STATE OF NORTH CAROLINA
DEPARTMENT OF HEALTH AND HUMAN SERVICES

ROY COOPER
GOVERNOR

MANDY COHEN, MD, MPH
SECRETARY

November 1, 2019

SENT VIA ELECTRONIC MAIL

The Honorable Joyce Krawiec, Chair
Joint Legislative Oversight Committee on
Health and Human Services
North Carolina General Assembly
Room 308, Legislative Office Building
Raleigh, NC 27603

The Honorable Josh Dobson, Chair
Joint Legislative Oversight Committee on
Health and Human Services
North Carolina General Assembly
Room 307B, Legislative Office Building
Raleigh, NC 27603

The Honorable Donny Lambeth, Chair
Joint Legislative Oversight Committee on
Health and Human Services
North Carolina General Assembly
Room 303, Legislative Office Building
Raleigh, NC 27603

Dear Chairmen:

NC General Statute §143B-139.4B, requires the Department of Health and Human Services to report to the Joint Legislative Oversight Committee on Health and Human Services and the Fiscal Research Division, on the operation and effectiveness of the Statewide Telepsychiatry Program. This annual report includes the number of consulting sites and referring sites participating in the program, the number of psychiatric assessments conducted under the program, the length of stay of patients, and number of involuntary commitments recommended.

Should you have any questions regarding this report, please contact Maggie Sauer, Director for the Office of Rural Health, at Maggie.Sauer@dhhs.nc.gov or 919-527-6440.

Sincerely,

Mandy Cohen, MD, MPH
Secretary

cc: Maggie Sauer, Lisa Wilks, Matt Gross, Zack Wortman, Mark Collins, Denise Thomas, Marjorie Donaldson, Rob Kindsvatter, Ben Money, reports@ncleg.net, Deborah Landry, Luke MacDonald, Katherine Restrepo, Joyce Jones, Hattie Gawande, Kody Kinsley, Steve Owen, Theresa Matula, Susan G. Perry, Erin Matteson, Tara Myers, Jessica Meed

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

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November 1, 2019

SENT VIA ELECTRONIC MAIL

Mr. Mark Trogdon, Director
Fiscal Research Division
Suite 619, Legislative Office Building
Raleigh, NC 27603-5925

Dear Director Trogdon:

NC General Statute §143B-139.4B, requires the Department of Health and Human Services to report to the Joint Legislative Oversight Committee on Health and Human Services and the Fiscal Research Division, on the operation and effectiveness of the Statewide Telepsychiatry Program. This annual report includes the number of consulting sites and referring sites participating in the program, the number of psychiatric assessments conducted under the program, the length of stay of patients, and number of involuntary commitments recommended.

Should you have any questions regarding this report, please contact Maggie Sauer, Director for the Office of Rural Health, at Maggie.Sauer@dhhs.nc.gov or 919-527-6440.

Sincerely,

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Maggie Sauer	Marjorie Donaldson	Katherine Restrepo	Theresa Matula
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Summary Report on SFY 2019 North Carolina Statewide Telepsychiatry Program (NC-STeP) Funds

General Statute 143B-139.4B

Report to the

Joint Legislative Oversight Committee on Health and Human Services

and

Fiscal Research Division

by the

North Carolina Department of Health and Human Services

November 01, 2019

Executive Summary

As evidenced by 90 North Carolina counties being designated as Health Professional Shortage Areas (HPSAs) in mental health, access to behavioral health services is a statewide challenge. The use of telehealth allows for rural and underserved communities to access healthcare providers. Ninety of North Carolina's 100 counties are considered Mental Health HPSAs due to lack of psychiatrists to meet the needs of residents in those areas. In keeping with the vision to lead the nation in innovation, in 2013, the North Carolina General Assembly authorized the creation of the North Carolina Telepsychiatry Program (NC-STeP).

Session Law 2013-360, Senate Bill 616 and subsequently General Statute 143B-139.4B, directed the Department of Health and Human Services, Office of Rural Health (ORH) to partner with East Carolina University on a statewide telepsychiatry program. Since 2013, NC-STeP has engaged North Carolina health care organizations to participate as referring sites or consulting sites in providing psychiatric assessments to patients presenting in the hospital emergency department (EDs) and, more recently, at the community-based primary care clinics. The East Carolina University Center for Telepsychiatry and e-Behavioral Health (C-TeBH) originally implemented these services in hospital emergency departments (EDs). Senate Bill 616 allowed for NC-STeP to expand services to community-based sites. The expansion allows psychiatric assessments and maintanence to be completed within the community. ORH is responsible for monitoring NC-STeP funds and performance measures. ORH ensures the program's performance measures align with legislation, in addition to collecting, analyzing, and maintaining all documentation needed for payments, contract creation, and amendments. ORH receives reports from C-TeBH and shares relevant information to rural healthcare partners and safety net providers.

As outlined in the legislative plan, NC-STeP focused on implementation of referring and consulting sites during its initial years. There was recurring funding of $2,000,000 that was awarded to build and maintain the program infrastructure. In addition to state appropriations, in 2015, The Duke Endowment awarded a one-time sum of $1,500,000 for two years to ORH to increase program sites and disseminate information regarding best practices. The Duke Endowment award was not fully expended between 2015-2017 and ORH received several carryforward approvals, including an approval to expand scope to allow for expending reminain funding to establish new community-based sites. The Duke Endowment award formally concluded on June 30, 2019. Additionally, the NC-STeP budget was impacted by Session Law 2017-57, Section 11A. 10. This law required the the Department of Health and Human Services (DHHS) to take a recurring reduction in the amount of $3.2 million. The provision further required DHHS not to reduce funds if doing so would impact services. This was a difficult task, as reductions in the past have typically been non-recurring. DHHS chose to reduce the NC-STeP contract by $180,000 due to historical reversions over the previous five years. NC-STeP objected to this cut and presented their concerns to the North Carolina General Assembly. The SFY 2019 contract for NC-STeP totaled $1,820,000. ORH partnered with North Carolina Department of Information Technology to secure additional one-time funding of $200,000 that was granted to NC-STeP to assist solely with purchasing equipment necessary to expand community-based telepsychiatry. In the proposed SFY 2020 state budget, the NC-STeP budget totals $2,120,000.

