



NORTH CAROLINA
STATEWIDE TELEPSYCHIATRY PROGRAM

Quarterly Progress Update



Sy Atezaz Saeed, MD, MS, FACP_{psych},

Professor and Chair

Department of Psychiatry and Behavioral Medicine

Brody School of Medicine - East Carolina University

Director

North Carolina Statewide Telepsychiatry Program (NC-STeP)



East Carolina University
CENTER FOR TELEPSYCHIATRY


NC-STeP Quality Management and Outcomes Monitoring Processes: January – March 2018

- 65 hospitals in network, 53 hospitals live, as of 03/31/18 with 30 hospitals reporting Telepsychiatry patients in their ED
 - not all live hospitals had telepsychiatry patients
- 774 patient assessments were billed for Model 1 hospitals during the reporting period
- Average consult elapsed time 3 hours and 8 minutes (Model 1)
- The Median Length of ED Stay was 29.4 hours
- The Average Length of ED Stay was 56.8 hours
 - 54.8 hours for those discharged to home
 - 59 hours for those transferred to another facility

NC-STeP Quality Management and Outcomes Monitoring Processes: January – March 2018

- 753 patients who received telepsychiatry services had an IVC in place during their ED stay.
 - 343 (45.5%) of those patients did not have an IVC in place when discharged.
- Of the ED patients who received telepsychiatry services, 39.4% were discharged to home. 37.5% were discharged to another facility.

*Note: Data for Bladen hospital was not submitted as of April 25, 2018. Data for Novant Brunswick for February and March was not submitted as of April 25, 2018. Data for Cone hospitals for January through March 2018 did not include a discharge disposition, so Cone is not included in the average LOS calculation by discharge (i.e. Home, Transfer). They are included in the overall average LOS and median LOS.

	Since project inception in November 2013	During Quarter Jan-Mar 2017	During Quarter Apr-Jun 2017	During Quarter Jul-Sep 2017	During Quarter Oct-Dec 2017	During Quarter Jan-Mar 2018
Total Patient Encounters	20,297	916	1,096	967	991	1,217
Model 1 Hospital Patient Encounters	14,741	463	587	486	507	623
Model 2 Hospital Patient Encounters	5,556	453	509	481	484	594
Total Number of Assessments (Billed Assessments for Model 1 Hospitals + Number of Patient Encounters for Model 2 Hospitals)	30,234	993	1,189	1,049	1,116	1,368

NC-STeP Benchmarks



	Goals	Values Reached		
	Cumulative Target to be reached by 6/30/2018	Value Reached as of most recent previous quarter (12/31/2017)	Value reached as of this reporting quarter (03/31/2018)	Year-to-Date Total with % of the Yearly Target
Number of IVCs	2,584	630	753	1,966 76.08%
Number of IVCs Overturned	1,034	240	343	835 80.75%
Total Number of Assessments (Billed assessments for Model 1 hospitals + Number of patient encounters for Model 2 hospitals.)	5,473	1,116	1,368	3,533 64.55%

NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
1. The number of full-time equivalent (FTE) positions supported by these contracts	2.1 FTEs	2.3 FTEs	1.9 FTEs
2. The number of overturned involuntary commitments (inpatient admission prevented)	396	1,034	343 in this quarter YTD Total 835 Cumulative total since program inception 3,651
3. The number of participating consultant providers	30	47	47

NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
4. The number of telepsychiatry assessments conducted.	2,024	5,743	1,368 in this quarter YTD Total 3,533 Cumulative total since program inception 30,234
5. The number of telepsychiatry referring sites	43	59	65 53 Live
6. The reports of involuntary commitments to enrolled hospitals	999	2,584	753 in this quarter YTD Total 1,966 Cumulative total since program inception 12,097

NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
7. The average (mean) Length of Stay for all patients with a primary mental health diagnosis across all dispositions.	53.2 hours	53 hours	QTD = 56.8 Median = 29.4
8. The rate of "satisfied" or "strongly satisfied" among emergency department staff participating in NC-STeP.	55.4%	85%	73%

NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
9. The rate of "satisfied" or "strongly satisfied" among hospital CEOs/COOs participating in NC-STeP.	0% (no responses received)	85%	100%
10. The rate of "satisfied" or "strongly satisfied" among consulting (hub) providers participating in NC-STeP.	72%	85%	83%

NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
11. The rate of "satisfied" or "strongly satisfied" among emergency department physicians participating in the statewide telepsychiatry program.	80%	85%	60%
12. The ratio of overall revenues (billing, subscription fees), exclusive of grant funding, to program costs (exclusive of start-up costs).	0.16:1.00	>1.00:1.00	0.39:1.00 YTD Average 0.21:1.00 Cumulative average since program inception 0.50:1.00

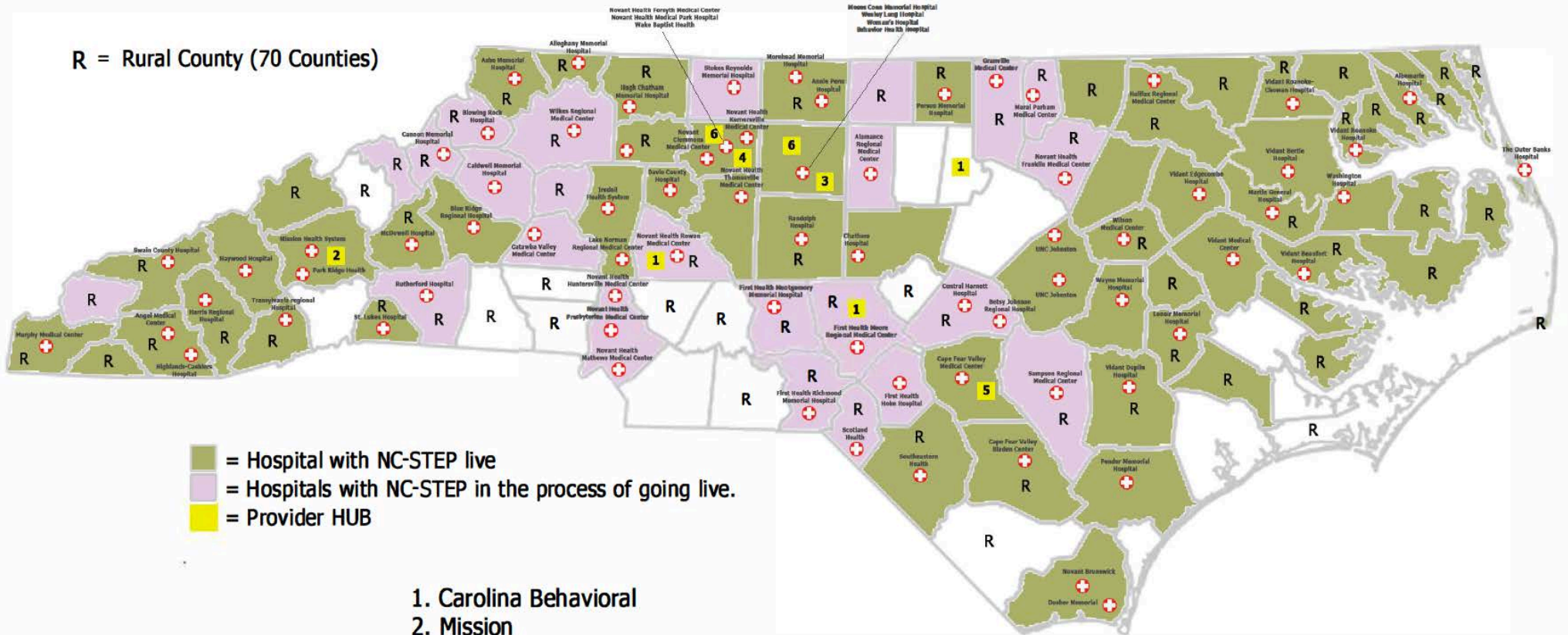
NC-STeP Status as of March 31, 2018



EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2017	TARGET TO BE REACHED BY 06/30/2018	VALUES/MEASURES REACHED AS OF 03/31/2018
<p>13. Cumulative return on investment to state psychiatric facilities through overturned involuntary commitments.</p> <p>(inpatient admission prevented)</p>	<p>\$2,138,400</p>	<p>\$5,583,600</p>	<p>\$1,852,200 in this quarter YTD \$4,509,000 Cumulative total since program inception \$19,715,400</p>

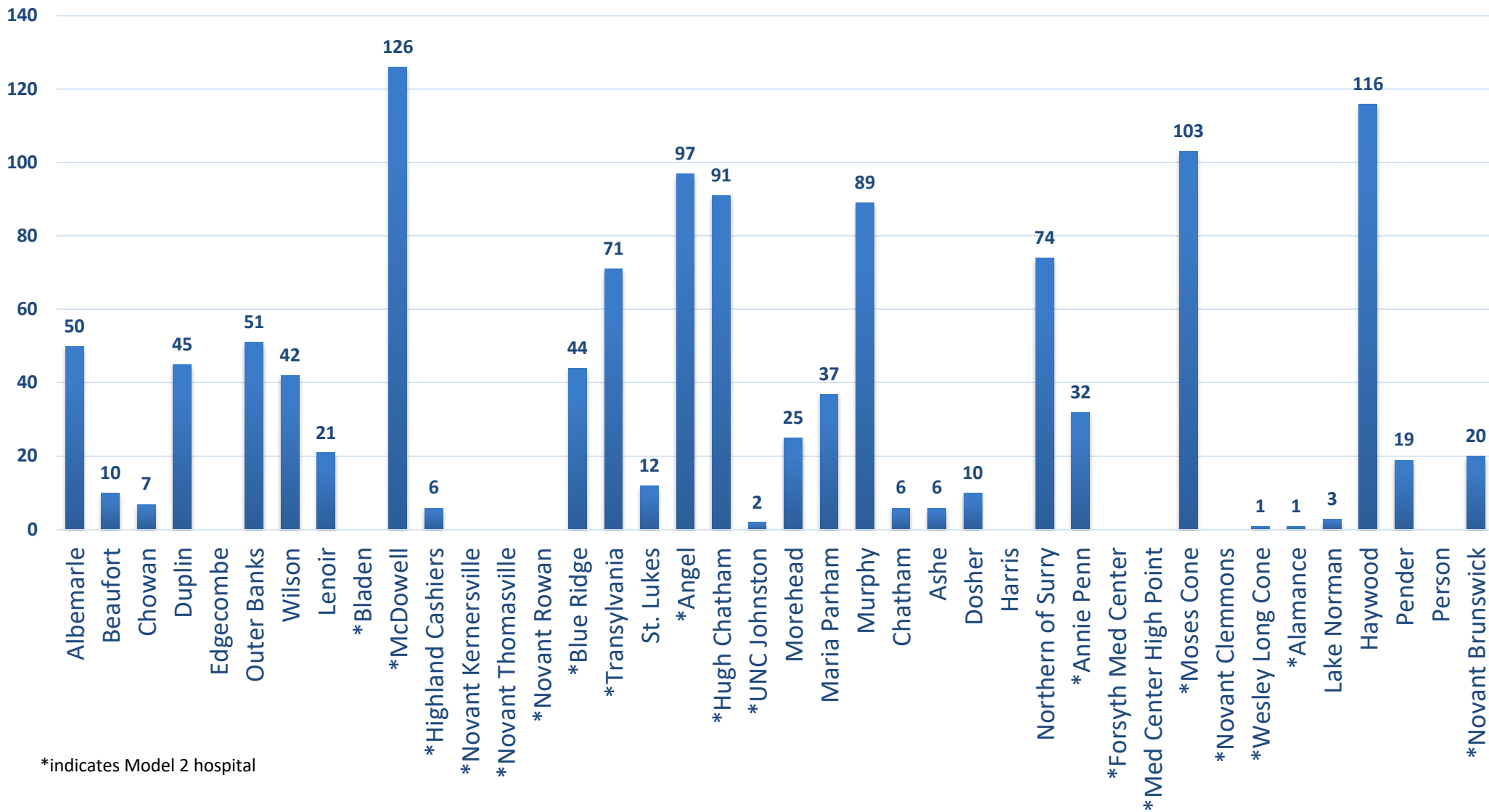
NC-STeP Status as of March 31, 2018

R = Rural County (70 Counties)



Number of NC-STeP Patients by Hospital

January - March 2018

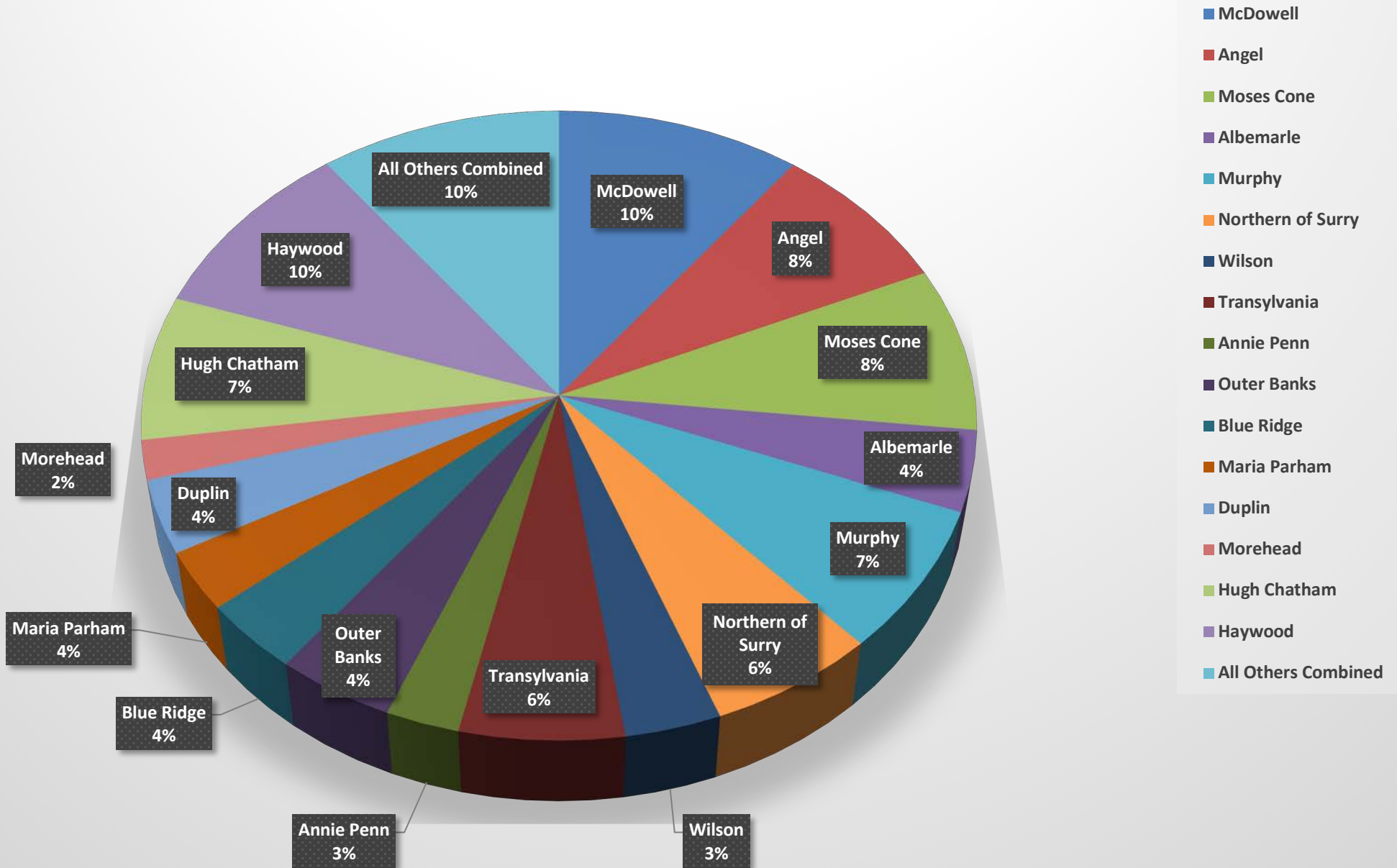


*indicates Model 2 hospital

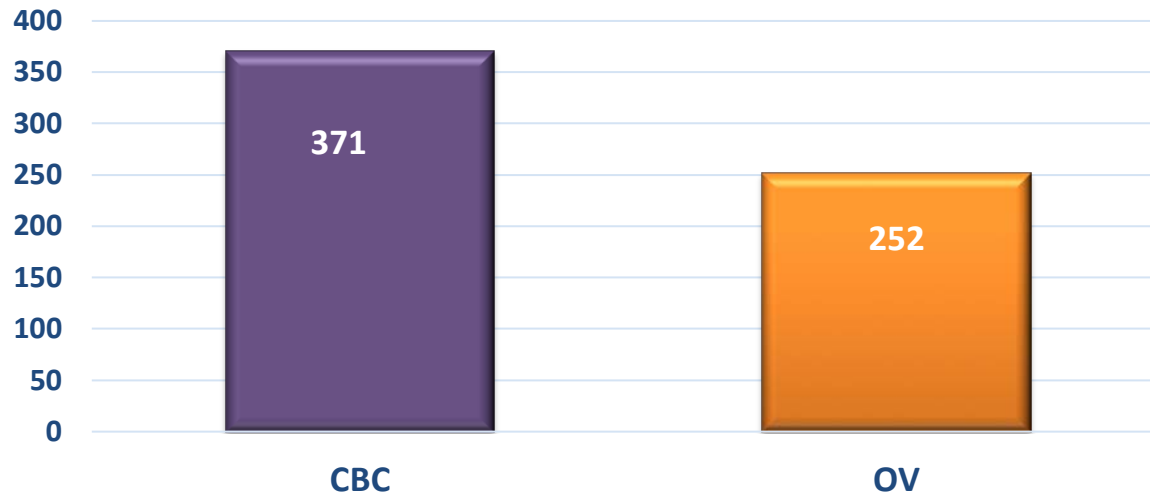


Percent of Use by Hospital Jan-Mar 2018

(based on number of patient encounters)

