



SOUTH CAROLINA  
SURGICAL QUALITY  
COLLABORATIVE

# South Carolina Surgical Quality Collaborative

# South Carolina Surgical Quality Collaborative (SCSQC)

- Established in 2015
- Joint effort to improve the quality and value of surgical care in South Carolina
- Originally funded by the Blue Cross Blue Shield of South Carolina Foundation and the Duke Endowment



# Key Components of the SCSQC

- Continuous quality improvement utilizing actionable and reliable data
- Group learning through collaborative meetings
- Training the next generation of surgical leaders in quality improvement techniques
- Achieve measurable reductions in post-operative complications and lower general surgery costs

# SCSQC Collaboration

SCSQC leaders have regular conference calls and face-to-face meetings with facility leaders

- Collaboration
- Disseminate information
- Review data
- Share best practices
- Learn from each other
- Shortens the learning curve for Quality Improvement projects

# SCSQC Data Abstraction

- Web-based input of patient specific clinical data by trained abstractors
- Reliable, risk-adjusted outcomes, state comparators
- Surgeons and quality officials at each hospital have access to see their risk-adjusted outcomes compared to their de-identified peers
- Site specific data is not shared with other facilities or outside entities

# General Surgery

1. Amputation
2. Bowel
3. Breast
4. Soft Tissue
5. Cholecystectomy
6. Colon
7. Endocrine
8. Hernia
9. Pancreas
10. Stomach

# SCSQC Goals

- Achieve measurable outcomes of highest importance to patients, clinicians, and payors
- Decrease health disparities in South Carolina through reducing surgical morbidity and mortality
- Improve health care value for patients undergoing surgical procedures
- Deliver the highest quality care at the lowest cost
- Assure sustainability of the program

# SCSQC Participant Benefits

- Better outcomes for patients
- More effective and efficient Quality Improvement efforts
- Collaboration and networking with leaders improving patient care.
- High quality, risk-adjusted actionable data immediately available to guide Quality Improvement efforts
- Access to resources to improve surgical outcomes
- BCBS Rewarding Excellence Points
- South Carolina's Quality-Based Payment Program through Medicaid