In the second year of operation of NC-STeP, the North Carolina Department of Health and Human Services (DHHS) and ORH incorporated a sustainability measurement tool into the contract. Without

including grant support from the State and other sources, the program currently operates at a 0.24:1.00 ratio (revenue:cost). The sustainability ratio of 0.24:1.00 means that, for every dollar the program spends, it can recover $0.24. The two main factors driving this ratio are the payor mix, including around 32% uninsured patients , about 45% patients covered Medicaid and Medicare, and the high provider costs.

The program has generated significant cost savings to the State, its partners, and external stakeholders. Although total cost savings are difficult to quantify due to the number of stakeholders, NC-STeP estimates ECU has saved $28,053,000 in cumulative cost savings to the State. The primary method of cost savings C-TeBH reports from this program is avoidance of unnecessary hospitalization through overturned unnecessary involuntary commitments. Of the 15,809 patients held under involuntary commitment and served by the program, 5,195 have been discharged for futher treatment using community resources. This approach has reduced burden for patients and families and reduced cost to state psychiatric facilities, other hopsitals, law enforcement agencies, government and private payers.

With the expansion into community-based settings, NC-STeP projects additional cost savings, although difficult to calculate, on serving patients in the community versus in the more expensive ED setting. Commuinty-based services will provide cost savings by enhancing ED throughput, reducing law enforcmenet transportation costs due to fewer IVC patients, and by enhancing community capacity to treat patients in the community.

As of June 30, 2019, 53 referring hospital sites across the state are connected to NC-STeP, and an additional four are in the process of being connected. There are also seven community-based sites that have become connected. It is expected that the continual growth for the program will be drawn from community-based settings. There has also been an expansion of the consulting psychatristy sites, which now include Carolina Behavioral Care (CBC), Cape Fear Valley Health, Cone Health, Mission Health, Novant Health, and Old Vineyard Behavioral Health Services, UNC Johnston and East Carolina University (ECU). As required by contract with ORH, C-TeBH submits quarterly reports regarding specific performance measures. These can be publicly accessed at the following site: http://www.ecu.edu/cs-dhs/ncstep/reports.cfm.

In accordance with the law, ORH conducted site visits to referring sites supported by state funding and consulting sites. During these visits, sites reported high staff satisfaction and positive outcomes, but there remain issues requiring future attention, including an under and uninsured patient population, physician credentialing policies, equipment challenges, and internet connectivity.

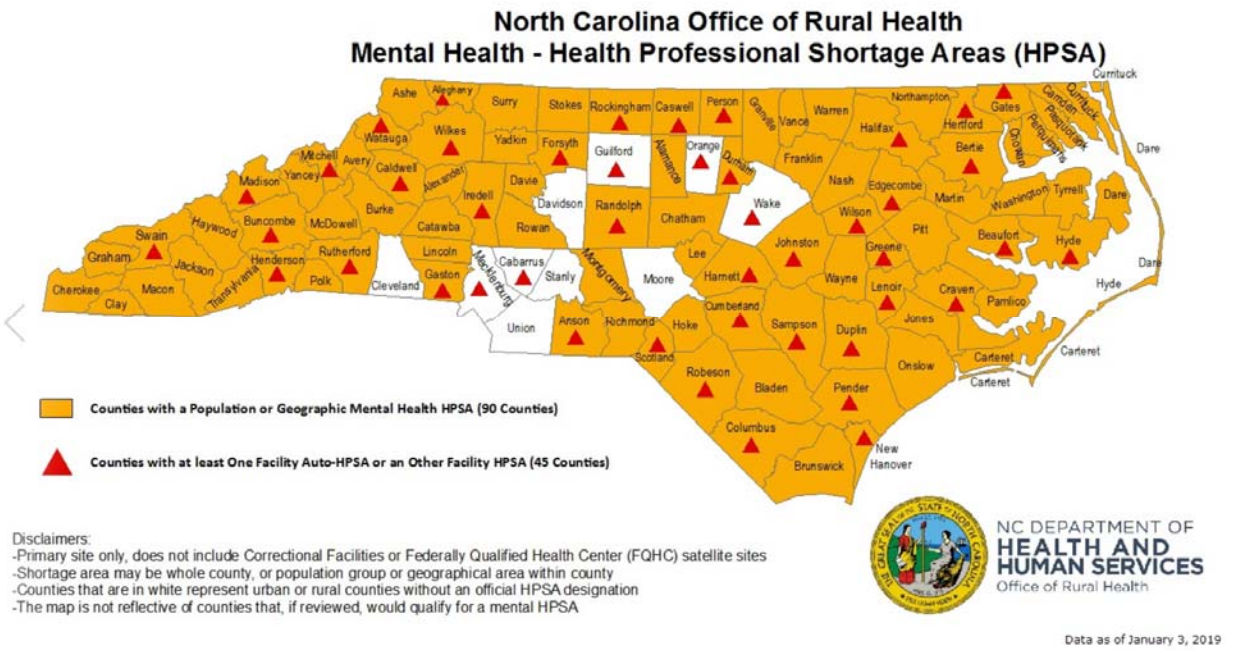
Both C-TeBH and ORH express appreciation for the innovative, critical support provided by the North Carolina General Assembly and The Duke Endowment to create this life-saving program. Without these funds, the NC-STeP Program could not have been a reality.

Table of Contents

Background

Overwhelmingly, rural North Carolina communities have a shortage of behavioral health providers. Areas can become designated Health Professional Shortage Areas (HPSAs) due to very low ratios between the number of providers and an area's population. Figure 1 is a map displaying the areas that are currently designated HPSAs specifically for behavioral health professionals in North Carolina. As the map reflects, 45 of 100 counties have at least one facility-based Mental Health HPSA. In addition, 90 counties have a Mental Health HPSA based on population or geographic data.

Figure 1: Map of Mental Health Professional Shortage Areas



These behavioral health professional shortages are acutely felt by the community and contribute to increased visits to emergency department (ED) settings. When a person in the community is petitioned for involuntary commitment, a magistrate may order that the person be taken for an evaluation. Many times, the individuals are taken to an ED for this evaluation. However, many ED physicians do not have training or adequate experience with psychiatric evaluations, and many of these EDs do not have access to psychiatrists or other qualified mental health professionals. As a result, in 2009 the North Carolina General Assembly (NCGA) passed two key pieces of legislation. One was to make permanent a program allowing other mental health professionals to conduct evaluations in the ED. The other was to allow these evaluations to be done by a physician or eligible psychologist via telemedicine. In addition to being in the ED for the initial evaluation, many times individuals remain in the ED awaiting transfer to an inpatient psychiatric hospital. The average length of stay (LOS) in an ED for an involuntary patient awaiting

transfer to another hospital can be between 48 and 72 hours.[1] A prolonged LOS can lead to other negative consequences, including increased wait times for other patients, diversion of ED staff resources, and poor patient outcomes for those needing mental health treatment.

