Projected cost savings from overturned IVC’s.</td>
</tr>
<tr>
<td></td>
<td>Cost savings from reduced recidivism</td>
</tr>
<tr>
<td>EDs</td>
<td>Reduced length of stay, improved throughput, reduced recidivism, assistance with medication management while in ED, etc.</td>
</tr>
<tr>
<td>Sheriff Department</td>
<td>Projected cost savings to Sheriff Department from overturned IVCs</td>
</tr>
<tr>
<td>Hospitals</td>
<td>Costs savings from increased throughput in the ED, reduced costs associated with psych consults, other benefits to EDs (as above), etc.</td>
</tr>
</tbody>
</table>
Creating collaborative linkages and developing innovative models of mental health care:

- EDs and Hospitals
- Communities-based mental health providers
- Primary Care Providers
- Public Health Clinics
- Others

NC-STeP web portal, accessible by participating providers, as a central point for coordinated care.
Next Steps:
Community-Based Demonstration Projects

- Provide evidence-based, out-patient mental health care to patients who currently lack access to this care.
- Embedded in a currently operational primary care clinic, providing a multi-disciplinary approach.
- Utilizes an integrated care model in which a behavioral health provider (BHP) or care manager is embedded in a primary care setting. BHP is linked, via telepsychiatry, to a clinical psychiatrist for case consultation and care planning.
- Emphasis is upon the total health care needs of the patient.
NC-STeP Community Appointments by Site
Program to Date Through September 2019

<table>
<thead>
<tr>
<th>Site</th>
<th>Total Appointments</th>
<th>Visits Kept</th>
<th>Rescheduled</th>
<th>Cancelled</th>
<th>No Show</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camden</td>
<td>972</td>
<td>505</td>
<td>371</td>
<td>6</td>
<td>90</td>
</tr>
<tr>
<td>Gates</td>
<td>272</td>
<td>140</td>
<td>120</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Pasquotank</td>
<td>1487</td>
<td>554</td>
<td>828</td>
<td>3</td>
<td>102</td>
</tr>
<tr>
<td>Hyde</td>
<td>323</td>
<td>169</td>
<td>41</td>
<td>66</td>
<td>47</td>
</tr>
<tr>
<td>Martin</td>
<td>340</td>
<td>187</td>
<td>29</td>
<td>57</td>
<td>11</td>
</tr>
<tr>
<td>Craven</td>
<td>340</td>
<td>187</td>
<td>29</td>
<td>57</td>
<td>11</td>
</tr>
<tr>
<td>Duplin</td>
<td>76</td>
<td>54</td>
<td>11</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Macon</td>
<td>35</td>
<td>15</td>
<td>7</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>
Recent Recognition of NC-STeP

Invited Presentations:
• The 3rd National Telehealth Summit, Miami, May 2019
• Weill Cornell Medicine | New York-Presbyterian, New York, April 2019
• The US News and World Reports, Washington DC, November 2017
• UNC Kenan-Flagler Business School, Chapel Hill, NC, November 2017
• The White House, March 2016
• Avera e-Care, Sioux Falls, South Dakota, September 2017
• IPS: The Mental Health Services Conference, Washington DC, October 8, 2016
• European Congress of Psychiatry, Madrid, March 2016
• St. Elizabeth Hospital, Washington DC, February 2016
• NC Academy of Family Physicians (NCAFP). Asheville, NC. December 2015
• Center for Evidence-Based Policy, Oregon Health Sciences Univ., Portland, Oregon. October 2015
• American College of Emergency Physicians’ Annual Meeting. Boston, October 2015
• North Carolina Institute of Medicine (NCIOM) August 2015
• State Offices of Rural Health (SORH), July 2015


Conclusions

• Telepsychiatry is a viable and reasonable option for providing psychiatric care to those who are currently underserved or who lack access to services.
• The current technology is adequate for most uses and continues to advance.
• Numerous applications have already been defined.
• Many documented benefits to the EDs and hospitals.
• Overcoming the barriers to implementation will require a combination of consumer, provider, and governmental advocacy.

• The purpose and fit of telecare services in the wider care system should drive its introduction – not the technology.

• Investing in a “connected network” should be the goal.