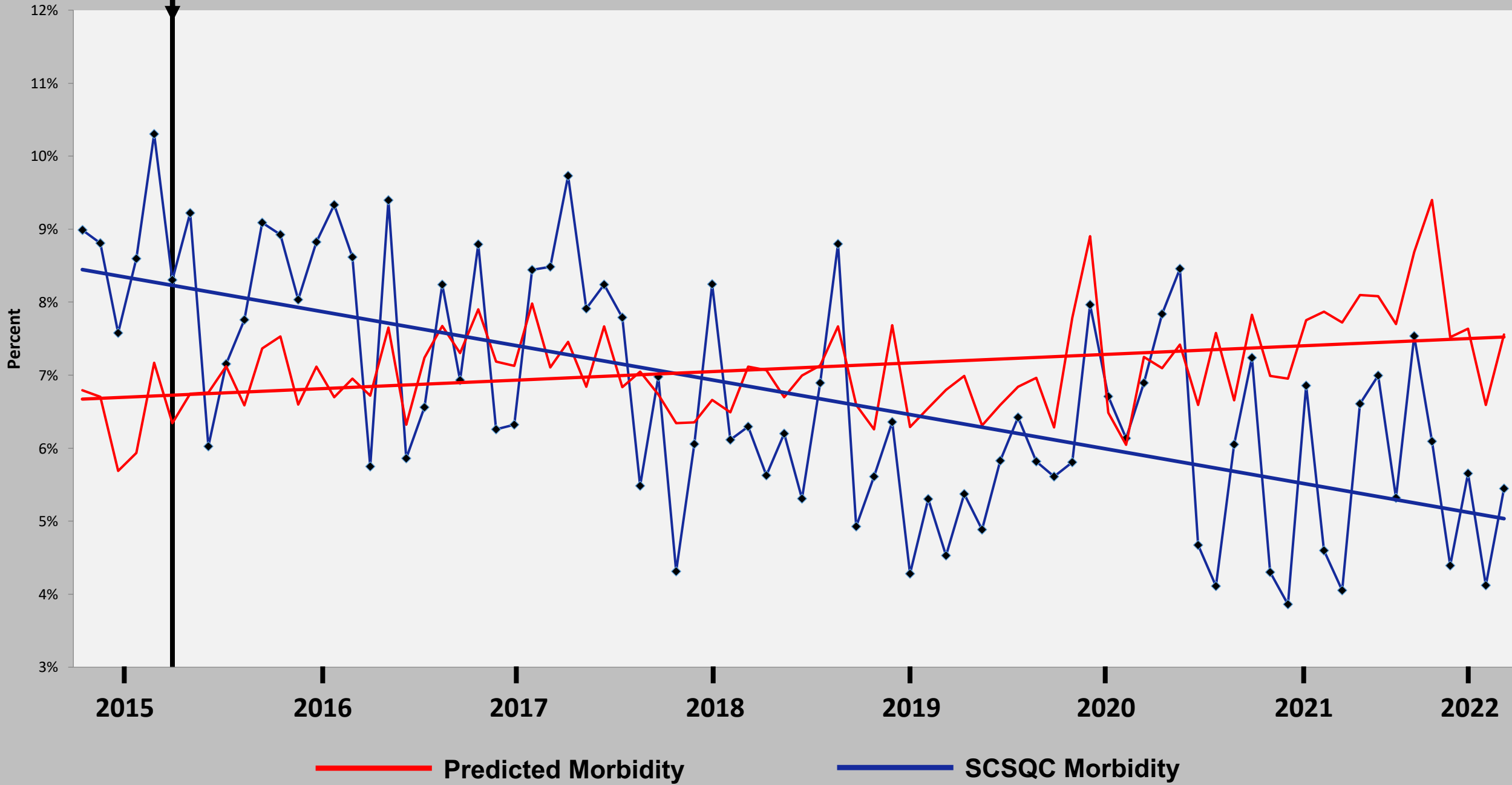


# Outcomes - Overall

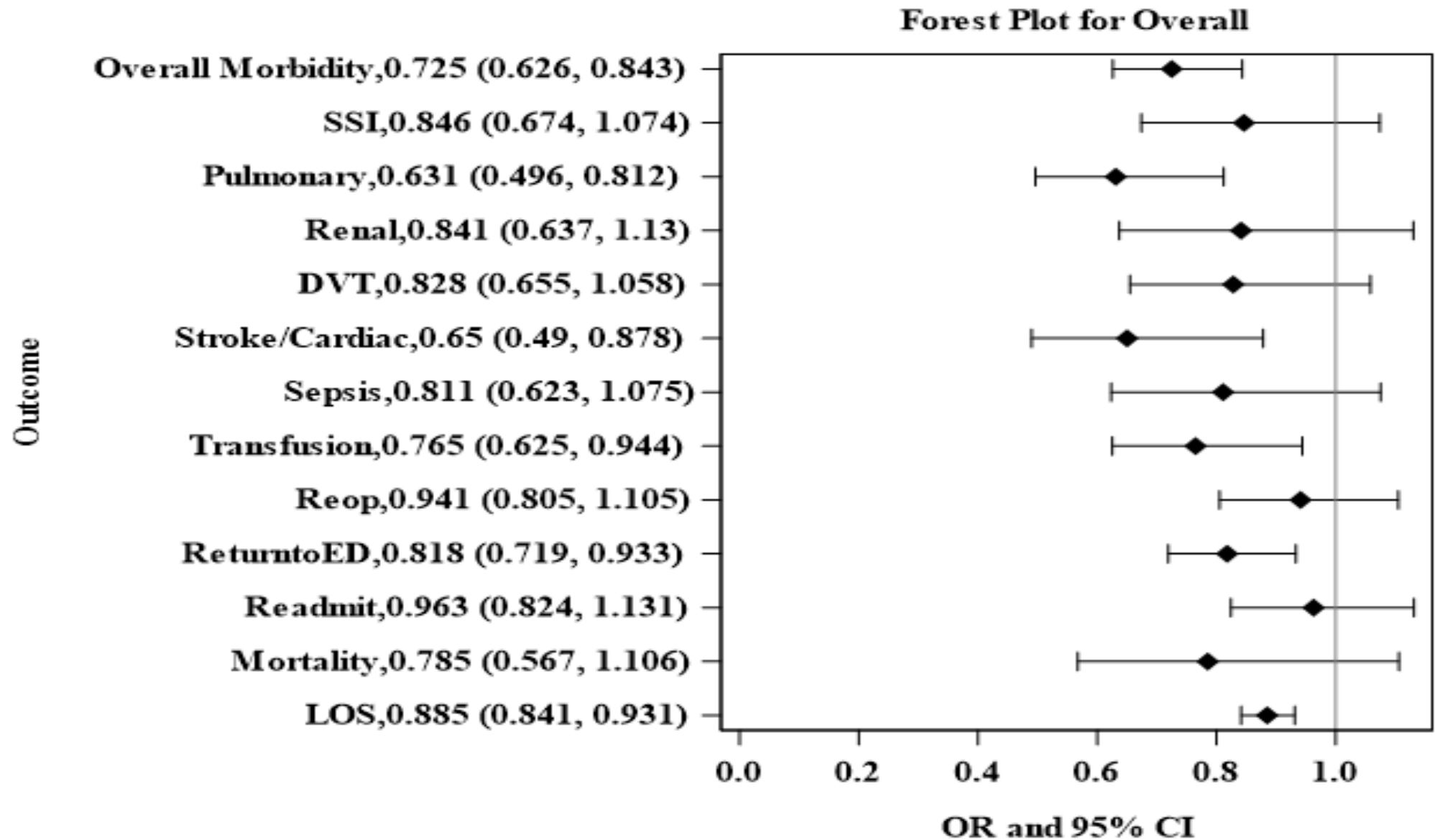
	Time Frame Aug15-Jan16 (n=2968)	Time Frame Feb16-Mar22 (n=40673)	p-value
<b>Overall</b>			
Morbidity (%)	8.76	6.56	<0.0001
SSI (%)	2.86	2.42	0.1281
Pulmonary (%)	2.86	1.69	<0.0001
Renal (%)	1.92	1.66	0.2902
DVT (%)	3.17	2.58	0.0528
Stroke/Cardiac (%)	2.06	1.38	0.0027
Sepsis (%)	2.12	1.61	0.0352
Transfusion (%)	4.68	3.55	0.0014
Reop (%)	6.74	5.92	0.0695
ReturntoED (%)	9.84	7.75	<.0001
Readmit (%)	6.30	6.02	0.5301
Mortality (%)	1.82	1.41	0.0677
LOS, Mean	3.75	3.42	0.0071
LOS, Median	1.52	1.45	0.0110

P-value <= 0.05;
  0.05 < P-value <= 0.10;
  0.10 < P-value < 0.20.

