



NORTH CAROLINA  
STATEWIDE TELEPSYCHIATRY PROGRAM

# Quarterly Progress Update



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North Carolina Statewide Telepsychiatry Program (NC-STeP)



East Carolina University  
CENTER FOR TELEPSYCHIATRY

# NC-STeP Quality Management and Outcomes Monitoring Processes: July - September 2018

- 60 hospitals in network, 53 hospitals live, with 30 hospitals reporting Telepsychiatry patients in their ED
  - not all live hospitals had telepsychiatry patients
- 848 patient assessments were billed for Model 1 hospitals
- The Median Length of Stay was 28.1 hours
- The Average Length of Stay was 51.6 hours
  - 47.9 hours for those discharged to home
  - 51.7 hours for those transferred to another facility

# NC-STeP Quality Management and Outcomes Monitoring Processes: July - September 2018

- 784 ED patients who received telepsychiatry services had an IVC in place during their ED stay.
  - 342 (43.6%) of those patients did not have an IVC in place when discharged.
- Of the ED patients who received telepsychiatry services, 40.2% were discharged to home. 41.9% were discharged to another facility.

\* Note: Data for Bladen hospital was not submitted as of October 25, 2018. Data for Novant hospitals was not submitted as of October 25, 2018 (Novant Kernersville, Novant Thomasville, Novant Clemmons, Novant Rowan, Novant Brunswick). Data for Cone hospitals for July through September 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 Calendar Year 2014	During Calendar Year 2015	During Calendar Year 2016	During Calendar Year 2017
<b>Total Patient Encounters</b>	22,897	5,144	7,128	1,896	3,970
<b>Model 1 Hospital Patient Encounters</b>	16,134	4,578	5,849	706	2,043
<b>Model 2 Hospital Patient Encounters</b>	6,763	566	1,279	1,190	1,927
<b>Total Number of Assessments</b> (Billed Assessments for Model 1 Hospitals + Number of Patient Encounters for Model 2 Hospitals)	33,149	8,130	13,573	1,942	4,347



	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
<b>Total Patient Encounters</b>	22,897	916	1,096	967	991
<b>Model 1 Hospital Patient Encounters</b>	16,134	463	587	486	507
<b>Model 2 Hospital Patient Encounters</b>	6,763	453	509	481	484
<b>Total Number of Assessments</b> (Billed Assessments for Model 1 Hospitals + Number of Patient Encounters for Model 2 Hospitals)	33,149	993	1,189	1,049	1,116



	Since project inception in November 2013	During Quarter Jan-Mar 2018	During Quarter Apr-Jun 2018	During Quarter Jul-Sep 2018	During Quarter Oct-Dec 2018
<b>Total Patient Encounters</b>	22,897	1,238	1,287	1,292	
<b>Model 1 Hospital Patient Encounters</b>	16,134	641	677	698	
<b>Model 2 Hospital Patient Encounters</b>	6,763	597	610	594	
<b>Total Number of Assessments</b> (Billed Assessments for Model 1 Hospitals + Number of Patient Encounters for Model 2 Hospitals)	33,149	1,393	1,448	1,442	

# NC-STeP Benchmarks



Goals	Values Reached		
Cumulative Target to be reached by (06/30/2019)	Value Reached as of most recent previous quarter (06/30/2018)	Value Reached as of this reporting quarter (09/30/2018)	Year-to-Date Total with % of the Yearly Target (09/30/2018)
<b>Number of IVCs</b>	2,817	817	784 28% of Yearly Target
<b>Number of IVCs Overturned</b>	1,197	358	342 28% of Yearly Target
<b>Total Number of Assessments</b> (Billed assessments for Model 1 hospitals + Number of patient encounters for Model 2 hospitals.)	5,086	1,448	1,442 28% of Yearly Target



# NC-STeP Status as of September 30, 2018

EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
1. The number of full-time equivalent (FTE) positions supported by these contracts	2.3 FTEs	3.65 FTEs	2.75 FTEs
2. The number of overturned involuntary commitments <small>(inpatient admission prevented)</small>	835	1,197	342 in this quarter YTD Total 342 Cumulative total since program inception 4,362
3. The number of participating consultant providers	47	48	47



# NC-STeP Status as of September 30, 2018

EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
4. The number of telepsychiatry assessments conducted.	3,533	5,086	1,442 in this quarter YTD Total 1,442 Cumulative total since program inception 33,149
5. The number of telepsychiatry referring sites	53	54	60 53 Live
6. The reports of involuntary commitments to enrolled hospitals	1,996	2,817	784 in this quarter YTD Total 784 Cumulative total since program inception 13,715

# NC-STeP Status as of September 30, 2018

EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
7. The average (mean) Length of Stay for all patients with a primary mental health diagnosis across all dispositions.	56.8 hours	55 hours	QTD = 51.6  Median = 28.1
8. The rate of "satisfied" or "strongly satisfied" among emergency department staff participating in NC-STeP.	73%	73%	56%

# NC-STeP Status as of September 30, 2018

EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
9. The rate of "satisfied" or "strongly satisfied" among hospital CEOs/COOs participating in NC-STeP.	85%	85%	100%
10. The rate of "satisfied" or "strongly satisfied" among consulting (hub) providers participating in NC-STeP.	83%	85%	83.5%

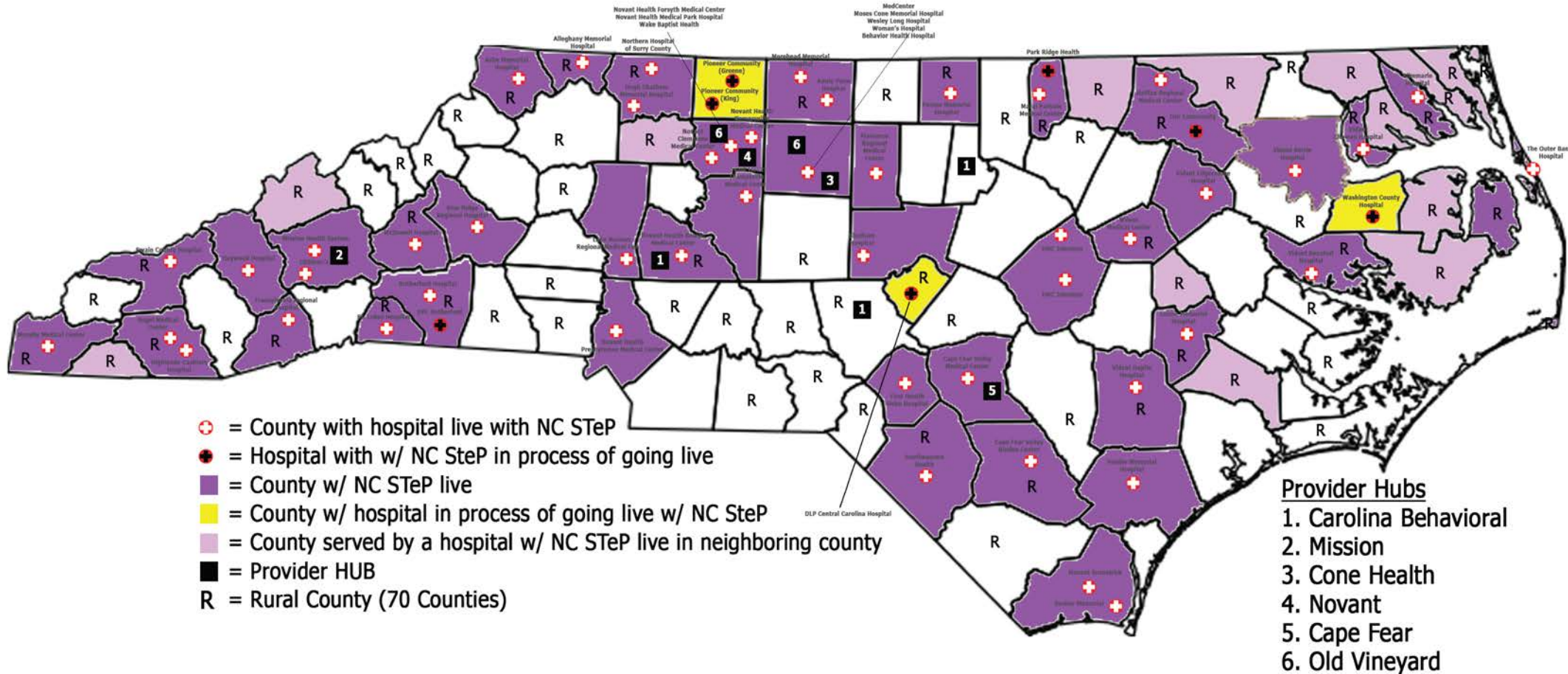
# NC-STeP Status as of September 30, 2018

EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
11. The rate of "satisfied" or "strongly satisfied" among emergency department physicians participating in the statewide telepsychiatry program.	60%	68%	60%
12. 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	0.27:1.00 YTD Average 0.27:1.00 Cumulative average since program inception 0.39:1.00

# NC-STeP Status as of September 30, 2018

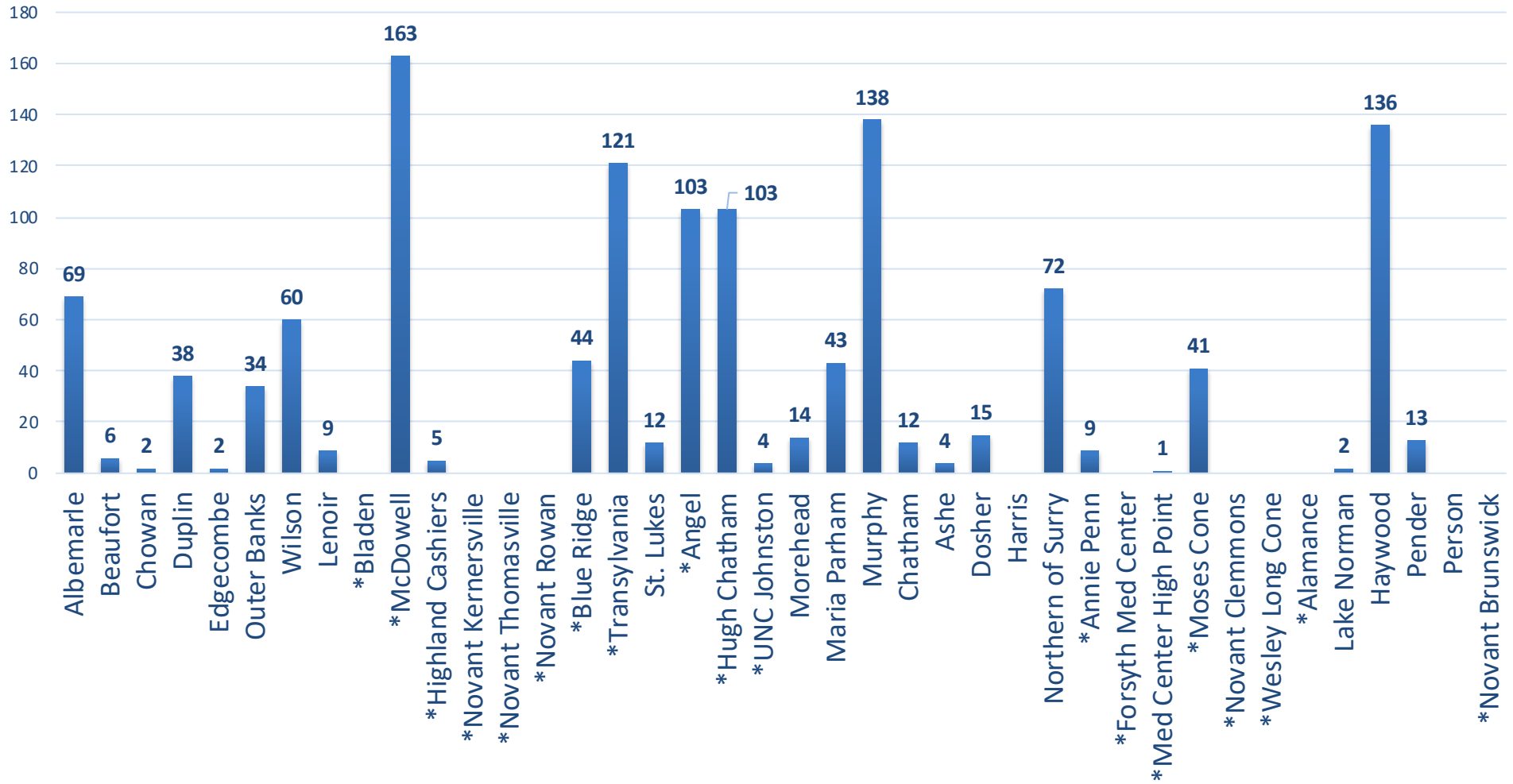
EVALUATION CRITERIA	BASELINE VALUES/MEASURES AS REPORTED ON 03/31/2018	TARGET TO BE REACHED BY 06/30/2019	VALUES/MEASURES REACHED AS OF 09/30/2018
<p>13. Cumulative return on investment to state psychiatric facilities through overturned involuntary commitments.</p> <p>(inpatient admission prevented)</p>	<p>\$4,509,000</p>	<p>\$6,463,800</p>	<p>\$1,846,800 in this quarter            YTD \$1,846,800            Cumulative total since program inception            \$23,554,800</p>

# NC-STeP Status as of September 30, 2018



# Number of NC-SteP Patients by Hospital

July - September 2018



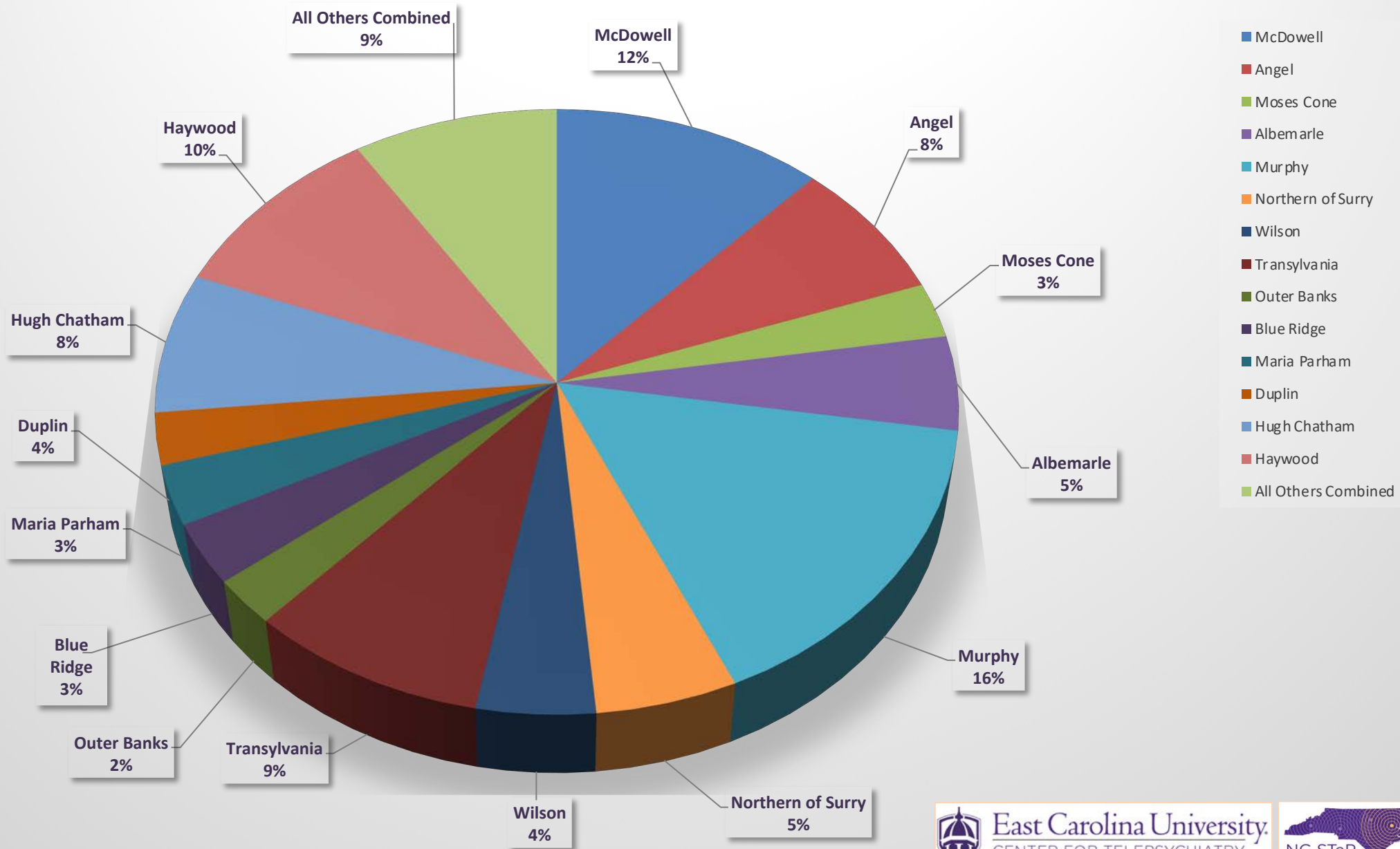
\* Indicates Model 2 hospitals



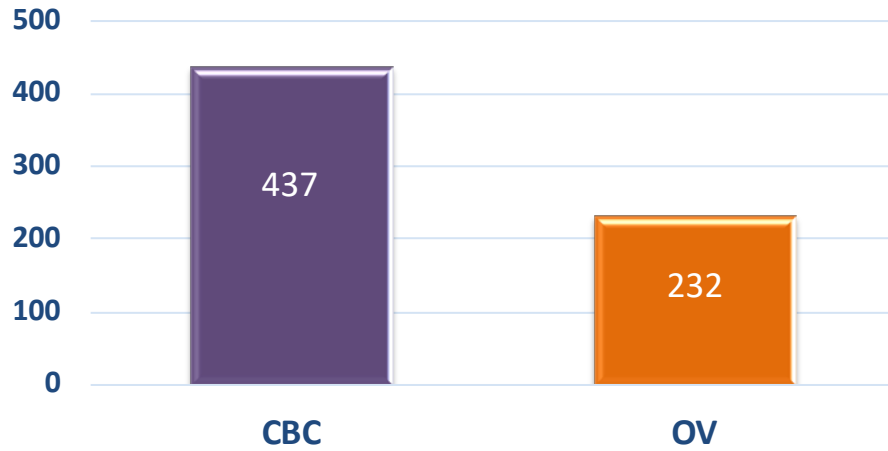


# Percent of Use by Hospital Jul-Sep 2018

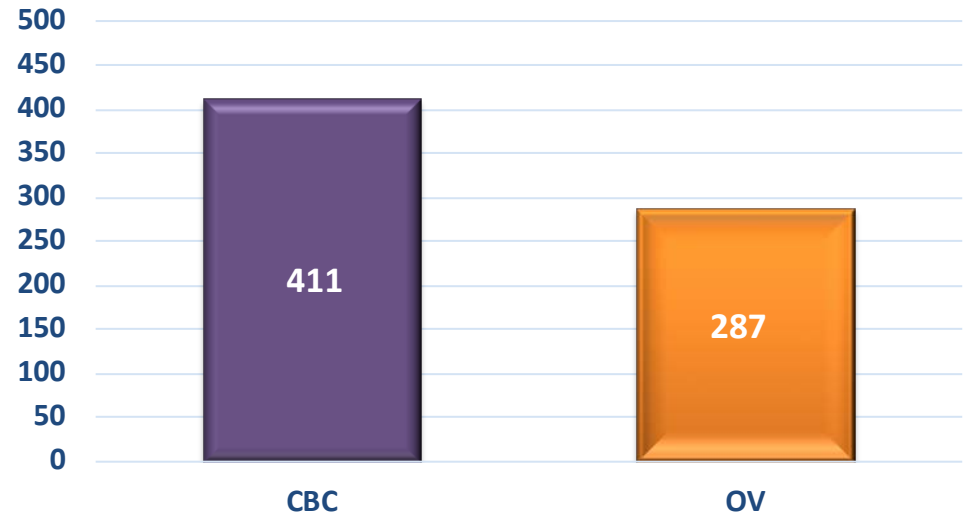
(based on number of patient encounters)