• It’s about relationships, not technology.
ACKNOWLEDGEMENTS

NC Statewide Telepsychiatry Program (NC-STeP) is funded through a blend of state, philanthropic, and federal funds. In addition to the NC General Assembly appropriation of $2 million per year to fund the program, NC-STeP is partially funded by the Duke Endowment in the amount of $1.5 million. HRSA is allowing ORH to use a portion of federal Flex funding to cover some unfunded and future ORH costs to administer the NC-STeP program. NC DHHS provides administrative oversight of the funding.
Contact

Sy Atezaz Saeed, M.D., M.S., FACPsych
Professor and Chairman
Department of Psychiatry and Behavioral Medicine
Brody School of Medicine | East Carolina University

Executive Director
North Carolina Statewide Telepsychiatry Program (NC-STeP)

Phone: 252.744.2660 | e-mail: saeeds@ecu.edu
Website: http://www.ecu.edu/psychiatry
Mail: 600 Moye Boulevard, Suite 4E-100,
Greenville, NC 27834
John Graham, Ph.D.
Consortium Development director and board chair
NC Telehealth Network Association
Our Mission

Assure that North Carolina public and non-profit healthcare providers have access to high-quality, reliable and affordable broadband services.
# NORTH CAROLINA TELEHEALTH NETWORK ASSOCIATION (NCTNA)

## History

1. The Beginning
2. Rural Healthcare Pilot
3. Healthcare Connect Fund

## Role

1. Healthcare Connect Consortium
2. Statewide, High-Quality Broadband Provider
WE SUPPORT DEMANDING HEALTHCARE BROADBAND REQUIREMENTS

Network reliability

Consistent throughput/performance

“Always On” customer support (NOC)

Streamlining broadband procurement, implementation
# NCTN Impact: Support Paid by Eligibility Category

4/1/15 Through 9/30/19

<table>
<thead>
<tr>
<th>Eligibility Category</th>
<th>Total Cost Invoiced</th>
<th>USF Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community health center</td>
<td>$596,781</td>
<td>$371,289</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>$2,256,952</td>
<td>$1,427,476</td>
</tr>
<tr>
<td>Local health department/agency</td>
<td>$3,491,363</td>
<td>$2,187,830</td>
</tr>
<tr>
<td>Non-profit hospital</td>
<td>$14,723,569</td>
<td>$8,879,242</td>
</tr>
<tr>
<td>Off-site Admin Office</td>
<td>$804,540</td>
<td>$505,406</td>
</tr>
<tr>
<td>Off-site Data Center</td>
<td>$553,486</td>
<td>$321,054</td>
</tr>
<tr>
<td>Rural health clinic</td>
<td>$752,314</td>
<td>$475,045</td>
</tr>
</tbody>
</table>
NCTN IMPACT: NORTH CAROLINA TELEHEALTH NETWORK SITES
## WHAT MAKES NCTNA DIFFERENT

1. We are who you are

2. We place a priority on value not profit

3. We practice flexible, timely decision-making

4. We are transparent and accountable

5. We are experts in the HCF process

6. More than a customer/provider relationship
VIRTUAL CARE INNOVATION IN NORTH CAROLINA

Steve North, MD, MPH, FAAFP
Medical Director, Center for Rural Health Innovation
State Medical Director, Eleanor Health - NC
2 MONTH OLD WITH EYE DISCHARGE
MEDICAL VIRTUAL VISITS IN NC
NOVANT AND TYTOCARE
COMPONENTS OF HIGH QUALITY VIRTUAL VISITS

Providers know limitations of the service
Strong internal quality control
Integration with primary care – share records
Can do a “warm handoff” when a higher level of care is needed
INCREASING ACCESS TO MENTAL HEALTH

• **13,000+** encounters were successfully conducted in 2019. (2018= **6,500**)
• **83** providers seeing patients through telemedicine (38 in 2018)
• No-show rate of **4.89%**
• Saw patients in **85 of the 100** North Carolina counties.
• **48%** of our patient population is located in areas that are suffering from a shortage of mental health providers (access)

MindPath Care Centers
VIRTUAL NURSING HOME AND HOSPITAL COVERAGE

- Founded in 2016 in Mooresville, NC
- 4000 nursing home calls per night
- 8.7% become video visits
- ~92% of patients seen via video stay at the SNF
- 400 SNFs and CAHs in 23 states
- Bidirectional app to allow discrete documentation in the EHR
TEXT BASED CARE

HealthTexting
TEXT-BASED PRIMARY CARE

Results
Here's how several people with cases like yours were diagnosed:

74%
Acute Prostatitis
< 50 people had this

26%
Kidney Stone
< 50 people had this

Serious Health Condition
People with Kidney Stone usually seek immediate medical care.

Chat with a board-certified doctor
Get diagnosed and treated in minutes
Chat with a Doctor now
What triggers are affecting this craving?

- **HUNGRY**: n/a
- **ANGRY**: 2
- **LONELY**: 3
- **TIRED**: 3
NC POLICY ISSUES

• HB 721 –
• SB 361 –
REGISTER NOW

April 5–7, 2020
Embassy Suites Charlotte - Concord Golf Resort & Spa

Also Featuring Poster Presentations and Hackathon
MATRCSummit.org