# Morbidity vs. Predicted Morbidity (2015-2022)



# Multivariable Regression



# Outcomes– Non-Commercial

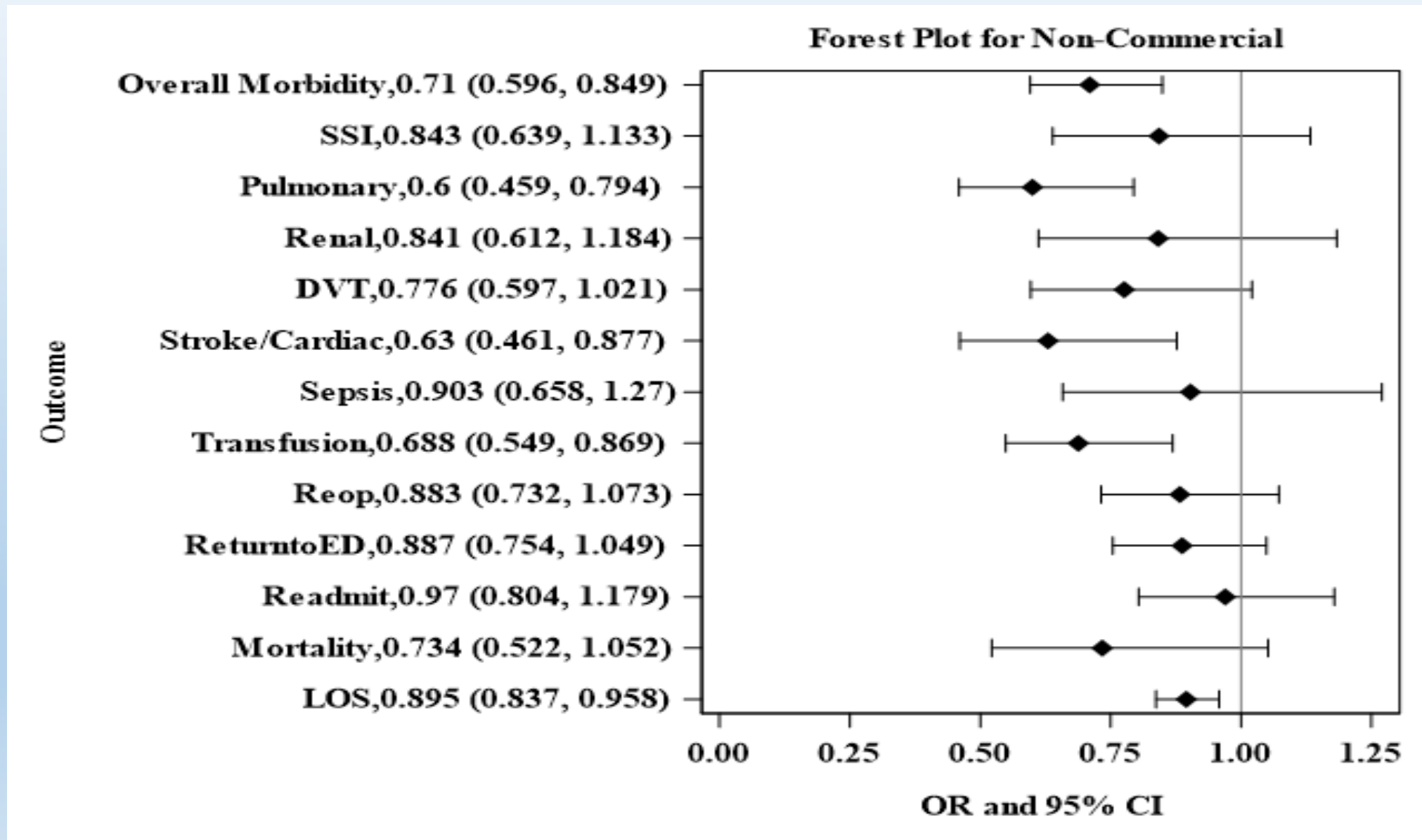
<b>Non-Commercial</b>	Time Frame Aug15-Jan16 (n=1661)	Time Frame Feb16-Mar22 (n=23572)	p-value
Morbidity (%)	11.50	8.40	<0.0001
SSI (%)	3.49	2.78	0.0900
Pulmonary (%)	4.21	2.32	<0.0001
Renal (%)	2.59	2.22	0.3249
DVT (%)	4.70	3.49	0.0106
Stroke/Cardiac (%)	3.13	2.04	0.0030
Sepsis (%)	2.59	2.10	0.1825
Transfusion (%)	7.10	4.87	<0.0001
Reop (%)	8.55	6.92	0.0123
ReturntoED (%)	11.08	9.22	0.0119
Readmit (%)	7.77	7.28	0.4576
Mortality (%)	3.01	2.16	0.0220
LOS, Mean	4.81	4.23	0.0003
LOS, Median	2.00	1.65	0.0032

P-value <= 0.05;

0.05 < P-value <= 0.10;

0.10 < P-value < 0.20.