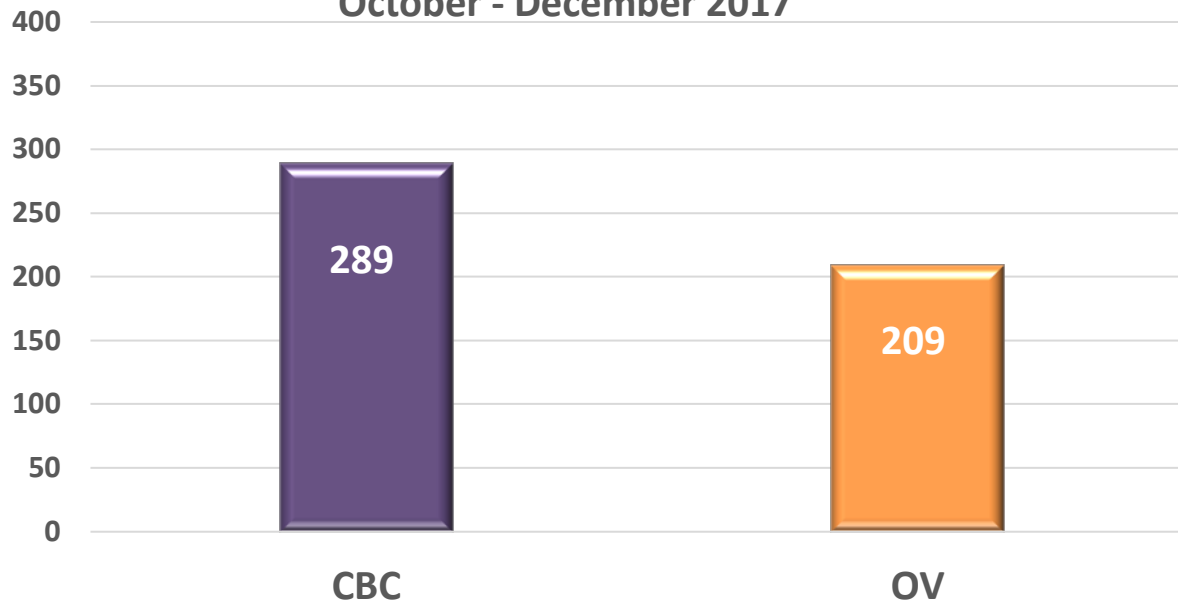


January-March 2018



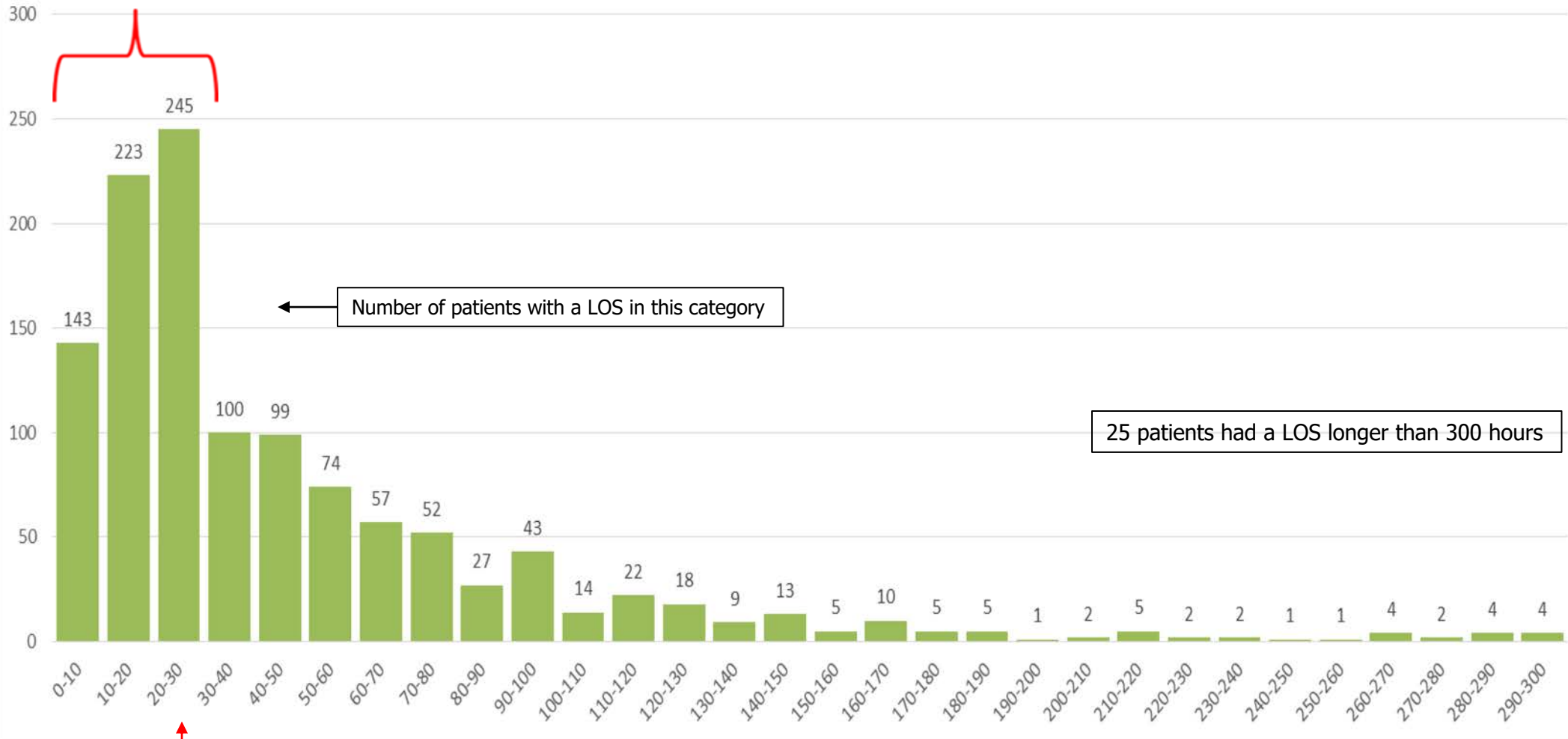
Number of Patients by Provider (Model 1)

October - December 2017



Number of NC-STeP Patients by LOS Category January - March 2018 (in hours)

**50.2% percent of patients
had a LOS of 30 hours or less**



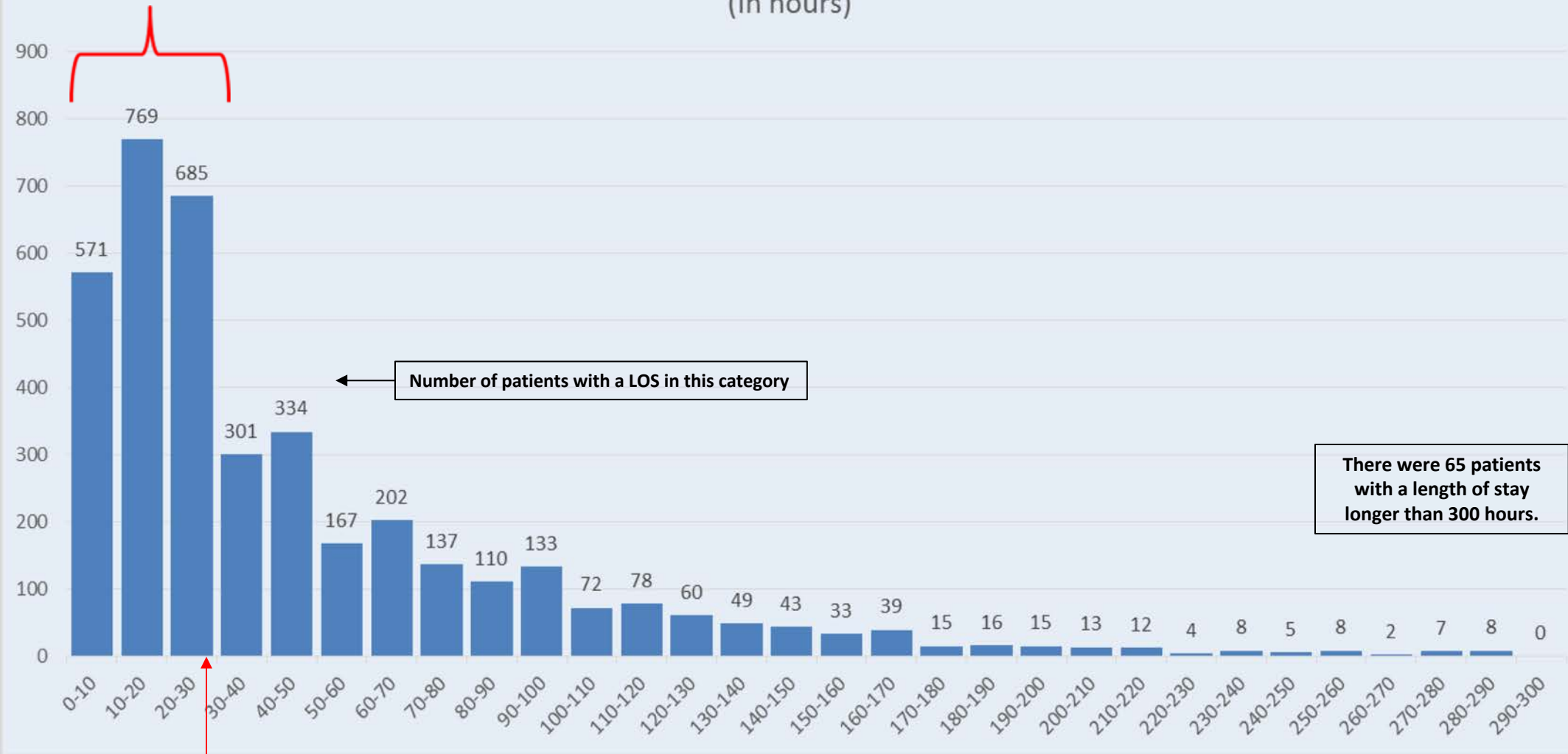
Number of patients with a LOS in this category

25 patients had a LOS longer than 300 hours

Median Length of Stay for Jan-Mar 2018 = 29.4 Hours

Number of NC-STeP Patients by LOS Category January - December 2017 (in hours)

51% percent of patients
Had a LOS of 30 hours or less



Median Length of Stay for Jan-Dec 2017 = 29.2 Hours

Median Length of Stay by Quarter (in hours)

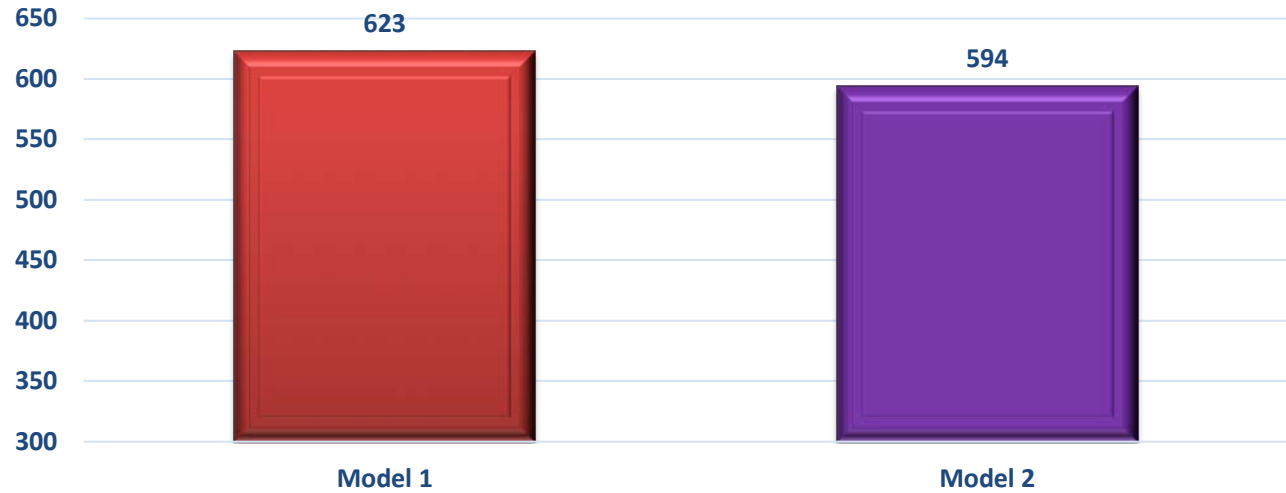


Median Length of Stay by Year (in Hours)

