Cohort 20 Team 7

Improving Care Of The Pediatric Patient With A Tracheostomy

UT Health San Antonio

Team Members & Participants

- Marisa Earley, MD / Medical Resource
- Carlos Montano / Respiratory Resource
- Nelia Acuna / Nursing Resource

Facilitator

- Edna Cruz, M.Sc., RN, CPHQ, CPPS -- Quality Resource

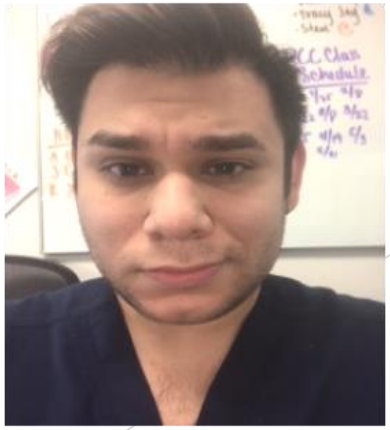
Ad Hoc Team Members

- Education Staff - Rebecca Rodriquez & Rosa Leal
- Frontline Staff - Jene Pak, Gamze Urkun, Gina Sanchez, Jeannette Rodriguez
- Clinical Coordinators/ Jenny Camacho & Navil Lozano

SPONSORS

- Pamela Redell
- Irene Sandate

Nurses, Educator, Quality Support.



Respiratory Support

Project Background

- Tracheostomy is one of the oldest performed surgical procedures
- Children born extremely premature are surviving longer and often need chronic ventilator support via tracheostomy
  - This leads to increase use of tracheostomy in children
- Studies of catastrophic complications after tracheostomy
  - Majority due to correctable deficits in:
    - Education
    - Nursing care
    - Junior physician care
    - Home care
    - Failure to adequately secure tube
- Survey of community physicians:
  - 25% are **highly uncomfortable** replacing tracheostomy tube, even if it were life-saving

Project Background

- Deficiencies in education of lower practitioners (i.e. non surgeons)
  - Decrease confidence and their ability to effectively care for children with tracheostomy
- Nurses' comfort with pediatric tracheostomy
  - Highest with at least 5 years experience and primary ICU location
- Lack of standardization of education in pediatric tracheostomy care
  - For health care providers
  - For parents
  - For home health aides

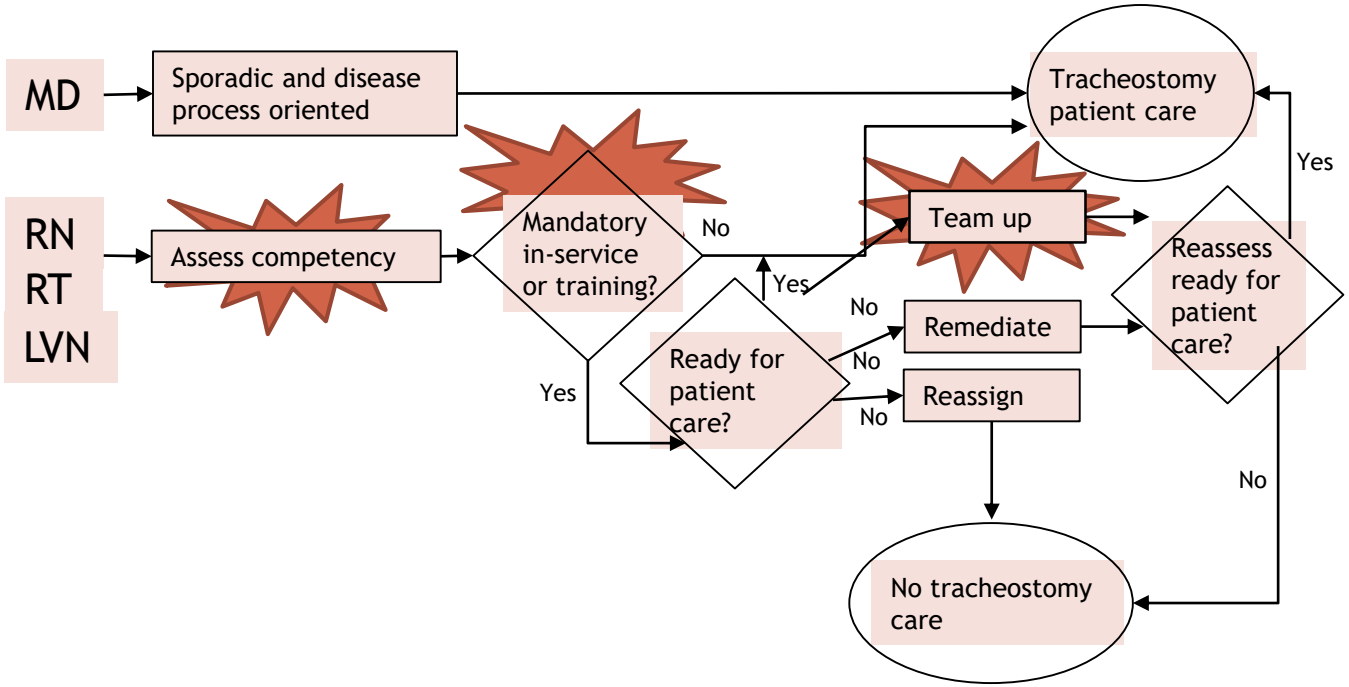
UHS Nursing Education on Tracheostomy

- Brief, otherwise no current education/training program or formal orientation
  - New graduate nurses
  - PICU=>IMC transition
  - Seasonal Nurses
  - Travel Nurses
- Unclear level of implementation
- Not Standardized
- Inconsistently Implemented
  - Competency not assessed by preceptors assigned to new nurses
  - No Tracheostomy Care Education Program
- Annual Skills Day for Tracheostomy Care insufficient training
  - Short didactics and poster boards on topics with ~5 question quiz completed throughout the day

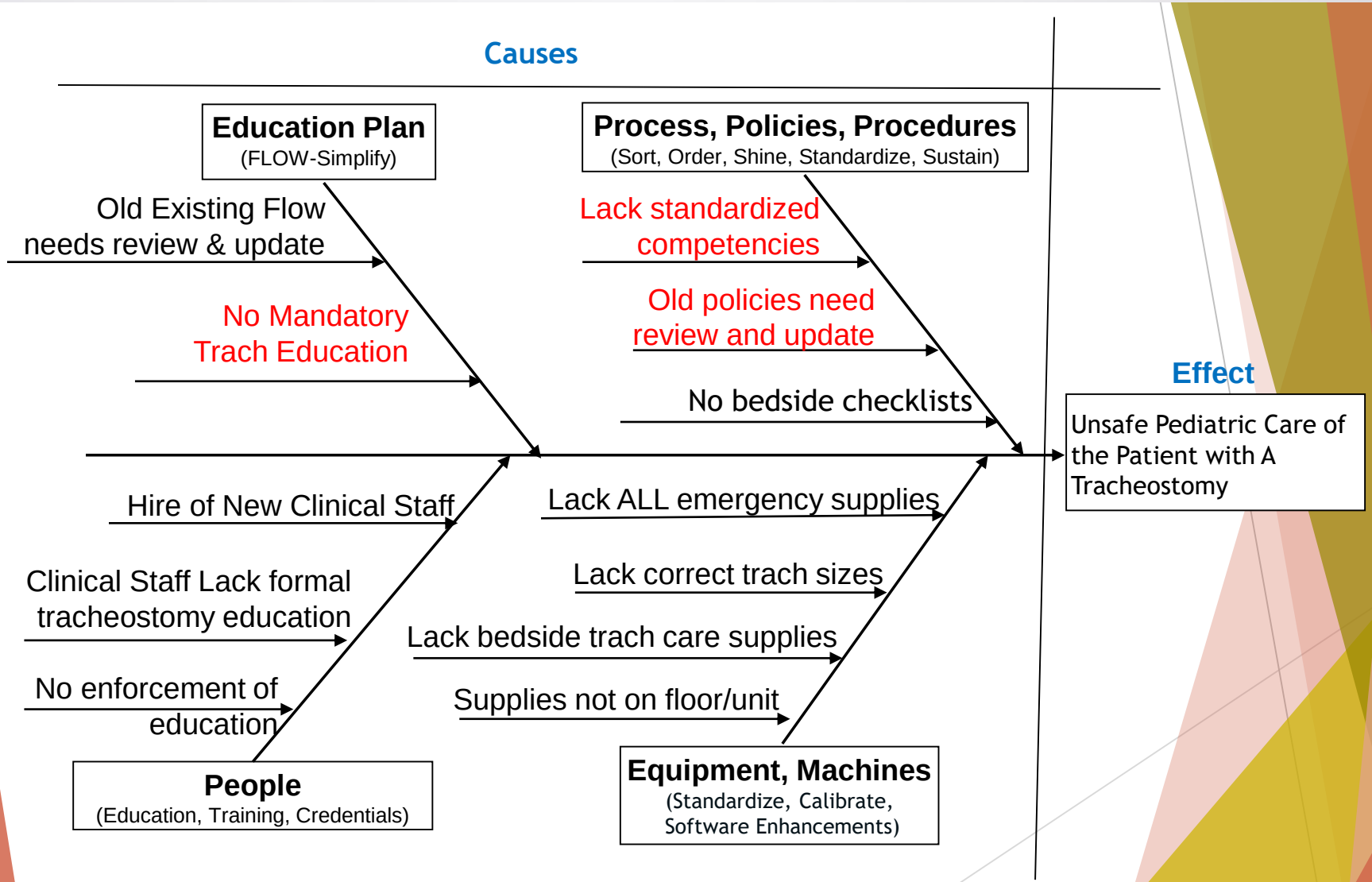
Project Aim Statement

- To improve clinical staff Level of Confidence and Comfort with Pediatric Tracheostomy Care on Sky 7 PICU/PIMU/PCCU by January 2018.