To help address this issue, many EDs in the United States have begun to use telepsychiatry. Telepsychiatry is a modality that enables a behavioral health professional to provide a patient assessment from a remote location using live, interactive, videoconferencing in real-time. In recent years, emerging technologies in video communication and high-speed internet connectivity have created an environment that has enabled telepsychiatry networks to expand.

In the summer of 2013, the NCGA decided to replicate the success of previous telepsychiatry initiatives in the state and elsewhere. In Session Law 2013-360, Section 12A.2B, the NCGA directed the N.C. Department of Health and Human Services (DHHS) Office of Rural Heath (ORH) to implement a statewide telepsychiatry program to be administered by East Carolina University Center for Telepsychiatry and e-Behavioral Health (ECU Center for Telepsychiatry). The plan was developed in collaboration with a workgroup of key stakeholders and modeled after the Albemarle Hospital Foundation Telepsychiatry Project, which was made possible with a grant from The Duke Endowment in 2010. This grant was awarded to implement telepsychiatry services into the EDs of Vidant Health and other hospitals, which experienced a decreased average LOS, a greater than 80% patient satisfaction rating, and a 33.6% rate in overturned involuntary commitments[2]. The initial aim of the North Carolina Statewide Telepsychiatry Program was to allow North Carolina hospitals to participate as referring sites or consulting sites in providing psychiatric assessments to patients experiencing an acute behavioral health or substance abuse crisis. This is accomplished through a contractual agreement between East Carolina University Center for Telepsychiatry and e-Behavioral Health (C-TeBH) and ORH. C-TeBH implements these services in hospital emergency rooms, and most recently in community settings, and ORH oversees the operations of NC-STeP while monitoring the program's expenditures, hospital enrollment, and performance measures.

Telepsychiatry has proven to be a successful resource for states with rural populations lacking behavioral health resources. Other successful telepsychiatry programs include the South Carolina Department of Mental Health Telepsychiatry Program[3] and the University of Virginia Telepsychiatry Program[4], which both continue to provide telepsychiatry services throughout their respective states.

[1] The DMH Telepsychiatry Program. (2013, July 31). *South Carolina Department of Mental Health*. Retrieved August 11, 2014, from http://www.state.sc.us/dmh/telepsychiatry/

[2] Davies, S. (2012, August 23). Vidant Health / Duke Endowment Telepsychiatry Project. *North Carolina Institute of Medicine*. Retrieved August 11, 2014, from http://www.nciom.org/wp-content/uploads/2012/06/Bed-Boarding-Davies.pdf

[3] The DMH Telepsychiatry Program. (2013, July 31). *South Carolina Department of Mental Health*. Retrieved August 11, 2014, from http://www.state.sc.us/dmh/telepsychiatry/

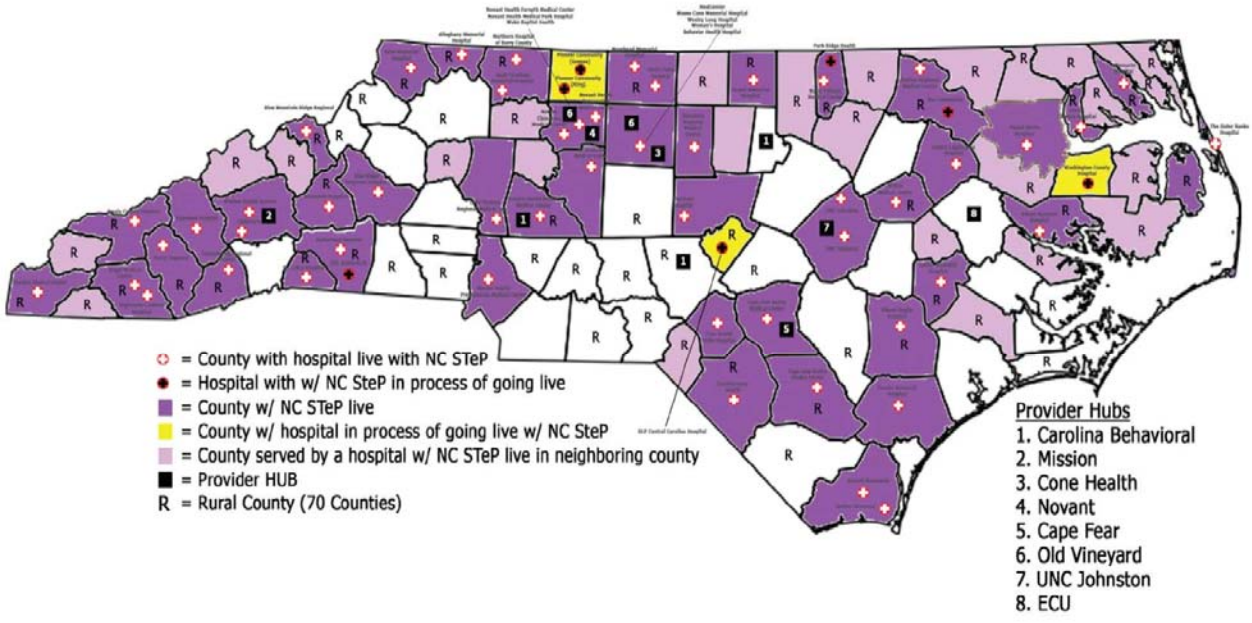
[4] Telepsychiatry. (n.d.). *School of Medicine at the University of Virginia*. Retrieved August 11, 2014, from http://www.medicine.virginia.edu/clinical/departments/psychiatry/sections/clinical/telepsychiatry/telepsychiatry

Program Implementation

The program began October 1, 2013 with the execution of a contract between ORH and C-TeBH. In accordance with Session Law 2013-360, subsequently General Statute 143B-139.4B, C-TeBH's role was to implement the service into enrolled hospitals and administer the operations of NC-STeP. As of June 30, 2019, there are 53 hospital live referring sites in the network with an additional four working toward program implementation. With Senate Bill 616 (2019-2020 Session), there are seven additional community-based sites working with NC-STeP psychiatric consultants. The community-based sites, which opened in 2019, are located in Camden County Health Department (Abemarle Regional Health System), Craven County Health Department, Duplin County Health Department, Hyde County Health Department, Martin County Health Department (Martin-Tyrrell-Washington) and Pasquotank County Health Department (Abemarle Regional Health System). The program obtained additional funding from the Fullerton Foundation Grant to begin services in the Macon County Health Department.