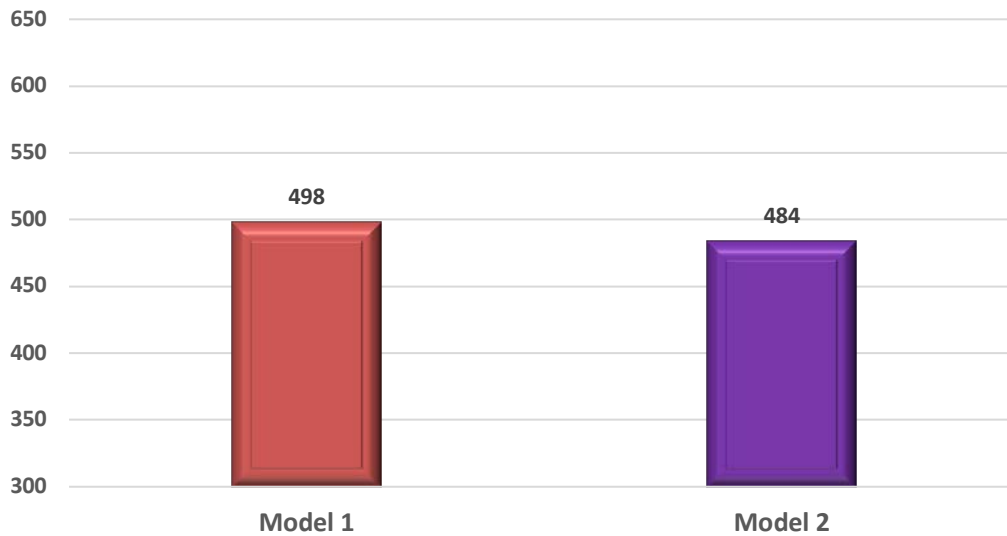


Number of Patients by Model

Jan-Mar 2018

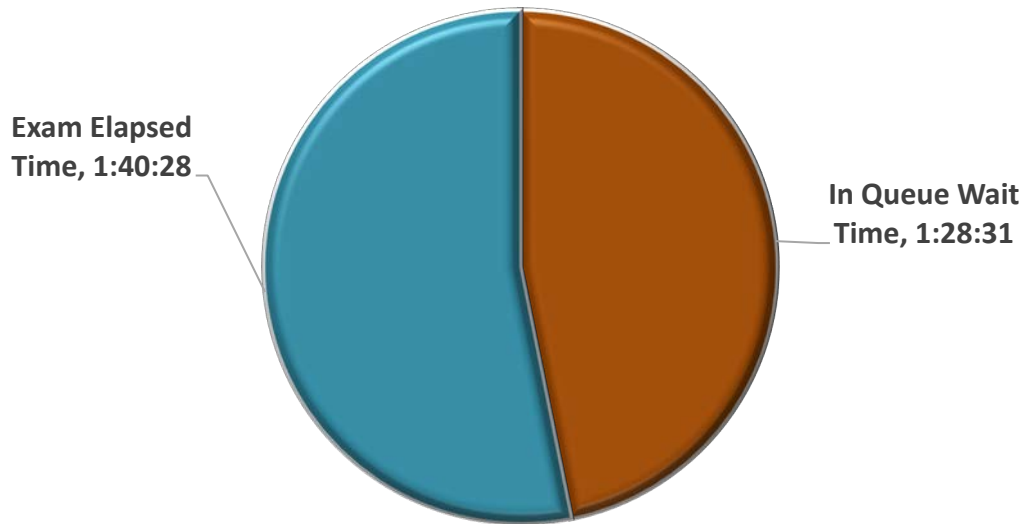


October - December 2017

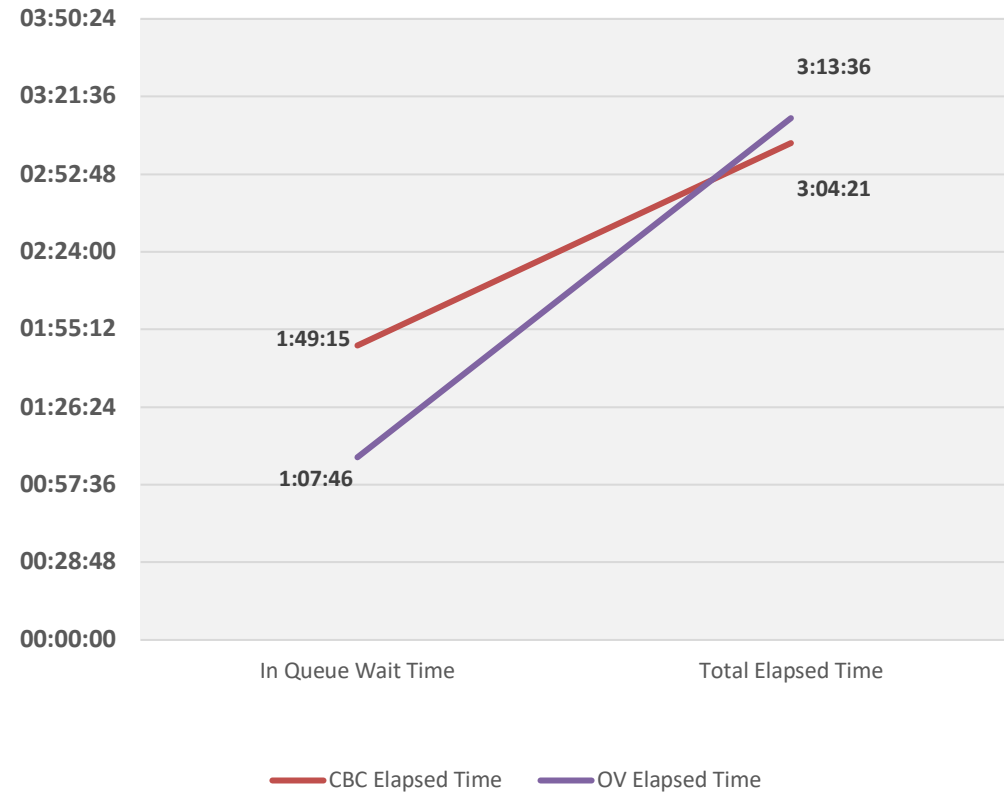


Consult Elapsed Time: January – March 2018

Average Consult Elapsed Time
In Queue to Exam Complete
(hh:mm:ss)



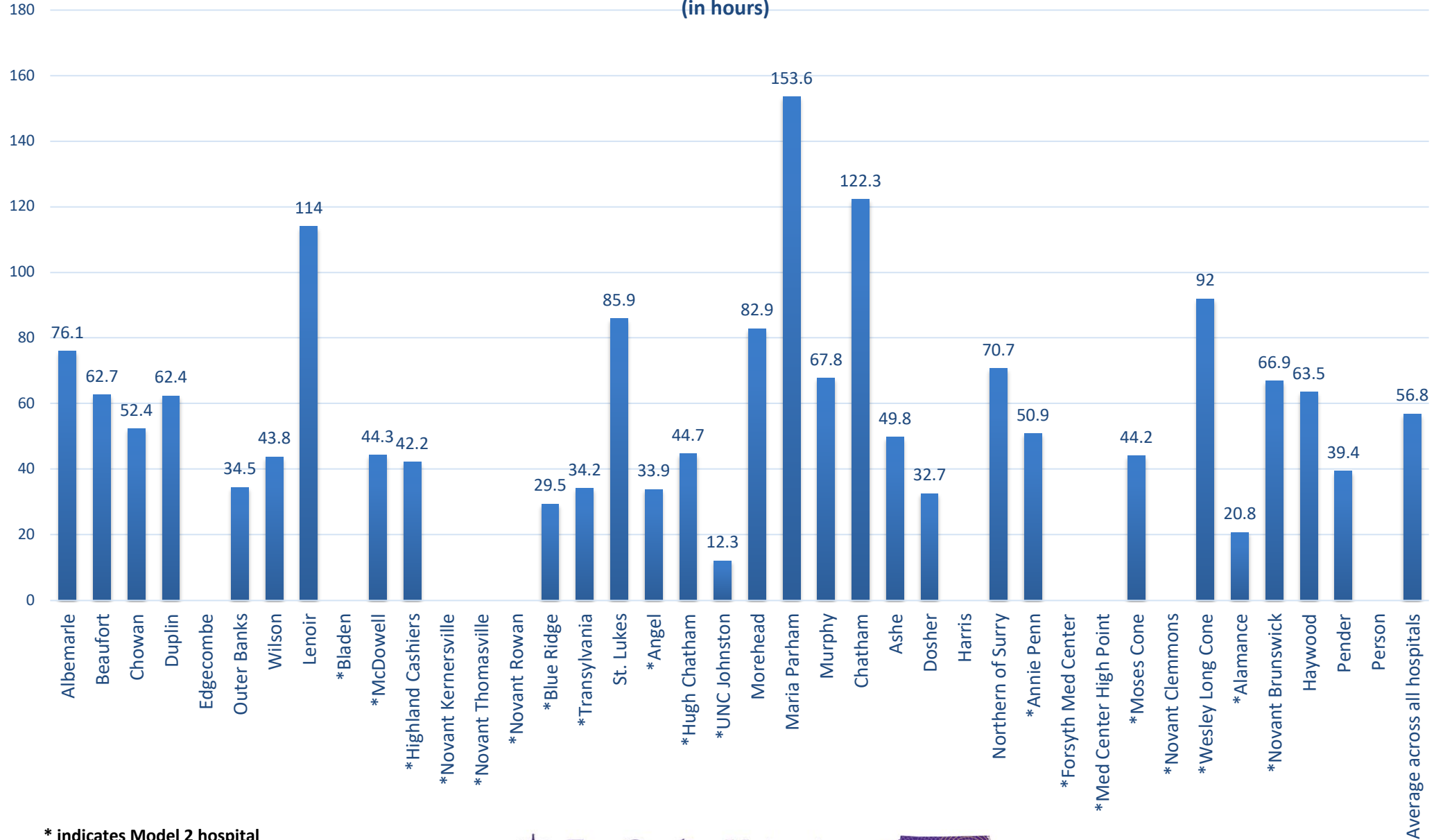
Comparison of CBC & OV
Average Consult Elapsed Time
In Queue to Exam Complete (hh:mm:ss)



Average Length of Stay for NC-STeP Patients by Hospital

January - March 2018

(in hours)



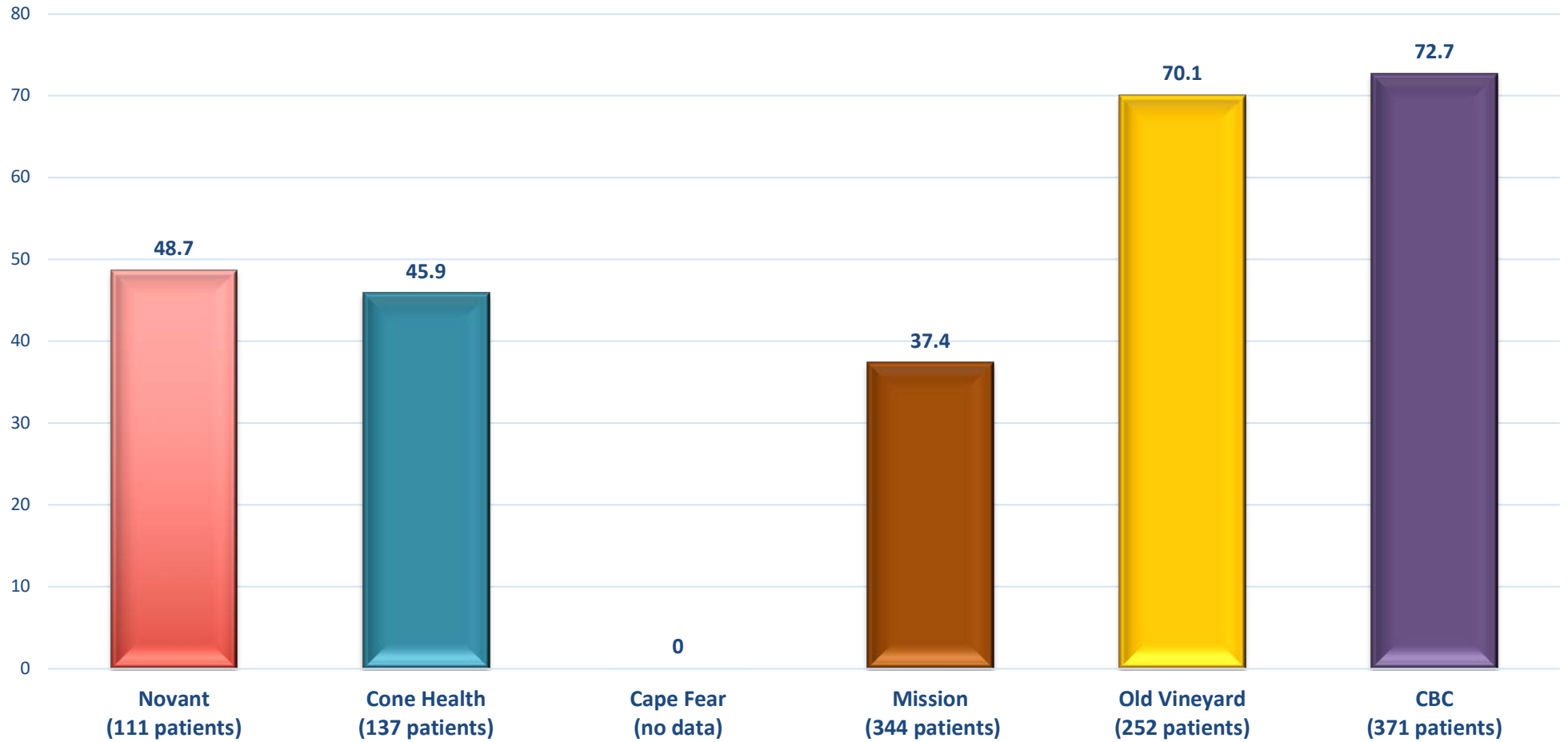
* indicates Model 2 hospital



Average Length of Stay by Provider

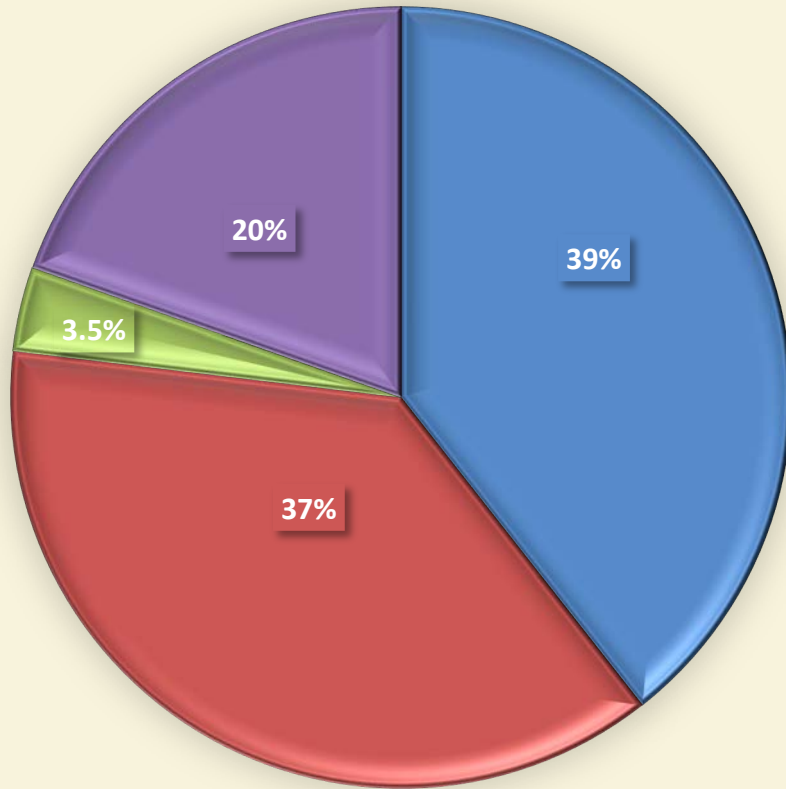
Jan-Mar 2018

(in hours)

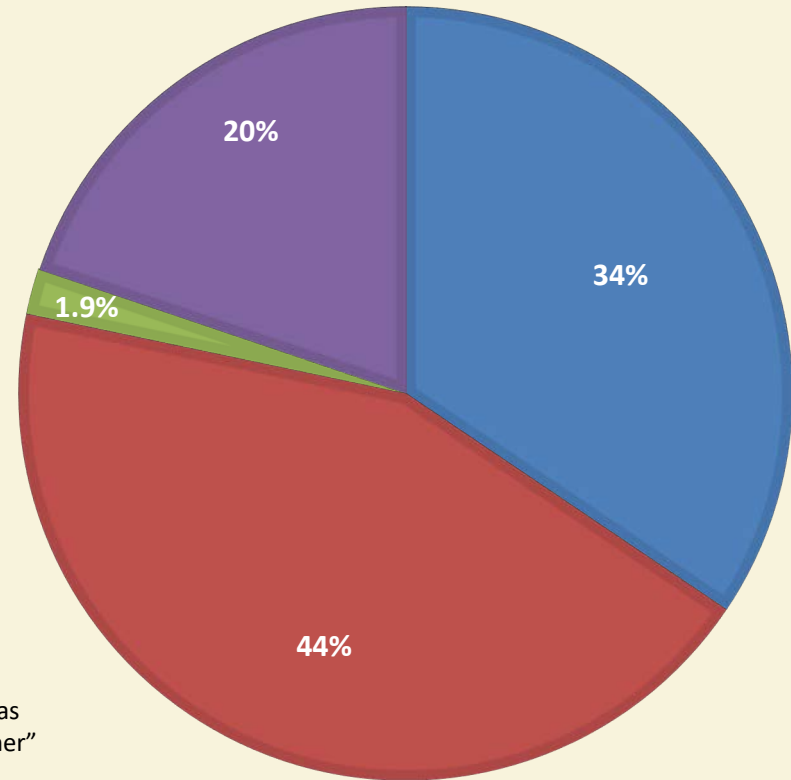


Percent of Patients by Discharge Disposition

January- March 2018



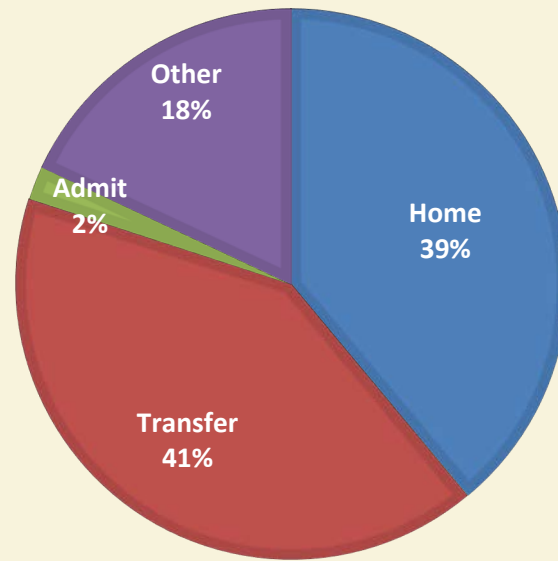
October - December 2017



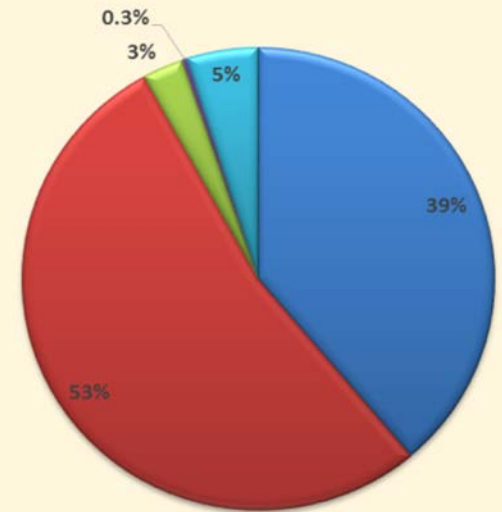
- Home
- Transfer
- Admit
- Other

Note: Data for Cone hospitals did not include a discharge disposition so it was coded as "Other," so the 20% for "Other" is higher than it otherwise would be.