# Multivariable Regression

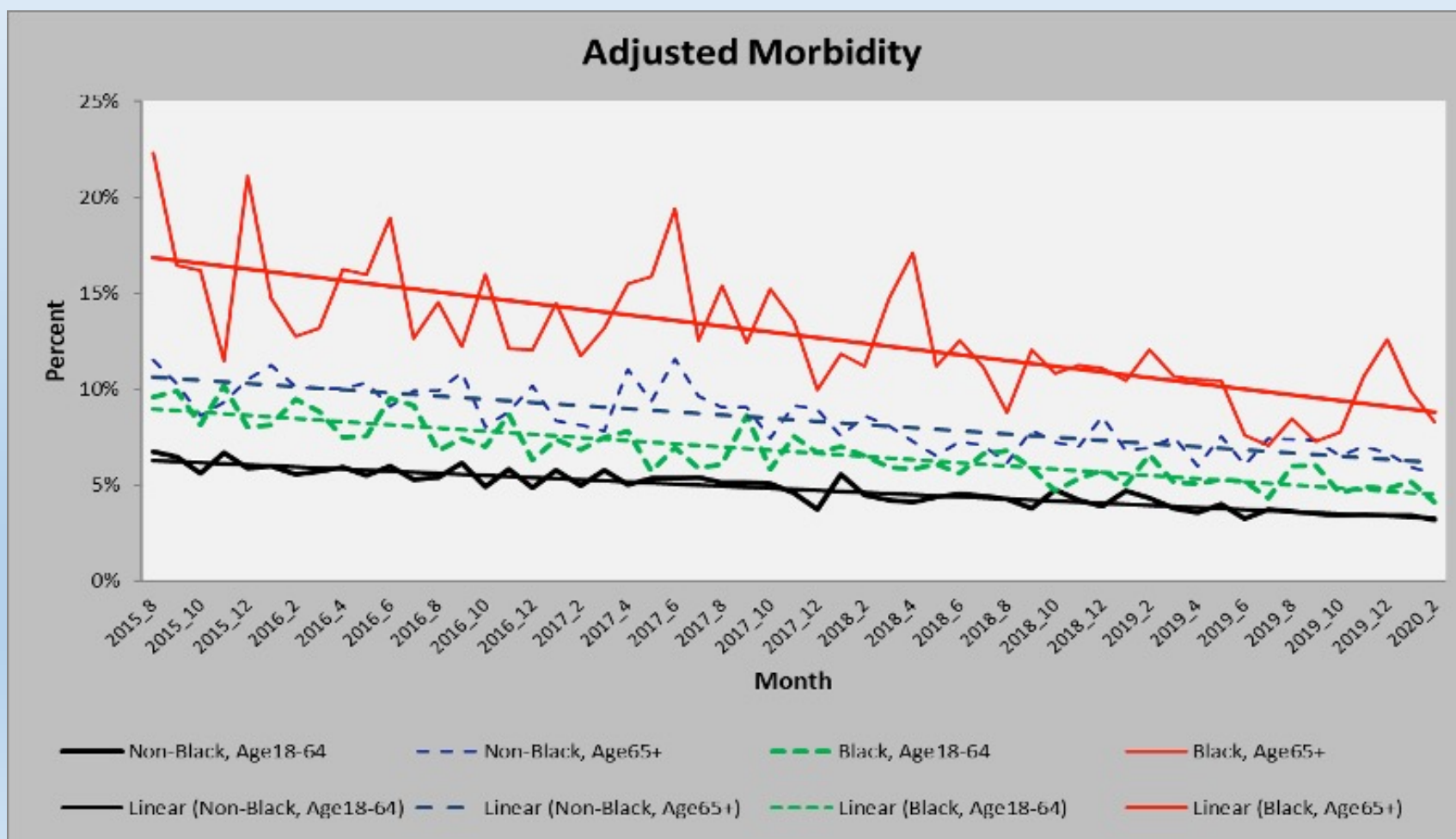


# Surgical Outcomes Improvement and Health Inequity in a Regional Quality Collaborative



JACS | Journal of the American College of Surgeons

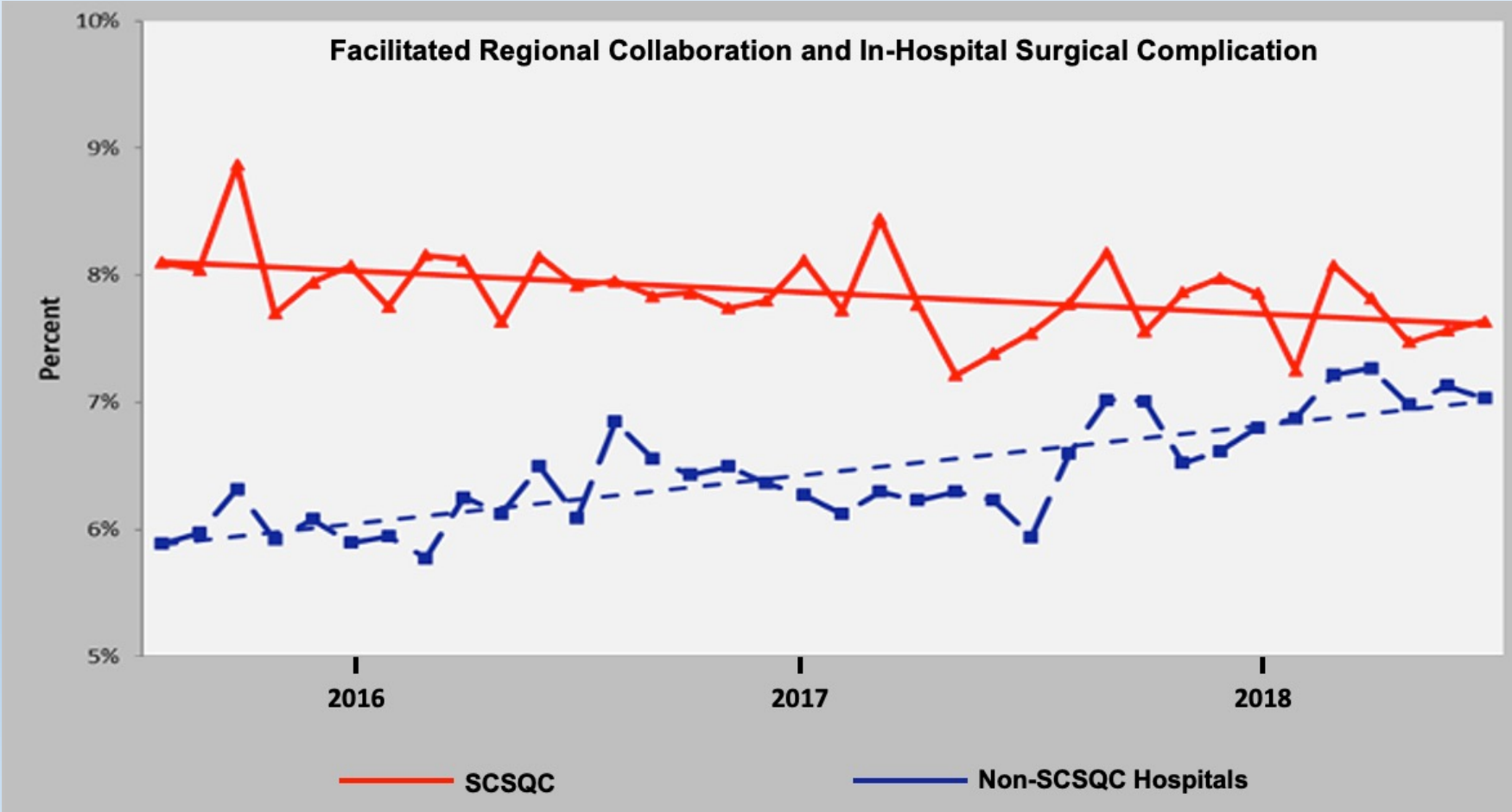
*J Am Coll Surg.* 2022 Apr 1;234(4):607-614. doi: 10.1097/XCS.000000000000084



# Facilitated Regional Collaboration and In-Hospital Surgical Complication



*J Am Coll Surg.* 2021 Apr 1;234(4):536-543. doi: 10.1016/j.jamcollsurg.2020.11.025. Epub 2020 Dec 28.