During SFY 2019, there were two additional consulting sites enrolled in the program, bringing the total of consulting sites to eight. These consulting sites include Carolina Behavioral Care (CBC), Cape Fear Valley Health, Cone Health, Mission Health, Novant Health, Old Vineyard, UNC Johnston and ECU. A complete list of the live and enrolled hospitals can be found in Appendix A of this document. Figure 2 displays the most recent map of site locations for telepsychiatry referring sites (EDs) and consulting sites (provider hubs).

Figure 2: Map of NC-STeP Enrolled Sites



East Carolina University CENTER FOR TELEPSYCHIATRY NC-STeP

State funding was essential to the creation of the statewide telepsychiatry program, and leaders of NC-STeP pursued additional funding from The Duke Endowment to expand the program. Funds in the amount of $1.5 million from The Duke Endowment were awarded to ORH to be disbursed from SFY 2015 to 2018. Through this award, NC-STeP expanded services to additional referring sites. Duke Endowment funding was used for ORH overhead to meet the unfunded requirements of S.L. 2013-360. This funding also supported dissemination of best practices of telepsychiatry through technical assistance, an informational website, provider training modules, publications, and conference presentations. The contract was under a no-cost extension that ended June 30, 2019.

With funding from The Duke Endowment concluding, ORH proactively sought and received approval to use a share of its Health Resources and Services Administration (HRSA) funds (totaling approximately $82,800 for salary, fringe and benefits) to support a portion of an ORH staff position's time to oversee NC-STeP, since the majority of critical access hospitals benefit from these services. Currently, ORH does not receive any state approprations to support the legislatively mandated oversight functions.

Performance Measures

As required by contract with ORH, C-TeBH submitted quarterly reports regarding specific performance measurements. Most performance measurements were defined in S.L. 2013-360, Section 12A.2B and are displayed in Table 1 with their respective targets and outcomes. DHHS also incorporated additional measures pertaining to user satisfaction and sustainability.

NC-STeP has accomplished much during its implementation and operation; however, there have been challenges. In December 2015, the largest telepsychiatry hub, Coastal Carolina Neuropsychiatric Center, discontinued its participation in the program. Leaders of NC-STeP immediately began recruiting additional hubs to fill the capacity, but all hospitals affected by the lapse in service had to be reconnected with a new hub. Now with eight hub sites up and running, the program is able to decrease wait time, increase weekend coverage, and improve stability of the program. The program has successfully surmounted ongoing implementation challenges with the transition of consulting sites. Transition of consulting sites triggers the need for re-training and new credentialing.

Some performance measures are designed for measuring the program's impact but are not in the direct control of program administrators. One of these performance measures pertains to length of service (LOS) times. Average LOS times are often skewed due to outlying patients with complex medical and behavioral needs. To clarify the impact of these outliers, median LOS time was also calculated and provided. Additionally, the program now reports the average "elapsed time" for the consultations performed which is a measure of time it took for a consultation to be completed from the point of patient referral to the program to the completion of the consultation. The elapsed time is a measure of time it takes NC-STeP to start and finish a consult once a referral is received from an emergency physician. The total elapsed time currently is 3 hours and 13 minutes.

Table 1: NC-STeP Performance Measurements

Evaluation Criteria	Baseline as of 3/31/2018	Target Goals	Reported Measures as of June 30, 2019
The number of full-time equivalent (FTE) positions supported by these contracts	2.3 FTEs	3.65 FTEs	4 FTEs
The number of overturned involuntary commitments	835	1,197	QTD = 236 YTD = 1,175 PTD = 5,195
The number of participating consultant providers	47	48	54
The number of telepsychiatry assessments conducted	3,533	5,086	QTD = 1,249 YTD = 6,676 PTD = 38,383
The number of telepsychiatry referring sites	53	54	53 Live (4 sites are in process)
The reports of involuntary commitments to enrolled hospitals	1,966	2,817	QTD = 661 YTD = 2,878 PTD = 15,809
The average (mean) Length of Stay for all patients with a primary mental health diagnosis across all dispositions††	56.8 hours	55 hours	QTD Average = 46.8 QTD Median = 25.5
The rate of "satisfied" or "strongly satisfied" among emergency department staff participating in NCSTeP	73%	73%	Satisfaction surveys not conducted this quarter
The rate of "satisfied" or "strongly satisfied" among hospital CEOs/COOs participating in the statewide telepsychiatry program	85%	85%	Satisfaction surveys not conducted this quarter
To rate of "satisfied" or "strongly satisfied" among consulting (hub) providers participating in the statewide telepsychiatry program	83%	85%	Satisfaction surveys not conducted this quarter
The rate of "satisfied" or "strongly satisfied" among emergency department physicians participating in the statewide telepsychiatry program	60%	68%	Satisfaction surveys not conducted this quarter
The ratio of overall revenues (billing, subscription fees), exclusive of grant funding, to program costs (exclusive of start-up costs)	0.21:1.00	>1.00:1.00	QTD = 0.13:1.00 YTD = 0.24:1.00 PTD = 0.24:1.00

†† Length of stay begins when the patient is admitted to the ED and ends when the patient is discharged from the ED

Site Visit Results

The North Carolina Office of Rural Health conducted site visits to all state funded hospital sites in which telepsychiatry has been implemented. Most ED staff interviewed during the hospital visits were satisfied with the service and the support they have received from the program. Structured questions revealed the majority felt they had received adequate training, were comfortable with the technology, and felt they could perform their jobs better through having telepsychiatry available. The results of these site visits have also identified issues that require future attention. The primary issues discussed during the site visits are summarized below:

Physician Credentialing - Each physician at a consulting site must be credentialed by the referring site to provide services to that site. The physician credentialing process usually takes between 3-6 months for each facility, which delays program implementation. This administrative burden is especially present in rural hospitals or small hospitals, which often do not have the resources to dedicate staff for credentialing.