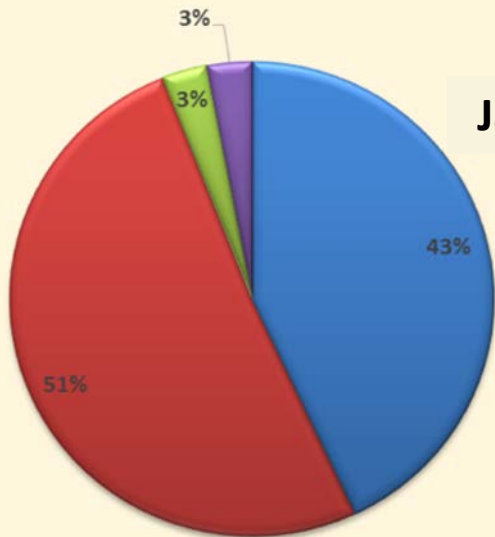
Percent of Patients By Discharge Disposition January - December 2017



January – December 2015

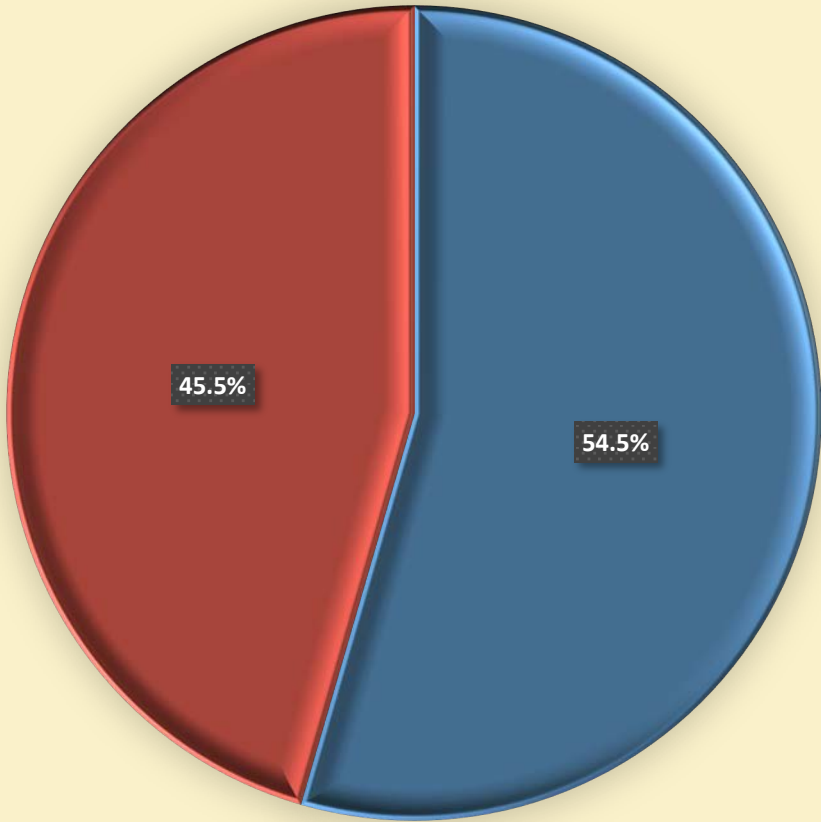


January – December 2016

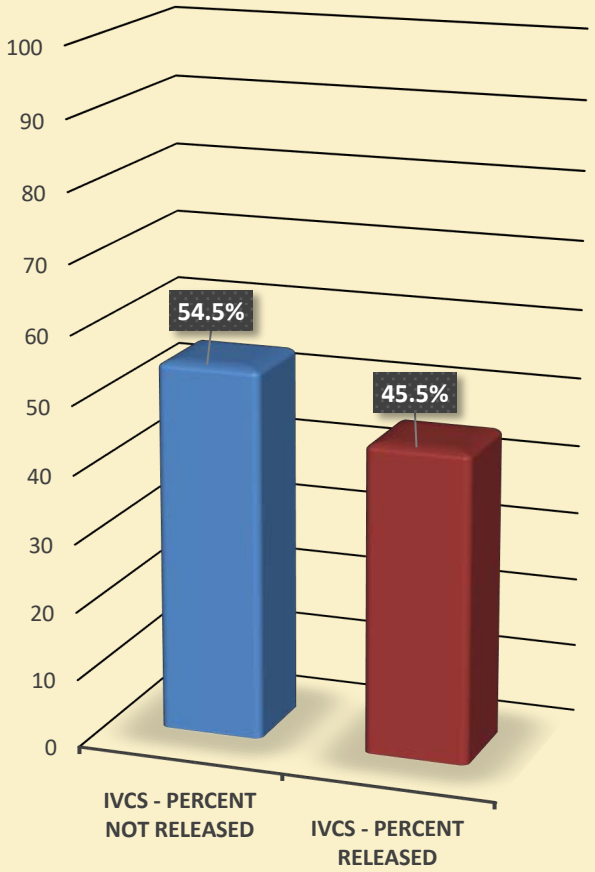


IVCs - By Release Status

January- March 2018

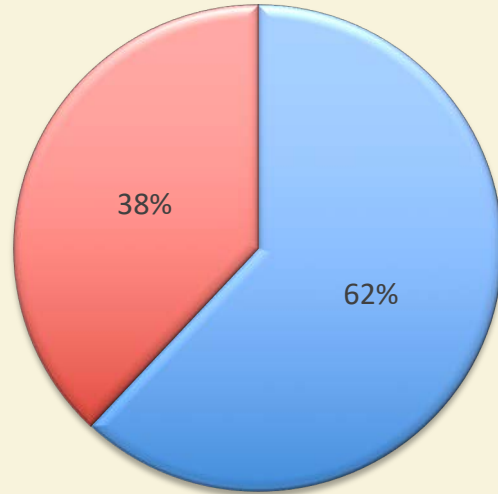


- IVCs - percent not released
- IVCs - percent released

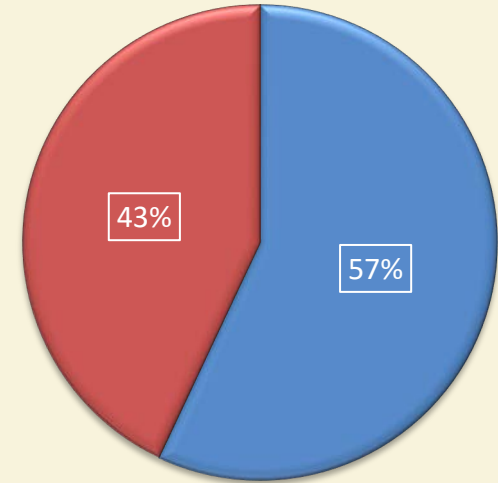


IVCs - By Release Status

October - December 2017



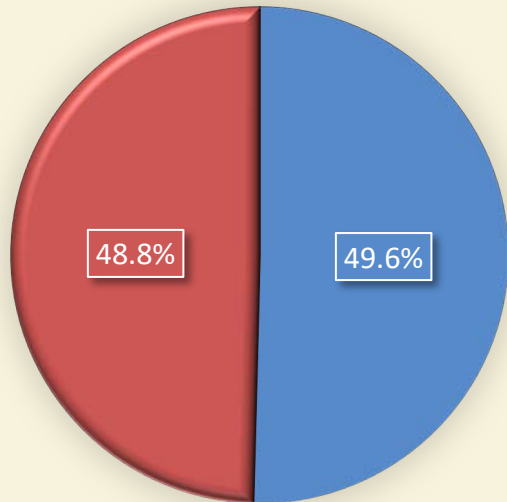
July - September 2017



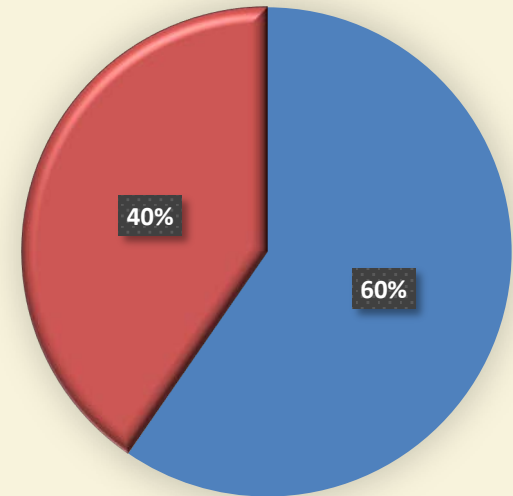
■ IVCs - percent not released

■ IVCs - percent released

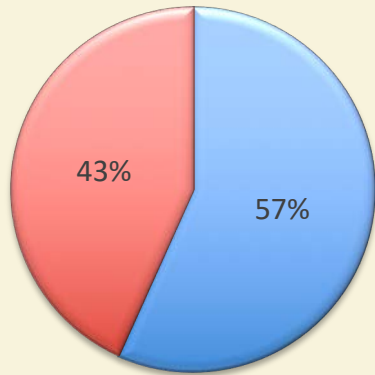
April - June 2017



January - March 2017

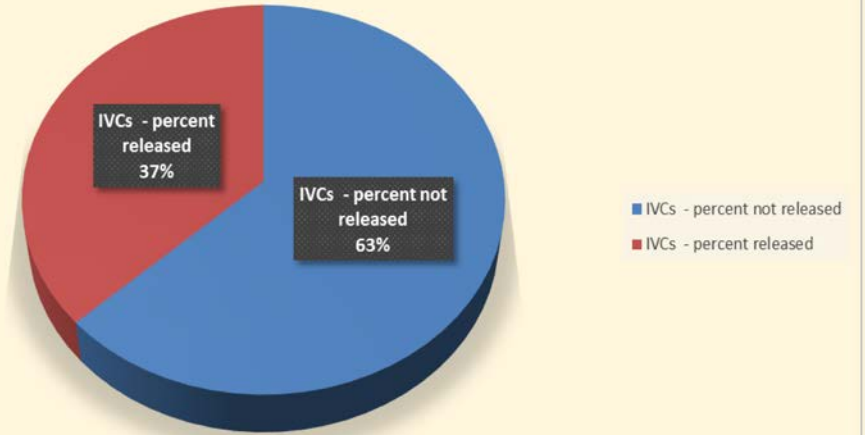


IVCs - By Release Status for January- December 2017

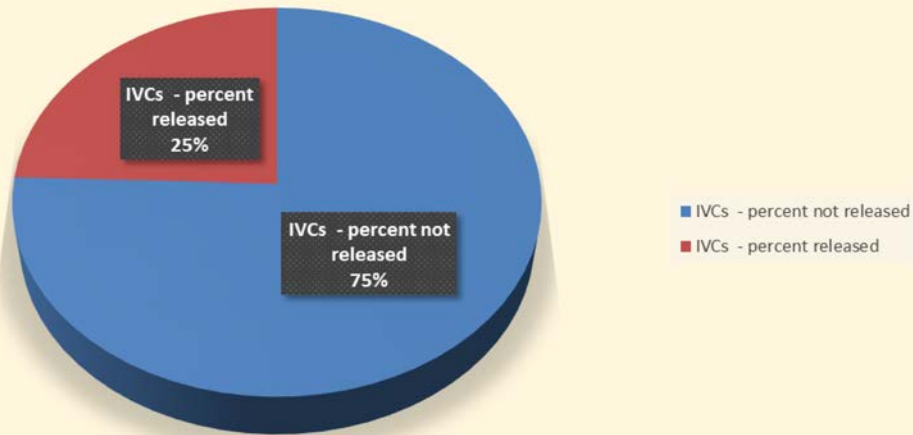


■ IVCs - percent not released ■ IVCs - percent released

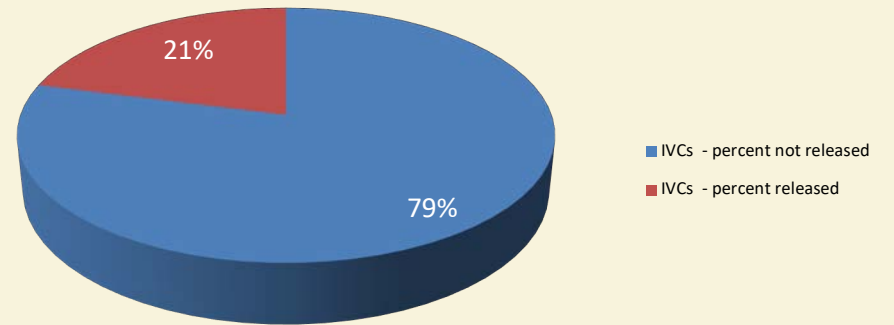
IVCs - By Release Status for January - December 2016



IVCs - By Release Status for January - December 2015



IVCs - By Release Status for January - December 2014



Satisfaction Surveys Methodology

Satisfaction surveys were conducted in March 2018 with 9 groups

1. Model 1 Emergency Department Physicians
2. Model 1 Emergency Department Staff
3. Model 1 Provider Psychiatrists
4. Model 1 Psychiatric Intake Specialists
5. Model 1 Hospital CEOs
6. Model 2 Emergency Department Physicians
7. Model 2 Emergency Department Staff
8. Model 2 Provider Psychiatrists
9. Model 2 Hospital CEOs

Each group was given a different survey (with different questions) based on their role in the program.

Satisfaction Surveys Methodology

- Invitations to participate were sent via electronic mail
- For groups that use the portal (Model 1 ED staff, psychiatrists, and intake specialists) there was a link to the survey on the portal log-in page.
- ED staff also received a pop-up within the portal with a link to the survey.
- Surveys were completed online via Qualtrics software
- For each group, one summary question is selected for an overall “satisfaction” rate.
- The overall satisfaction rate is 78%.