Flow Diagram



CAUSE & EFFECT



Action Plan

Aim Statement: To Improve Clinical Staff Comfort and Level of Confidence With Pediatric Tracheostomy Care on Sky 7 PICU, PIMU, and PCCU by December 2017.

Action Strength	Action Driver (Taken from Flow, Fishbone or Pareto)	Action	Who?	Why?	Start Date
STRONG	No Mandatory Tracheostomy Education	Train & Educate the Team on the Integrated Old and Existing Plan With Cohort Approval.	Dr. Marissa Earley Nelia Acuna Carlos Montano	Standardize	4/1/2017
INTERMEDIATE	Clinical Staff Lack Formal Tracheostomy Education	Introduce the Plan to Staff in at Least 3 Staff Meetings.	Dr. Marisa Earley Nelia Acuna Carlos Montano	Standardize	3/15/2017
INTERMEDIATE	No Bedside Checklists	Review the Checklists & Cognitive Aides.	Selected Nursing & Respiratory Teams	Standardize	4/15/2017
SRONG	Lack All Emergency Supplies	Create Awareness and Processes Regarding Tracheostomy Tube Supplies & Location on the Floor.	Selected Nursing & Respiratory Teams	Standardize	5/1/2017
WEAK	Old Policy Needs Revision	Update	Selected Nursing & Respiratory Teams **Looking at Sky Video Lippincott Education for Policy & Procedure**	Standardize	Updated & Still in review
STRONG	Identify the Right Scale for Survey (Likert)	Initiate the Likert Survey to PICU, PIMU, PCCU, and Pedi Acute, Hemoc	Dr. Marisa Earley Nelia Acuna, Rebecca Rodriguez Rosa Leal	Enhance Education	Pre survey 4/2017 Post 10/30/2017

Action Plan
Standardize Education

- Education & Training
  - Introduce the plan to the Nursing Staff in 3 separate staff meetings using visual aid poster board of Tracheostomy
  - Set up training time for new staff, existing staff and seasonal staff by Educators collaborating with Respiratory Team
  - Educate staff to access the Nursing Portal for any future dates and remediation on Tracheostomy Care
  - Review and update the existing Tracheostomy Care Policy
- Reassess:
  - Survey and observational assessment
    - Same methods used in baseline data

Action Plan Continues

- **STARDARDIZE CHECKLIST & COGNITIVE AIDES**
  - Create a checklist on what needs to be in the supply cart for an Emergency Dislodgement of Tracheostomy (which was already developed by Respiratory Team)
  - Organize & create an Educational Checklist for parents or care providers on care of the tracheostomy and emergency dislodgement and educate prior to discharge
  - Teach Nurses & Respiratory to make sure the supplies in the cart are present at bedside at Hand-Off

Data Plan

- Baseline data:
  - Survey nursing staff with questions assessing **COMFORT and CONFIDENCE** for various interventions on a Likert Scale
  - Objective questions and results of Pre Survey for developing education and skills training program
- Possible observational assessment and rating by qualified staff (RT/MD)
- **Intervene with educational /training program and materials**
- **Goal would be both hands on standardized training as well as access to standardized videos and reading material
- **Reassess:**
- Post-survey and observational assessment
  - Same methods used in baseline data

Survey Data

- There were 30 respondents to the Pre-Survey
- Identified areas for improvement
- Some data is surprising
- Overall, optimistic as everyone seems eager to learn more to improve comfort level!

Nursing Years of Experience

TOTAL OF 30 SURVEYS	
LESS THAN 1 YEAR	2
1-4 YEARS	13
5-10 YEARS	10
GREATER THAN 10 YEARS	5

PEDIATRIC PICU, PCCU, & PIMU

PEDIATRIC INTENSIVE CARE UNIT (PICU)	8
PEDIATRIC INTERMEDIATE UNIT (PIMU)	10
PEDIATRIC ACUTE CARE	8
PEDIATRIC HEMOTOLOGY	2
PEDIATRIC CARDIAC CARE (PCCU)	1
PEDIATRIC EMERGENCY DEPARTMENT	1

Q4 Did you receive tracheostomy training since starting employment at UH?				
	Percent		Volume	
Variable	Pre	Post	Pre	Post
No	39.2%	25.0%	20	10
Yes	**60.8%**	**75.0%**	**31**	**30**
			51	40

Q5 I have received tracheostomy training in the past.				
	Percent		Volume	
	Pre	Post	Pre	Post
Never	7.8%	7.5%	4	3
2 years ago or more	35.3%	25.0%	18	10
1 year ago	37.3%	32.5%	19	13
6 months ago	9.8%	5.0%	5	2
<6 months ago	**9.8%**	**30.0%**	**5**	**12**
			51	40

Q7 How long has it been since you performed a tracheostomy tube change?				
	Percent		Volume	
	Pre	Post	Pre	Post-
Never changed tracheostomy tube	**43.1%**	**30.0%**	**22**	**12**
> 1 year	29.4%	40.0%	15	16
1 year	9.8%	15.0%	5	6
6 months	**11.8%**	**0.0%**	**6**	**0**
3 months	3.9%	12.5%	2	5
1 month	2.0%	2.5%	1	1
1 week	0.0%	0.0%	0	0
			51	40

Q8 My confidence level in performing routine tracheostomy care is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	13.3%	5.0%	4	2
Not confident	13.3%	10.0%	4	4
Somewhat confident	33.3%	27.5%	10	11
Confident	**23.3%**	**37.5%**	**7**	**15**
Very confident	**16.7%**	**20.0%**	**5**	**8**
			30	40

Q9 My confidence level performing tracheostomy tube change is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	26.7%	10.0%	8	4
Not confident	26.7%	22.5%	8	9
Somewhat confident	**30.0%**	**32.5%**	**9**	**13**
Confident	**6.7%**	**25.0%**	**2**	**10**
Very confident	10.0%	10.0%	3	4
			30	40

Q10 My confidence level performing an emergency tracheostomy tube change is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	30.0%	15.0%	9	6
Not confident	13.3%	22.5%	4	9
Somewhat confident	36.7%	32.5%	11	13
Confident	**13.3%**	**17.5%**	**4**	**7**
Very confident	**6.7%**	**12.5%**	**2**	**5**
			30	40

Q11 My experience with an emergency tracheostomy tube change was				
	Percent		Volume	
	Pre	Post	Pre	Post
No experience	70.0%	55.0%	21	22
It was pleasant, smooth	**3.3%**	**22.5%**	**1**	**9**
It was uncomfortable	16.7%	22.5%	5	9
It was terrifying	**10.0%**	**0.0%**	**3**	**0**
			30	40

Q12 My training in tracheostomy care adequately prepared me for emergency tracheostomy tube change.				
	Percent		Volume	
	Pre	Post	Pre	Post
Strongly do not agree	23.3%	12.50%	7	5
Do not agree	36.7%	20.00%	11	8
Moderately agree	**10.0%**	**30.00%**	**3**	**12**
Agree	23.3%	22.50%	7	9
Strongly agree	**6.7%**	**15.00%**	**2**	**6**
			30	40

Q13 Describe your feelings regarding changing an established pediatric tracheostomy tube.				
	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	**10.0%**	**5.0%**	**3**	**2**
This is a nursing task	3.3%	0.0%	1	0
This is a nursing and RT task	**83.3%**	**95.0%**	**25**	**38**
This is an MD task	3.3%	0.0%	1	0
			30	40

Q14 Describe your comfort level on changing an established pediatric tracheostomy tube.

	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	26.7%	17.50%	8	7
Somewhat comfortable	30.0%	22.50%	9	9
Moderately comfortable	20.0%	25.00%	6	10
Comfortable	**16.7%**	**22.50%**	**5**	**9**
Extremely comfortable	**6.7%**	**12.50%**	**2**	**5**
			30	40

Q15 Describe your feelings regarding accidental decannulation of pediatric tracheostomy tube, prior to the first post-operative change, e.g. a "fresh trach".

	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	6.7%	5.0%	2	2
This is a nursing task	0.0%	0.0%	0	0
This is a nursing and RT task	**43.3%**	**45.0%**	**13**	**18**
This is an MD task	**50.0%**	**50.0%**	**15**	**20**
			30	40

Q17 Describe your feelings regarding management of accidental decannulation of an established pediatric tracheostomy tube.

	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	3.3%	0.0%	1	0
This is a nursing task	0.0%	0.0%	0	0
This is a nursing and RT task	**96.7%**	**97.5%**	**29**	**39**
This is an MD task	0.0%	2.5%	0	1
Comment				1
			30	**40**

Q18 Describe your comfort level regarding management of accidental decannulation of an established pediatric tracheostomy tube.

	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	23.3%	20.0%	7	8
Somewhat comfortable	36.7%	25.0%	11	10
Moderately comfortable	**10.0%**	**25.0%**	**3**	**10**
Comfortable	20.0%	20.0%	6	8
Extremely comfortable	10.0%	10.0%	3	4
			30	40

Q19 Describe your feelings about teaching family members/caregivers how to perform tracheostomy tube changes.

	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	23.3%	25.0%	7	10
This is a nursing task	0.0%	0.0%	0	0
This is a nursing and RT task	**76.7%**	**75.0%**	**23**	**30**
This is an MD task	0.0%	0.0%	0	0
			30	40

Q20 Describe your comfort level related to teaching family members/caregivers how to perform tracheostomy tube change.

	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	36.7%	35.0%	11	14
Somewhat comfortable	43.3%	15.0%	13	6
Moderately comfortable	**6.7%**	**17.5%**	**2**	**7**
Comfortable	**6.7%**	**17.5%**	**2**	**7**
Extremely comfortable	**6.7%**	**15.0%**	**2**	**6**
			30	40

Q21 Describe your feelings about teaching family members/caregivers how to provide tracheostomy tube care other than tube changes.

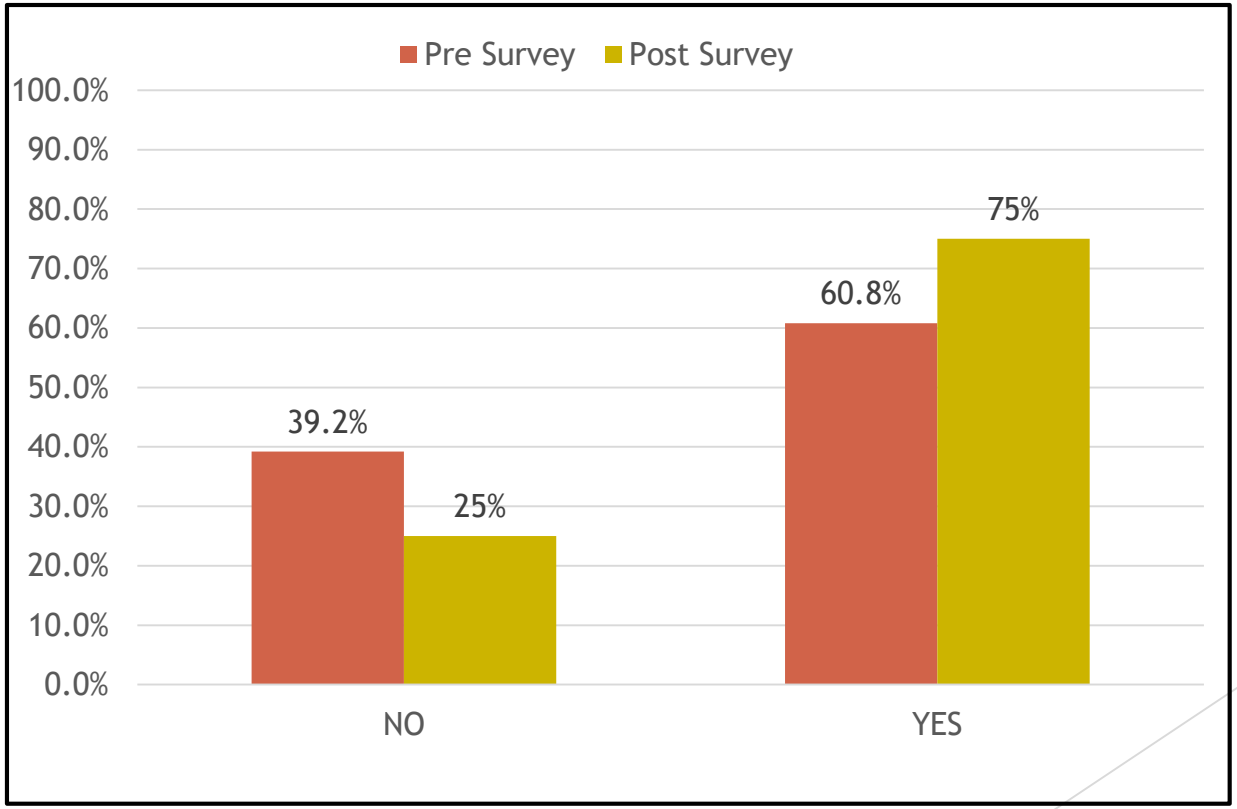
	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	10.0%	10.0%	3	4
This is a nursing task	6.7%	5.0%	2	2
This is a nursing and RT task	**83.3%**	**85.0%**	**25**	**34**
This is an MD task	0.0%	0.0%	0	0
			30	40

Q22 Describe your comfort level teaching family members/caregivers how to provide tracheostomy tube care other than tube change.

	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	26.7%	20.0%	8	8
Somewhat comfortable	30.0%	22.5%	9	9
Moderately comfortable	13.3%	12.5%	4	5
Comfortable	**20.0%**	**35.0%**	**6**	**14**
Extremely comfortable	10.0%	10.0%	3	4
			30	40

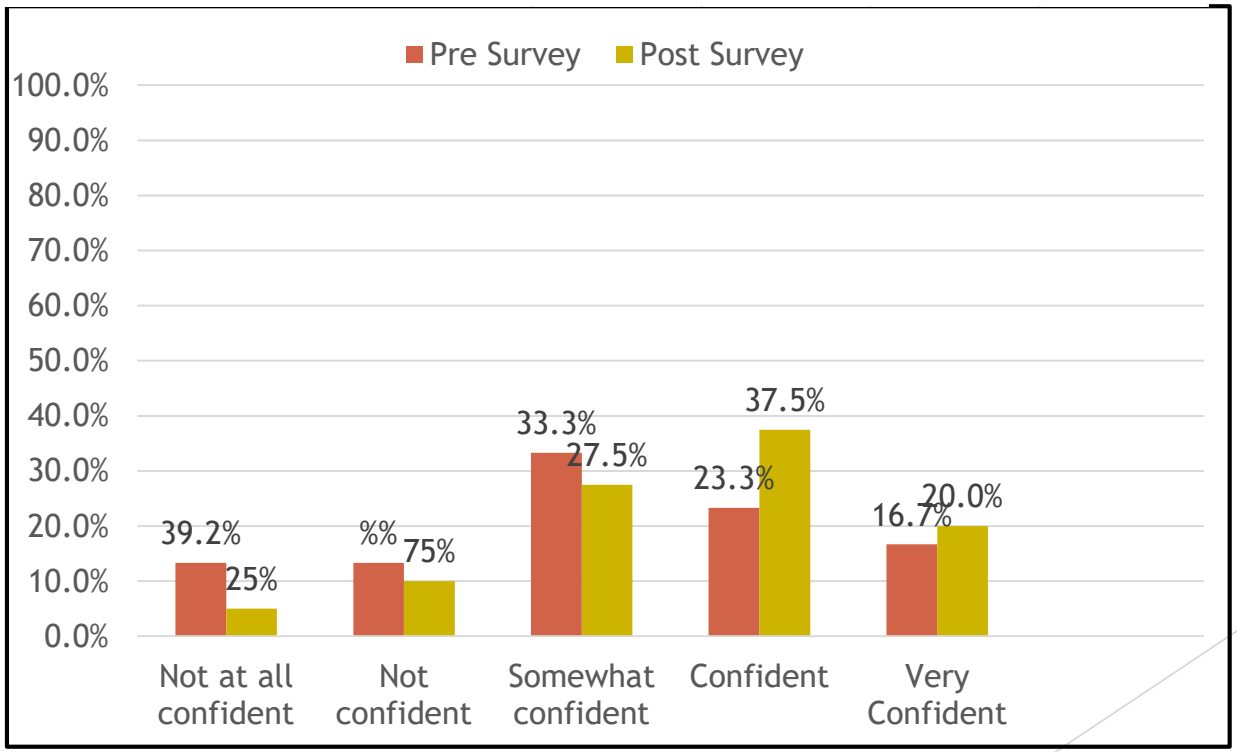
Q4 Did You Received Tracheostomy Training Since Starting Employment at UHS?