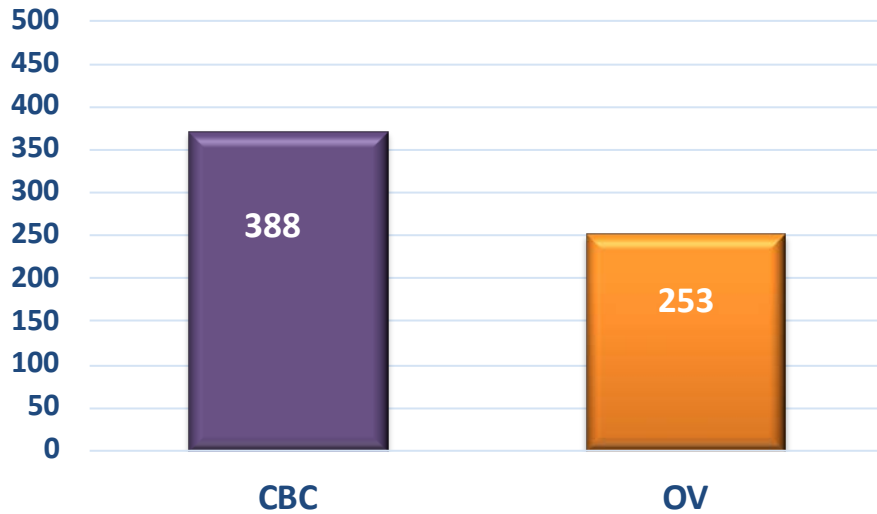
**April - June 2018**



**July -September 2018**



**January - March 2018**



**Number of Patients  
by Provider  
(Model 1)**



### Jul-Sep 2018



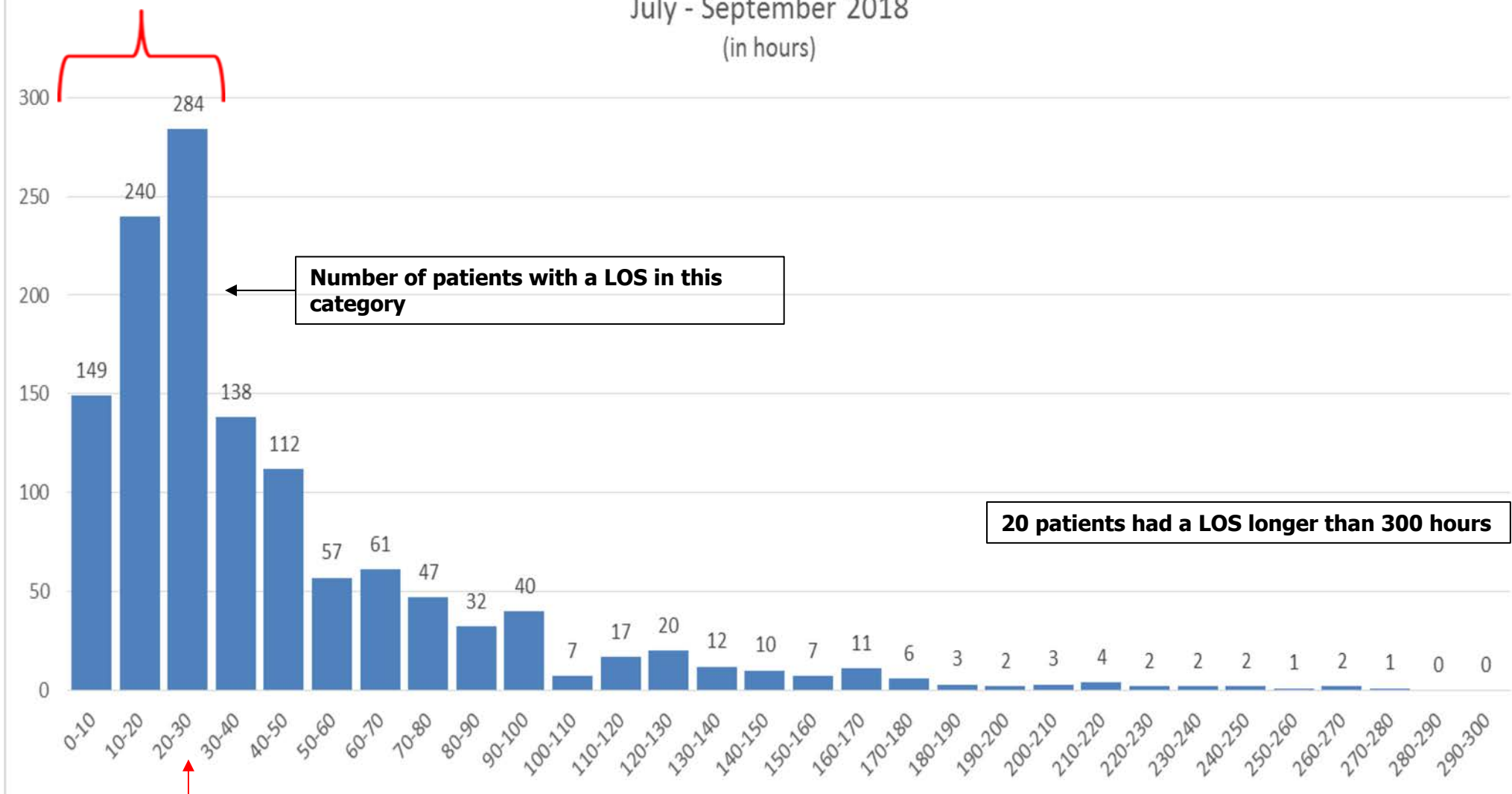
## Number of Patients by Model

### April - June 2018



**52% percent of patients had a LOS of 30 hours or less**

### Number of NC-STeP Patients by LOS Category July - September 2018 (in hours)

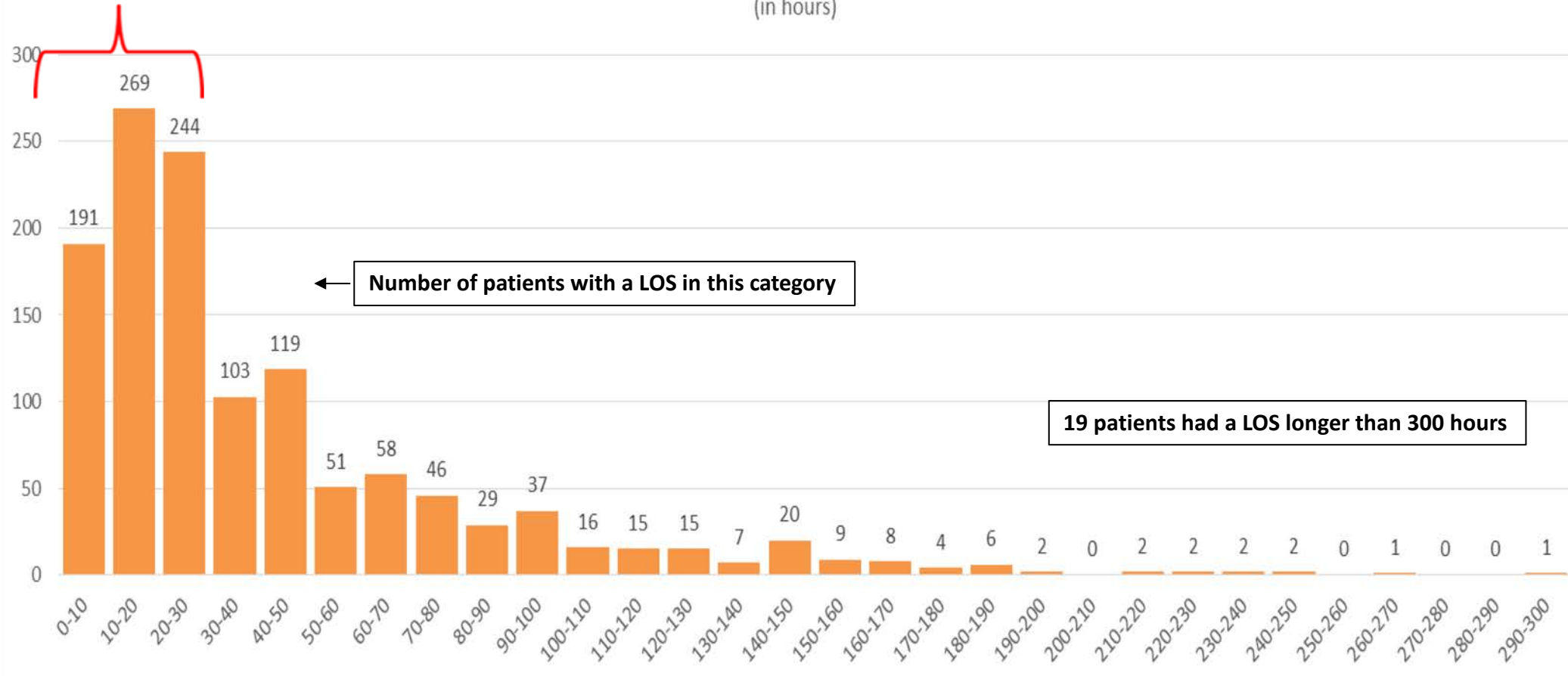


**Median Length of Stay for Jul-Sep 2018 = 28.1 Hours**



# Number of NC-STEP Patients by LOS Category April - June 2018 (in hours)

**55% percent of patients had a LOS of 30 hours or less**

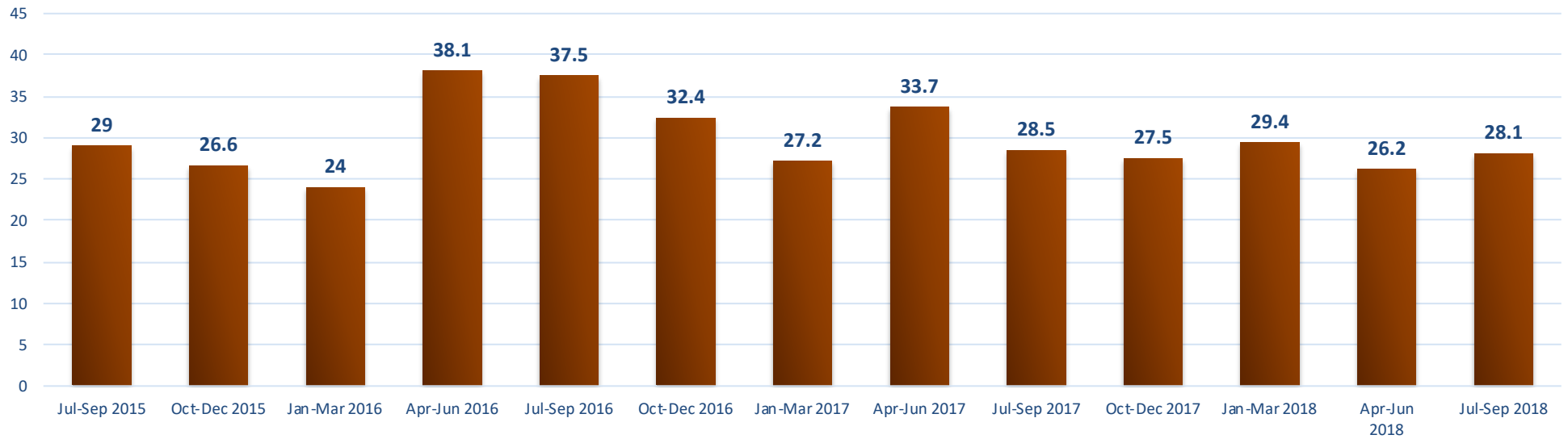


Number of patients with a LOS in this category

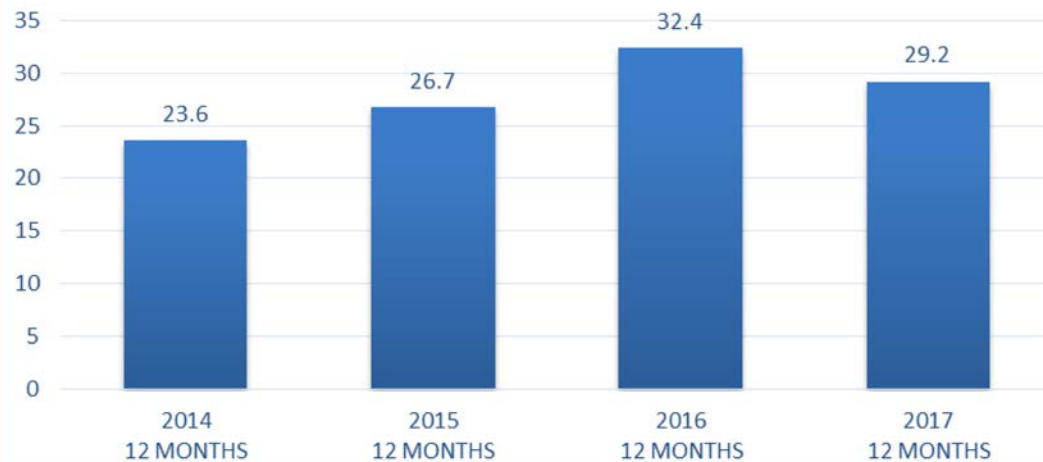
19 patients had a LOS longer than 300 hours

**Median Length of Stay for Apr-Jun 2018 = 25.7 hours**

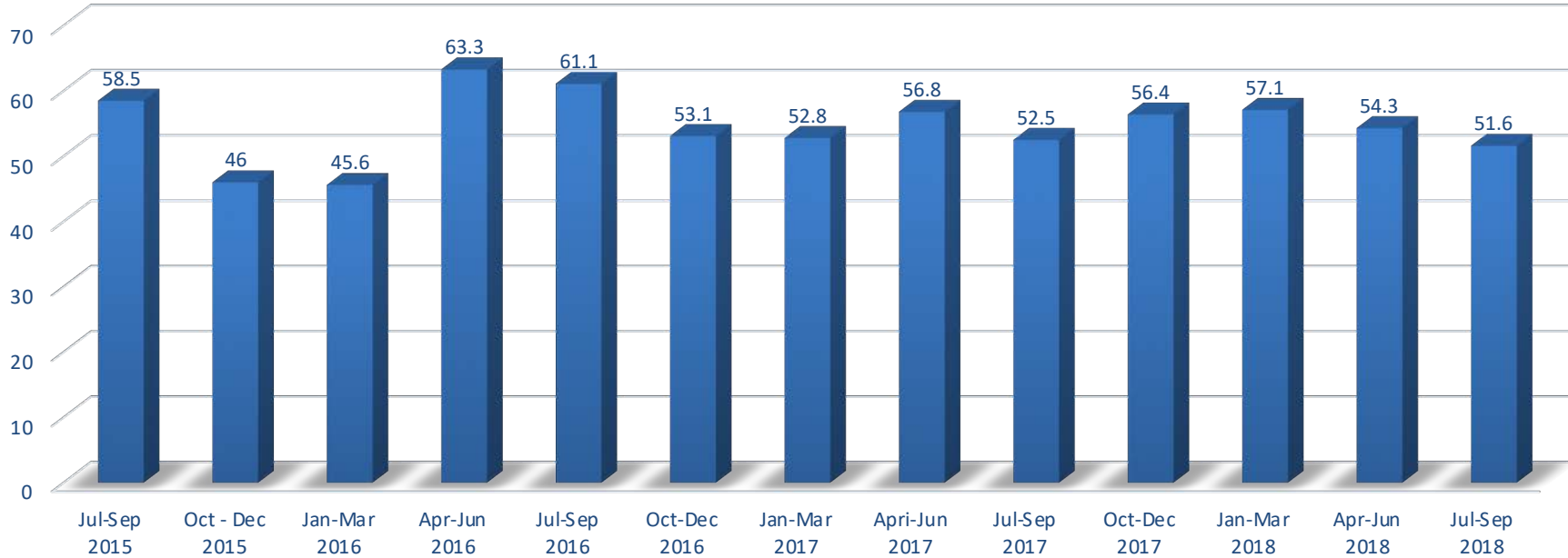
## Median Length of Stay by Quarter (in hours)



## Median Length of Stay by Year (in hours)



## Average Length of Stay by Quarter for Hospitals Participating in NC-Step (in hours)



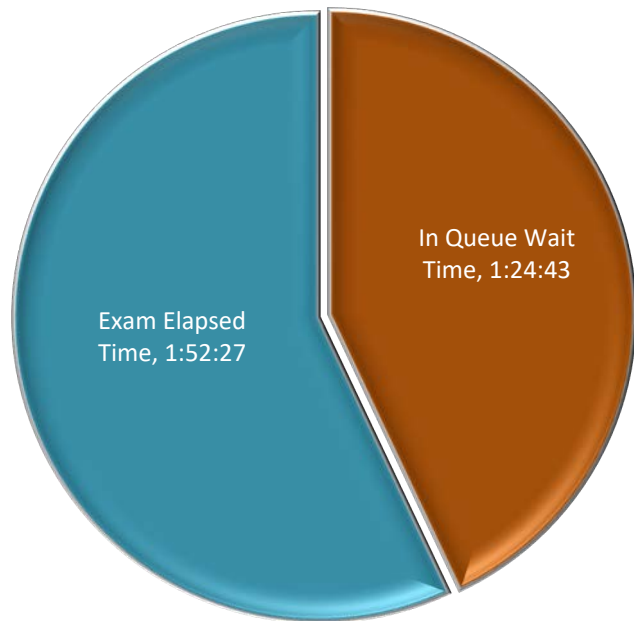
## Average Length of Stay by Year (in hours)