Satisfaction Surveys Methodology

Response Rate

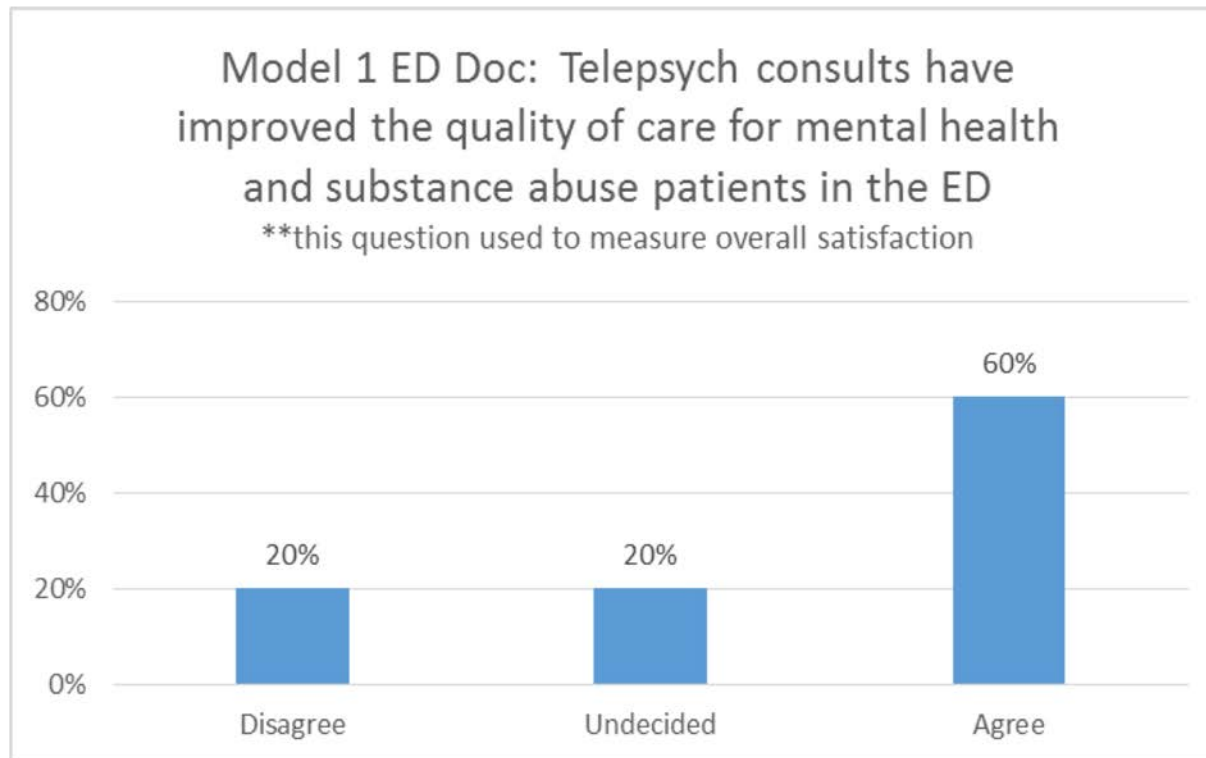
- Model 1 ED Physicians = 5
- Model 1 ED Staff = 33
- Model 1 Provider Psychiatrists = 5
- Model 1 Psychiatric Intake Specialists = 5
- Model 1 Hospital CEOs = 7 responded
- Model 2 ED Physicians = 0
- Model 2 ED Staff = 1
- Model 2 Provider Psychiatrists = 1
- Model 2 Hospital CEOs = none

The overall satisfaction rate is 78%.

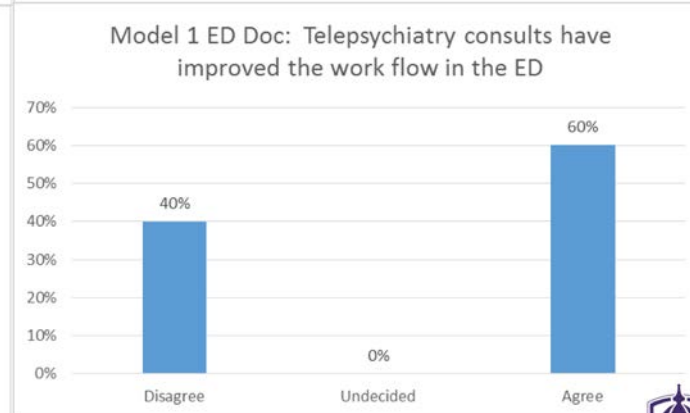
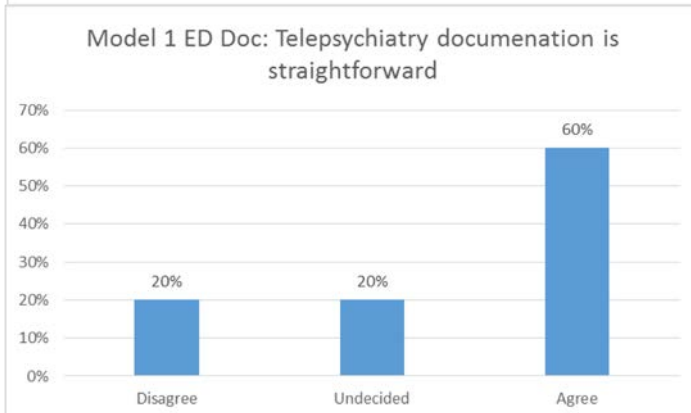
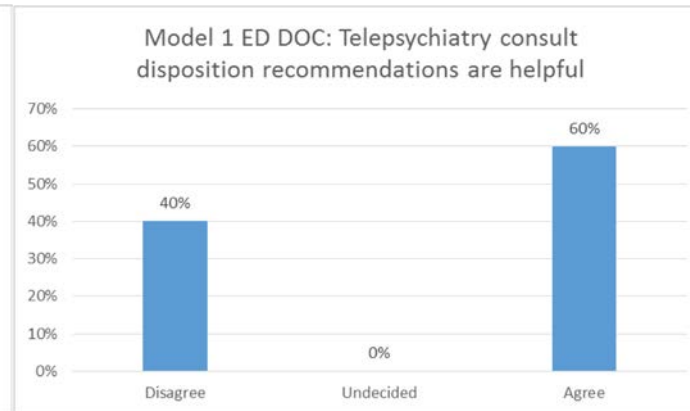
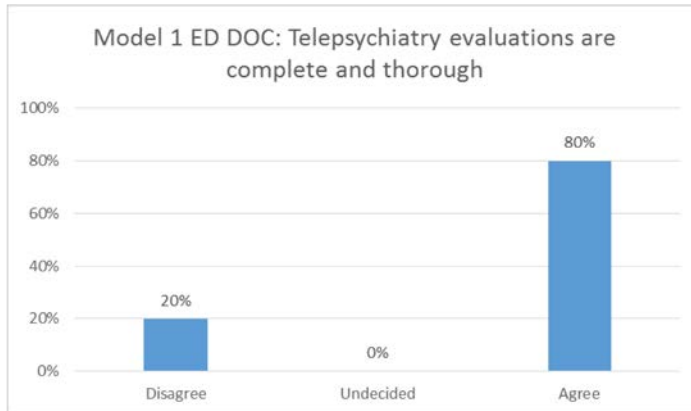
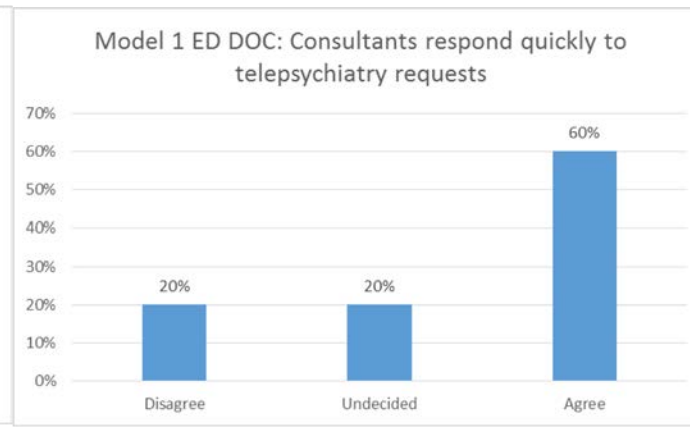
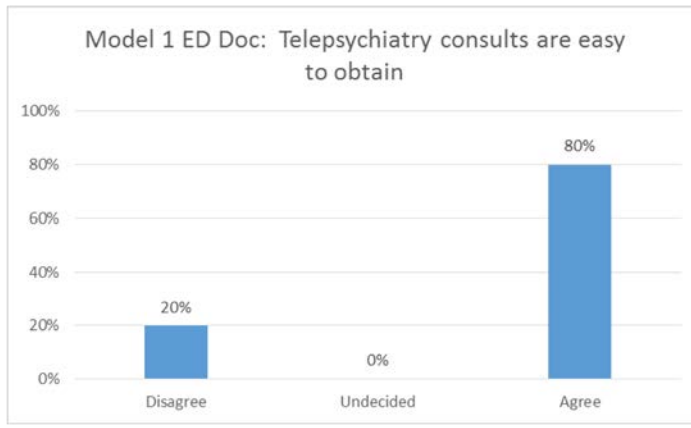


Model 1 Hospital ED Physicians Results

- **60% report that the consults have improved the quality of care for mental health/substance abuse patients in the ED.**
- 80% report that the telepsych consults are easy to obtain.
- 60% report that the psychiatric consultants respond quickly to telepsych requests.
- 80% report that evaluations are complete and thorough.
- 60% report that consult disposition recommendations are helpful, 40% disagree.
- 60% report that telepsych documentation is straightforward.
- 60% report that telepsych consults have improved workflow in the ED, 40% disagree.

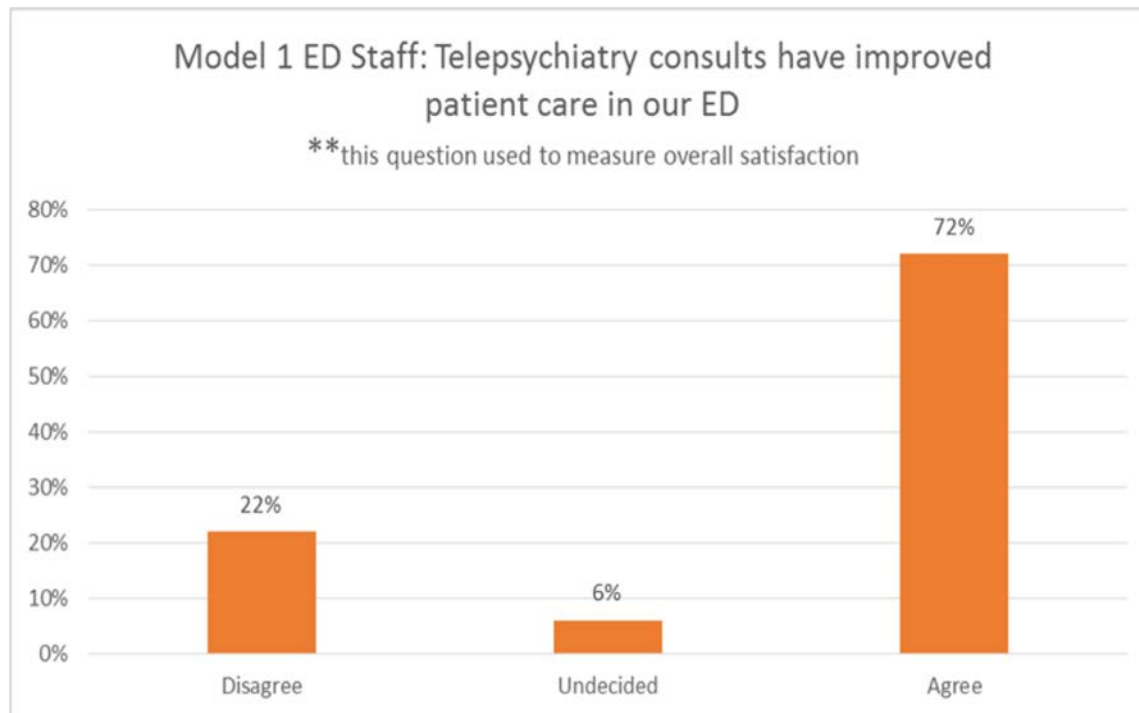


Model 1 Hospital ED Physicians Results

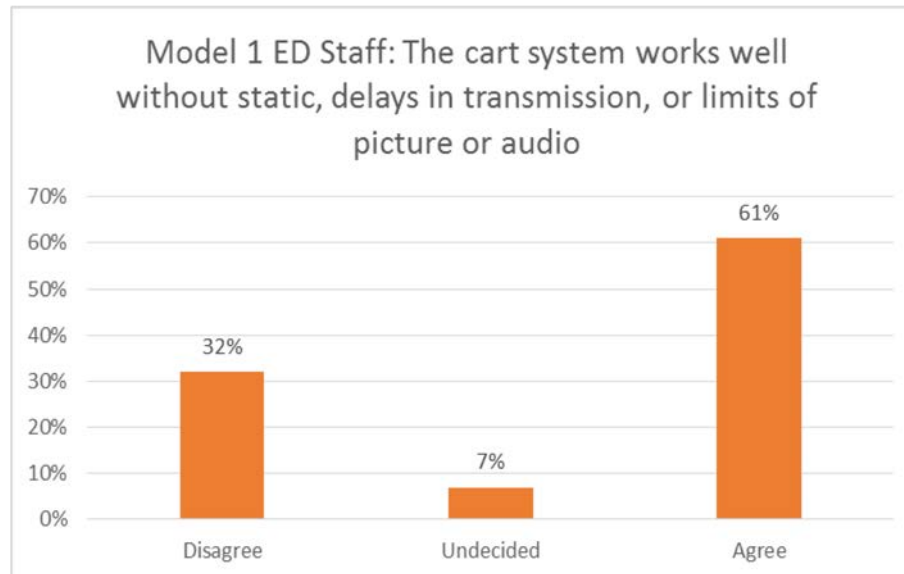
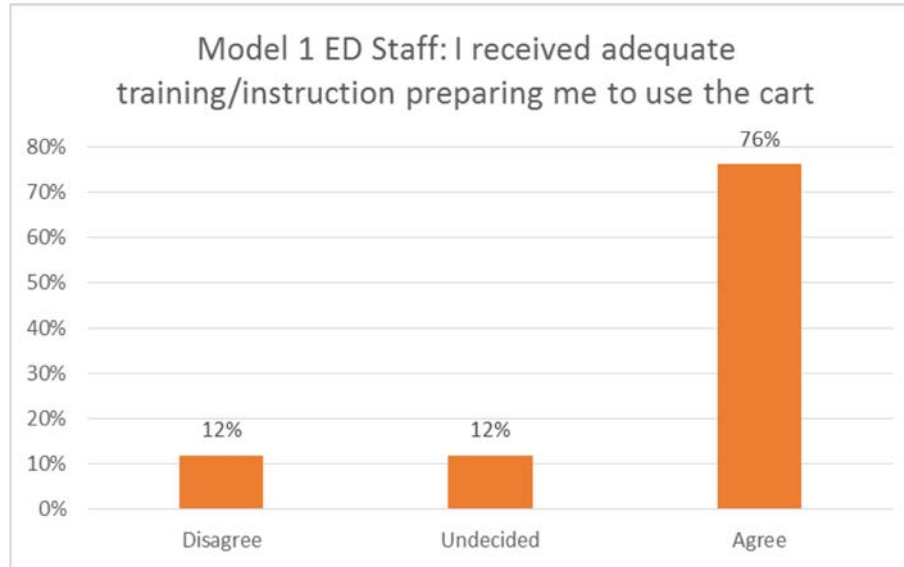
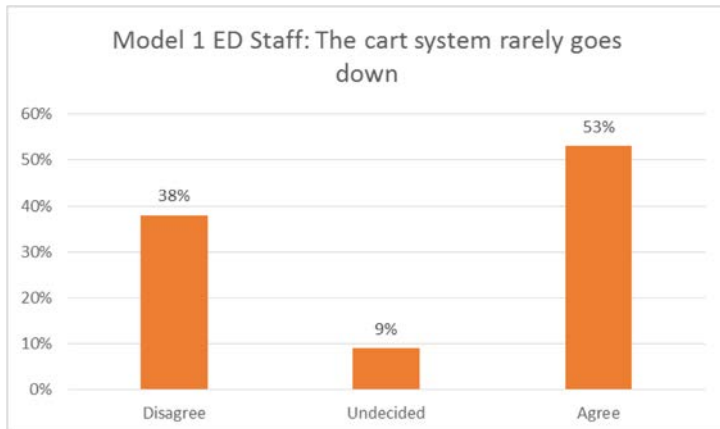
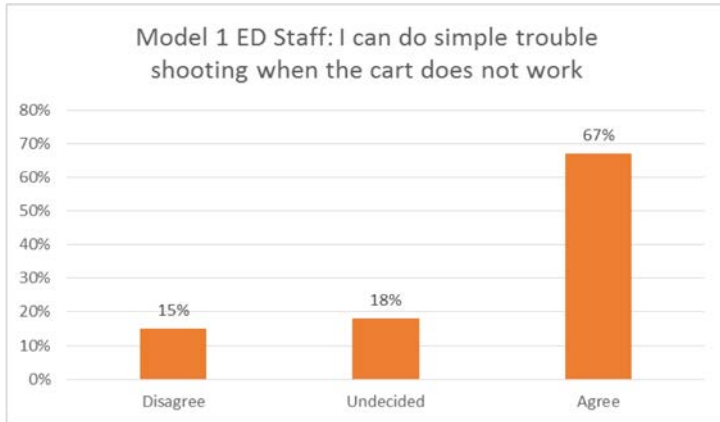
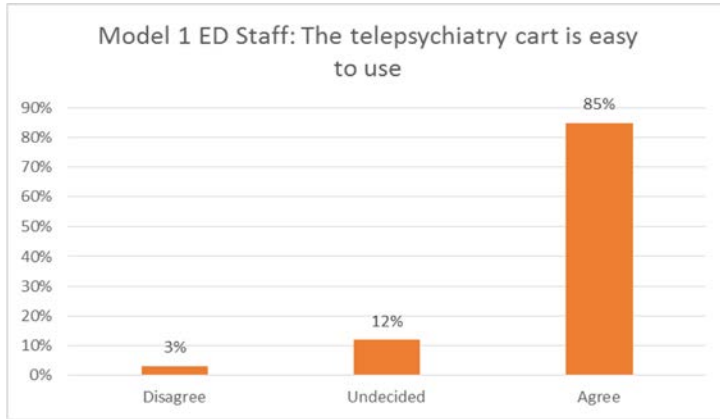


Model 1 Hospital ED Staff Results

- **72% agreed with the statement that the program has improved patient care in our ED.**
- 85% report that the telepsychiatry cart is easy to use.
- 76% reported they received adequate training and instruction to use the cart.
- 61% reported that the cart system works well without static or delays. 32% disagreed, 7% undecided.
- 53% reported that the cart system rarely goes down, 38% disagreed, 9% undecided.
- 72% reported that the portal system of requesting consultations is straight forward to use.
- 50% said the portal system works well without excessive delays or downtime, 28% disagreed, 22% were undecided.
- 76% agreed that they received adequate training preparing them to use the portal. (last survey 57% said this).

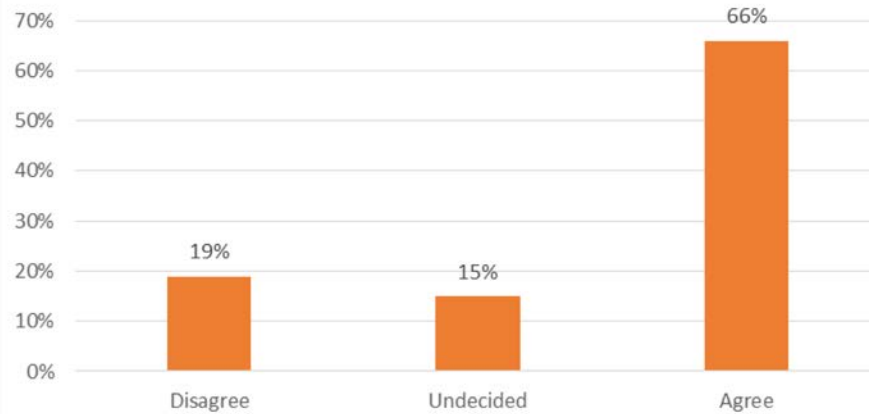


Model 1 Hospital ED Staff Results

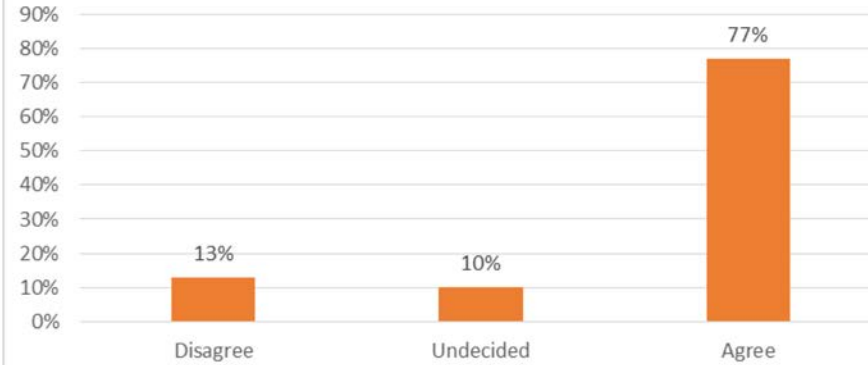


Model 1 Hospital ED Staff Results

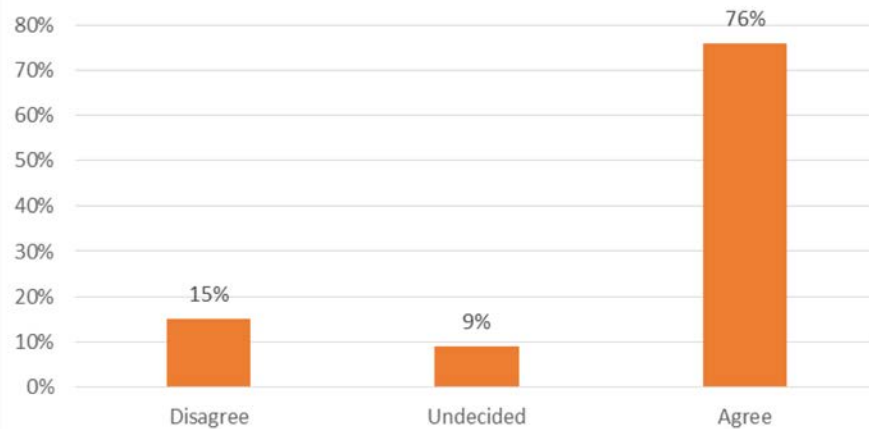
Model 1 ED Staff: Assisting in telepsychiatry consults is an efficient use of my time



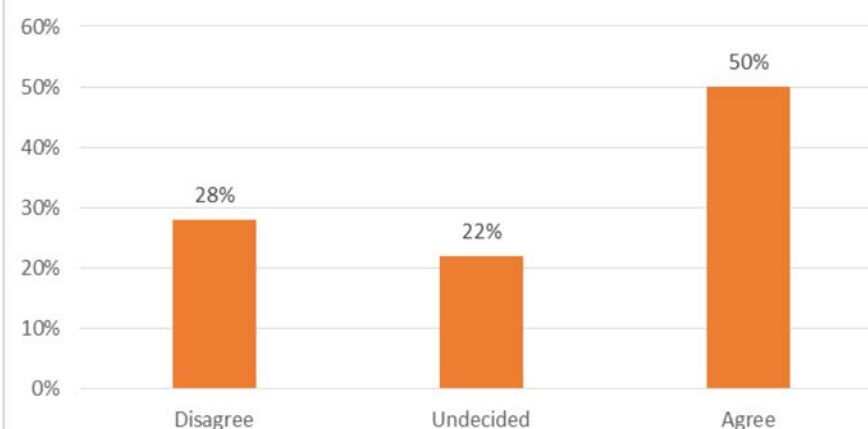
Model 1 ED Staff: The portal system of requesting the consultation is straight forward to use



Model 1 ED Staff: I received adequate training preparing me to use the portal

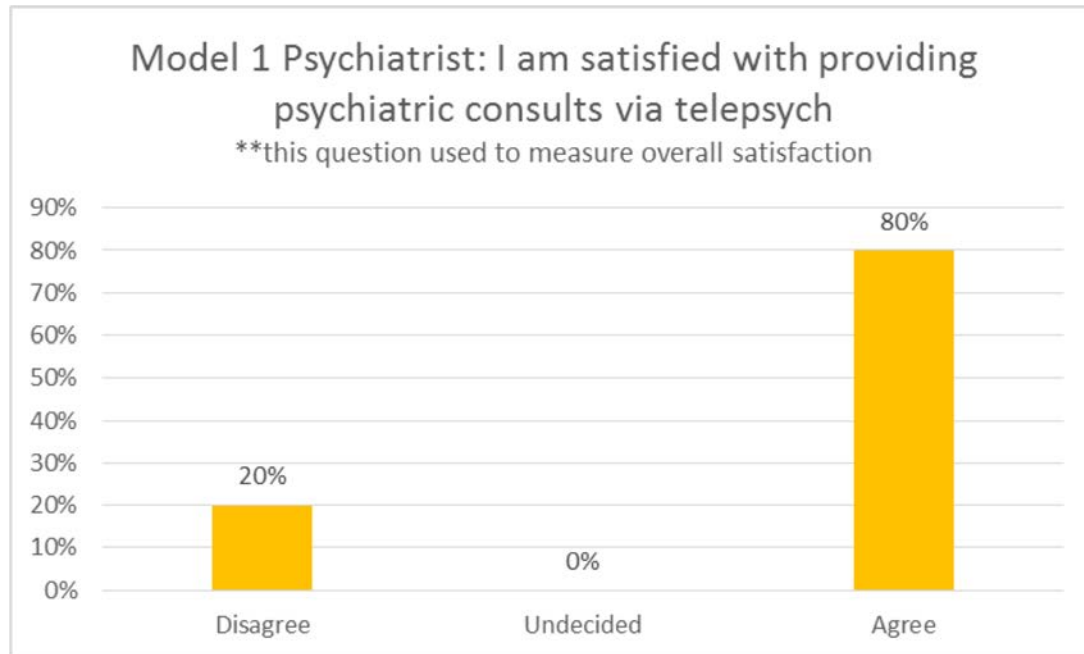


Model 1 ED Staff: The portal system works well without excessive delays or downtime



Model 1 Provider Psychiatrist Results

- **80% agreed, “I am satisfied with providing psychiatric consults via telepsychiatry.”**
- 100% Believe that providing telepsychiatry services is an effective and efficient way of assessing and treating patients with mental health and substance abuse issues.
- 60% agree the quality of psychiatric care provided via telepsychiatry is comparable to face to face care. 40% are undecided, none disagree.
- 60% agree that “Telepsychiatry increases my productivity.” 20% disagree, 20% undecided.
- 75% agree the desktop unit is reliable, seldom down. 22% are undecided, none disagree.
- 80% agree that the portal system of sending consultations is straightforward to use.
- 80% agree they received adequate training and resources preparing them to use the system.
- 60% agree that the portal system works well without excessive delays or downtime. 20% disagree. 20% are undecided.

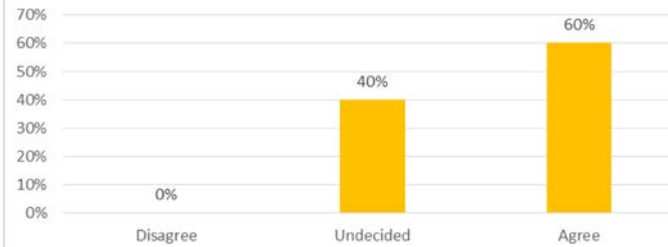


Model 1 Provider Psychiatrist Results

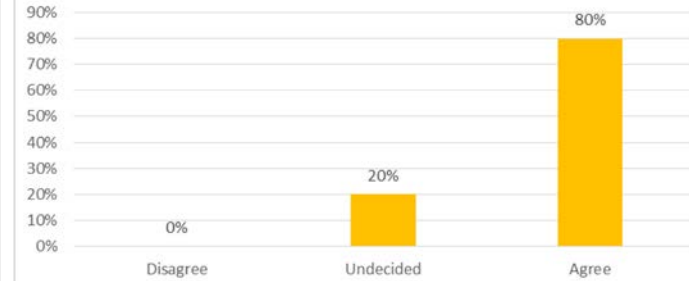
Model 1 Psychiatrist: Providing telepsych services is an effective and efficient way of assessing and treating patients with mental health/substance abuse issues



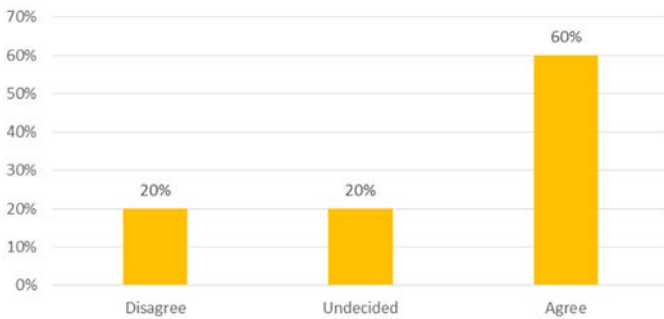
Model 1 Psychiatrist: I believe the quality of psychiatric care provided via telepsychiatry is comparable to the quality of care delivered via face to face care



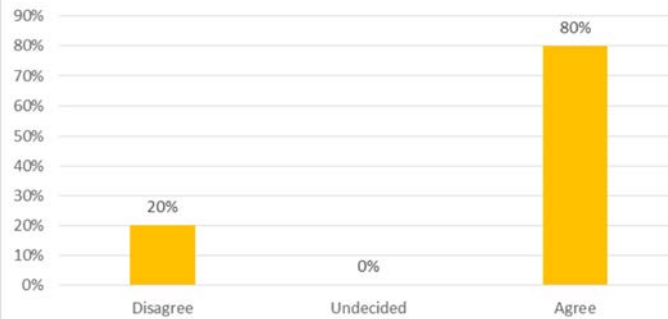
Model 1 Psychiatrist: I received adequate training and resources preparing me to use the portal system



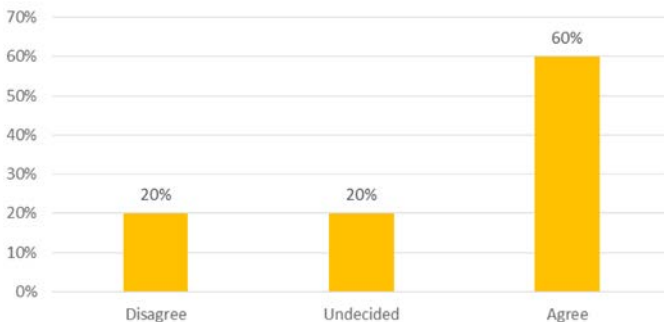
Model 1 Psychiatrist: Telepsychiatry increases my productivity



Model 1 Psychiatrist: The portal system of sending consultations is straightforward to use



Model 1 Psychiatrist: The portal system works well without excessive delays or downtime