Q4 Did you receive tracheostomy training since starting employment at UH?				
	Percent		Volume	
Variable	**Pre**	**Post**	**Pre**	**Post**
No	39.2%	25.0%	20	10
Yes	**60.8%**	**75.0%**	**31**	**30**
			51	40



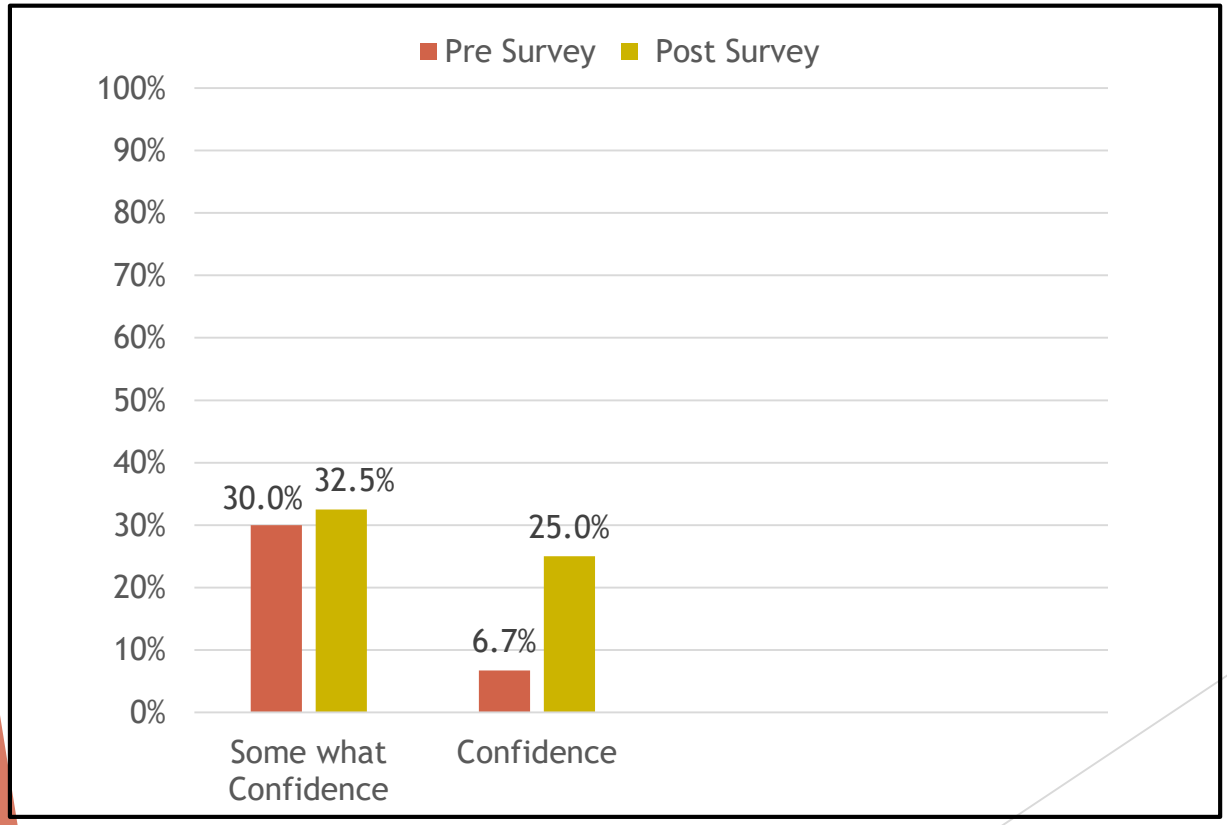
Q8 My confidence level in performing routine tracheostomy care is:

Q8 My confidence level in performing routine tracheostomy care is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	13.3%	5.0%	4	2
Not confident	13.3%	10.0%	4	4
Somewhat confident	33.3%	27.5%	10	11
Confident	**23.3%**	**37.5%**	**7**	**15**
Very confident	**16.7%**	**20.0%**	**5**	**8**
			30	40



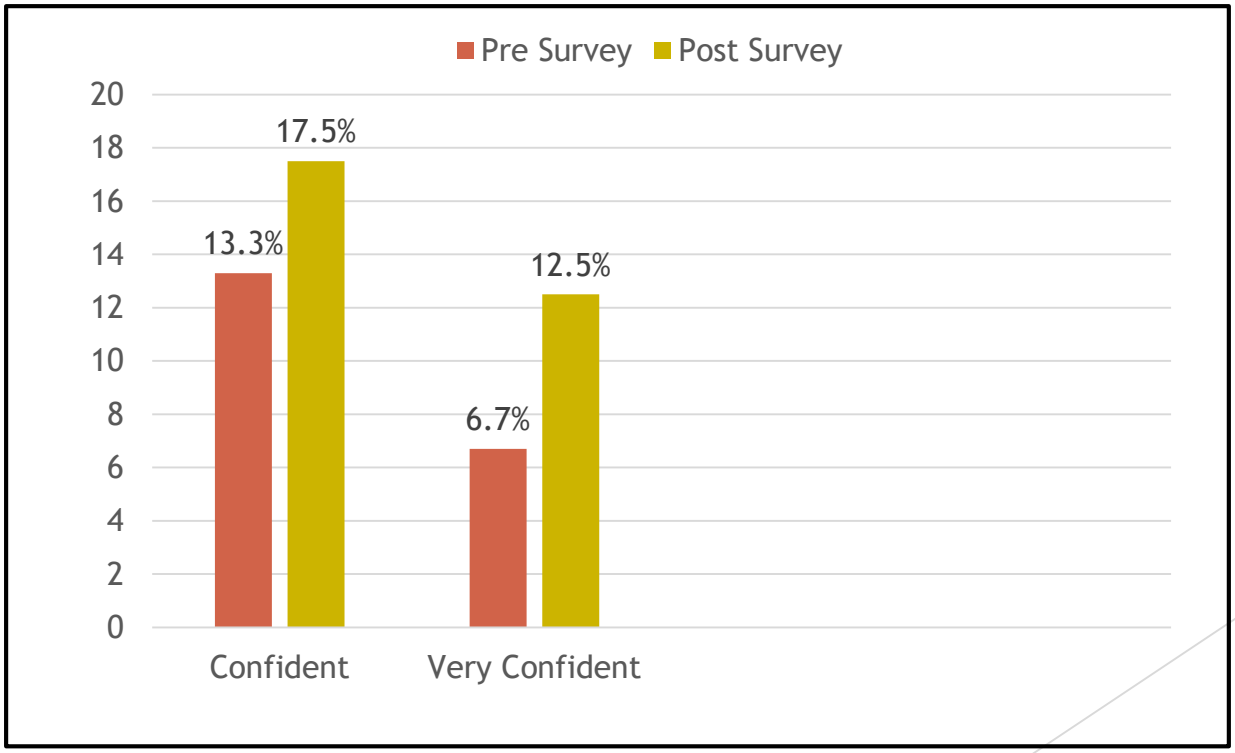
Q9 My Confidence Level Performing Tracheostomy Tube Change is:

Q9 My confidence level performing tracheostomy tube change is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	26.7%	10.0%	8	4
Not confident	26.7%	22.5%	8	9
Somewhat confident	**30.0%**	**32.5%**	**9**	**13**
Confident	**6.7%**	**25.0%**	**2**	**10**
Very confident	10.0%	10.0%	3	4
			30	40



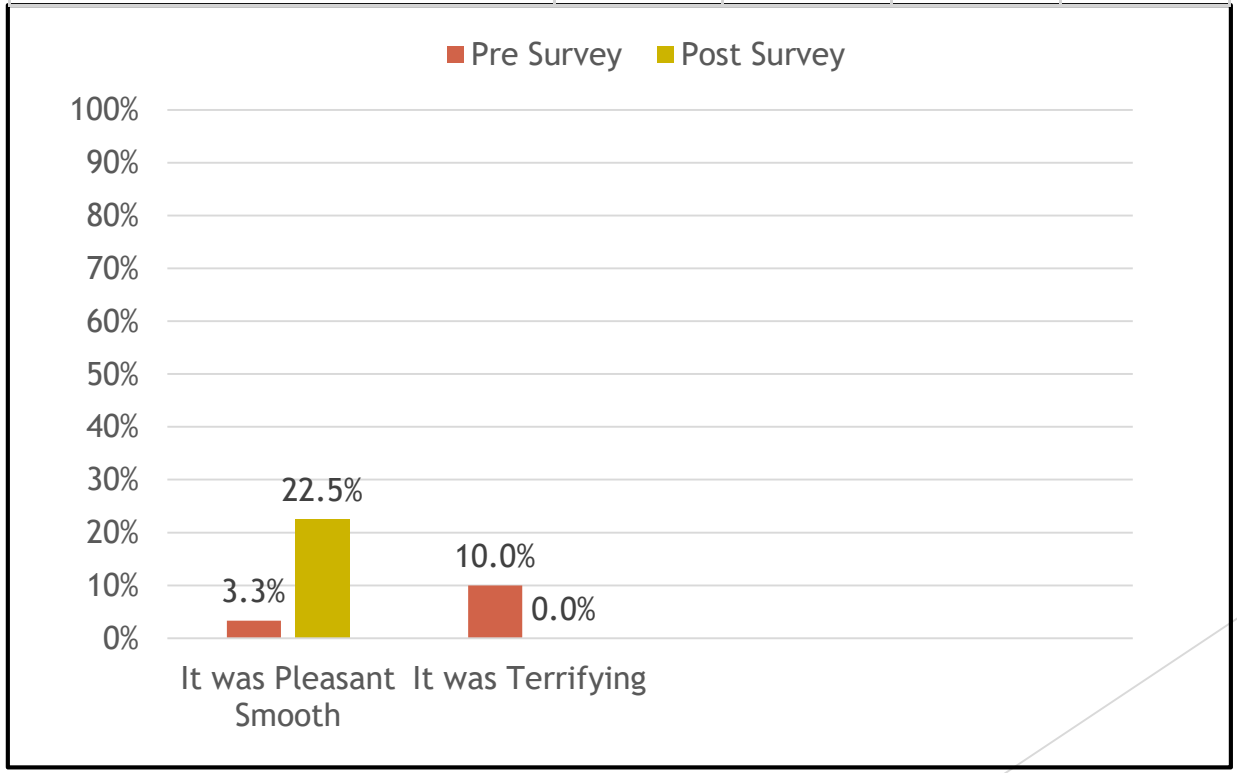
Q10 My Confidence Level Performing an Emergency Tracheostomy Tube Change Is:

Q10 My confidence level performing an emergency tracheostomy tube change is				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all confident	30.0%	15.0%	9	6
Not confident	13.3%	22.5%	4	9
Somewhat confident	36.7%	32.5%	11	13
Confident	**13.3%**	**17.5%**	**4**	**7**
Very confident	**6.7%**	**12.5%**	**2**	**5**
			30	40



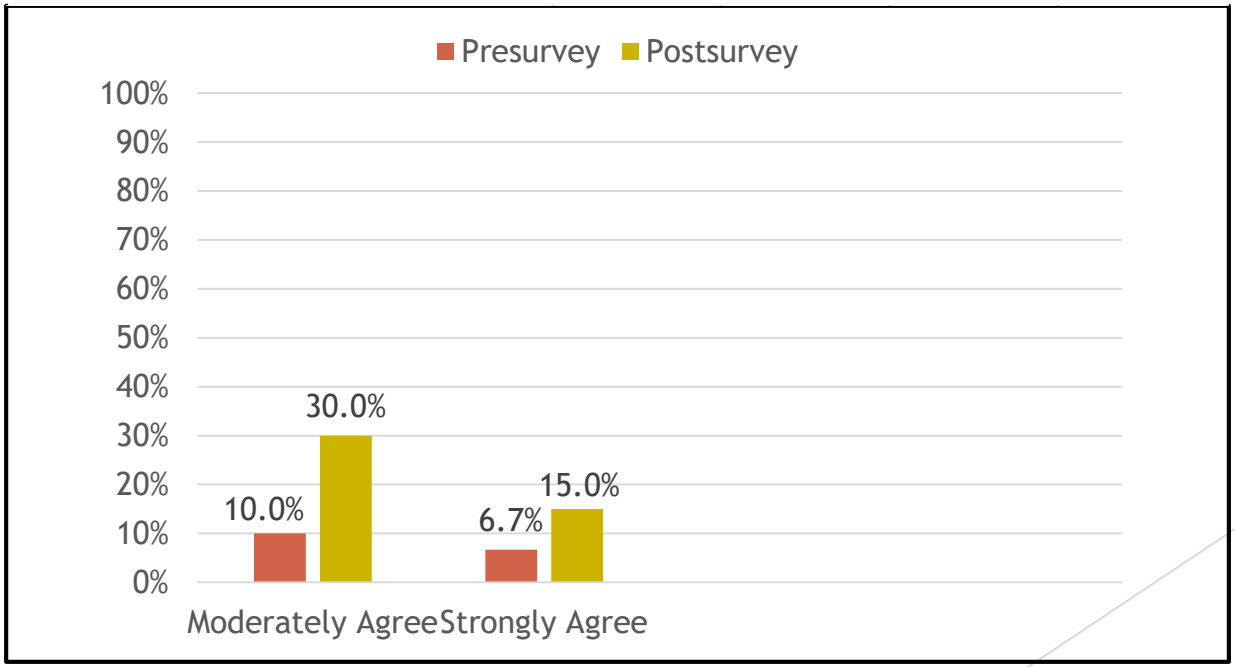
Q11 My Experience With An Emergency Tracheostomy Tube Change was

Q11 My experience with an emergency tracheostomy tube change was				
	Percent		Volume	
	Pre	Post	Pre	Post
No experience	70.0%	55.0%	21	22
It was pleasant, smooth	**3.3%**	**22.5%**	**1**	**9**
It was uncomfortable	16.7%	22.5%	5	9
It was terrifying	**10.0%**	**0.0%**	**3**	**0**
			30	40



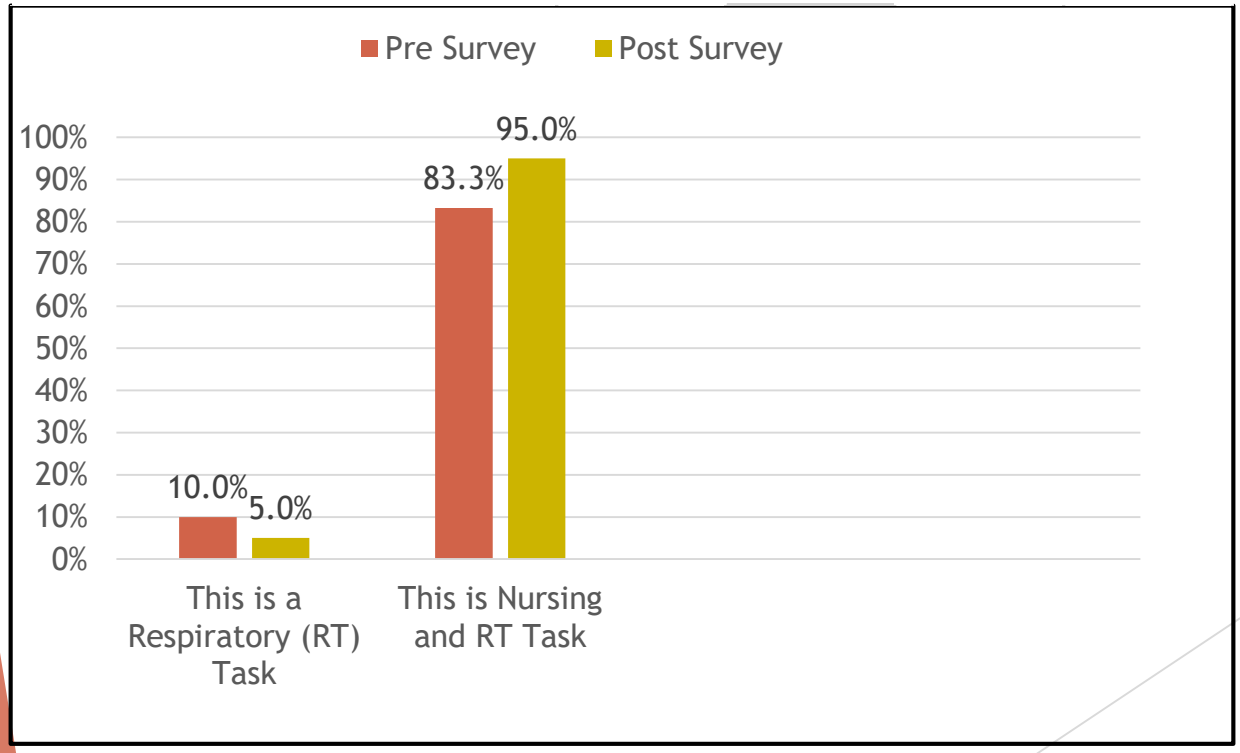
Q12 My Training in Tracheostomy Care Adequately Prepared Me For Emergency Tracheostomy Tube Change

Q12 My training in tracheostomy care adequately prepared me for emergency tracheostomy tube change.				
	Percent		Volume	
	Pre	Post	Pre	Post
Strongly do not agree	23.3%	12.50%	7	5
Do not agree	36.7%	20.00%	11	8
Moderately agree	**10.0%**	**30.00%**	**3**	**12**
Agree	23.3%	22.50%	7	9
Strongly agree	**6.7%**	**15.00%**	**2**	**6**
			30	40



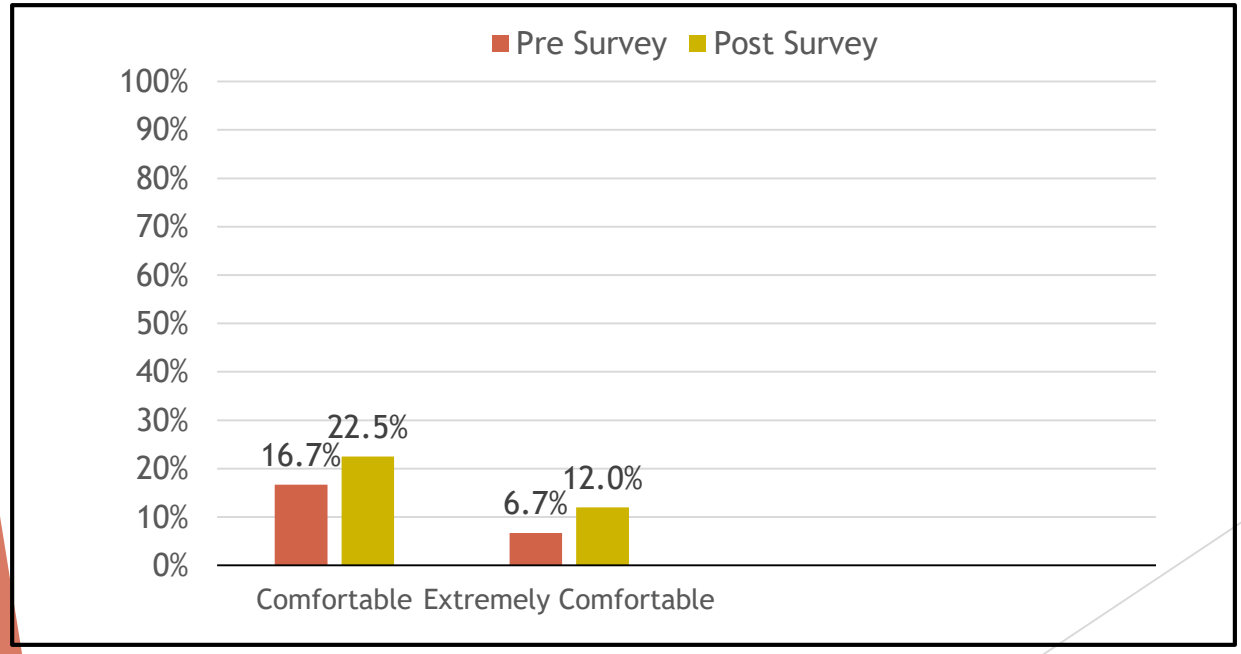
Q13 Describe Your Feelings Regarding Changing An Established Pediatric Tracheostomy Tube

Q13 Describe your feelings regarding changing an established pediatric tracheostomy tube.				
	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	**10.0%**	**5.0%**	**3**	**2**
This is a nursing task	3.3%	0.0%	1	0
This is a nursing and RT task	**83.3%**	**95.0%**	**25**	**38**
This is an MD task	3.3%	0.0%	1	0
			30	40



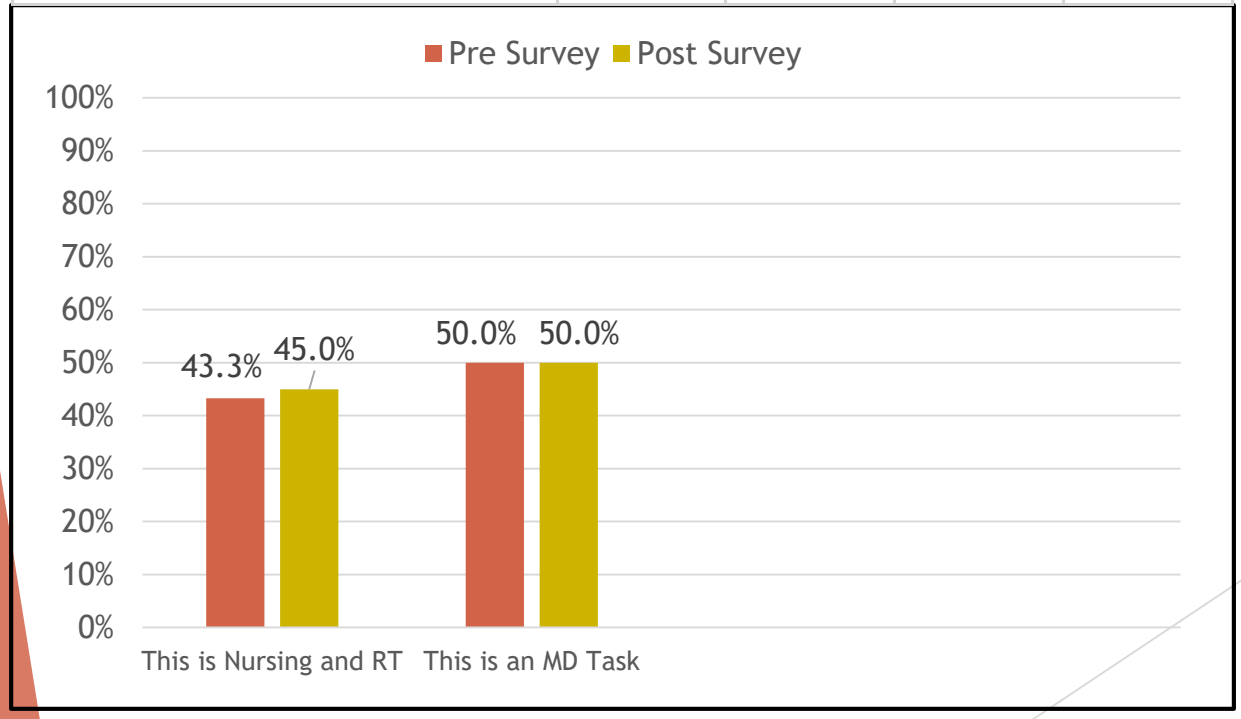
Q14 Describe Your Comfort Level on Changing an Establish Pediatric Tracheostomy Tube

Q14 Describe your comfort level on changing an established pediatric tracheostomy tube.				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	26.7%	17.50%	8	7
Somewhat comfortable	30.0%	22.50%	9	9
Moderately comfortable	20.0%	25.00%	6	10
Comfortable	**16.7%**	**22.50%**	**5**	**9**
Extremely comfortable	**6.7%**	**12.50%**	**2**	**5**
			30	40



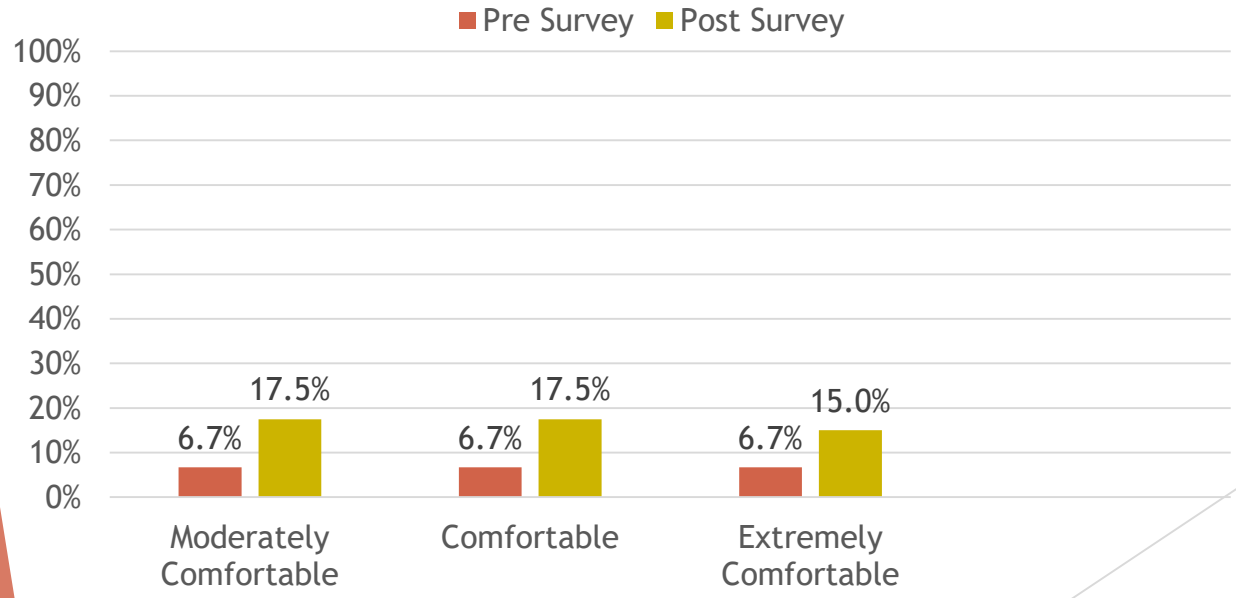
Q15 Describe Your Feelings Regarding Accidental Decannulation of Pediatric Tracheostomy Tube on First Post Operative change (Fresh Trach)

Q15 Describe your feelings regarding accidental decannulation of pediatric tracheostomy tube, prior to the first post-operative change, e.g. a "fresh trach".				
	Percent		Volume	
	Pre	Post	Pre	Post
This is a respiratory therapy (RT) task	6.7%	5.0%	2	2
This is a nursing task	0.0%	0.0%	0	0
This is a nursing and RT task	**43.3%**	**45.0%**	**13**	**18**
This is an MD task	**50.0%**	**50.0%**	**15**	**20**
			30	40



Q20 Describe Your Comfort Level Related to Teaching Family Members/Caregivers How to Perform a Tracheostomy Tube Change

Q20 Describe your comfort level related to teaching family members/caregivers how to perform tracheostomy tube change.				
	Percent		Volume	
	Pre	Post	Pre	Post
Not at all comfortable	36.7%	35.0%	11	14
Somewhat comfortable	43.3%	15.0%	13	6
Moderately comfortable	**6.7%**	**17.5%**	**2**	**7**
Comfortable	**6.7%**	**17.5%**	**2**	**7**
Extremely comfortable	**6.7%**	**15.0%**	**2**	**6**
			30	40



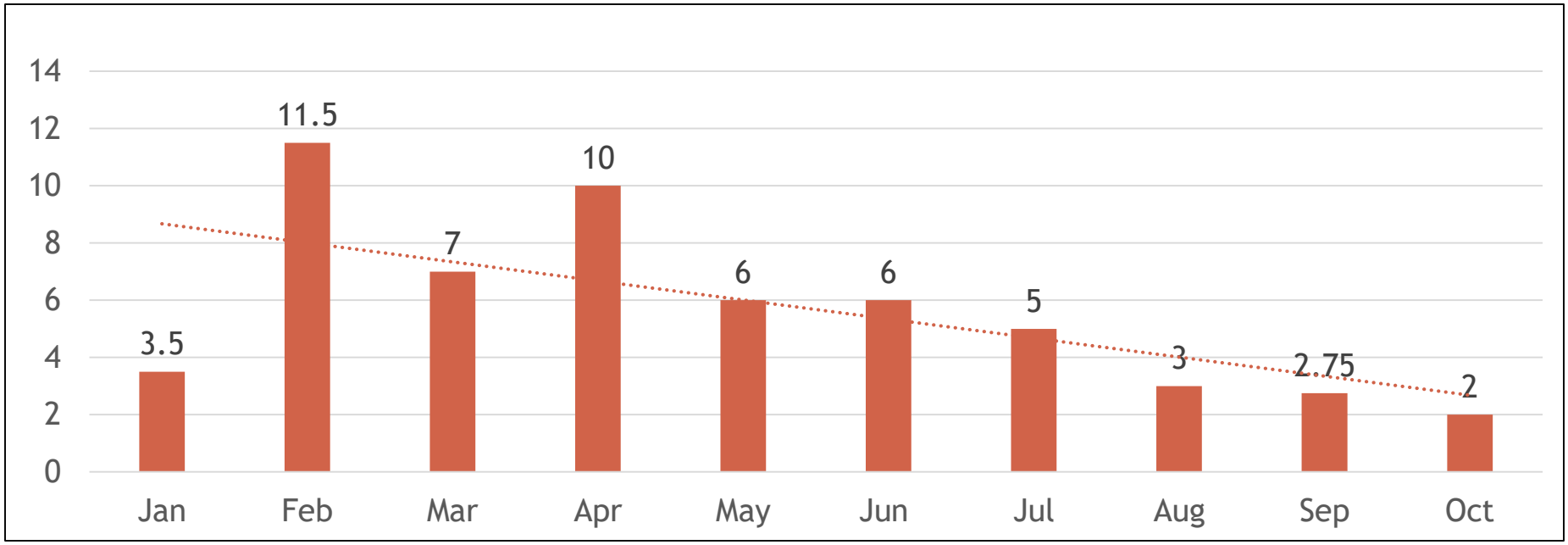
Return On Investment

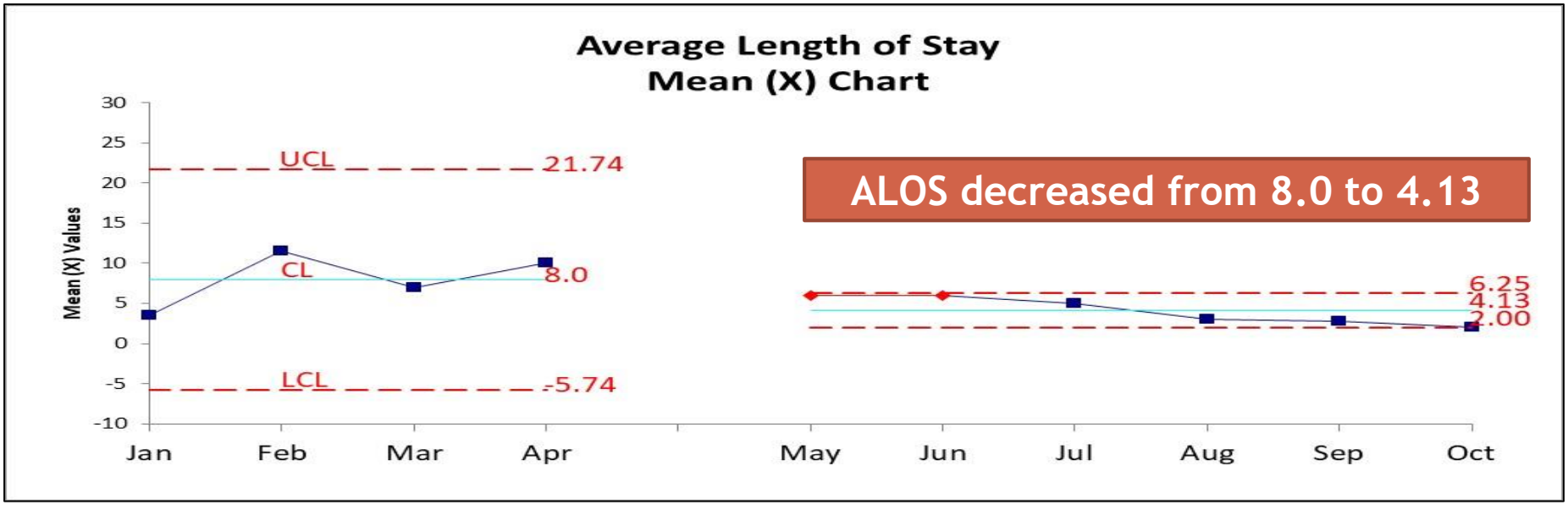
- ALOS Jan through Oct 2017 reduced from 8.0 to 4.13 – Continue to measure

- Re-admission rate remain stable at 1 from 5 through 28 days – Re-measure post survey re-admission rate.

- Provide for staff longevity within the acute care setting and home care environment by Reducing staff turn over/vacancies from 16.4% in 2016 to 7.6% through September 2017 – Continue to measure

- Improve Patient Satisfaction Scores on NRC Picker – Re-measure post survey
  - "Overall Hospital Rate" for all Pediatric locations was 66.7 to 87.5 where the number of responses ranged from 3 to 89.
    The Percentile Rank ranged from 8 through 83.
  - "Would Recommend Hospital" ranged from 64.3 to 100 where the number of responses ranged from 3 to 89.
    The Percentile Rank ranged from 2 through 100.