# Consult Elapsed Time: April – June 2018

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



 In Queue Wait Time     Exam Elapsed Time

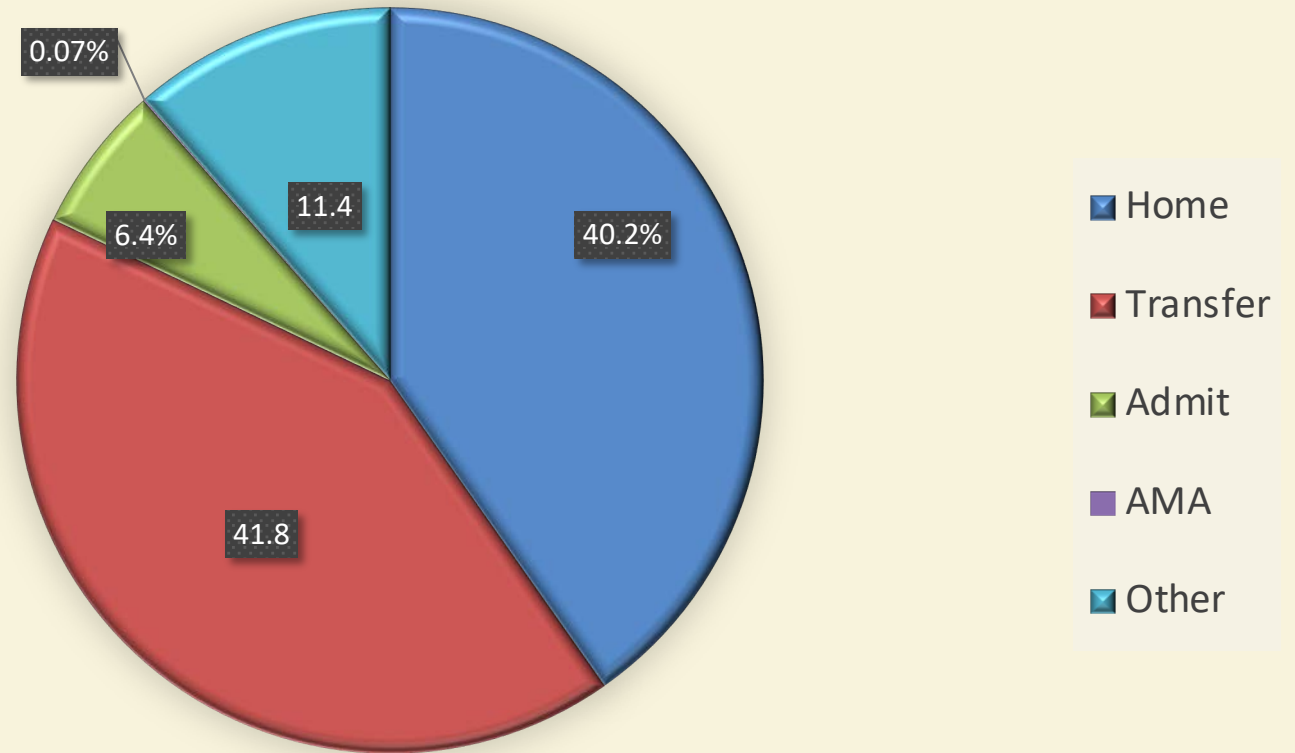
### Comparison of CBC and OV

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



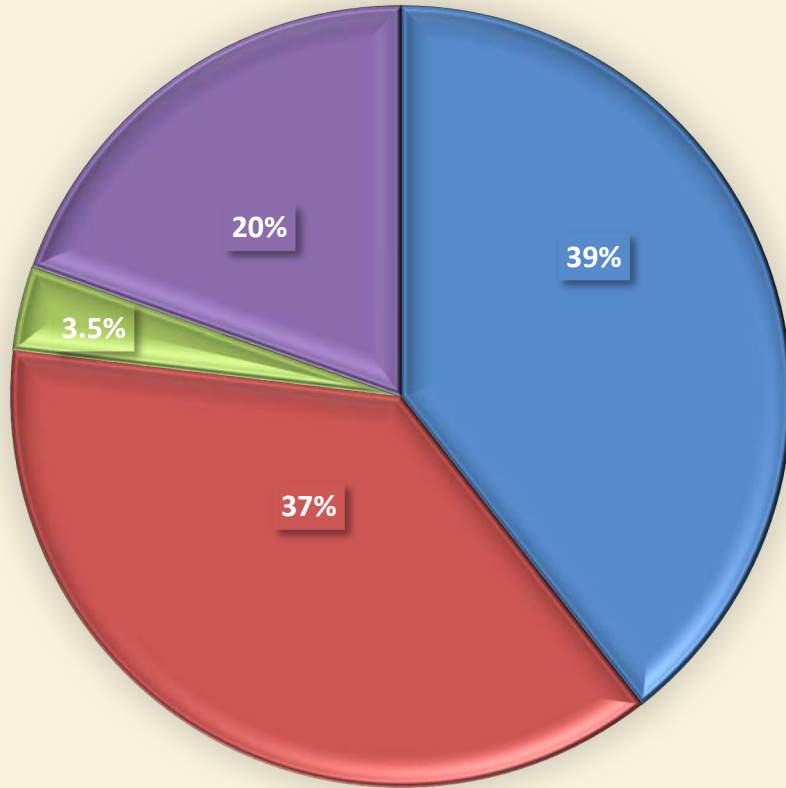
# Percent of Patients by Discharge Disposition

## Jul-Sep 2018

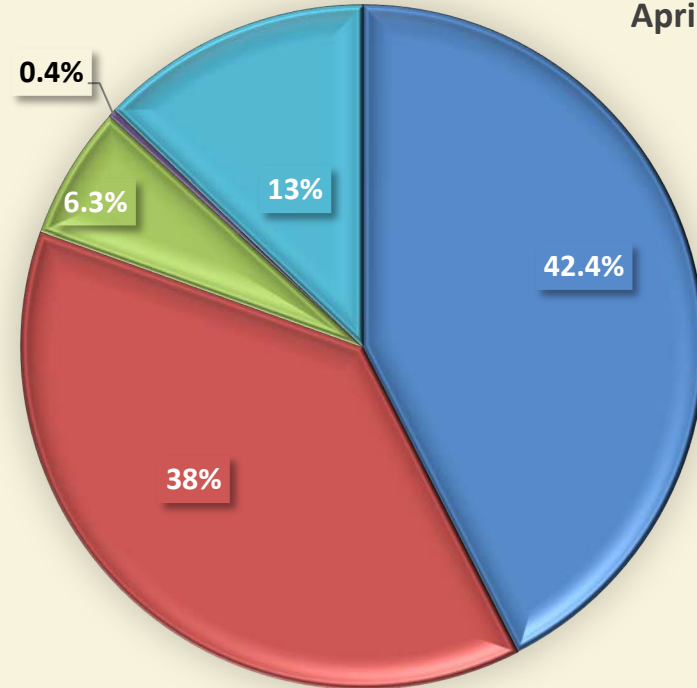


# Percent of Patients by Discharge Disposition

January – March 2018



April - June 2018



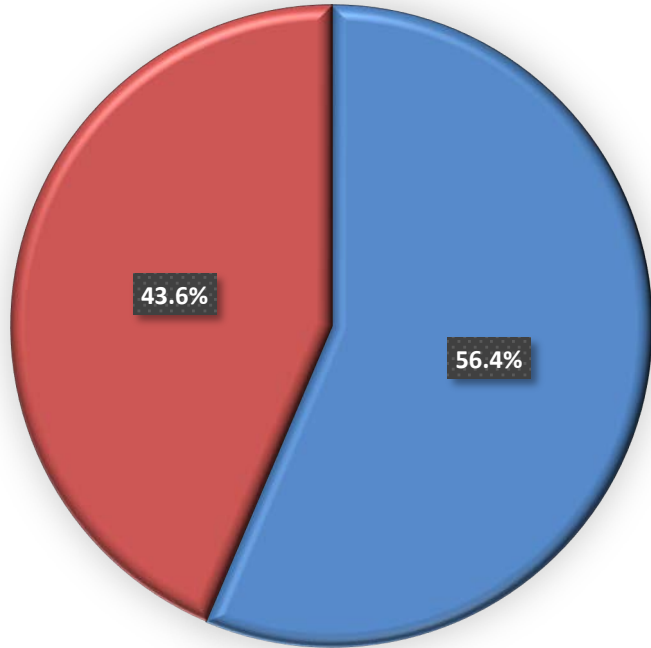
- Home
- Transfer
- Admit
- AMA
- Other

- Home
- Transfer
- Admit
- Other

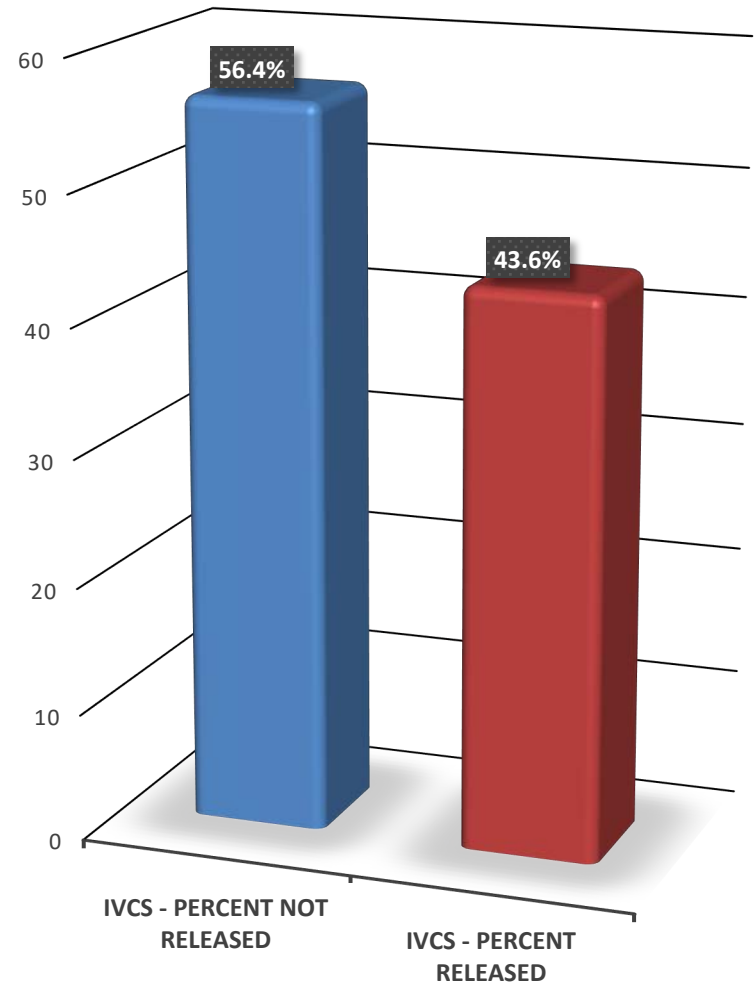
Note: Data for Cone hospitals did not include a discharge disposition so it was coded as "Other," so the 13% for "Other" is higher than it otherwise would be.

# IVCs - By Release Status

Jul-Sep 2018

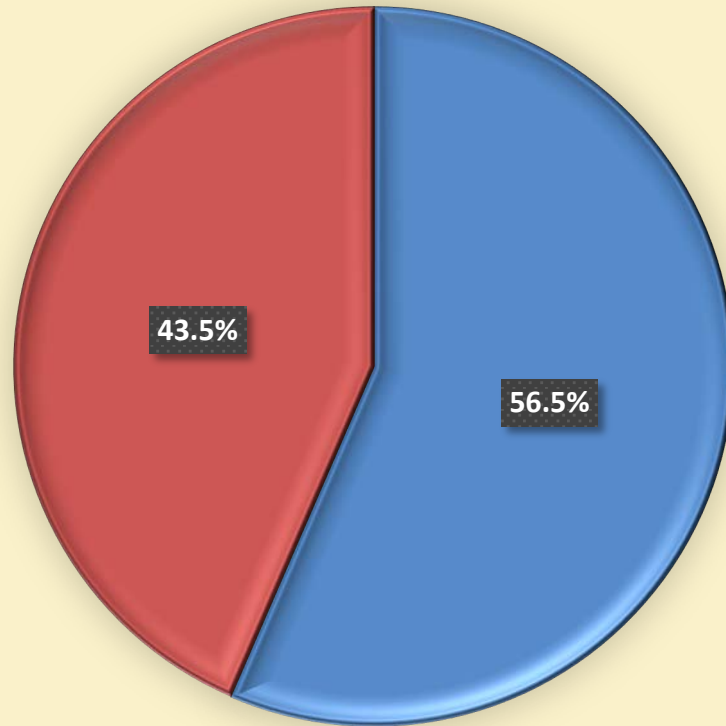


- IVCs - percent not released
- IVCs - percent released



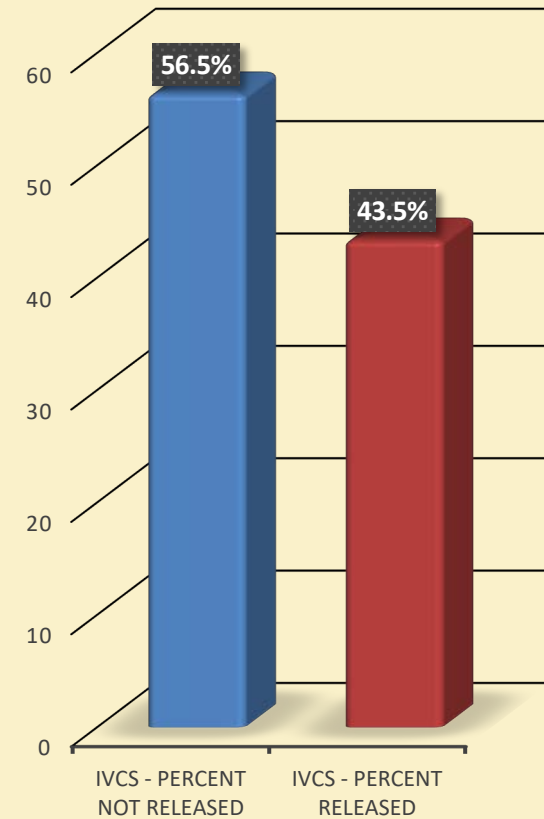
# IVCs - By Release Status

April - June 2018



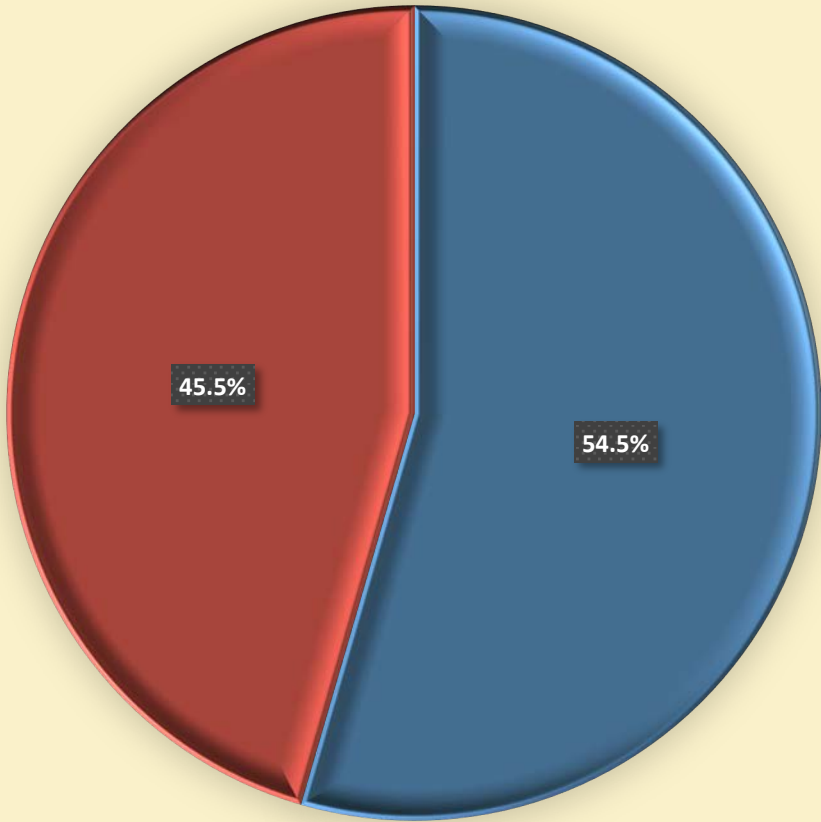
■ IVCs - percent not released

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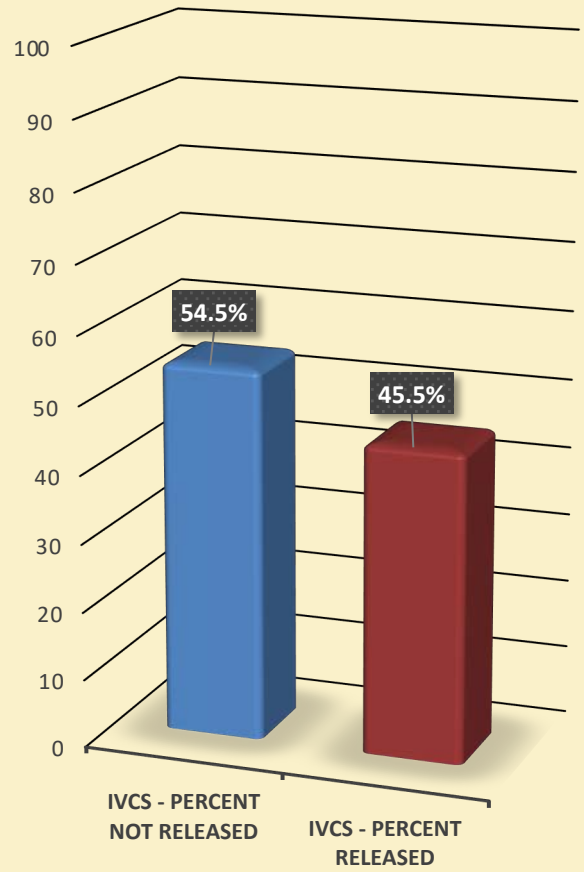


# IVCs - By Release Status

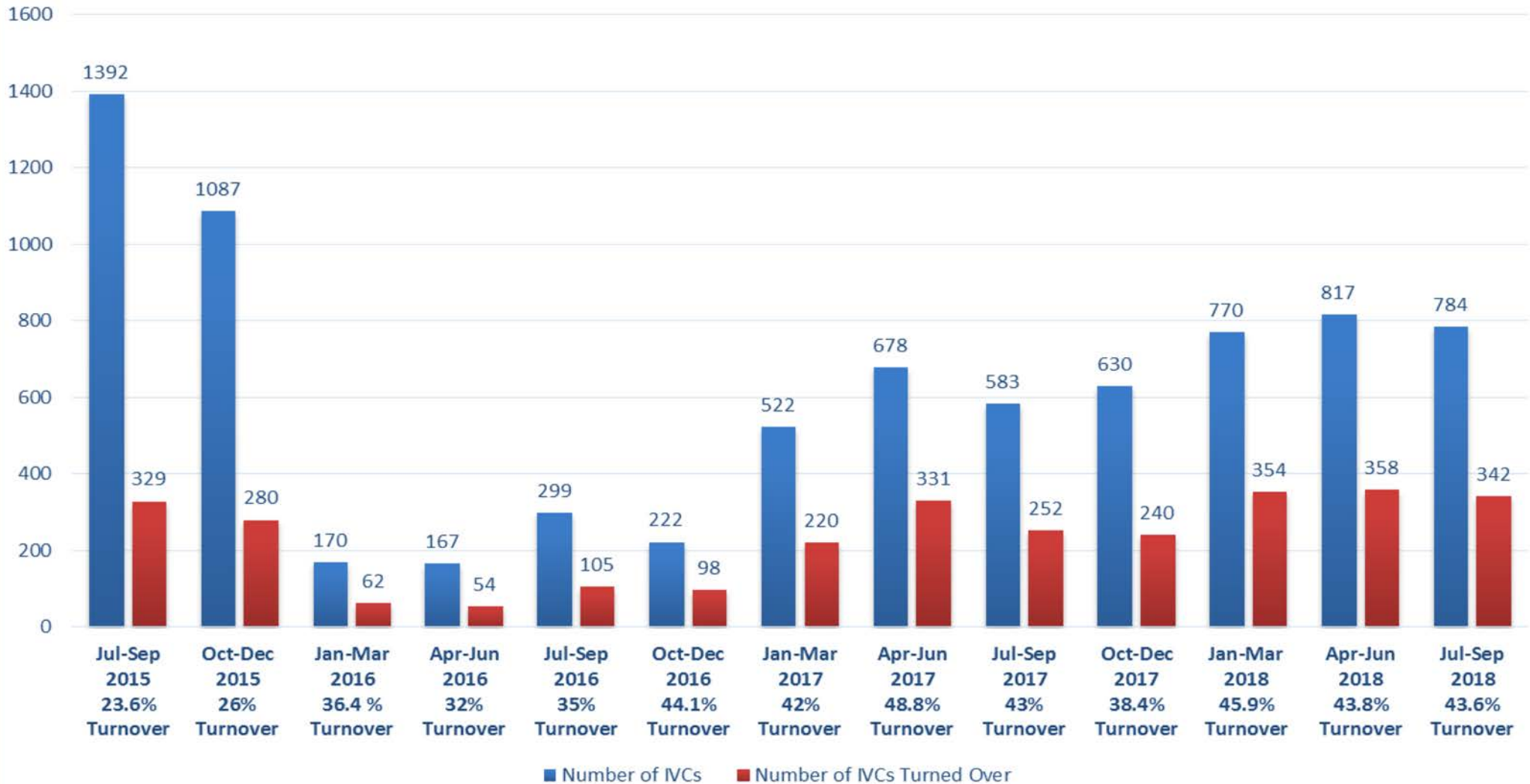
January - March 2018



- IVCs - percent not released
- IVCs - percent released



## Number of IVCs and IVCs Turned Over by Quarter





# Are Overturned IVCs Really the Hospitalizations Avoided?

IVCs		April 1, 2018 - June 30, 2018 Model 1 and Model 2	
Total IVCs			808
Overturned IVCs			352
Overturned IVCs by Disposition Summary Code		Number (percent of overturned IVCs)	
Admit		8	(2.2%)
AMA		2	(0.5%)
<b>Home</b>		<b>301</b>	<b>(85.5%)</b>
Other		26	(7.3%)
Transfer		15	(4.3%)

# Are Overturned IVCs Really the Hospitalizations Avoided?

## Model 1 IVCs (4/1/2018 through 6/30/2018)

Total IVCs	506
Overturned IVCs	269

Overturned IVCs by Disposition Summary Code	Number (% overturned IVCs)	by Full Disposition	Number
Admit	8 (2.9%)	admitted to psychiatric ward of the same general hospital	8
AMA	2 (0.7%)	left after receiving medical advice against leaving	2
Home	232 (86.2%)	discharged to home or self care, routine discharge	232
Other	15 (5.6%)	other	10
		transferred to court, law enforcement, Jail	5
Transfer	12 (4.5%)	transfer to another type of institution	1
		transfer to group home	4
		transfer to intermediate care facility	1
		transfer to psychiatric unit of another general hospital	3
		transfer/discharge to skilled nursing facility	2
		transfer to substance abuse facility other than state ADATC	1



# Satisfaction Surveys

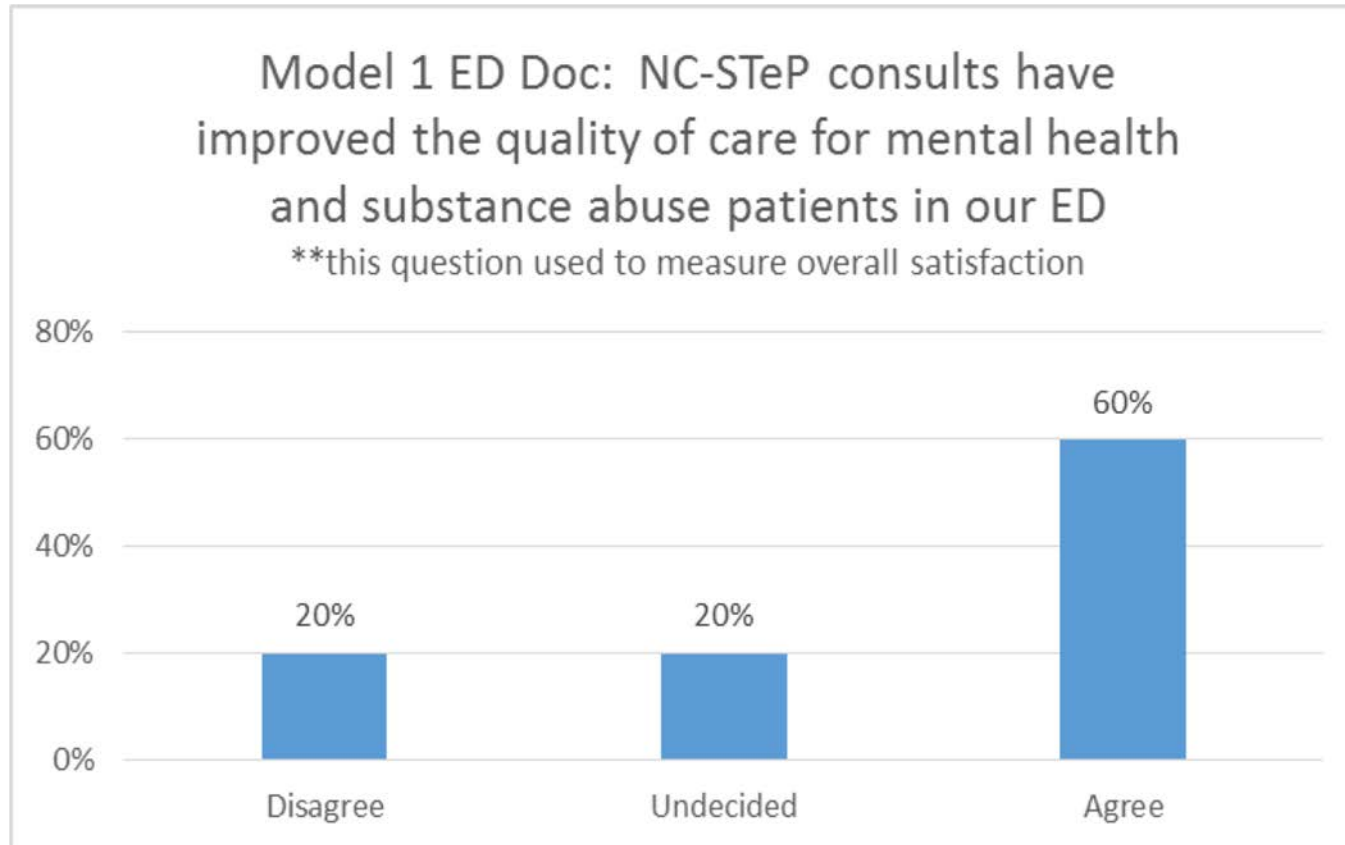
The following number of individuals from each group responded

Group	Responders
Model 1 ED Physicians	5
Model 1 ED Staff	36
Model 1 Provider Psychiatrists	3
Model 1 Psychiatric Intake Specialists	2
Model 1 Hospital CEOs	8
Model 2 ED Physicians	0
Model 2 ED Staff	1
Model 2 Provider Psychiatrists	1
Model 2 Hospital CEOs	0

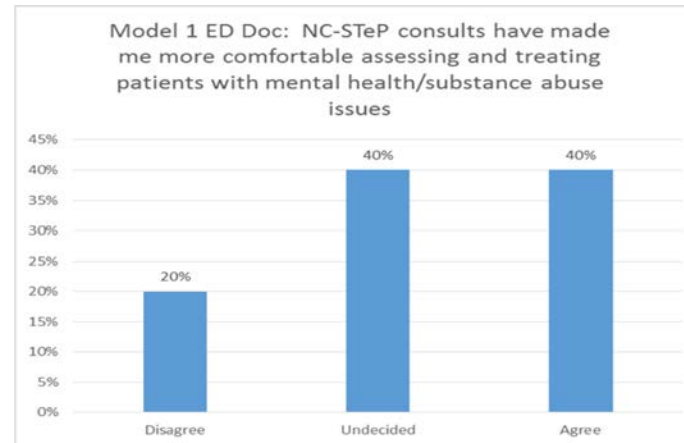
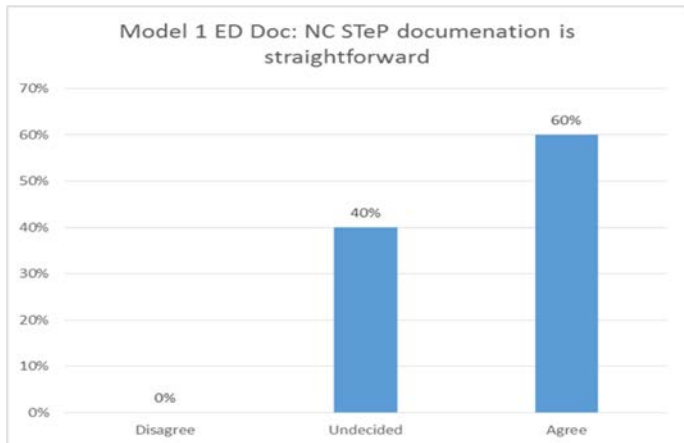
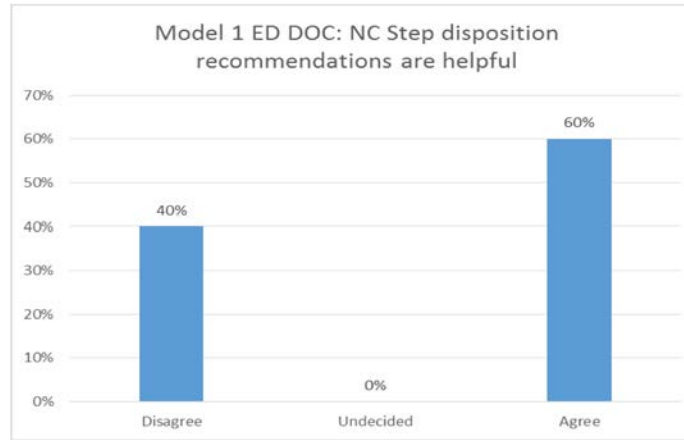
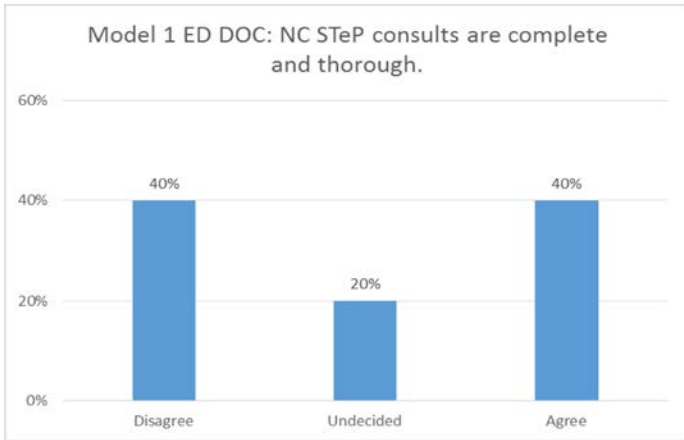
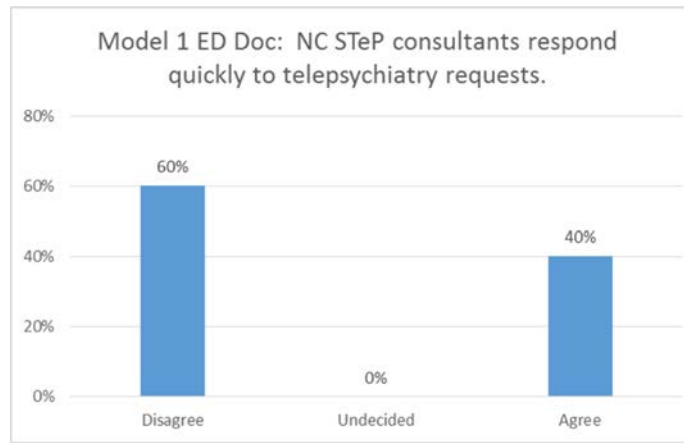
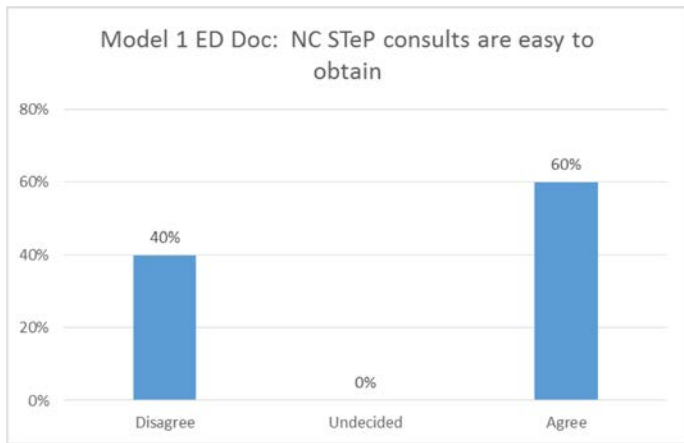
For each group, one summary question is selected for an overall “satisfaction” rate. The overall satisfaction rate is 65%.

# Satisfaction Survey: Model 1 Hospital ED Physicians

60% report that NC-STeP consults have improved the quality of care for mental health/substance abuse patients in our ED



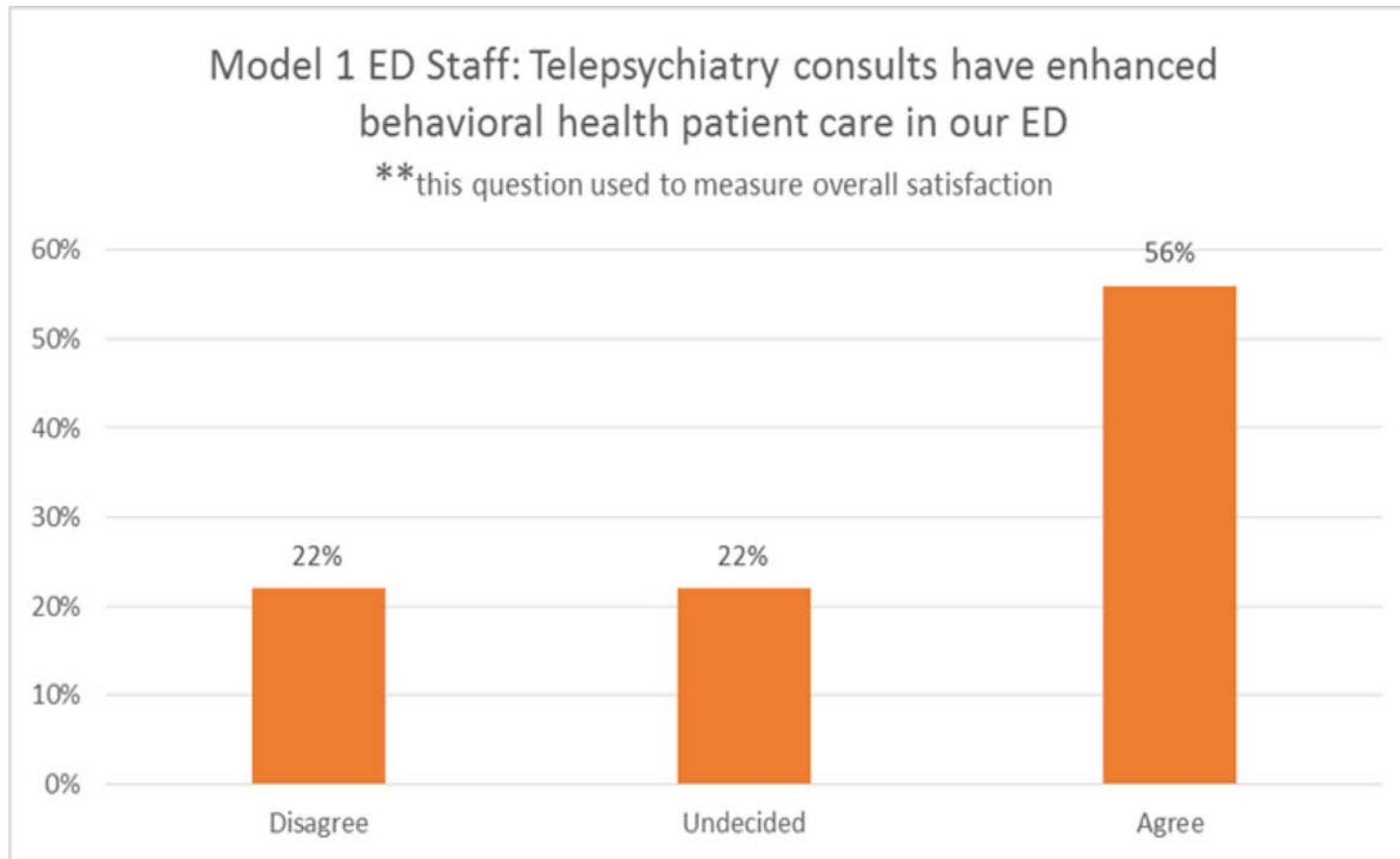
October 18, 2018



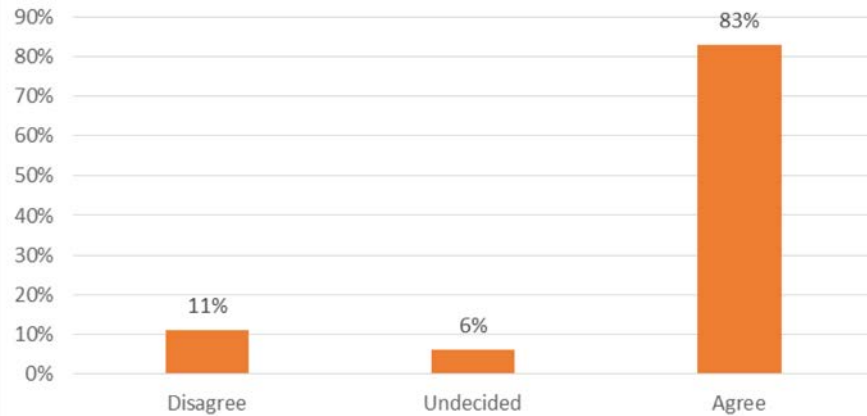
- 60% report that the NC-STeP consults are easy to obtain.
- 40% report that the NC-STeP consultants respond quickly to telepsych requests.
- 40% report that evaluations are complete and thorough.
- 60% report that NC-STeP disposition recommendations are helpful.
- 60% report that NC-STeP documentation is straightforward.
- 40% report that NC-STeP consults have made me more comfortable assessing and treating patients with mental health/substance abuse issues, 40% are undecided, 20% disagree.

# Satisfaction Survey: Model 1 Hospital ED Staff

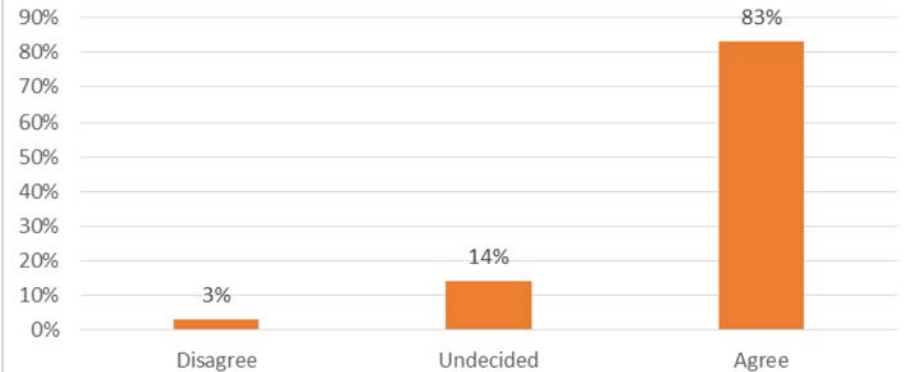
56% agreed with the statement that the telepsychiatry consults have enhanced behavioral health patient care in our ED



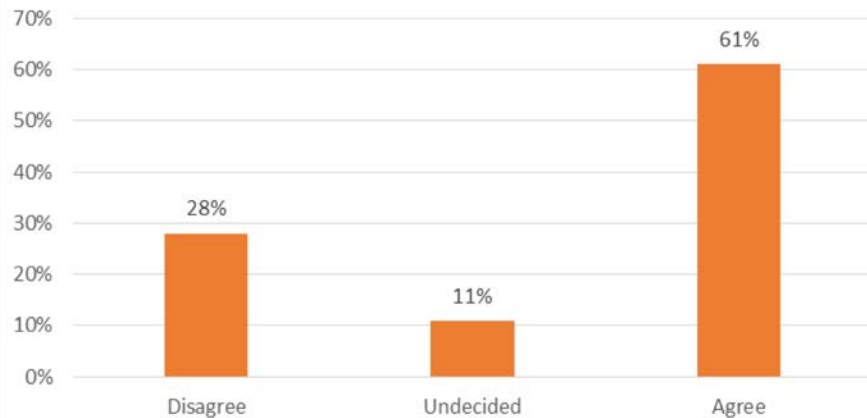
Model 1 ED Staff: The telepsychiatry cart is easy to use



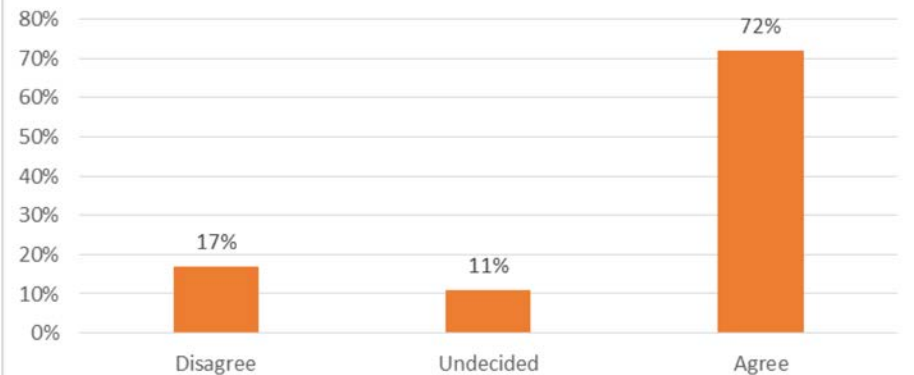
Model 1 ED Staff: I received adequate training/instruction preparing me to use the telepsychiatry cart



Model 1 ED Staff: The telepsychiatry cart is reliable and seldom goes down.

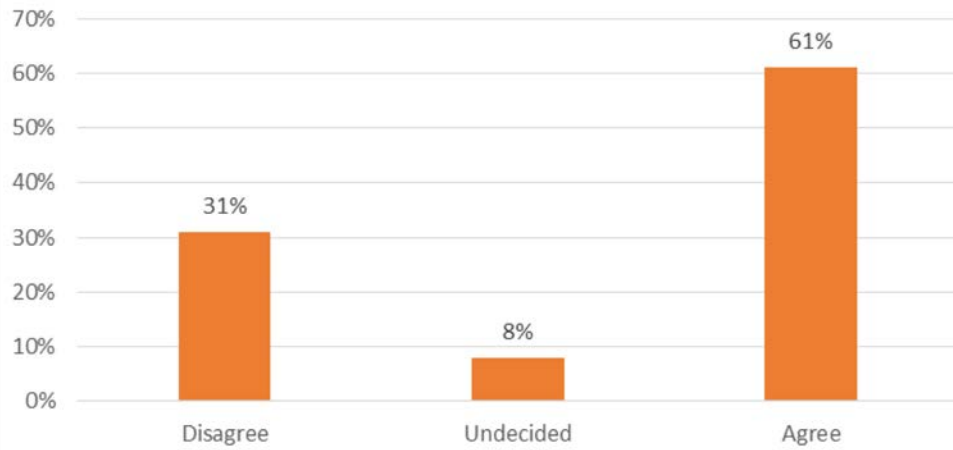


Model 1 ED Staff: Patients appear comfortable interacting with the psychiatric providers via the telepsychiatry cart.

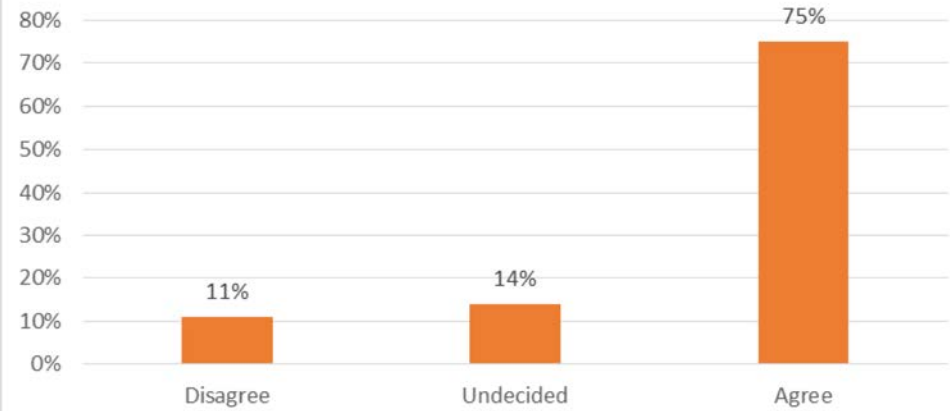




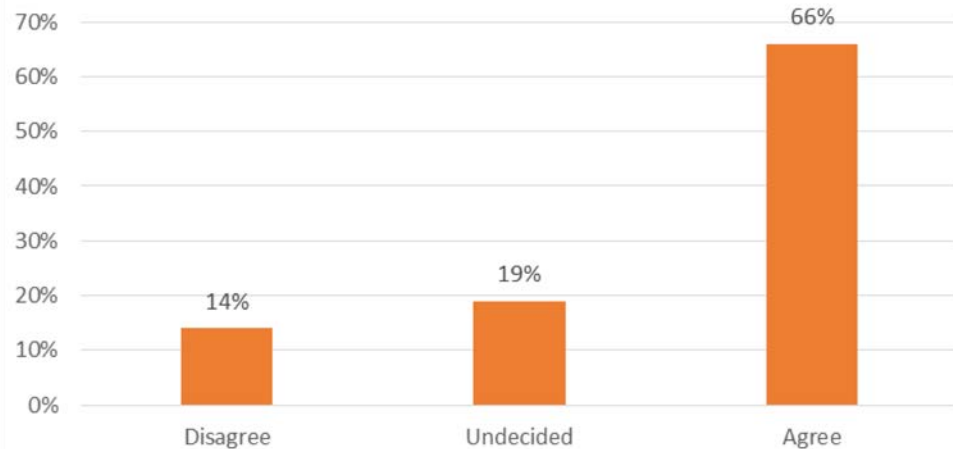
Model 1 ED Staff: The NC-STeP portal is easy to use.



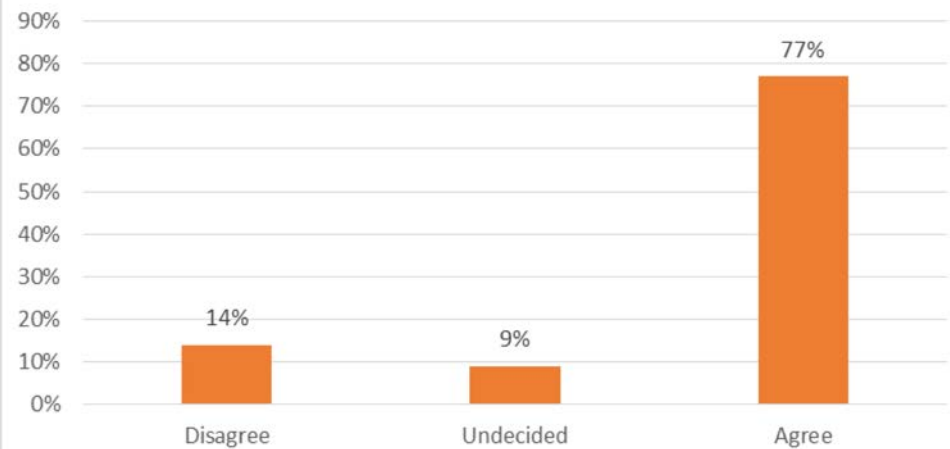
Model 1 ED Staff: The training and resources provided adequately prepared me to use the NC-STeP portal.



Model 1 ED Staff: The NC-STeP portal is reliable and unscheduled downtime is rare.



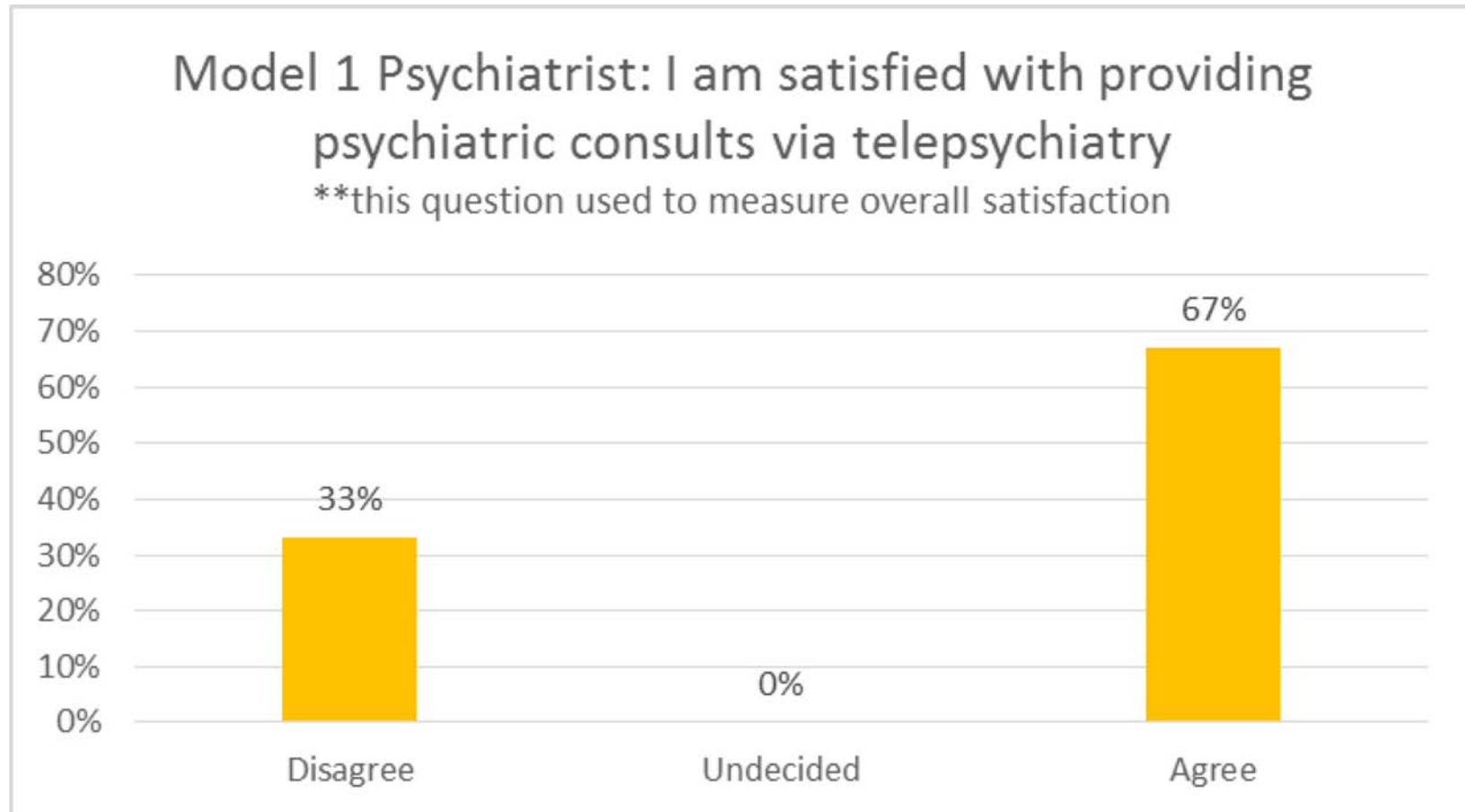
Model 1 ED Staff: The level of technical expertise provided by NC-STeP support is adequate.

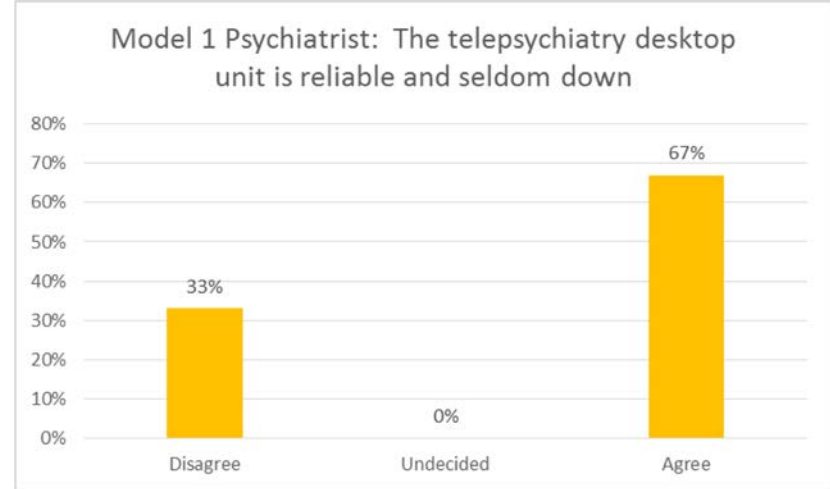
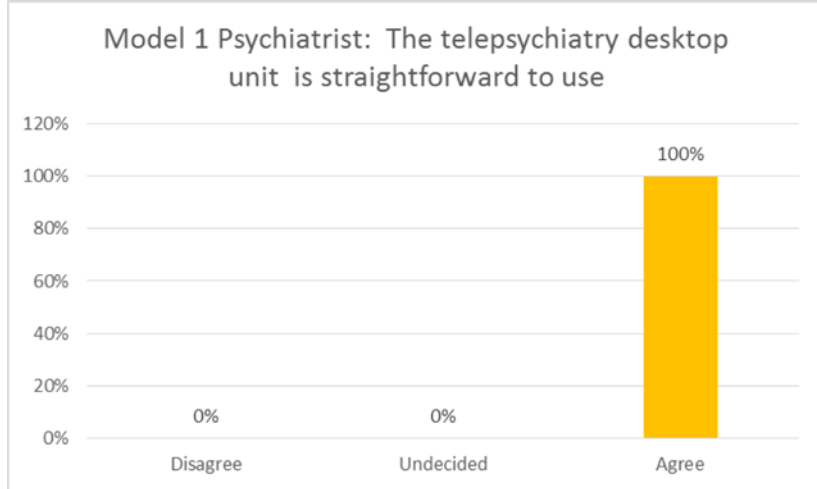
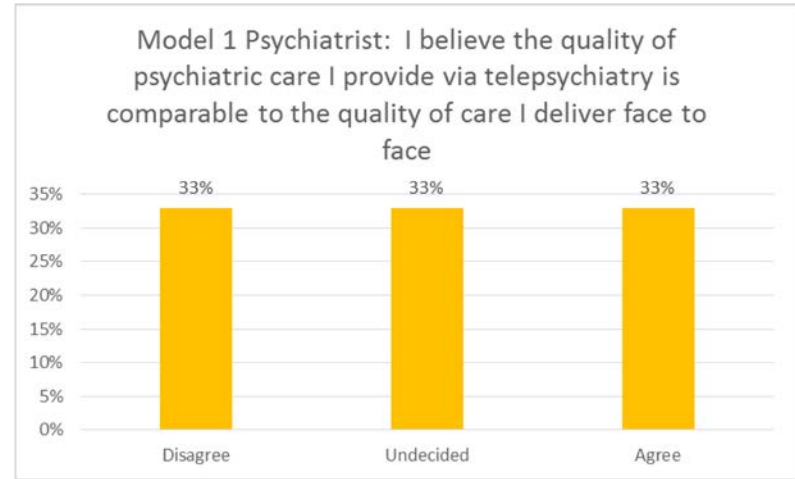
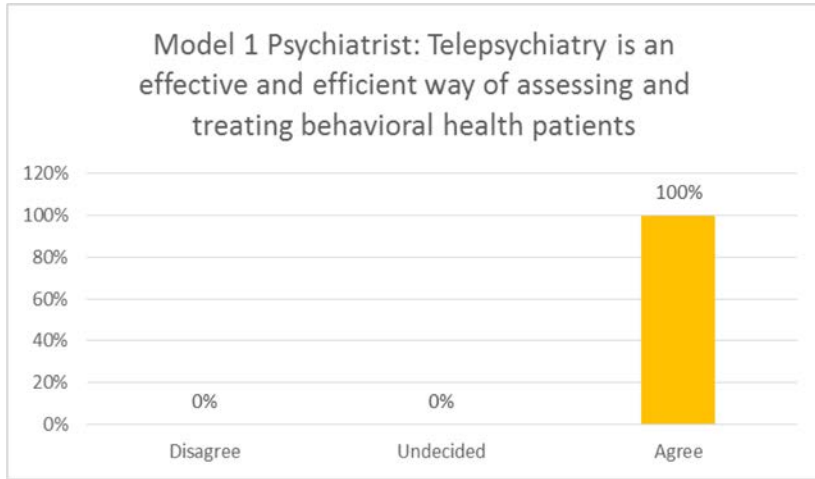


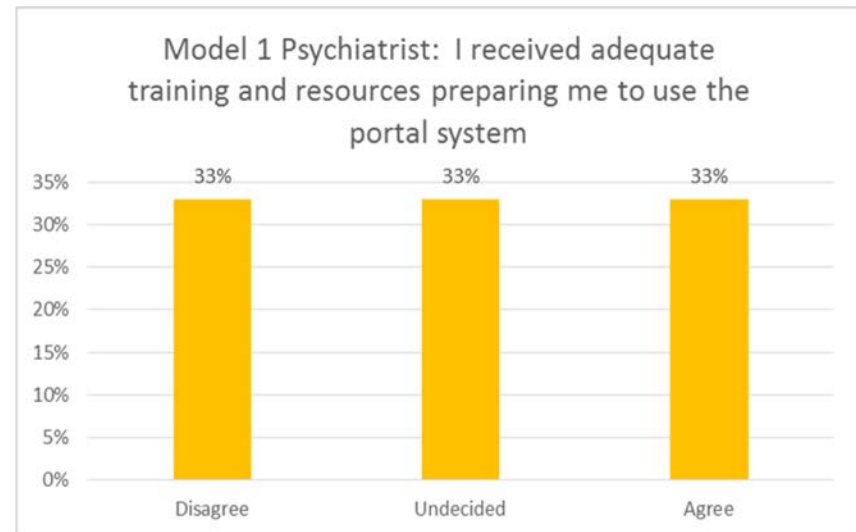
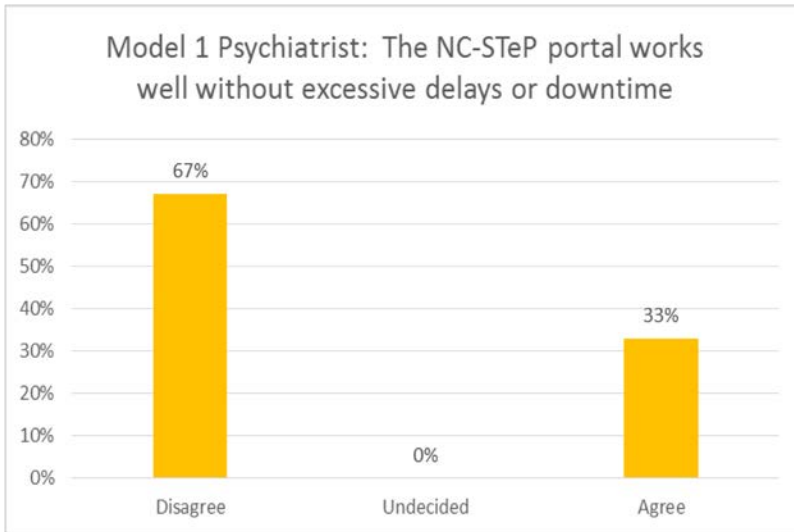
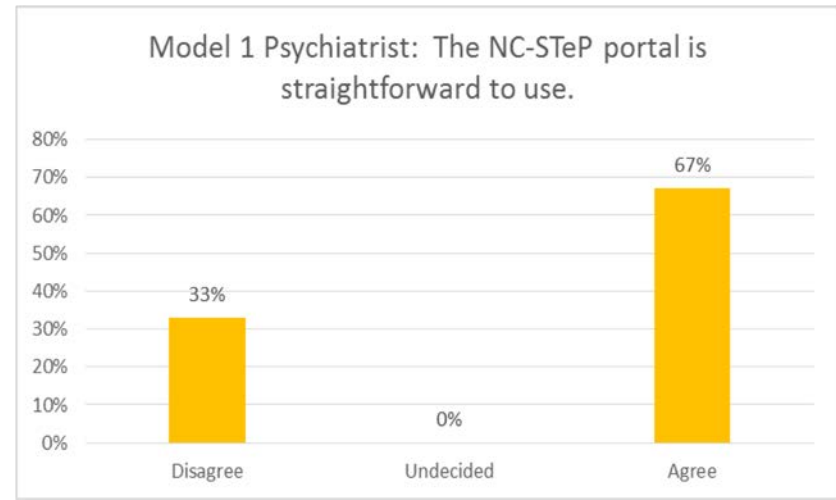
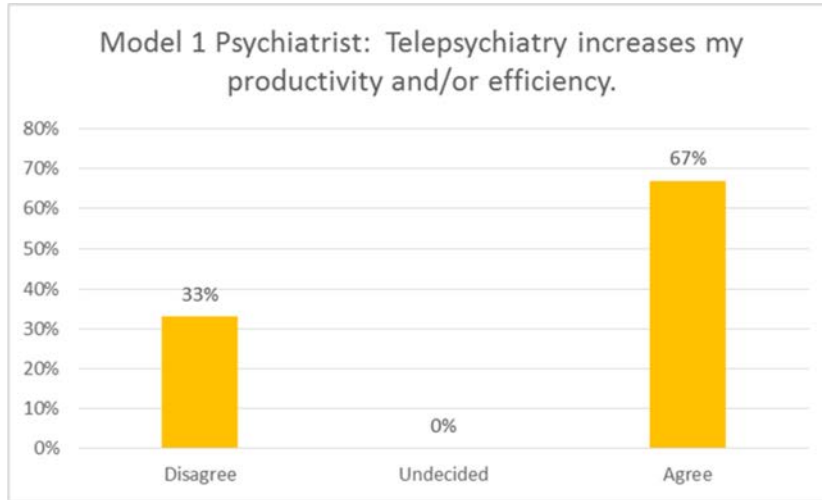
# Satisfaction Survey: Model 1 Provider Psychiatrist

67% agreed with the statement

“I am satisfied with providing psychiatric consults via telepsychiatry”

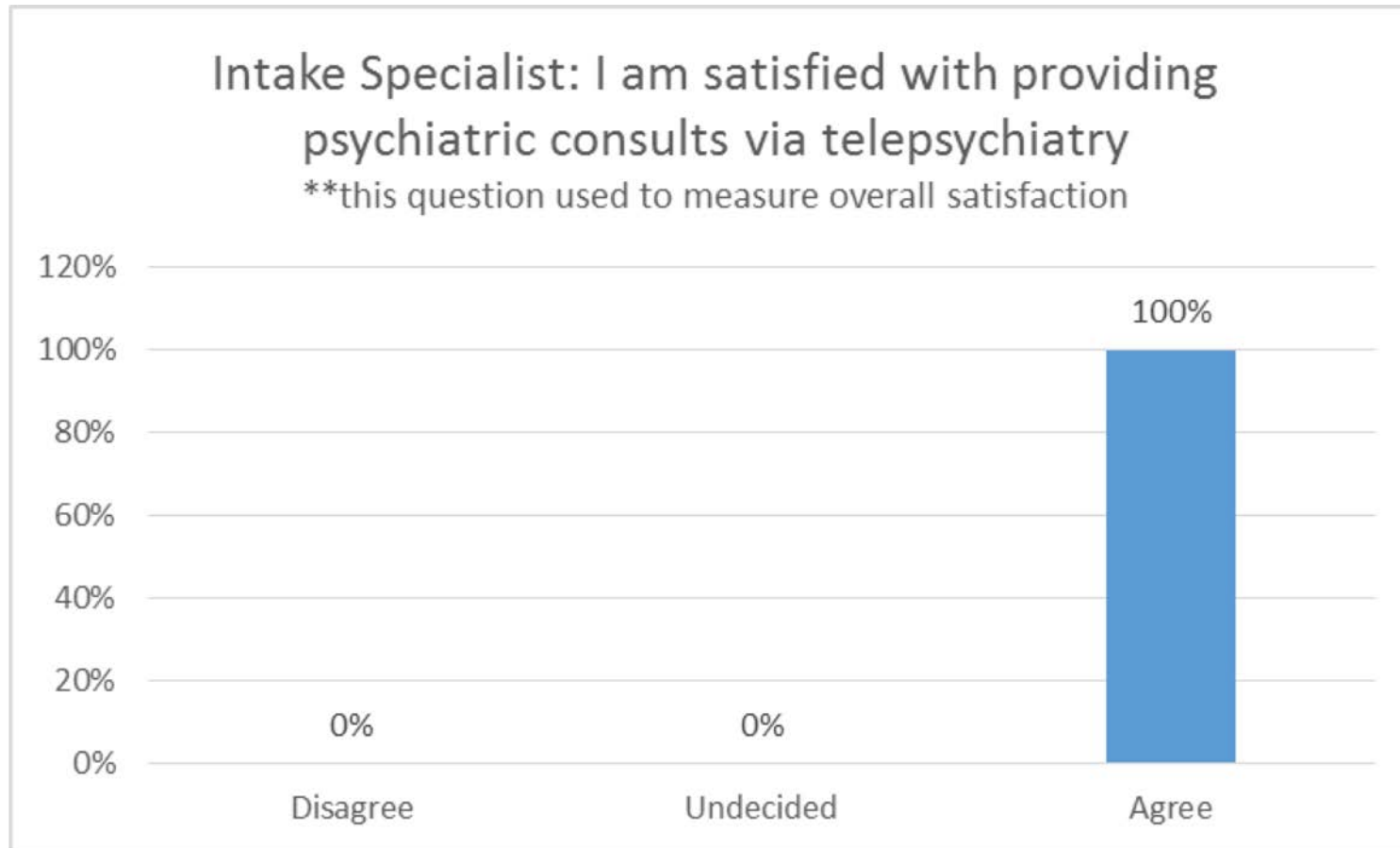




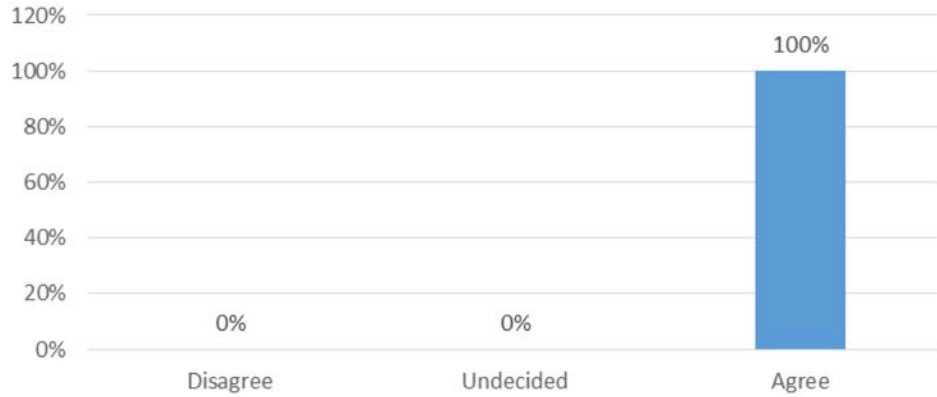


# Satisfaction Survey: Model 1 Psychiatric Intake Specialist

100% agreed, "I am satisfied with providing psychiatric consults via telepsychiatry"



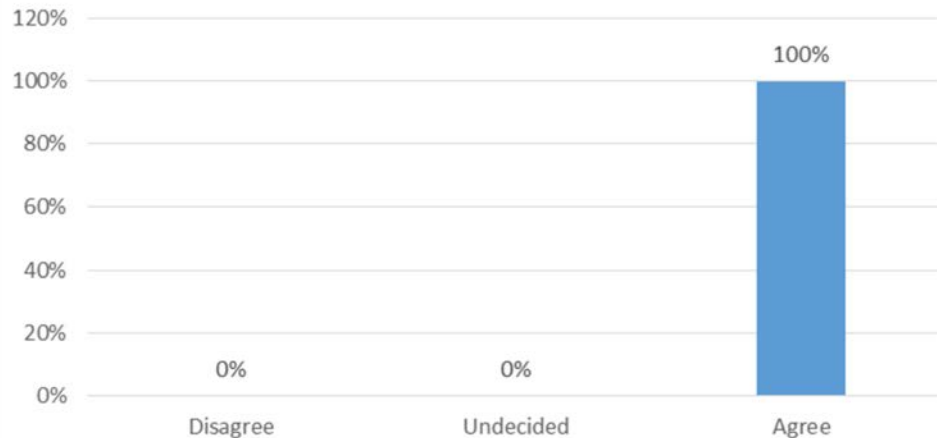
Intake Specialist: Telepsychiatry is an effective and efficient way of assessing and treating behavioral health patients



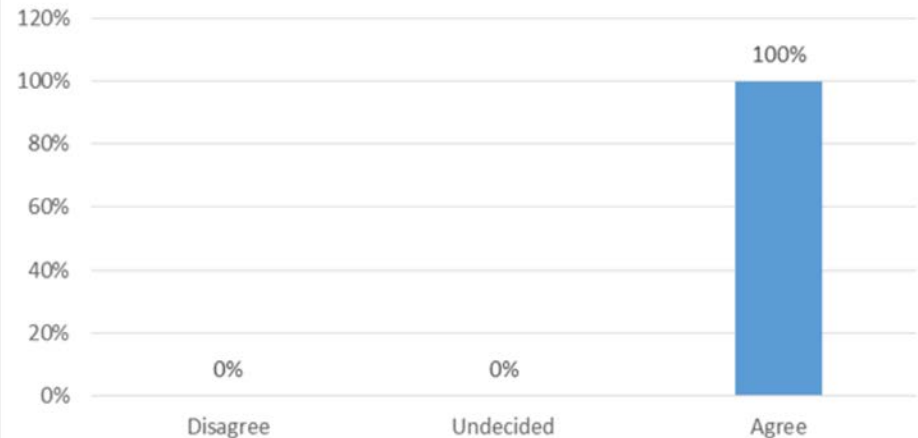
Intake Specialist: I believe the quality of psychiatric care I provide via telepsychiatry is comparable to the quality of care I deliver face to face

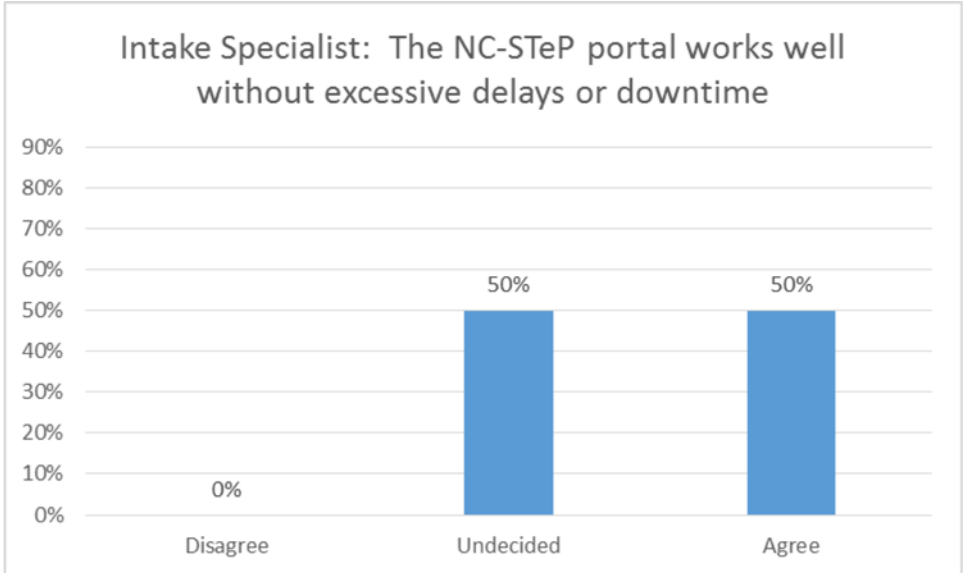
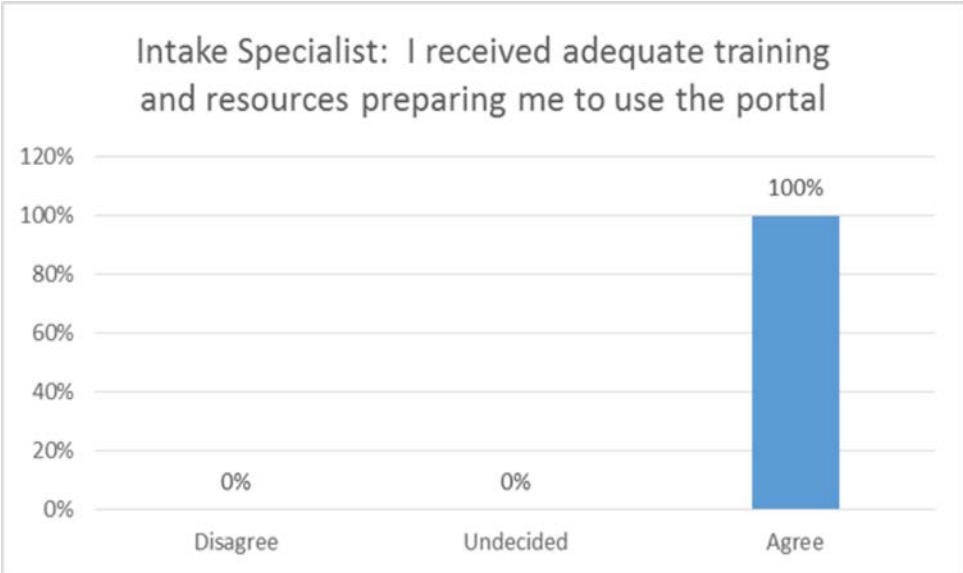
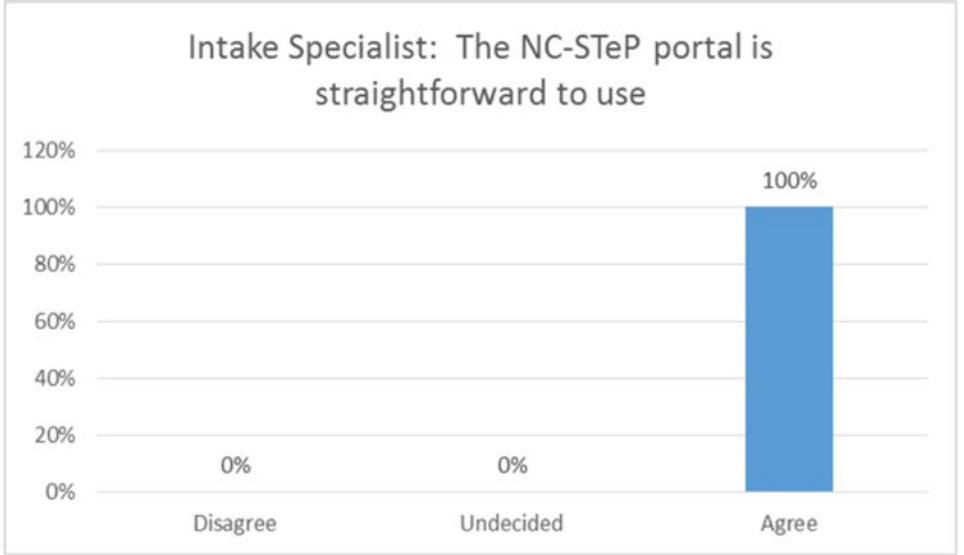
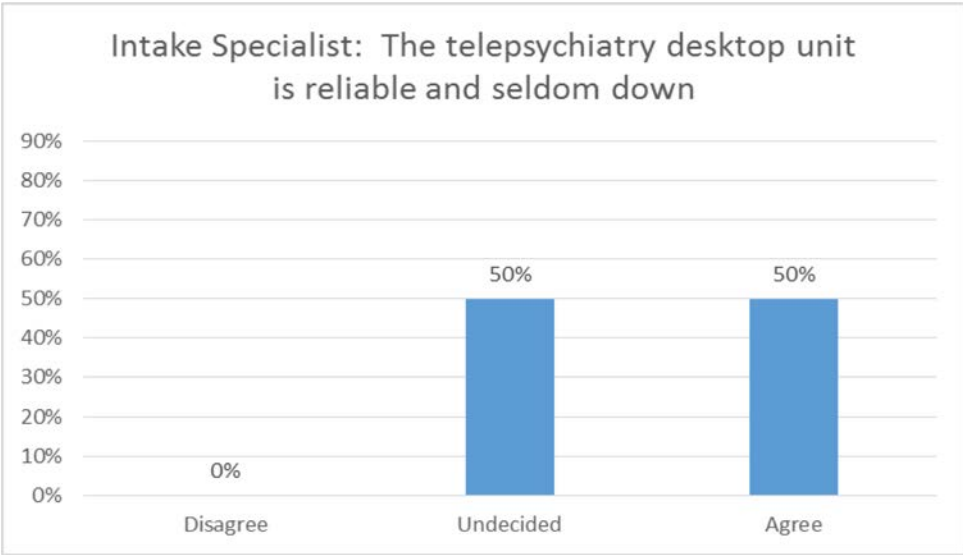


Intake Specialist: Telepsychiatry increases my productivity and/or efficiency.



Intake Specialist: The telepsychiatry desktop unit is straightforward to use

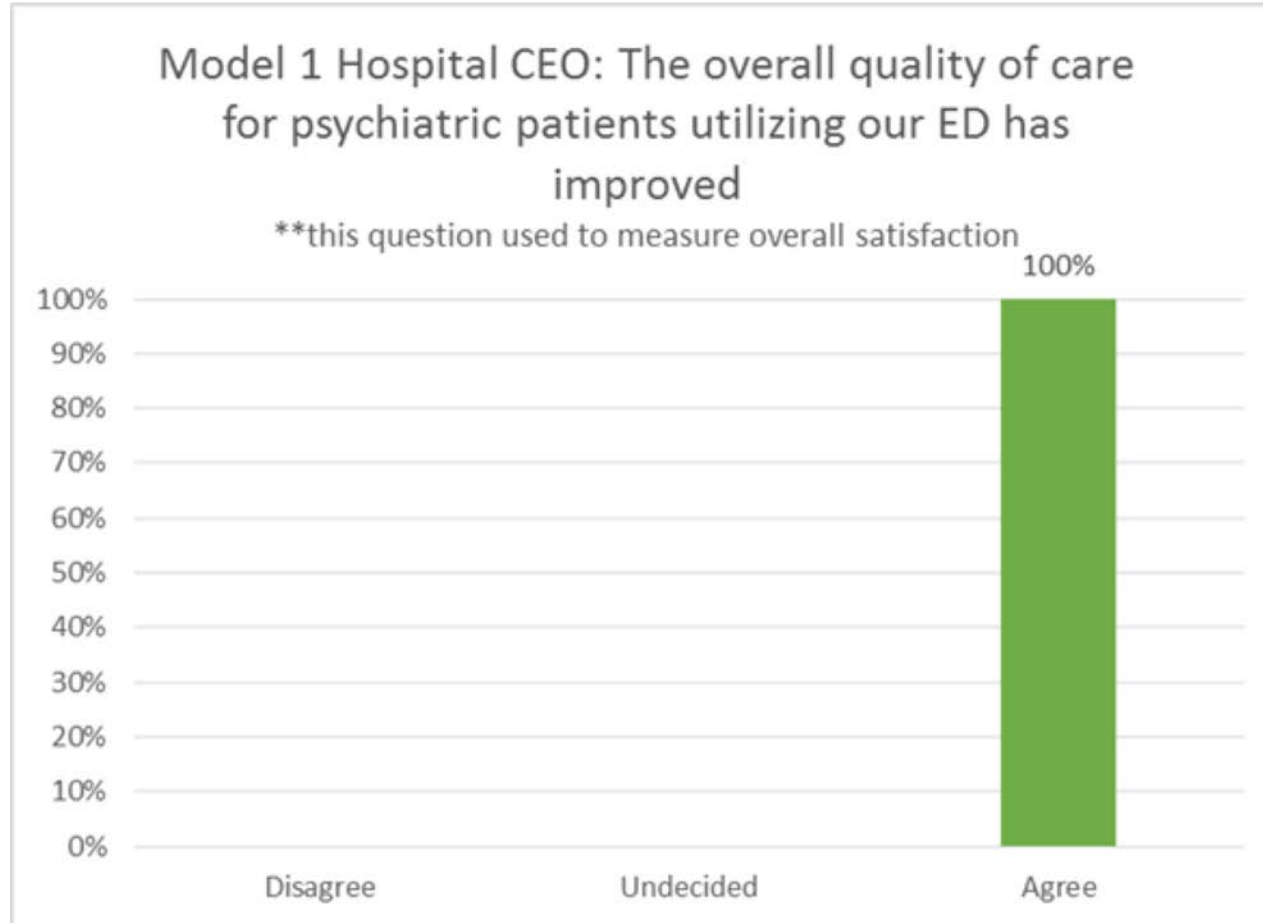




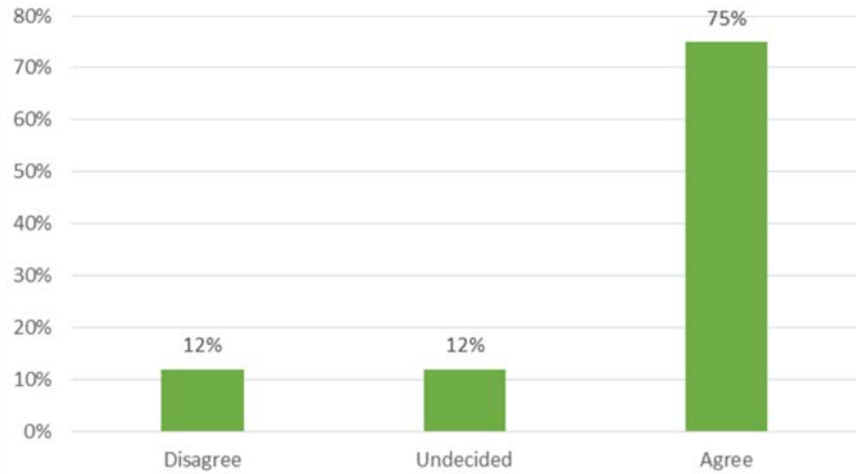


# Satisfaction Survey: Model 1 CEO/COO/CNO/ED Manager

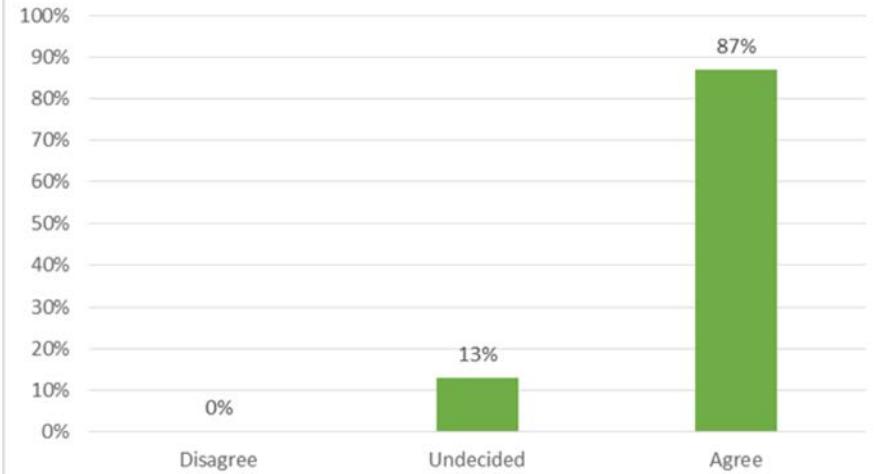
100% agree that, “the overall quality of care for psychiatric patients in our ED has improved”



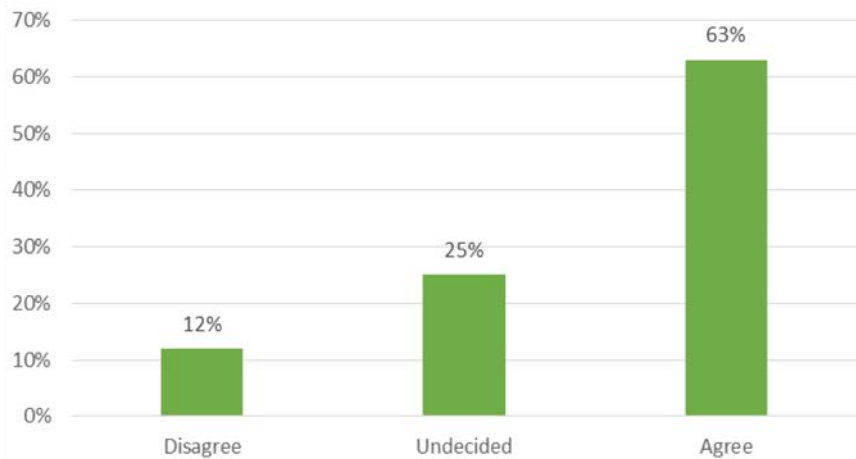
Model 1 Hospital CEO: The LOS for psychiatric patients in our ED has reduced



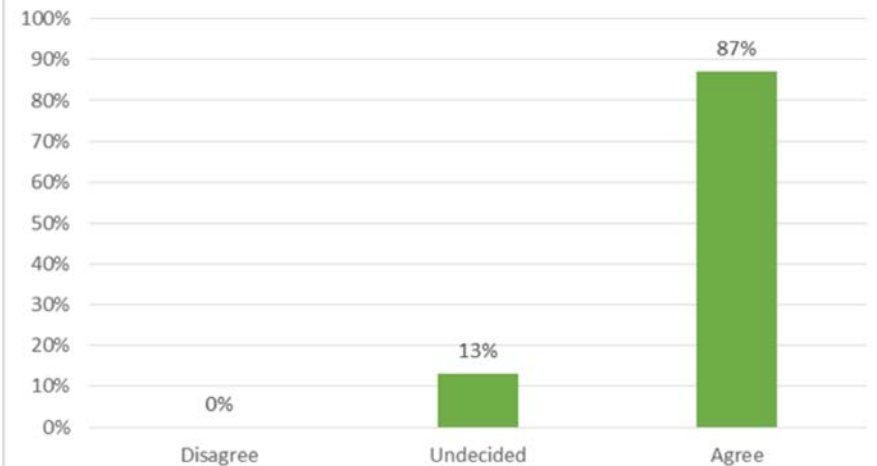
Model 1 Hospital CEO: Overall, ED staff satisfaction has improved



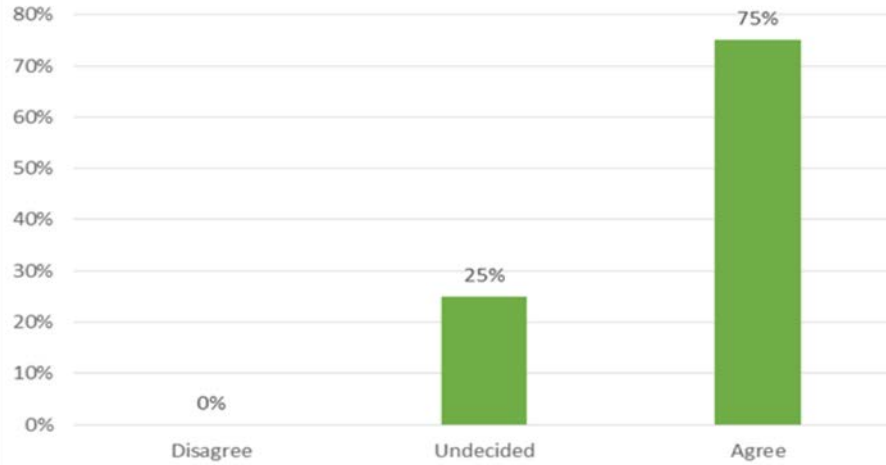
Model 1 Hospital CEO: Overall, ED throughput has improved.



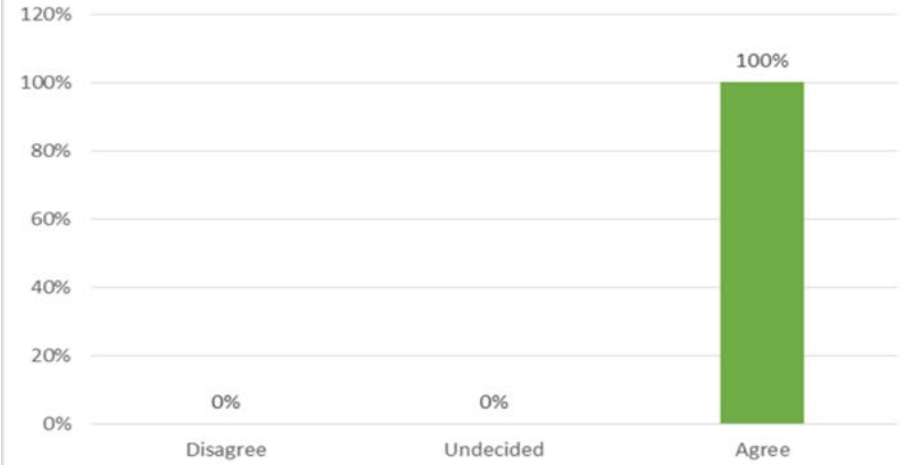
Model 1 Hospital CEO: Our hospital's use of NC-STeP consultants has been cost effective



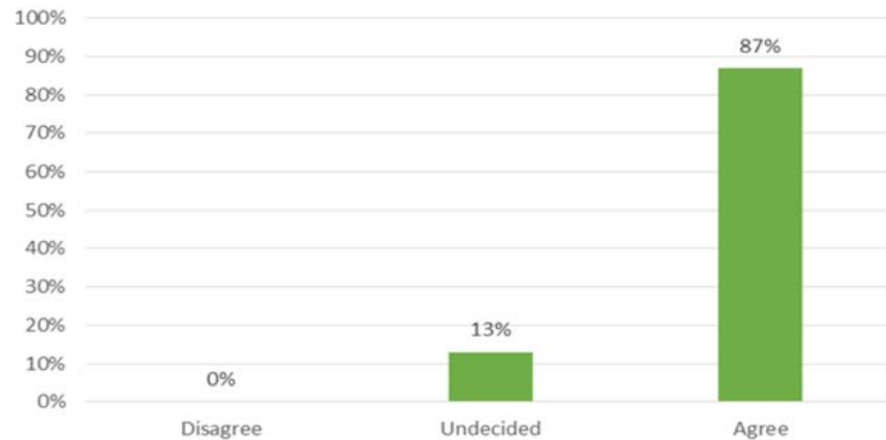
Model 1 Hospital CEO: Medical staff's understanding of mental health issues and treatment options in our ED has improved



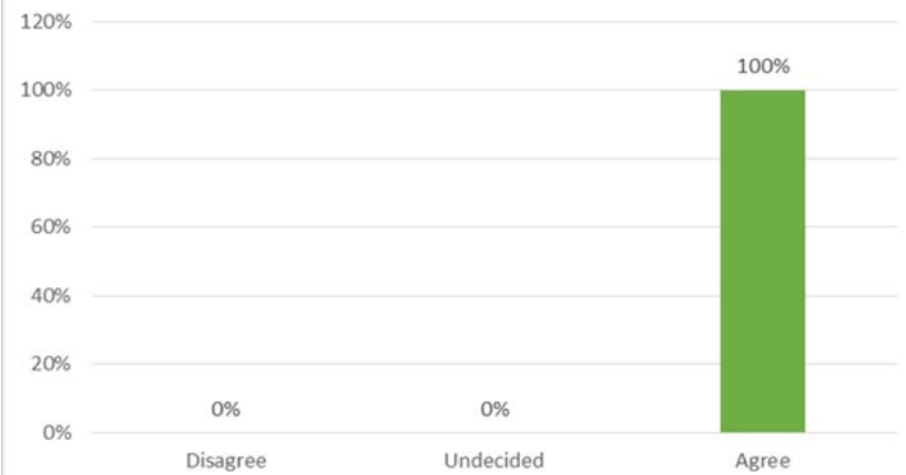
Model 1 Hospital CEO: There has been an improvement in discharge planning and referrals for psychiatric patients in our ED



Model 1 Hospital CEO: I would pursue additional uses of telemedicine technology for other medical specialty areas