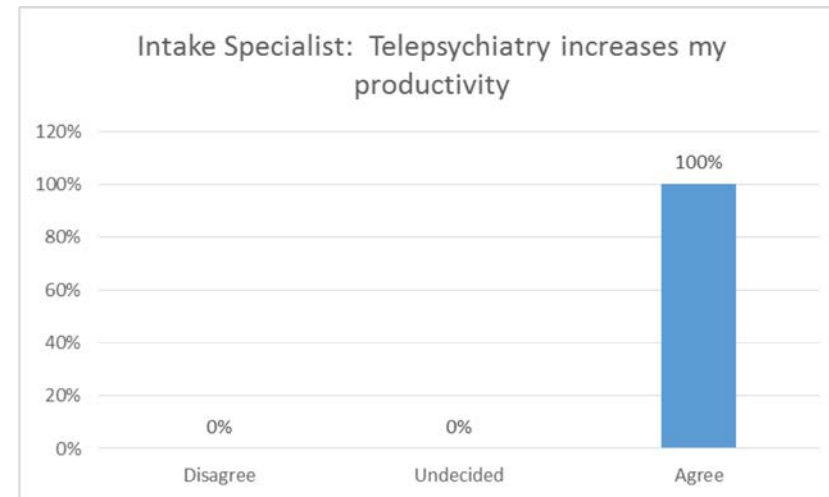
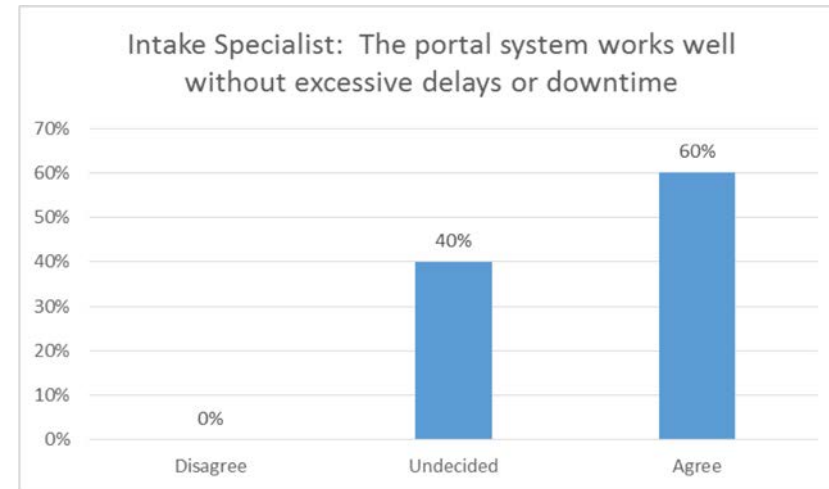
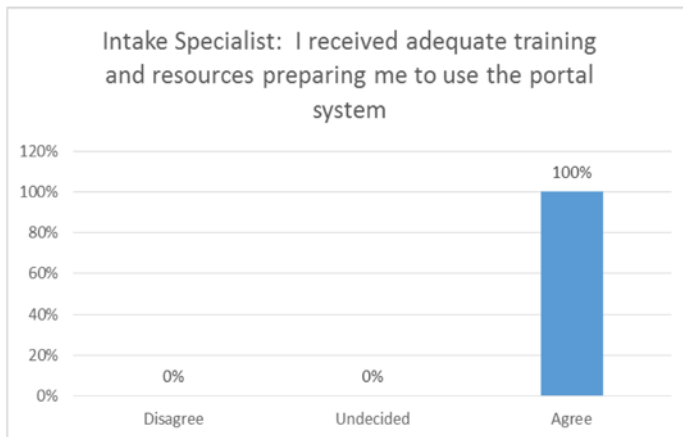
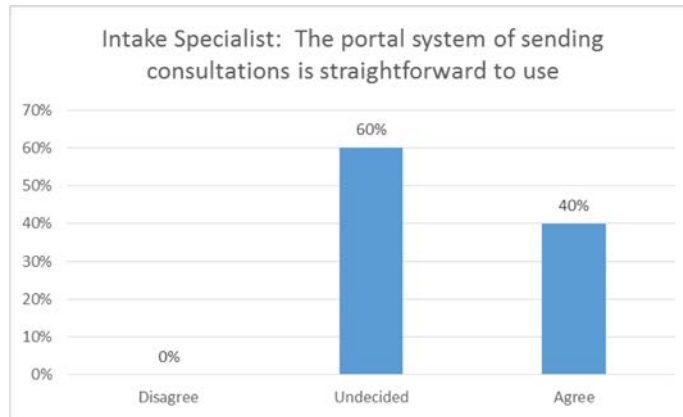
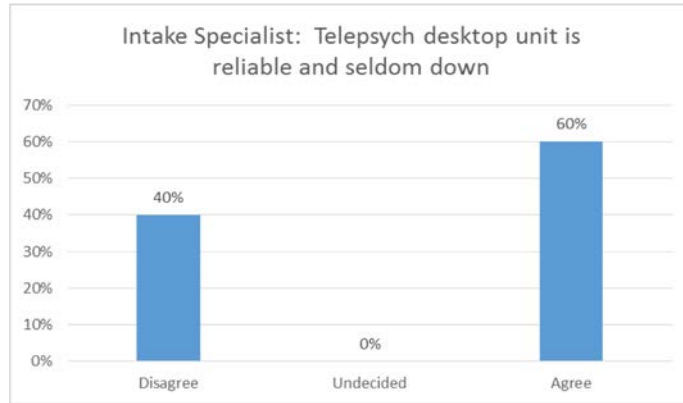


Model 1 Psychiatric Intake Specialist Results

- **100% agreed, “I am satisfied with providing psychiatric consults via telepsychiatry.”**
- 100% agree that “Telepsychiatry increases my productivity.”
- 80% agree that the telepsychiatry desktop unit is straightforward to use, 20% undecided.
- 60% agree the desktop unit is reliable and seldom down. 40% disagreed.
- 40% agree that the portal system of sending consultations is straightforward to use, 60% are undecided.
- 100% agree they received adequate training and resources preparing them to use the system.
- 60% agree the portal system works well without excessive delays or downtime. 40% undecided.

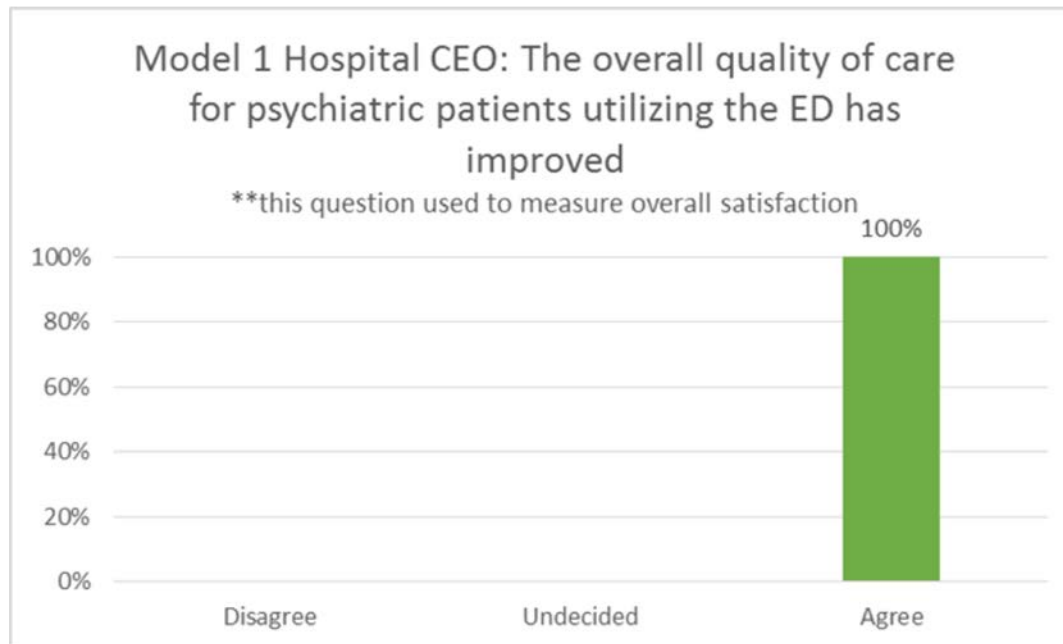


Model 1 Psychiatric Intake Specialist Results



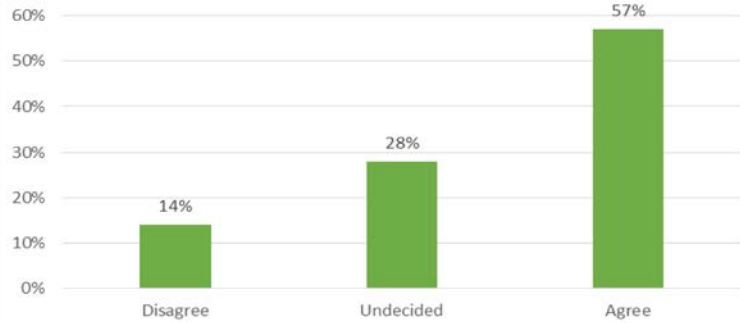
Model 1 CEO/COO/CNO/ED Manager Results

- **100% agree that, “the overall quality of care for psychiatric patients utilizing the ED has improved.”**
- 57% agree that the LOS for psychiatric patients in the ED has been reduced, 14% disagree, 28% are undecided.
- 71% agree overall ED staff satisfaction has improved.
- 43% agree that overall ED costs have been reduced, 43% are undecided, 14% disagree.
- 86% agree there has been an improvement in discharge planning and referrals for psychiatric patients.
- 100% agree, “our hospital’s use of telepsychiatry has been cost effective.”
- 100% agree, “I would recommend this program to other hospitals.”

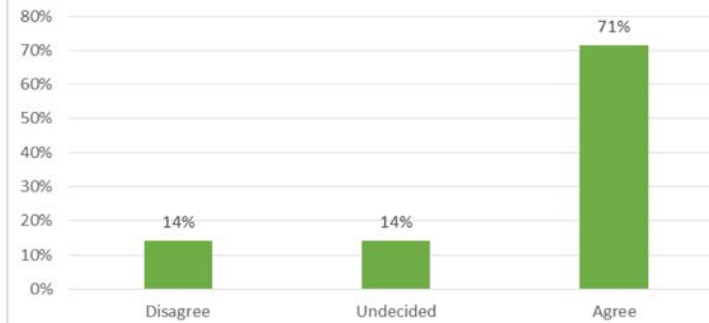


Model 1 CEO/COO/CNO/ED Manager Results

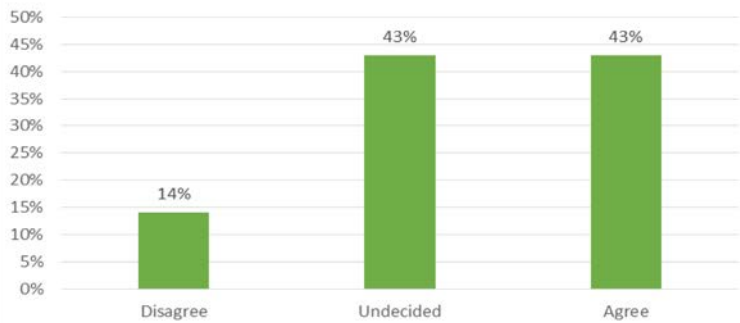
Model 1 Hospital CEO: The LOS for psychiatric patients in the ED has reduced



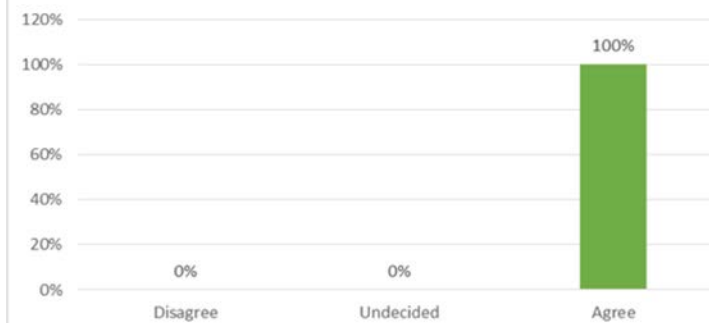
Model 1 Hospital CEO: Overall ED staff satisfaction has improved



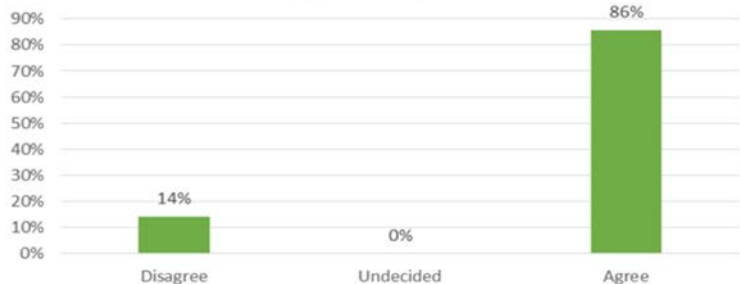
Model 1 Hospital CEO: Overall ED costs have been reduced



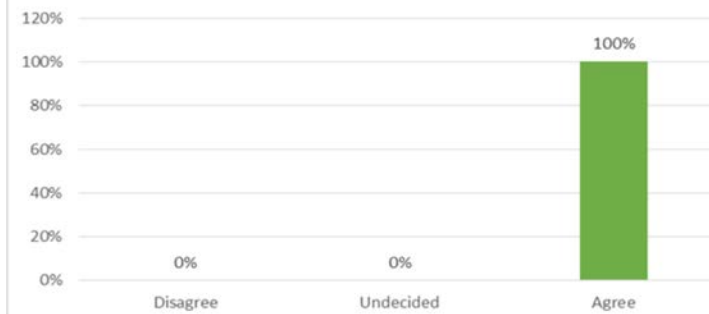
Model 1 Hospital CEO: Our hospital's use of telepsych consults has been cost effective



Model 1 Hospital CEO: There has been an improvement in discharge planning and referrals for psychiatric patients

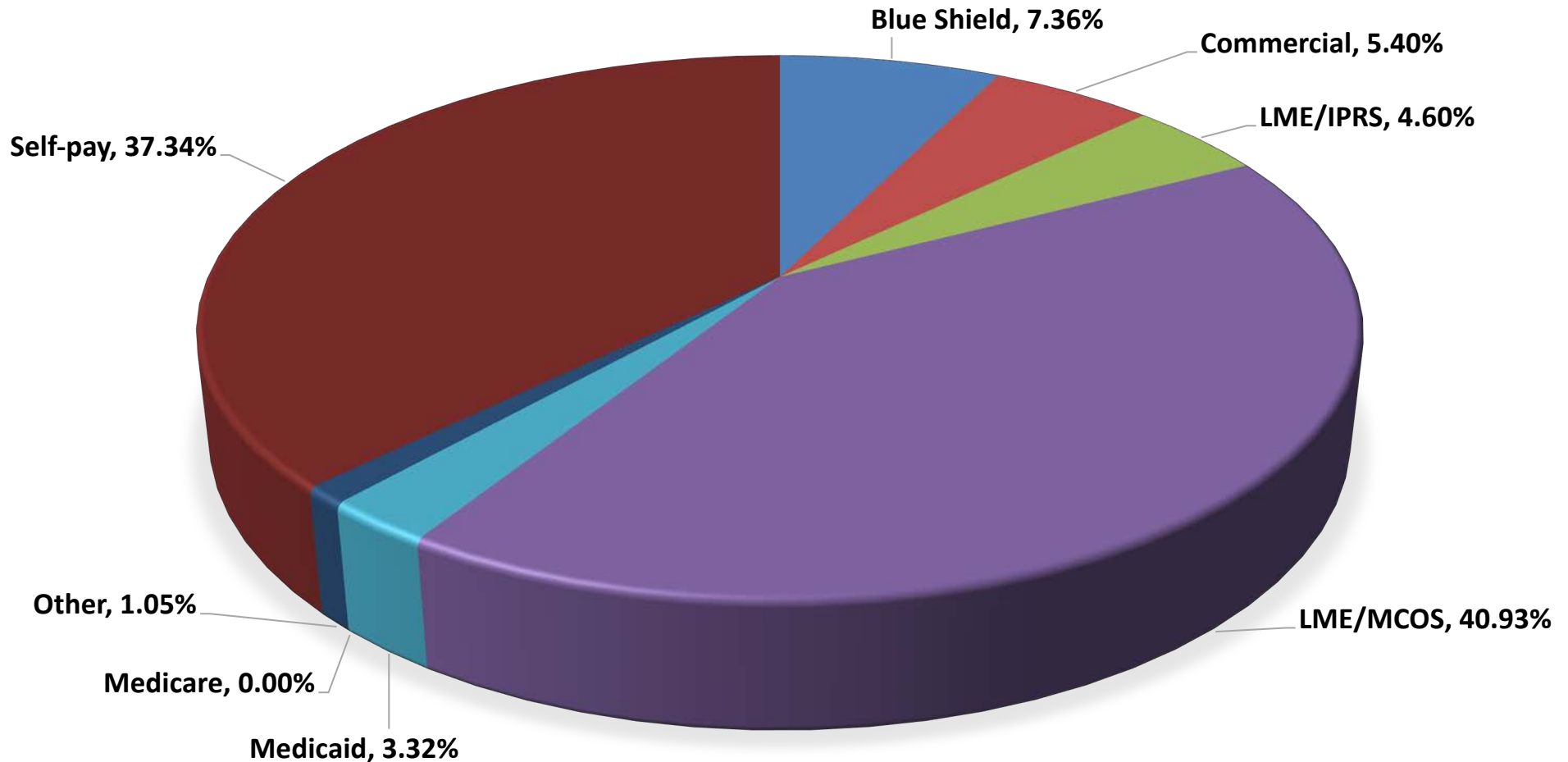


Model 1 Hospital CEO: I would recommend this program to other hospitals



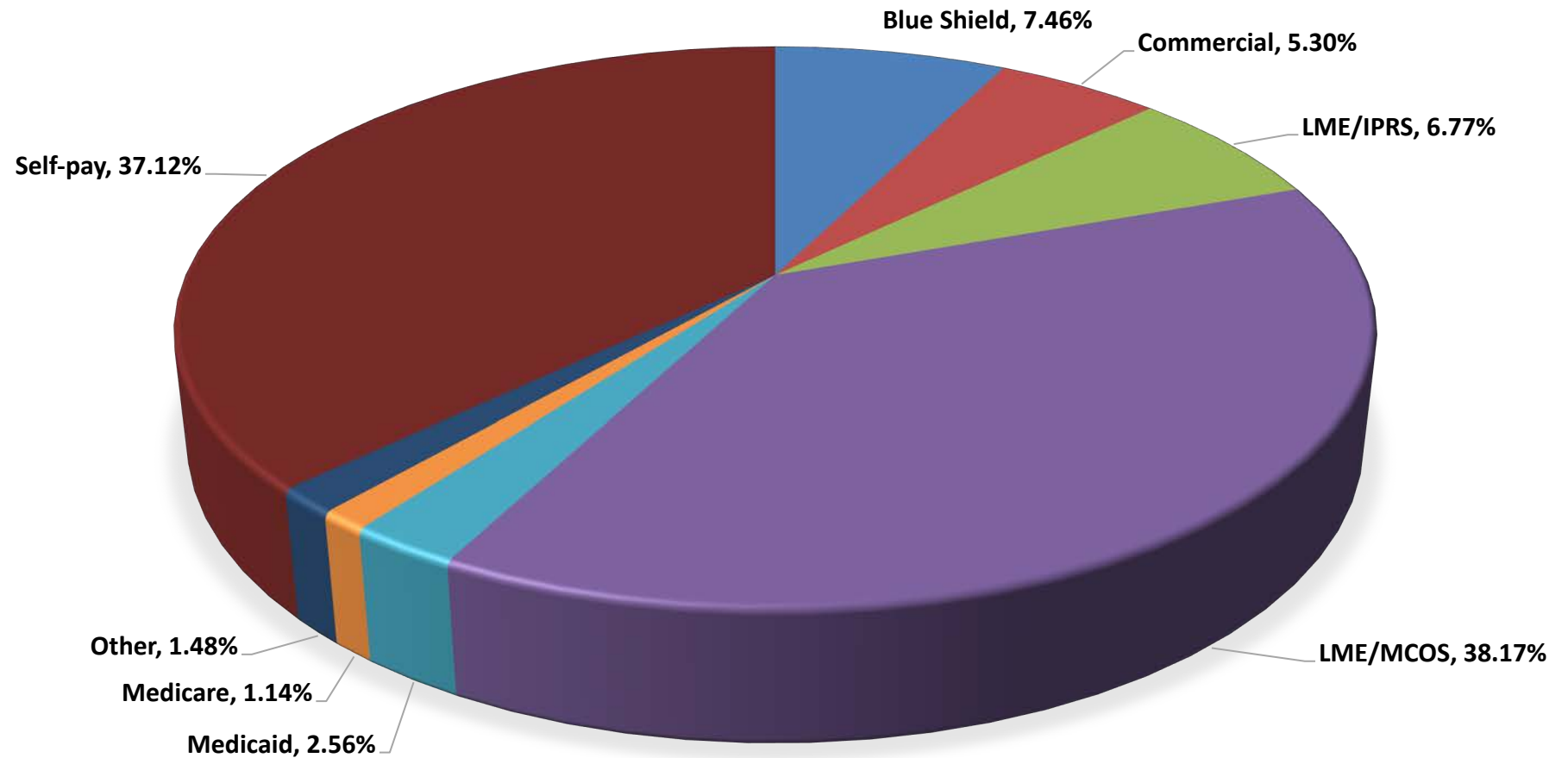
NC-STeP Charge Mix

QTD 2018 - Quarter 3



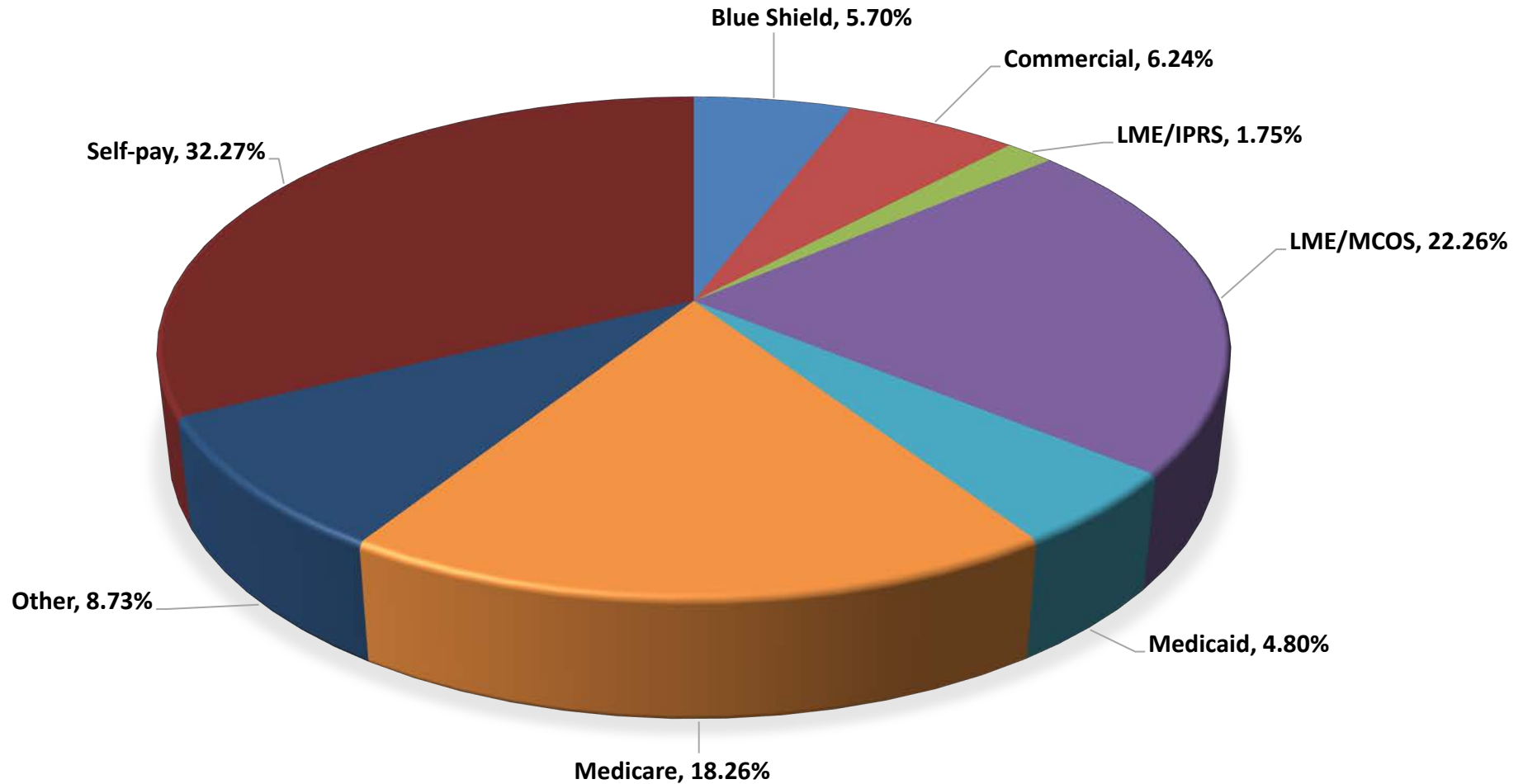
NC-STeP Charge Mix

FYTD 2018 - Quarter 3



NC-STeP Charge Mix – Project to Date

Service Dates: October 1, 2013 – March 31, 2018



NC-STeP Status as of March 31, 2018

- 65 hospitals in the network. 53 live.
- 30,234 total psychiatry assessments since program inception
- 3,651 IVCs overturned
 - Cumulative return on investment = \$19,715,400
(savings from preventing unnecessary hospitalizations)
- Seven Clinical Providers' Hubs with 47 consultant providers
- Administrative costs below industry's standard
- Over 37% of the patients served had no insurance coverage*

* Fiscal year to date,

Hospital Status Report as of March 2018

Model 1 – Live



Hospital Name	Portal Go Live
Vidant Outer Banks Hospital	08/08/2016
Vidant Bertie Hospital	08/15/2016
Vidant Chowan Hospital	08/15/2016
Vidant Edgecombe Hospital	08/15/2016
Sentara Albemarle Medical Center	08/17/2016
Vidant Beaufort Hospital	08/22/2016
Vidant Duplin Hospital	08/22/2016
Lenoir Memorial Hospital	09/06/2016
St Lukes Hospital	09/07/2016
Wilson Medical Center	09/20/2016
Morehead Memorial Hospital	10/05/2016
DLP Harris Regional Medical	10/14/2016
DLP Swain Community Hospital	10/14/2016
Murphy Medical Center	10/26/2016
DLP Maria Parham Medical Center	11/15/2016
UNC Chatham Hospital	12/21/2016
J. Arthur Doshier Memorial Hospital	01/07/2017
Ashe Memorial Hospital	01/26/2017
Northern Hospital of Surry County	03/07/2017
Southeastern Regional Medical Center	08/08/2017
Halifax Regional Medical Center	08/08/2017
DLP Person Memorial Hospital	08/17/2017
DLP Haywood Regional Medical Center	08/22/2017
Alleghany Memorial Hospital	10/17/2017
Lake Norman Regional Medical Center	10/17/2017
Randolph Memorial Hospital	12/07/2017

Hospital Status Report as of March 2018

Model 1 – In Process



Hospital Name	Portal Go Live
FirstHealth Regional Hospital – Hoke	Fall 2018
FirstHealth Montgomery Memorial Hospital	Fall 2018
FirstHealth Moore Regional Hospital	Fall 2018
FirstHealth Richmond Memorial Hospital	Fall 2018
FirstHealth Sandhills Regional Medical Center	Fall 2018
DLP Rutherford Regional Medical Center	Fall 2018
Our Community Hospital	Fall 2018

Hospital Status Report as of March 2017

Model 1 – Participation Pending



Hospital Name	Program Status
DLP Central Carolina Hospital	Reviewing Contract
Park Ridge Health	Reviewing Contract
Pioneer Community Hospital of Stokes (Greene)	Reviewing Contract
Pioneer Community Hospital of Stokes (King)	Reviewing Contract
Washington County Hospital	Reviewing Contract

Hospital Status Report as of March 2017

Model 2



Hospital Name	Go Live Date/Status
Cape Fear Valley Medical Center	06/2014
Cape Fear Valley Bladen Hospital	07/2014
Cone Health Behavioral Health Hospital	07/2014
Cone Health MedCenter High Point	07/2014
Forsyth Medical Center	07/2014
McDowell Hospital	07/2014
Mission Hospital	07/2014
Novant Health Clemmons Medical Center	07/2014
Novant Health Kernersville Medical Center	07/2014
Wesley Long Hospital	07/2014
Mission Children's Hospital	08/2014
Annie Penn Hospital	08/2014
Moses H. Cone Memorial Hospital	08/2014
Blue Ridge Regional Hospital	09/2014
Transylvania Regional Hospital	09/2014
Women's Hospital – Cone Health	10/2014
Angel Medical Center	01/2015
Highlands-Cashiers Hospital	03/2015
Novant Health Thomasville Medical Center	03/2015
Alamance Regional Medical Center	04/2015
Hugh Chatham Memorial Hospital	12/2015
Cape Fear Valley Hoke Hospital	06/2016
UNC Johnston, Clayton	06/2016
UNC Johnston, Smithfield	06/2016
Novant Health Presbyterian Hospital	11/2016
Novant Health Rowan Medical Center	07/2017
Novant Health Brunswick Medical Center	07/2017

Hospital Status Report as of March 2018

Expressed Possible Interest



Hospital Name	Program Status	NC-STeP Model
Central Harnett Hospital	TBD	TBD
Duke Regional Hospitals	TBD	TBD
Novant Matthews Medical	TBD	Model 2
Iredell Memorial Hospital	TBD	TBD

Hospital Status Report as of March 2018

Terminated



Hospital Name	Hospital Name
Carolina East	WakeMed Apex
Carteret	WakeMed Briar Creek
Columbus Regional	WakeMed Cary
Davie Medical	WakeMed Garner
Lexington	WakeMed North Healthplex
Martin County General	WakeMed Raleigh
Nash General Hospital	WakeMed Raleigh Children's ED
Sampson	WakeMed Psychiatric Observation Unit
UNC Hillsborough	

Hospital Status Report as of March 2018

No Information Available



Hospital Name	Program Status	NC-STeP Model
Caldwell Memorial	TBD	TBD
Cherokee Indian Hospital	TBD	TBD
New Hanover	TBD	TBD
Novant Franklin Medical	TBD	TBD
Onslow Memorial	TBD	TBD
Scotland Health	TBD	TBD
Wilkes Regional Medical	TBD	TBD



East Carolina University
CENTER FOR TELEPSYCHIATRY



NC-STEP

Contact

Sy Atezaz Saeed, M.D., M.S., FACP_{psych}
Professor and Chairman

Department of Psychiatry and Behavioral Medicine
Brody School of Medicine | East Carolina University

Director

North Carolina Statewide Telepsychiatry Program (NC-STEP)

Phone: 252.744.2660 | e-mail: saeeds@ecu.edu | Website:
<http://www.ecu.edu/psychiatry>

Mail: Brody School of Medicine, 600 Moye Boulevard, Suite 4E-100,
Greenville, NC 27834



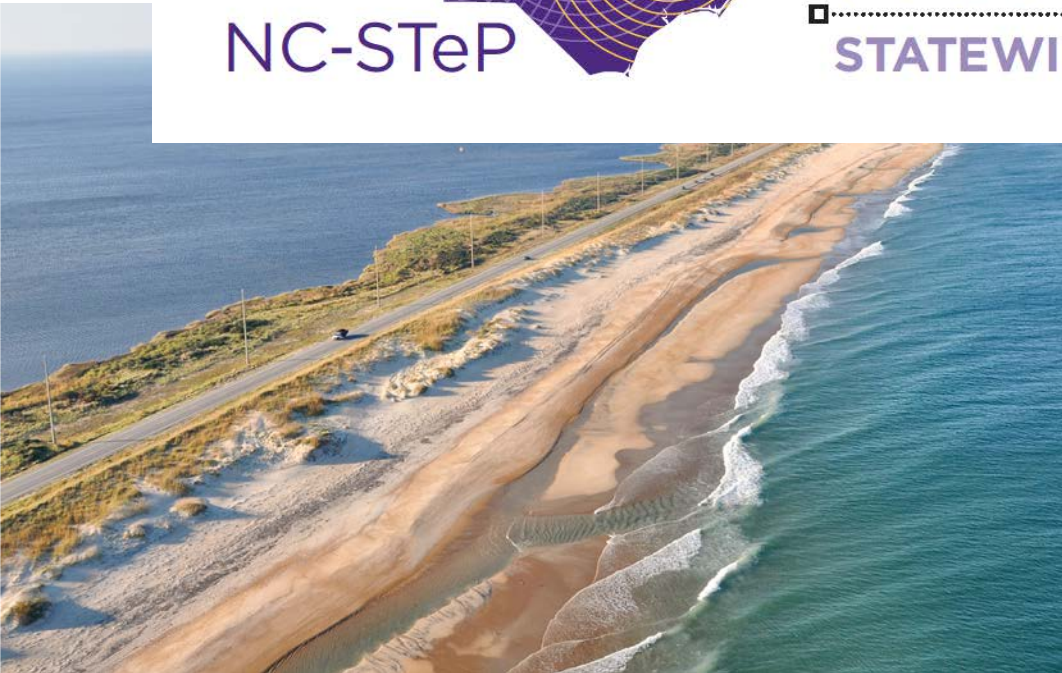
CAPTURE YOUR HORIZON



NC-STeP

NORTH CAROLINA

STATEWIDE TELEPSYCHIATRY PROGRAM





NC-PACT

NORTH CAROLINA

PSYCHIATRIC ACCESS THROUGH COMMUNITY TELEPSYCHIATRY



East Carolina University
CENTER FOR TELEPSYCHIATRY