# Funding

BCBS Rewarding Excellence				
Domain	Sub-Points Allocated	Measure ID	Benchmark	Measure Description
<b>2022</b>				
Patient Experience	6	South Carolina Surgical Quality Collaborative	Yes	Hospitals that are members of the collaborative will be awarded bonus points.
<b>2023</b>				
Patient Experience	8	South Carolina Surgical Quality Collaborative	Yes	Hospitals that are members of the collaborative will be awarded bonus points.
<b>Indirect</b>				
Harm Avoidance / Patient Safety	5	HAI-1-SIR	National Average	Central Line Associated Blood Stream Infection (CLABSI)
Harm Avoidance / Patient Safety	5	HAI-3-SIR	National Average	Surgical Site Infection (Colon)
Harm Avoidance / Patient Safety	5	HAI-4-SIR	National Average	Surgical Site Infection (TAH)
Harm Avoidance / Patient Safety	5	HAI-2-SIR	National Average	Catheter Associated Urinary Tract Infection (CAUTI)
Harm Avoidance / Patient Safety	5	HAI-6-SIR	National Average	Clostridium Difficile Infection
Readmissions	20	BCBSSC Readmission Rate	<.80	Less than 80% of expected readmission rate
Readmissions	10		.80-.8999	Between 80% and 89.99% of expected readmission rate
Readmissions	5		.90-.9999	Greater than 90% and less than 99.99% of expected readmission rate
Bonus Points	0.5	SCHA: Certified Zero Harm Awards Program (Sustained for 12+ months)	Yes	Hospitals that sustained 0 harm events for 12+ months, as so recognized by the SCHA, will be rewarded bonus points. Hospitals may only receive the bonus points once, regardless of the number of awards.

- Medicaid Quality-Based Payment Program – 2% of program funds



# Diabetes Free South Carolina – Diabetes Pre-hab Program

- Diabetes pre-habilitation program funded by the Blue Cross Blue Shield of South Carolina Foundation
- Focused on improving surgical outcomes for patients with diabetes
- Participants
  - McLeod
  - MUSC
  - Regional Medical Center Orangeburg