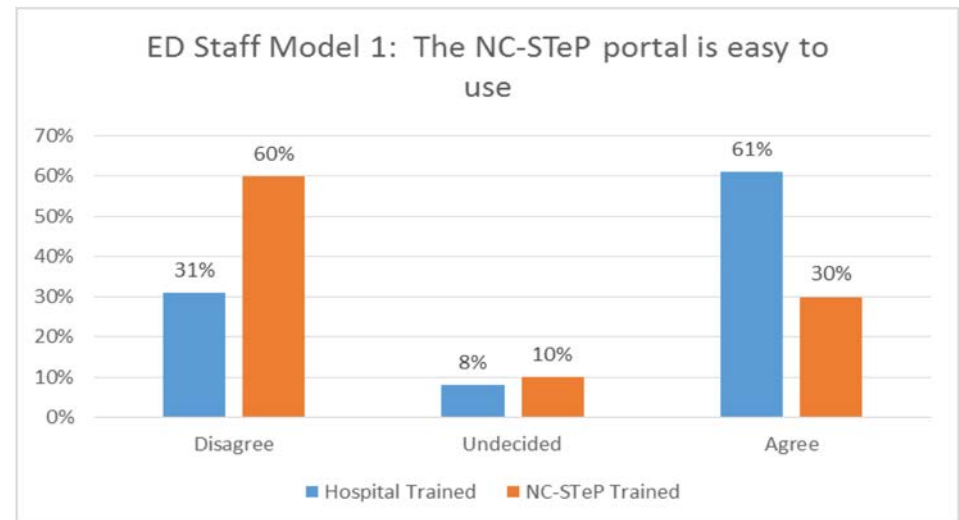
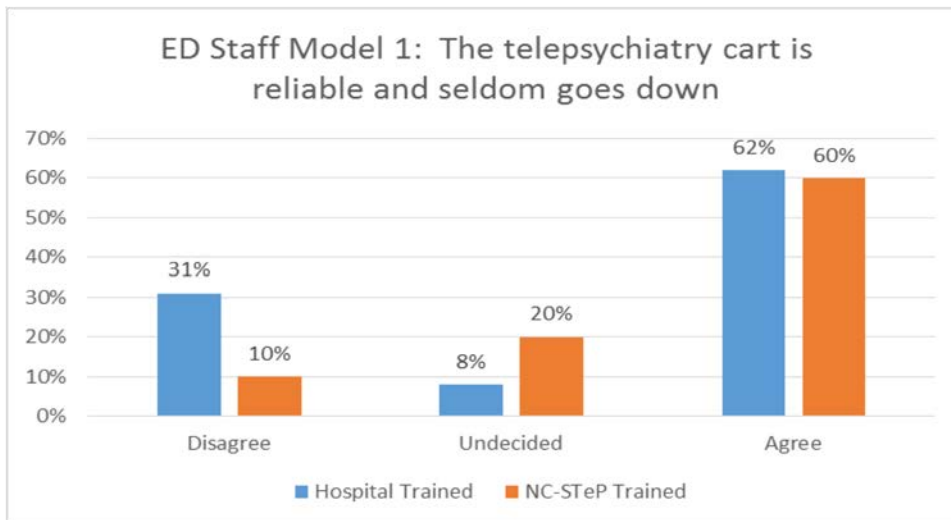
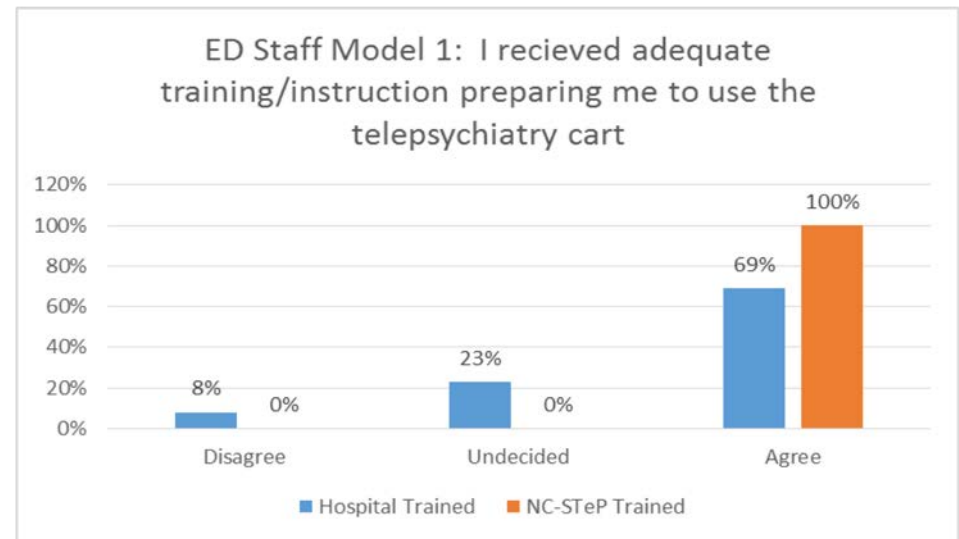
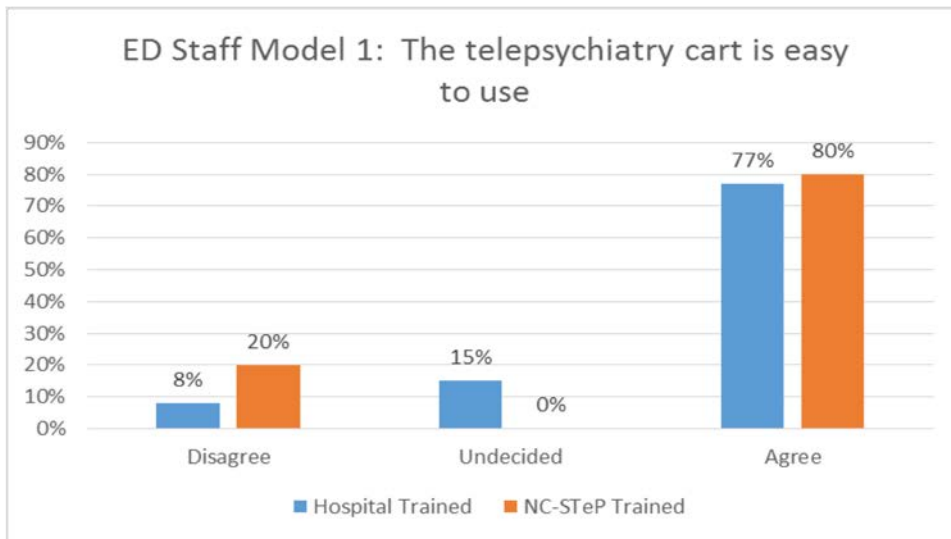


Model 1 Hospital CEO: I would recommend NC-SteP to other hospitals



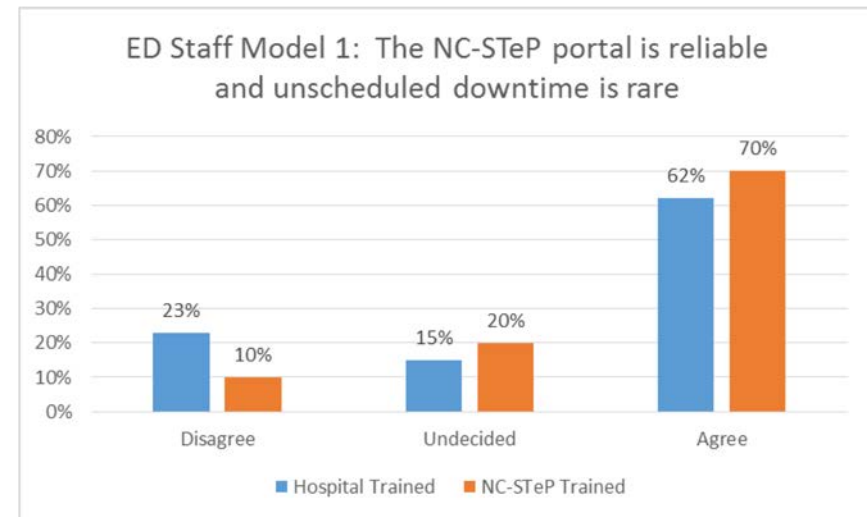
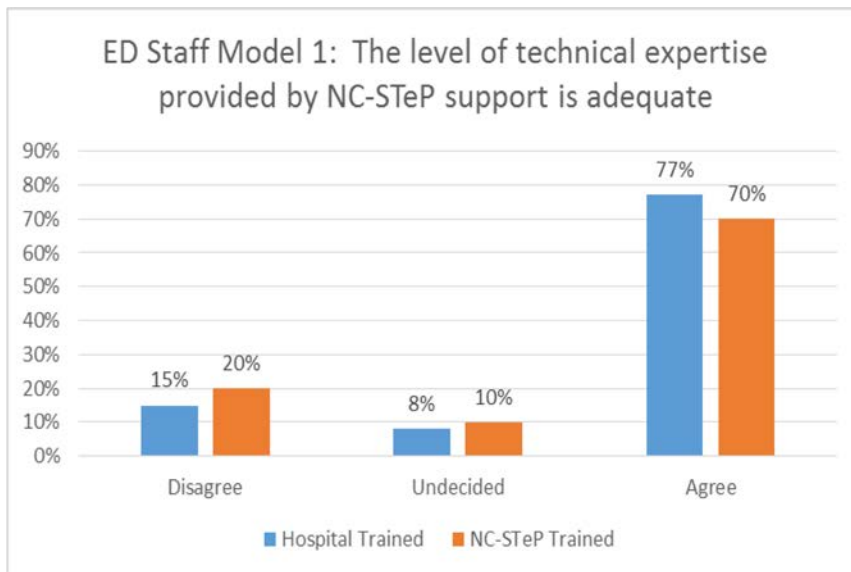
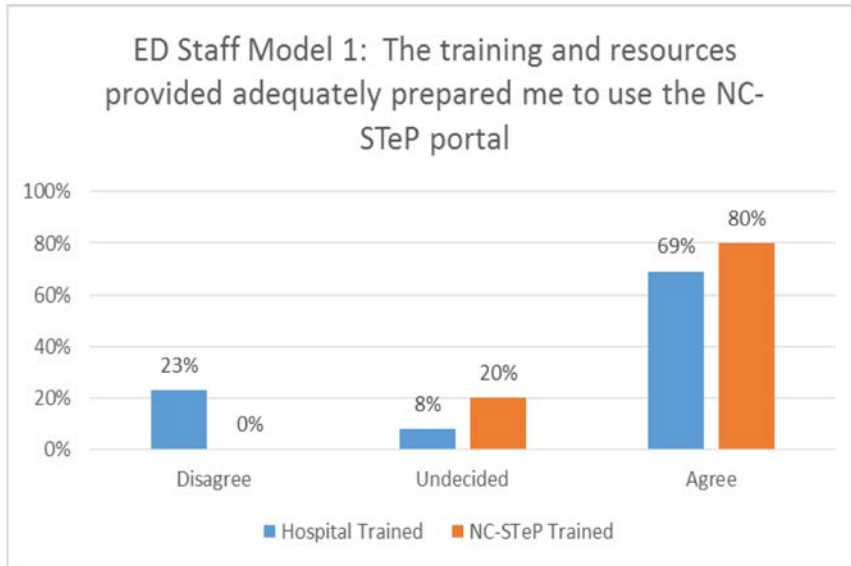
# Model 1 ED Staff Results, by Source of Training:

Total n=36: trained by NC-STeP n=10, trained by hospital personnel n=13



# Model 1 ED Staff Results, by Source of Training:

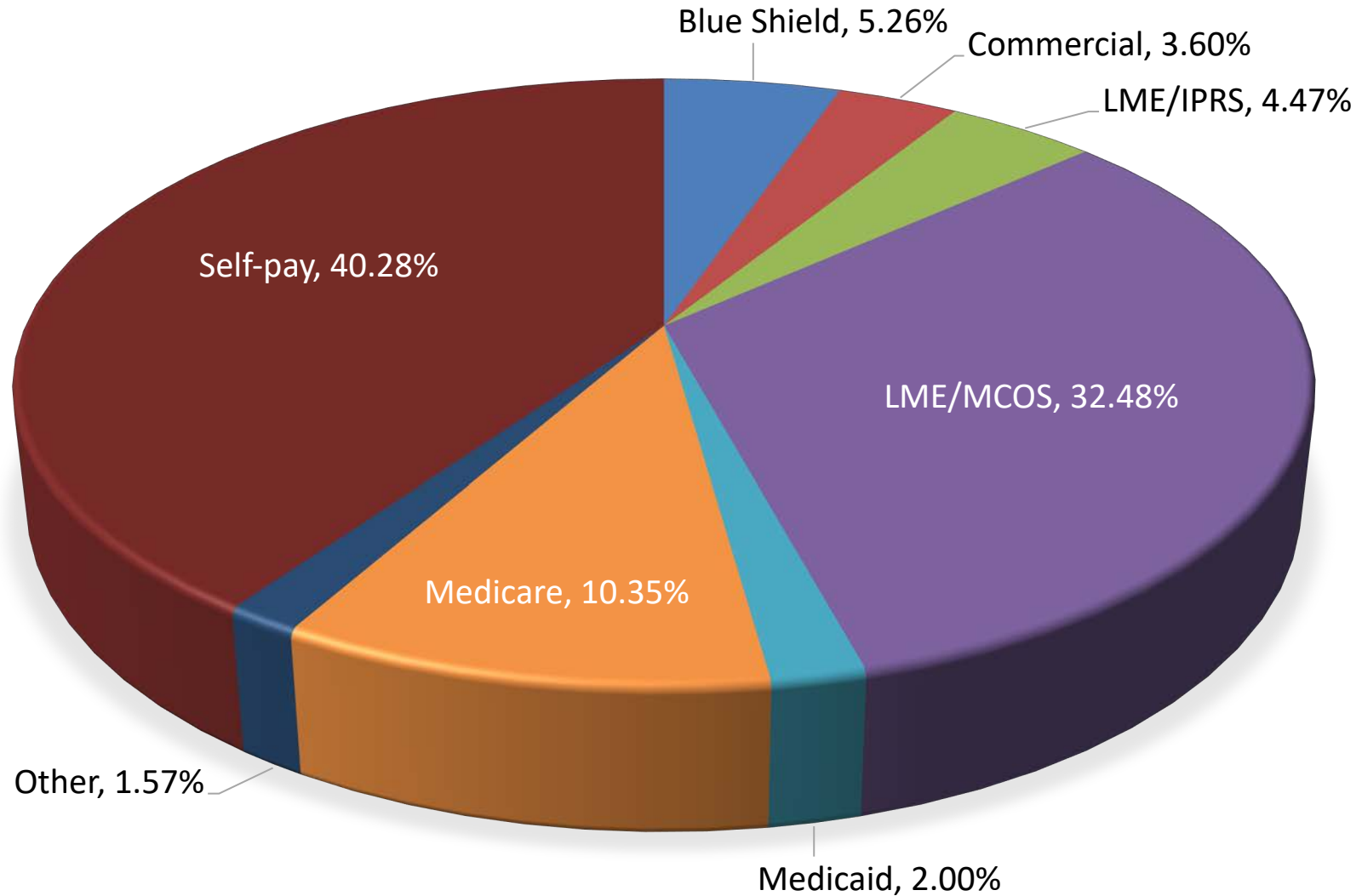
Total n=36: trained by NC-STeP n=10, trained by hospital personnel n=13



October 18, 2018

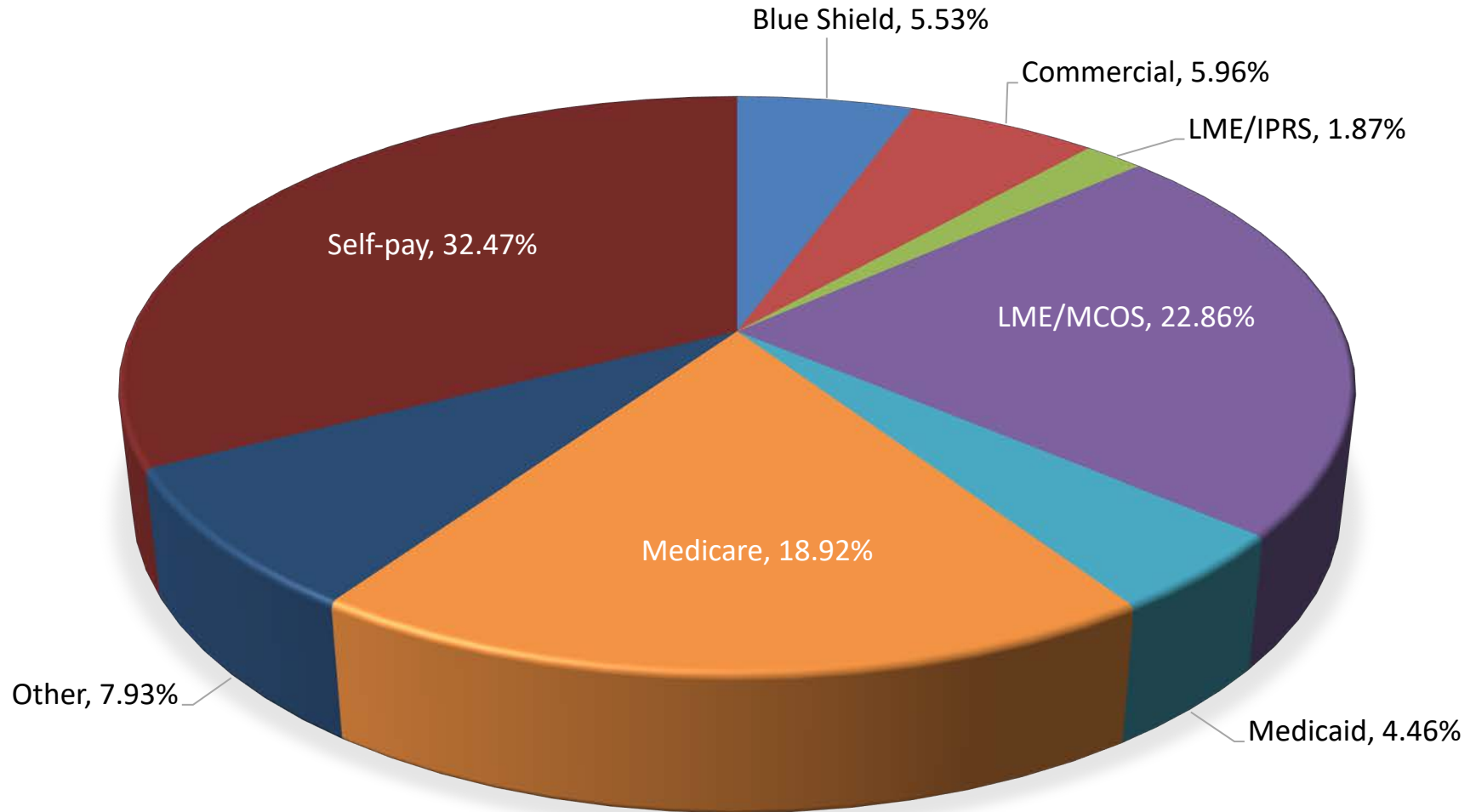
# NC-STeP Charge Mix

QTD 2019 - Quarter 1



# NC-STeP Charge Mix – Project to Date

Service Dates: October 1, 2013 – September 30, 2018



# NC-STeP Status as of September 30, 2018

- 60 hospitals in the network. 53 live.
- 33,149 total psychiatry assessments since program inception
- 4,362 IVCs overturned
  - Cumulative return on investment = \$23,554,800  
(savings from preventing unnecessary hospitalizations)
- Seven Clinical Provider Hubs with 47 consultant providers
- Administrative costs below industry standard
- Over 40% of the patients served had no insurance coverage



# Hospital Status Report as of September 2018

## Model 1 – Live (Page-1)



<b>Hospital Name</b>	<b>Portal Go Live</b>
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

# Hospital Status Report as of September 2018

## Model 1 – Live (Page-2)



Hospital Name	Portal Go Live
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
Pender Memorial Hospital	12/07/2017

# Hospital Status Report as of September 2018

## Model 1 – In Process



<b>Hospital Name</b>	<b>Portal Go Live</b>
DLP Rutherford Regional Medical Center	Fall 2018
DLP Maria Parham Franklin	Winter 2018
Park Ridge Health	Winter 2018

# Hospital Status Report as of September 2018

## Model 1 – Participation Pending



Hospital Name	Program Status
DLP Central Carolina Hospital	Reviewing Contract
Our Community Hospital	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 September 2018

## Model 2 (Page-1)



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

# Hospital Status Report as of September 2018

## Model 2 (Page-2)



Hospital Name	Go Live Date/Status
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 September 2018

## Expressed Possible Interest



<b>Hospital Name</b>	<b>Program Status</b>	<b>NC-Step Model</b>
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 September 2018

## Terminated



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



# Hospital Status Report as of September 2018

## No Information Available



<b>Hospital Name</b>	<b>Program Status</b>	<b>NC-STeP Model</b>
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

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Brody School of Medicine | East Carolina University

*Director*

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Mail: 600 Moye Boulevard, Suite 4E-100,  
Greenville, NC 27834



**CAPTURE YOUR HORIZON**





NC-STeP

# NORTH CAROLINA

STATEWIDE TELEPSYCHIATRY PROGRAM