Length of Stay – The NC-STeP program has reduced the ED length of stay (LOS) significantly when compared to the NC Healthcare Association (NCHA) data on file.[5] There are many factors which affect patient LOS, some of which are beyond the ED and NC-STeP's control. Despite use of telepsychiatry, a patient's LOS can vary and still remain above average depending upon discharge disposition. Patients with complex medical needs, in addition to behavioral health needs, can expect to remain in the ED longer. A patient not under involuntary commitment may be sent home; however, patients who remain under the involuntary commitment process must await placement in an appropriate facility. This process often takes up to 48 hours and can be even longer if the patient is an adolescent. One hospital ED reported a 15-year-old pediatric patient under involuntary commitment with a length of stay over 300 hours due to the patient's inability to communicate. The patient's medical condition precluded them from responding to specific questions and providers could not recommend a discharge location.

Availability of Service - Several sites informed ORH that they wished these services were provided 24 hours a day. Currently, consulting sites offer telepsychiatry services from 8 AM to 6 PM. Since there is not 24-hour support, patients who arrive in the ED during the evening will be required to spend the night before recieving telepsychiatry assessments. Multiple sites report that the weekend coverage is excellent and greatly improves delivery of services.

Telepsychiatry Carts - The telepsychiatry carts are designed to be mobile, but the carts are reportedly cumbersome for many staff to maneuver. Multiple sites are currently working with telepsych carts that are old/damaged. This is causing some inefficiency in care and slows the process for both staff and patients. Some sites requested that tablet or laptop computers be adopted in the future so that equipment may be more easily brought to the patient's location.

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[5] North Carolina Healthcare Association (NCHA) ED Tracker. 2012 Data. Avialable at https://www.ncleg.net/documentsites/committees/JLOCHHS/JLOCHHS%20Subcommittees%20by%20Interim/2013-14%20JLOC-HHS%20Subcommittees/Mental%20Health%20Subcommittee%20Folder/2-24-14%20MH%20Subcom%20Meeting/IVe-Nelson%20140224_NCHA_MHLOC_ED%20Crisis.pdf. Accessed August 16, 2018

Connectivity - Several sites are currently using the telepsychiatry cart's wireless capability to connect to the internet. However, due to the density of building materials used in hospital construction and the lack of high-powered wireless technology in some areas, staff members have trouble connecting to the local wireless network. Other sites connect the telepsychiatry cart to the internet via a cable and wall jack, but this is only possible if wall jacks are available in the patient's room. In addition, some sites have reported difficulty connecting to the consulting provider's machine. These connectivity issues have decreased user satisfaction.

Web Portal - The web portal is an innovation created, developed, and implemented by NC-STeP and two peer reviewed papers have since been published about this web portal[6] [7]. Multiple sites reported trouble connecting to consulting sites via the telepsych cart. A pop-up message on the screen reads "your call could not be completed because the call was routed through an intermediate network that does not service the far site. Contact your network administrator for assistance." This happens on multiple occasions. The HUB site that could not be connected was located in Winston-Salem, where they say the issue happens occasionally and they call to the hospital from the HUB site, with no connection issues. The web portal is the data entry point at the time of patient intake. A few sites report issues with the web portal transitioning data from the "Exam Underway" to "Exam Completed" status. Many sites requested continual training to accommodate employee turnover in the ED. The highest need for training is in the use of the web portal. NC-STeP is planning to assist hospitals with training lapses by developing a newsletter and recorded training that will assist with troubleshooting and provide continuing education for hospital sites.

Community-based support services – Several hospital sites noted that having a psychiatric evaluation is helpful in overturning an IVC or obtaining medication, but if the patient is released from hospital without any additional follow-up care in the community, the patient often returns to the ED in crisis. Hospitals would like additional options for community-based treatment sites to refer patients.

All these issues have been present since the start of the program and have affected the speed of program implementation and user satisfaction. ORH has been in discussion with NC-STeP and its Advisory Workgroup to resolve these issues, but some of them are outside of the scope and control of the NC-STeP program.

Financial Report

The North Carolina General Assembly originally appropriated a recurring annual sum of $2,000,000 for this initiative. The initial use of funds included: 1) entering into a contract with C-TeBH, 2) purchasing the necessary equipment for hospitals and consulting sites participating in the program, 3) building administrative and clinical infrastructure for the program, 4) establishing policies and procedures for the clinical operations and training, 5) designing and implementing a functional web portal, and 6) supporting

[6] Saeed SA. (2018). Successfully Navigating Multiple Electronic Health Records When Using Telepsychiatry: The NC-STeP Experience. Psychiatric Services. 2018 May 15:appips 201700406. doi: 10.1176/appi.ps.201700406. [Epub ahead of print].

[7] Saeed SA (2018). Tower of Babel Problem in Telehealth: Addressing the Health Information Exchange Needs of the North Carolina Statewide Telepsychiatry Program (NC-STeP). Psychiatric Quarterly. 2018 Jun;89 (2):489-495.

under and uninsured patients. The current primary emphasis is to bring additional sites online over the next year, with the Web Portal implemented at each site.

Session Law 2017-57, Section 11A. 10. required the the Department of Health and Human Services (DHHS) to take a recurring reduction in the amount of $3.2 million. The provision further required DHHS not to reduce funds if it would impact direct services. This was a difficult task for DHHS, as reductions in the past have typically been non-recurring making them easier to manage by identifying one-time dollars. DHHS chose to reduce the NC-STeP contract by $180,000 due to historical reversions over the previous five years. NC-STeP objected to this cut and presented their concerns to the North Carolina General Assembly. The SFY 2019 contract for NC-STeP totals $1,820,000 resulting from the budget reduction.

In addition to state funds, The Duke Endowment also awarded a sum of $1,500,000 to ORH. This award was a multi-year award which was extended to five years to exhaust all funding. Effective June 30, 2019 The Duke Endowment funding was expended. This award provided for additional equipment and added additional sites to the program. It also enabled the program to identify and disseminate information regarding best practices.

The Duke Endowment funding supported a portion of a staff position to conduct the legislatively mandated program monitoring and fical oversight. When The Duke Endowment funding concluded, ORH secured permission to use a portion of the Health Resources and Services Administration Medicare Rural Hospital Flexibility Program funds to support a portion of an ORH staff position's time to oversee NC-STeP, since the majority of critical access hospitals benefit from these services.

NC-STeP estimates that the program will require an annual $2,000,000 for ongoing implementation and maintenance, not including the costs associated with the new community-based telepsychiatry programs.

Budget Carryover - Of the $1.5 million awarded from The Duke Endowment, $276,553 was not expended by June 30, 2018. In response to this, a carryover request was submitted and approved so that the remaining funds could be used in SFY 2019. This amount includes funds for C-TeBH, ORH administrative costs, and initial funding and support for the new community-based setting telepsychiatry pilot programs at six sites. ORH has executed a no-cost extension to its contract with C-TeBH to reflect these changes. Effective June 30, 2019, all of The Duke Endowment funding was expended.