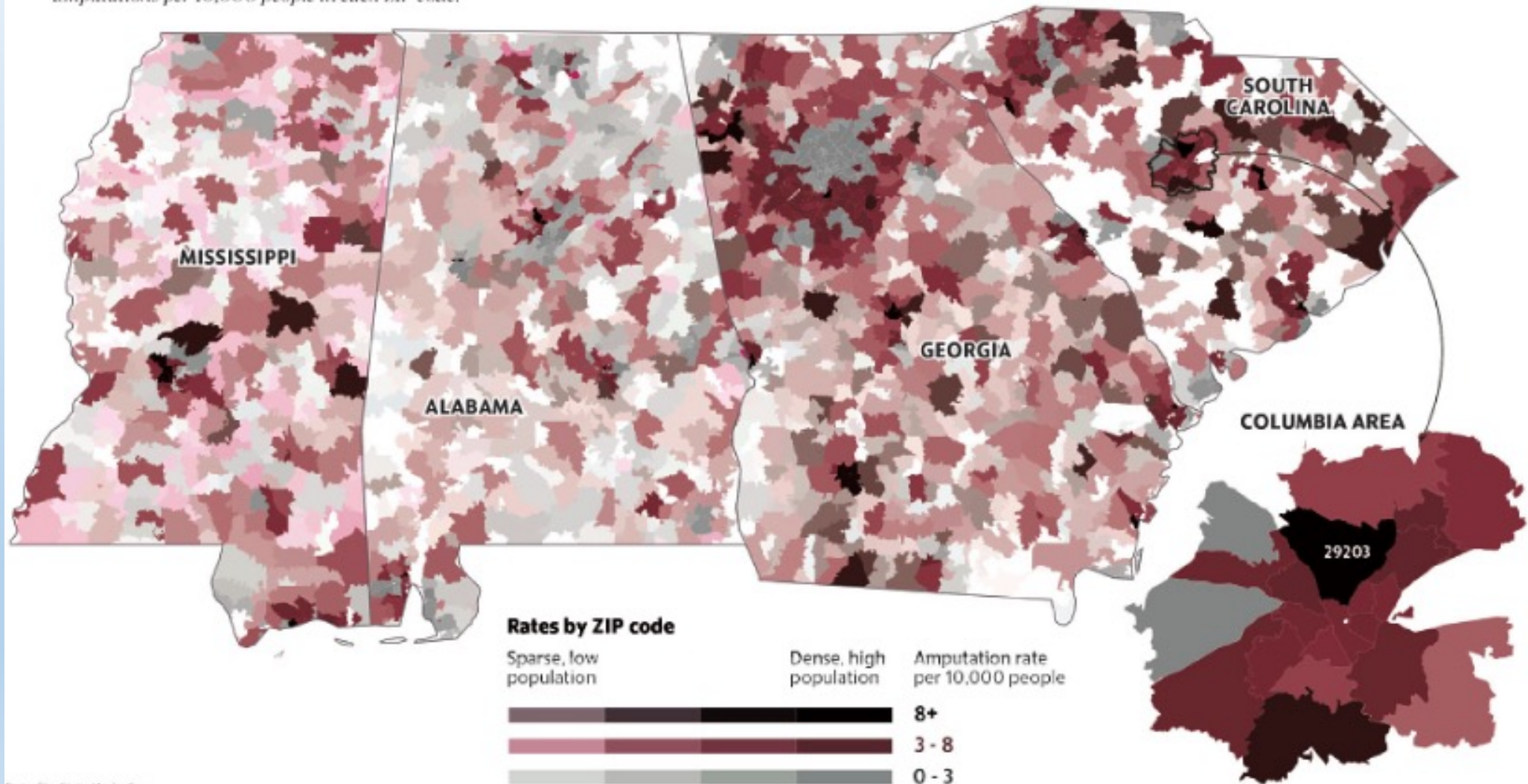
# Diabetics vs. Non-Diabetics

<b>Overall</b>	No Diabetes (n=35,564)	Insulin Diabetes (n=3,765)	Non-Insulin Diabetes (n=6,312)	p-value
Morbidity (%)	5.83	12.51	7.89	<.0001
SSI (%)	2.31	3.16	2.77	0.0011
Pulmonary (%)	1.53	3.32	2.11	<.0001
Renal (%)	1.41	3.67	1.92	<.0001
DVT (%)	2.05	6.96	3.06	<.0001
Stroke/Cardiac (%)	1.14	3.21	1.90	<.0001
Sepsis (%)	1.42	3.19	1.92	<.0001
Transfusion (%)	2.87	9.43	4.18	<.0001
Reop (%)	5.23	11.31	6.73	<.0001
ReturntoED (%)	7.38	11.39	8.54	<.0001
Readmit (%)	5.30	11.39	6.73	<.0001
Mortality (%)	1.15	3.05	1.96	<.0001
LOS, Mean	3.05	6.08	3.95	<.0001
LOS, Median	1.20	3.78	1.59	<.0001

# Diabetic Amputation Rates

## Diabetic amputation rates

Data shown represents the number of people who have received diabetic-related amputations per 10,000 people in each ZIP code.



# DFSC Diabetes Pre-hab Program

- Many surgical patients have pre-diabetes or diabetes discovered at the time of surgical workup.
- Surgery provides an ideal time to encourage patients to improve their health.
  - “teachable moment”
- The diabetes pre-hab program can improve both short-term surgical outcomes and long-term health habits.

# DFSC Diabetes Pre-hab Program

- Hospitals recruit and engage a multidisciplinary team dedicated to optimizing patient outcomes and long-term health.
- