The North Carolina Statewide Telepsychiatry Program (NC-SteP) was developed in response to the critical need discussed above. NC-SteP connects hospital emergency departments across the state of North Carolina to provide psychiatric assessments and consultations to patients which is linked by using telemedicine technologies. Currently 57 hospital emergency departments in North Carolina are enrolled in the program with 53 live. Most of these emergency departments are in rural underserved areas that have limited if any access to a psychiatrist. By utilizing telemedicine technology NC-SteP can provide services to these emergency departments.

NC-SteP was facilitated by NC Session Law 2013-360 which was recodified as G.S. 143B-139 in 2016 which expanded the scope of NC-SteP to community-based settings. Currently, there are 8 community-based sites across the state and this number is growing rapidly with NC-SteP’s goal being to get to 20 such sites in next three years. NC-SteP is based at East Carolina University Center for Telepsychiatry and E- Behavioral Health

## RESULTS

As of June 2019, the program has provided 38,383 total psychiatry assessment to patients who otherwise would have gone without care. Of note, about a third of these patients had no insurance. The program is now also providing access to psychiatric care in rural communities at 8 sites. The program has developed a web portal to link different electronic health records. Of note, such solutions existed to solve this problem until the solution developed by NC-SteP. Starting in 2013 NC-SteP set out to build a network with hospital emergency departments in need of behavioral health resources using funds appropriated by the NC General Assembly. NC-SteP began the education and implementation to stakeholders in emergency department across the state. NC-SteP provided the telemedicine equipment, installation, education and reimbursement of each hospital emergency department in our network. This work is still ongoing as new hospital emergency departments enroll in our program.

NC-SteP utilizes a network of eight Clinical Provider Hubs with 54 consultant providers located across the state to provide services to our 57 partner hospitals. These hubs serve a geographic region within the state which enables them to understand behavioral health resources available in the region of the hospital(s) they are serving. The network hubs provide an on-call service (often referred to as the fire house model) seven days a week from 8am-6pm. Since the inception of NC-SteP to June 2019 a total of 38,383 psychiatry assessment has been performed and 5,195 IVCs have been overturned across the state of North Carolina.

The cumulative return on investment since the beginning of our program is $28,053,000 (data reported as of June 30, 2019). This number is based on the savings from preventing unnecessary hospitalizations. This dollar amount does not include other ancillary savings that are more difficult to measure. Over 32% of the patients served by NC-SteP had no insurance when presenting at the emergency department.

The average length of stay for patients being presented for NC-SteP consults has been reduced dramatically. Average consult elapsed time once the patient is placed (in queue to exam time) was 3 hours and 13 minutes.

## DISCUSSION

Rural populations are at significant disadvantage than their urban counterparts in accessing specialty care especially mental healthcare in North Carolina, calling for an urgent need for innovative methods to deliver mental health services. Telepsychiatry bring the promise of much-needed specialty expertise to those in under served and difficult to reach settings. Telepsychiatry can be used to provide a variety of services including diagnostic evaluations, medication management, therapy and patient education. Systematic review done by Isabel Reinhart identified that (a) the validity of assessments and clinical interaction with the telepsychiatry is comparable to that of face-to-face care, (b) correlated with the reduction in the length of stay and reduction of the number of hospital admissions, (c) cost effective, and (d) patient’s and professionals have a positive attitude towards the technology and showing a high level of satisfaction with tele psychiatry (8). Narasimhan et al. evaluated the implementation of a state-wide tele psychiatry program which was implemented in 2009 in 18 non psychiatric rural and urban emergency department in a control group design. The authors reported a decrease of the length of stay from 3.5 to 2.43 days and drop in admissions from 22 to 11% and a raise of follow-up rates of 46 from 18% compared with matched controls (9). Even though Tele psychiatry has immense benefit, it is underutilized. Hoffman and Kane surveyed 183 existence programs in the USA and found less than half of the programs were involving tele psychiatry (10).

## MATERIALS & METHODS

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## CONCLUSION

NC-SteP has provided over 38,000 assessments to patients, a third of whom had no insurance coverage. Patients receive evidence-based care closer to home that results in reduced distress/disability, functional improvement, enhanced quality of life, and gainful employment. As a result, communities are likely to get better “citizenship”, reduced homelessness, crime reduction, more self-reliance, etc. With expanding infrastructure and provider volume, NC-SteP has the potential to bridge the gap in mental health care in North Carolina.