Budget Detail - NC-STeP continues implementation, while transitioning into an on-going management, evaluation and program expansion phase. With the amendment to GS 143B-139.4B in June 2018, NC-STeP has expanded its telepsychiatry beyond emergency departments and into community-based settings, which shows an emphasis on staffing and provider support with the continued growth of the program. Table 2 summarizes the budget detail of state-appropriated funds for SFY 2019 (Year 6) compared to SFY 2020 (Year 7) which reflects the $180,000 reduction in response to department-wide DHHS reductions required by Session Law 2017-57, Section 11A. 10.

Table 2: NC-STeP SFY 2018 and 2019 State Budget Detail

Category	Narrative	Budgeted Year 6 SFY 2019 7/1/2018–- 6/30/2019	Accrued Year 6 SFY 2019 7/1/2018 – 6/30/2019	Budgeted Year 7 July 1, 2019 – June 20, 2020
Capital Equipment	Telepsychiatry Equipment	$14,523	$0.00	$0.00
Operating Expenses	Provider Support, Indirect Cost, Travel, etc.	$1,078,391	$1,052,989	$996,741
Staffing	Employee Salaries/Wages	$463,432	$477,637	$560,339
Telepsychiatry Web Portal	Web Portal / Health Information Exchange	$263,654	$289,376	$262,920
Total		**$1,820,000**	**$1,820,000**	**$1,820,000**

The program has resulted in significant cost savings to the State, its partners, and external stakeholders. The primary method of cost savings C-TeBH reports from this program is overturning unnecessary involuntary commitments. Of the 15,809 patients held under involuntary commitment and served by the program, 5,195 have been discharged into their own communities to receive treatment using community resources. This has reduced burden to patients and their families and lowered costs for state psychiatric facilities, other hospitals, law enforcement agencies, government payers, private payers, and. Although total cost savings are difficult to quantify due to the number of stakeholders, NC-STeP estimates $28,053,000 in cumulative cost savings to the State.

The expansion into community-based settings will also contribute significantly to state cost savings. Although these cost savings will also be difficult to quantify due to nature of services, allowing psychiatric consultation within the community will reduce the number of ED visits and stays for behavioral health concerns.

Next Steps

Overall, NC-STeP has had a successful first six years, but there is still much to be accomplished. The S.L. 2013-360 was recodified as G.S. 143B-1494B (a)(1b) by Session Laws 2018-44, s. 15.1, effective July 1, 2018. The NC General Assembly shows continued support with legislastive changes and continued funding for the NC-STeP program. The program has shown significant cost savings to the NC hospitals without psychiatric services.

NC-STeP is currently in a phase of implementation as more referring sites go-live. During this phase, there will be operational spending related to providers' costs, increasing videoconferencing capabilities, credentialing providers, administrative overhead, web portal maintenance, regional provider hub support, and data exchange.

The leveling of hospital-based telepsychiatry sites happened in SFY 2019 at approximately 53 sites, with an additional four in process. This is consistent with the 2012-13 original proposal to the legislature that suggested that 59 hospital sites (of 108 hospitals in North Carolina) may need a program like NC-STeP. When new hospital

sites are added, this is sometimes countered by existing hospital sites choosing to stop services or develop in-house psychiatry services. NC-STeP considers hospitals' development of in-house psychiatric services a success due to the initial support that NC-STeP provided that lead to the hospitals developing local expertise and comfort with providing psychiatric services. This allows NC-STeP to free up funds for developing new community-based sites.

The growth of the program will now be building from community-based sites. The evaluation of these sites is challenging as the program captures individuals before a mental health crisis that requires a hospital level IVC assessment. If the community sites are preventing an unneccsary hospital-based IVC assessment, then cost savings are realized by preventing an IVC from occurring. This upstream approach aligns with the DHHS Healthy Opportunities, to address health before it progresses to high-cost services and time, for both individual and provider.

The expansion of NC-STeP to community-based settings represents a new telespsychiatry delivery model for the program. The community-based sites are located in Camden County Health Department (ARHS), Craven County Health Department, Duplin County Health Department, Hyde County Health Department, Martin County Health Department (MTW), Pasquotank County Health Department (ARHS), and Macon County Health Department. The Macon County Health Department site is funded by the Fullerton Foundation Grant. In conjunction with a primary care and behavioral health provider at the referring site, NC-STeP will provide psychiatric consultation as well as direct patient care. This approach affords an opportunity for rural partners to maintain patients in the community rather than send them far distances or to the ED for care. The reporting of community-based telepsychiatry sites can be carved out for reference in future reports when more data is available.

The Telepsychiatry Web Portal has been developed[8] [9], and C-TeBH is implementing it to all sites as part of the go-live process. The Web Portal enables provider scheduling, billing, and exchange of health information, allowing hospitals and community-based sites to transmit clinical outcomes to C-TeBH. The contract between ORH and C-TeBH will continue to allow expenses for annual hosting and maintenance costs.

Program Developments for SFY 2020

With the program scope expanding to community-based settings, monitoring and evaluation of services in this new environment will be an important addition. During implementation, the program will be asked to identify obstacles and necessary adjustments to maximize success. Further, it will identify the most effective method of measuring impact on providers, patients and community. Finally, the program will evaluate the viability of addressing substance use intervention needs through the delivery of telepsychiatry. The program will look toward long-term viability and stability by creating a permanent hub at ECU.

[8] Saeed SA. (2018). Successfully Navigating Multiple Electronic Health Records When Using Telepsychiatry: The NC-STeP Experience. Psychiatric Services. 2018 May 15:appips 201700406. doi: 10.1176/appi.ps.201700406. [Epub ahead of print].

[9] Saeed SA (2018). Tower of Babel Problem in Telehealth: Addressing the Health Information Exchange Needs of the North Carolina Statewide Telepsychiatry Program (NC-STeP). Psychiatric Quarterly. 2018 Jun;89 (2):489-495.