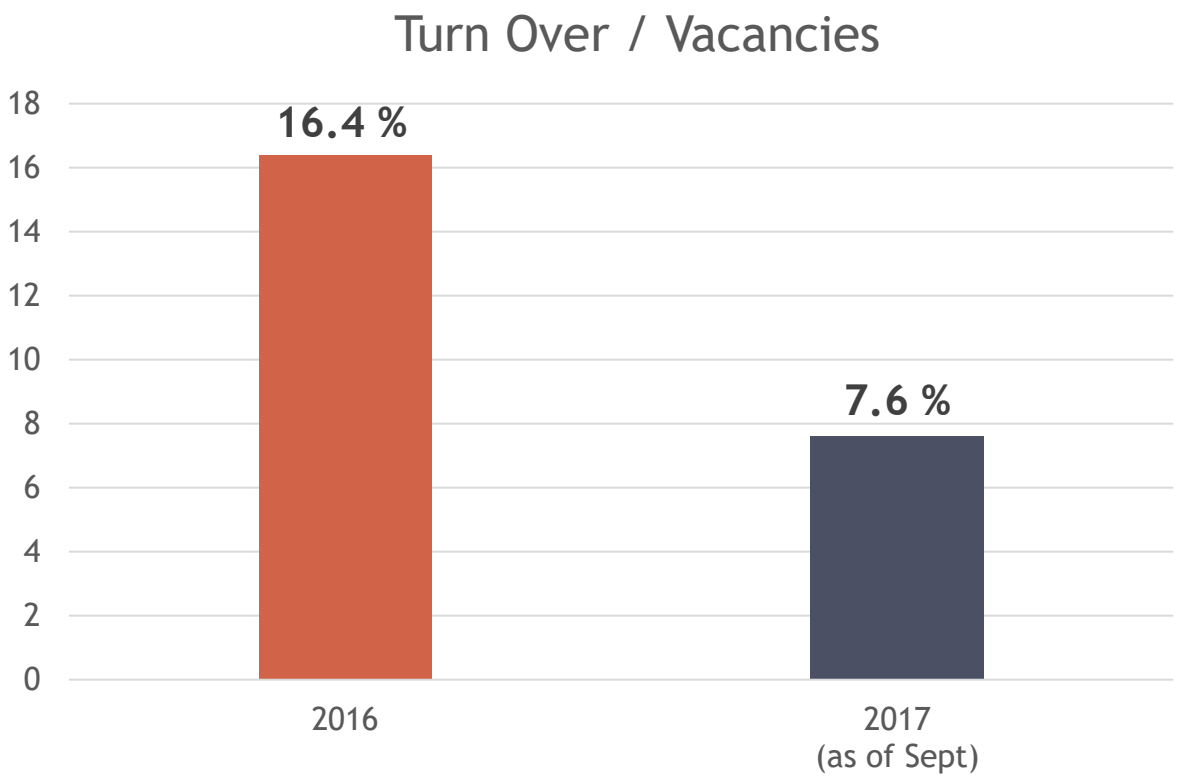




Average Length of Stay

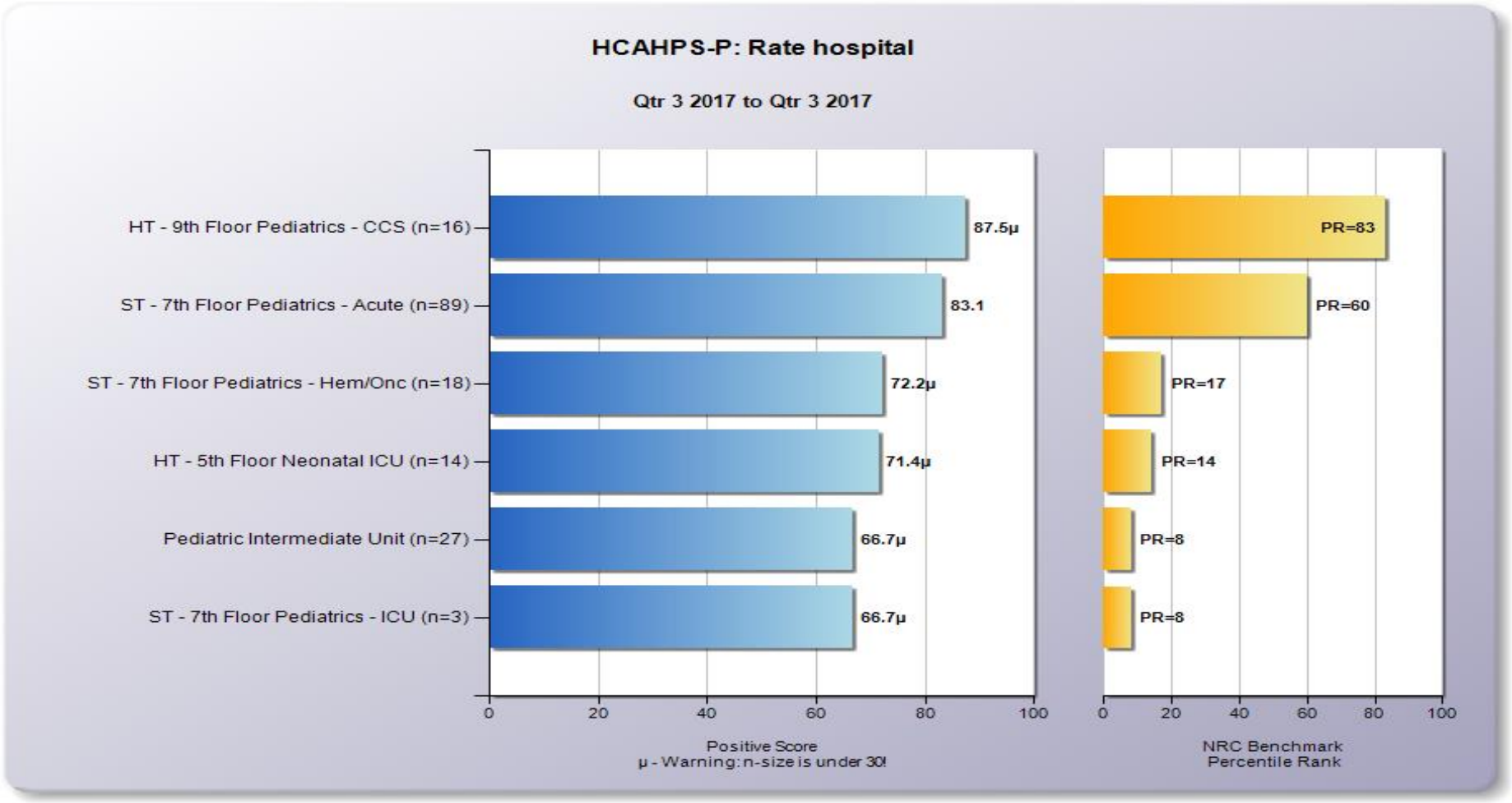
Information from University Health Systems Data Account

Reduce Staff Turn Over/Vacancies



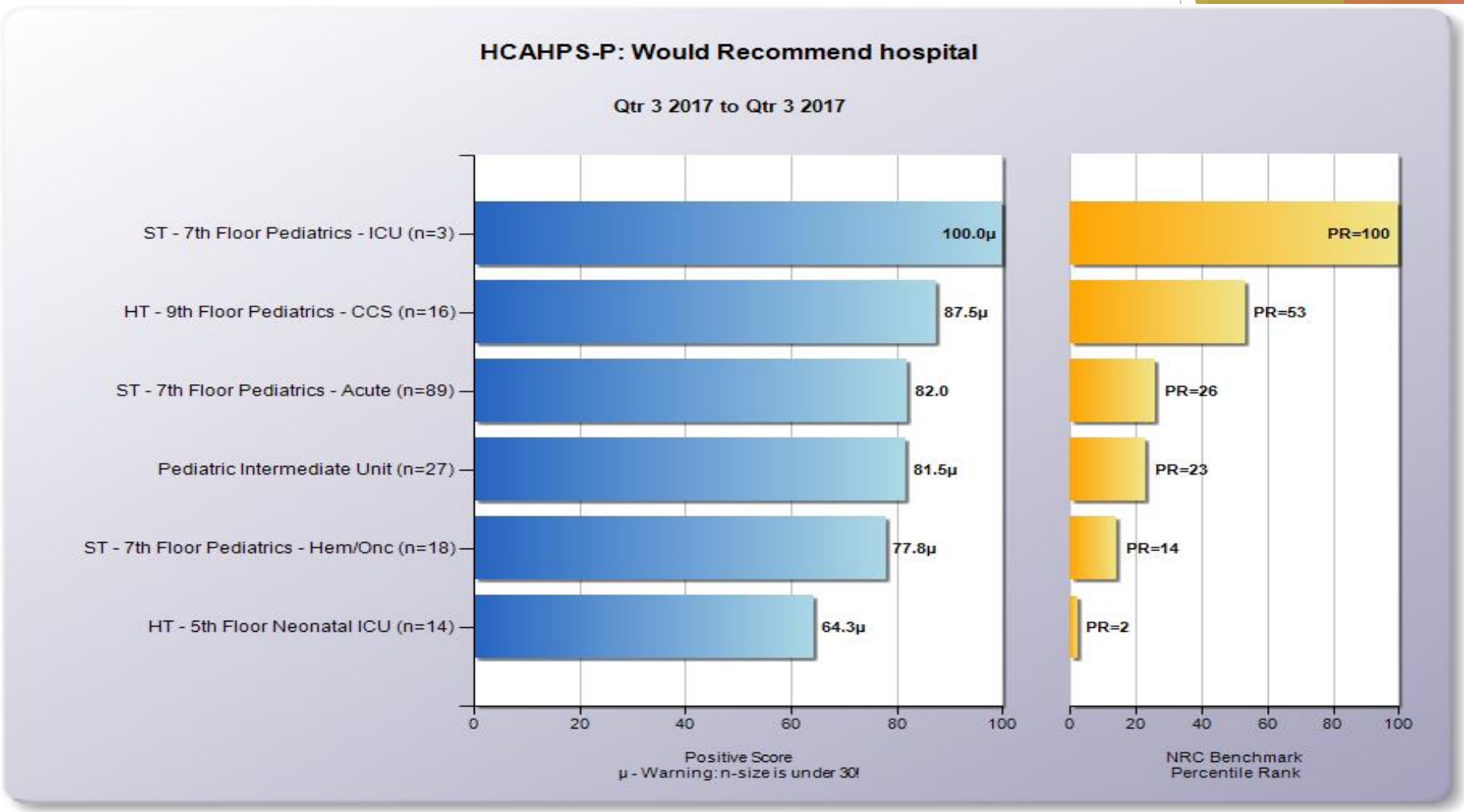
Information provided by Pamela Redell/ Director

NRC Picker Patient Satisfaction Hospital Rate



Information provided by Annierose Abogadie, Director of Quality

NRC Picker Patient Satisfaction Would You Recommend



Information provided by Annierose D. Abogadie, Director of Quality

Actions to Maintain the Gains

- Continue education new, establish, & seasonal Register Nurses & support staff
- Provide education training biannual
- Improve access to the Nursing Portal for remediation
- Hold more “Just in Time” education on Tracheostomy & Ventilators
- In-service & improve preceptors comfort level & confident to support new RN orientation
- Improve communication between the Nursing & Respiratory Staff
- Create a like mind set with the team to help care of the patient with a tracheostomy tube
- Increase the level of trust within the disciplines
- Discuss how to decrease and eliminate Nursing & Respiratory Silos/territory

Next Steps

- Re-visit the policy with NICU educators and nurses
- Identify the Home Health Agencies that care for Pediatric Population with tracheostomy tube
- Assess the Comfort/Confidence of nurses caring for Pediatric patient with a tracheostomy tube in a Home Health Provider Agency
- Plan Tracheostomy Fair for Promoting Education and Care for the Community

Future Directions/Goals

- Following Moore's *Expanded Outcomes Framework*, we achieve Level 4/5
  - Participants *show* in an educational setting or *do* in practice what the educational activity intended them to be able to do
- Our goal would be to progress to Level 6 or 7
  - Level 6: Improve health status of patients due to changes in the practice behavior of participants
  - Level 7: Improve the health status of a community of patients due to changes in practice behavior of participants
    - This would be accomplished by extending assessment and training intervention to home health aides and parents

Reference: Moore DE, et al. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. J Contin Educ Health Prof. 2009 Winter;29(1):1-15.


Q&A

References:

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- Prichett CV, et al. Inpatient nursing and parental comfort in managing pediatric tracheostomy care and emergencies. JAMA Otolaryngology Head Neck Surg. 2016 Feb;142(2):132-7.
- St. Clair JS. A New Model of Tracheostomy Care: Closing the Research–Practice Gap. In: Henriksen K, Battles JB, Marks ES, et al., editors. Advances in Patient Safety: From Research to Implementation (Volume 3: Implementation Issues). Rockville (MD): Agency for Healthcare Research and Quality (US); 2005 Feb. Available from: https://www.ncbi.nlm.nih.gov/books/NBK20542/