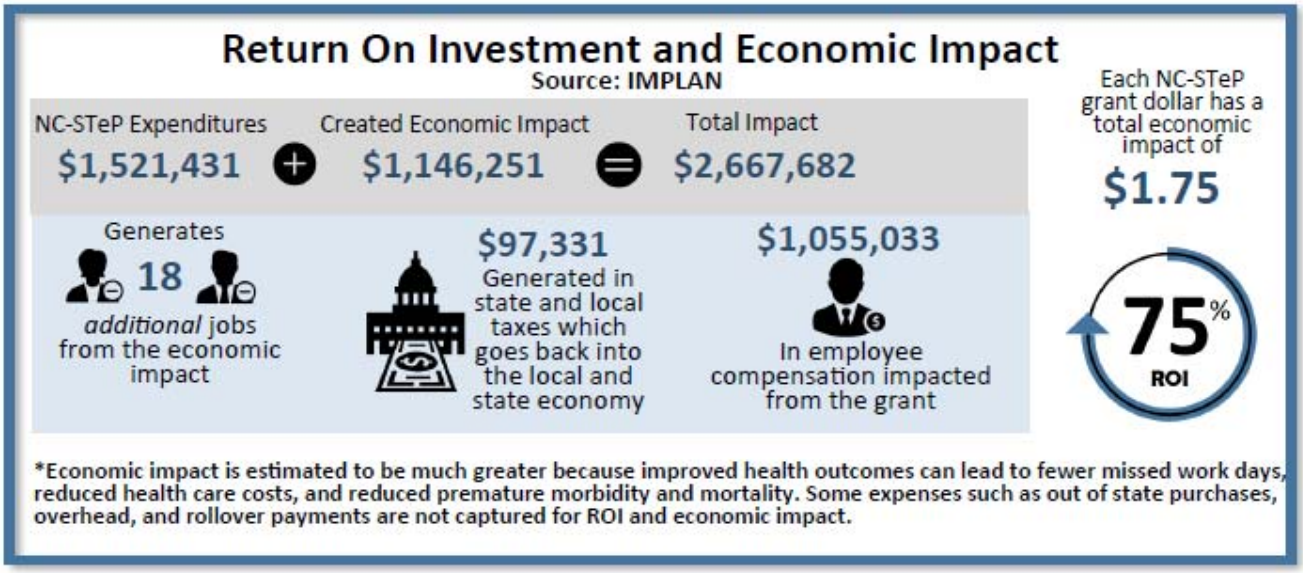
Long-Term Sustainability

C-TeBH reports difficulty as the number of individuals served who have no insurance coverage has ranged from 30% to 42%. Currently, the program, including grant support from the State and other sources, is operating at a 0.24:1.00 ratio (revenue:cost), which is far below the desired objective of >1:1 ratio.

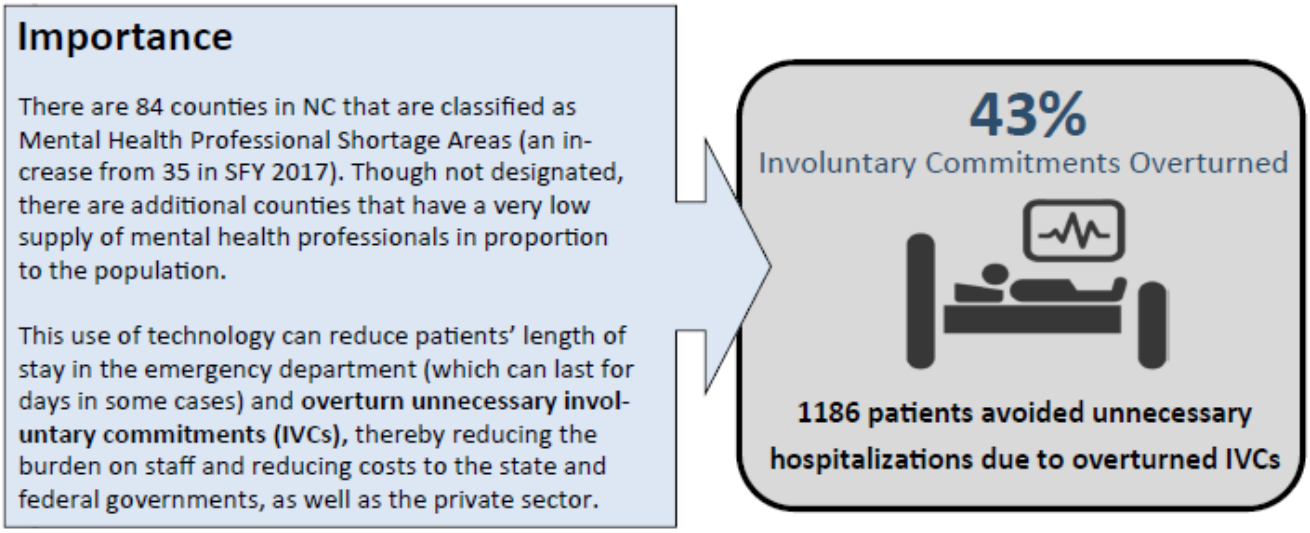
The sustainability ratio of 0.24:1.00 means that, for every dollar the program spends, it is able to recover $0.24. These costs are recovered in four ways: 1) charging hospitals a subscription fee to use the service, which is currently set at $43 for each telepsychiatry assessment conducted which is about a third of the cost of the consult, 2) billing public and private payors for each assessment, 3) State funding, and 4) grant funding.

The program remains in the implementation stage and is working with pricing models that require adjustments to establish a fair and equitable cost. Further, the expansion to community-based settings could impact long-term sustainability by presenting new opportunities for healthier populations, early treatment and prevention, as well as new revenue options.

Appendix A: Economic Impact of the program



Appendix B: FY2018 IVC Overturn Ratio



Appendix C: List of Enrolled Hospitals and Go-Live Status

As of June 30, 2019. Sorted by county, then by hospital.

County	Hospital	Provider	Status
Alamance	Alamance Regional Medical Center	Cone Health	Live
Ashe	Novant Ashe Memorial Hospital	Old Vineyard	Live
Beaufort	Vidant Beaufort Hospital	Carolina Behavioral Care	Live
Bertie	Vidant Bertie Hospital	Carolina Behavioral Care	Live
Bladen	Cape Fear Valley- Bladen County Hospital	Cape Fear	Live
Brunswick	Dosher Memorial Hospital	Old Vineyard	Live
Brunswick	Brunswick Medical Center	Novant	Live
Buncombe	Mission Memorial Hospital	Mission	Live
Bumcombe	Mission Children's Hospital	Mission	Live
Chatham	Chatham Hospital	Old Vineyard	Live
Cherokee	Murphy Medical Center	Old Vineyard	Live
Chowan	Vidant Chowan Hospital	Carolina Behavioral Care	Live
Cumberland	Cape Fear Valley Medical Center	Cape Fear	Live
Dare	Outer Banks Hospital	Carolina Behavioral Care	Live
Davidson	Novant Thomasville Hospital	Novant	Live
Duplin	Vidant Duplin Hospital	Carolina Behavioral Care	Live
Edgecombe	Vidant Edgecombe Hospital	Carolina Behavioral Care	Live
Forsyth	Novant Clemmons Hospital	Novant	Live
Forsyth	Novant Forsyth Medical Center	Novant	Live

County	Hospital	Provider	Status
Forsyth	Novant Kernersville Hospital	Novant	Live
Franklin	DLP Franklin Hospital	Carolina Behavioral Care	Live
Guilford	Cone Health - Behavioral Health	Cone Health	Live
Guilford	Cone Health - MedCenter High Point	Cone Health	Live
Guilford	Cone Health - Moses Cone	Cone Health	Live
Guilford	Cone Health - Wesley Long	Cone Health	Live
Guilford	Cone Health - Women's Hospital	Cone Health	Live
Halifax	Halifax Regional Medical Center	Carolina Behavioral Care	Live
Harnett	Betsy Johnson Regional	TBD	Enrolled
Harnett	Harnett Hospital	TBD	Enrolled
Haywood	Duke Life Point Haywood	Carolina Behavioral Care	Live
Henderson	Advent Health Henderson (Park Ridge)	TBD	Enrolled
Hoke	Cape Fear Valley Health Pavilion Hoke	Cape Fear	Live
Iredell	Lake Norman Regional Medical Center	Carolina Behavioral Care	Live
Jackson	Harris Regional Medical Center	Carolina Behavioral Care	Live
Johnston	UNC Johnston Clayton	UNC Johnston Health	Live
Johnston	UNC Johnston Smithfield	UNC Johnston Health	Live
Lenoir	Lenoir Memorial Hospital	Carolina Behavioral Care	Live
Macon	Angel Medical Center	Mission	Live
Macon	Highlands-Cashiers Hospital	Mission	Live
McDowell	McDowell Hospital	Mission	Live

County	Hospital	Provider	Status
Mecklenburg	Novant Presbyterian Hospital	Novant	Live
Mitchell	Blue Ridge Regional Hospital	Mission	Live
Pasquotank	Sentara Albemarle Medical Center	Old Vineyard	Live
Pender	Pender Memorial Hospital	Old Vineyard	Live
Person	Person Memorial Hospital	Carolina Behavioral Care	Live
Polk	St Luke's Hospital	Old Vineyard	Live
Robeson	Southeastern Hospital	Old Vineyard	Live
Rockingham	Cone Health - Annie Penn Hospital	Cone Health	Live
Rockingham	Morehead Memorial Hospital	Old Vineyard	Live
Rowan	Novant Rowan Hospital	Novant	Live
Surry	Hugh Chatham Memorial Hospital, Inc.	Novant	Live
Surry	Northern Hospital of Surry County	Old Vineyard	Live
Swain	Swain Community Hospital	Carolina Behavioral Care	Live
Transylvania	Transylvania Regional Hospital	Mission	Live
Vance	Maria Parham Medical Center	Carolina Behavioral Care	Live
Wayne	Wanyne Memorial Hospital	TBD	Enrolled
Wilson	Wilson Medical Center	Carolina Behavioral Care	Live

Appendix D: List of Enrolled Consulting Sites and Go-Live Status

As of June 30, 2019. Sorted by county and site.

County	Consulting Site	Status
Buncombe	Mission Health System	Live
Cumberland	Cape Fear Valley Health System	Live
Durham, Moore, Orange	Carolina Behavioral Care	Live
Forsyth	Novant Health System	Live
Forsyth	Old Vineyard	Live
Guilford	Cone Health System	Live
Guilford	Old Vineyard Behavioral Health Services	Live
Johnston	UNC Johnston Health	Live
Pitt	East Carolina University	Live

Appendix E: NC-STeP Advisory Workgroup Member Organizations

ORH and NC-STeP expresses gratitude to the following organizations for their commitment and participation in quarterly NC-STeP Advisory Workgroup meetings:

Monarch North Carolina
North Carolina Psychiatric Association
Carolinas HealthCare System
Cone Health System
Duke University
East Carolina University
Harnett Health System
MedAccess Partners
Mission Health System
Murphy Medical Center
NC DHHS Division of Medical Assistance
NC DHHS Division of Mental Health, Developmental Disabilities, and Substance Abuse Services
NC DHHS Office of Rural Health
North Carolina Healthcare Association
Novant Ashe Memorial Hospital
St. Luke's Hospital
Trillium Health Resources
UNC-Chapel Hill
Vidant Health
Wake Forest School of Medicine

Appendix F: NC-STEP Publications in Refereed Journals

1. Saeed SA. (2018). Successfully Navigating Multiple Electronic Health Records When Using Telepsychiatry: The NC-STeP Experience. Psychiatric Services. 2018 May 15:appips 201700406. doi: 10.1176/appi.ps.201700406. [Epub ahead of print].

2. Saeed SA (2018). Tower of Babel Problem in Telehealth: Addressing the Health Information Exchange Needs of the North Carolina Statewide Telepsychiatry Program (NC-STeP). Psychiatric Quarterly. 2018 Jun;89 (2):489-495.

3. Saeed SA, Johnson TL, Bagga M, Glass O. (2017). Training Residents in the Use of Telepsychiatry: Review of the Literature and a Proposed Elective. Psychiatric Quarterly. Volume 88. No.2. June. pp. 271-283.

4. Saeed SA, Anand V. (2015). Use of Telepsychiatry in Psychodynamic Psychiatry. Psychodynamic Psychiatry: Vol.43, No.4, pp.569-583.

5. Saeed SA. (2015). Current Challenges and Opportunities in Psychiatric Administration and Leadership. Psychiatric Quarterly. Volume 86, Issue 3, September: pp 297-300.

6. Saeed SA. (2015). Telebehavioral Health: Clinical Applications, Benefits, Technology Needs, and Setup. *NCMJ:* Vol. 76, Number 1, pp 25-26.

Appendix G: Recent Recognitions 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.
- NC Psychiatric Association Annual Meeting & Scientific Session. Winston-Salem. October 2015.
- North Carolina Institute of Medicine (NCIOM) August 2015.
- State Offices of Rural Health (SORH), July 2015.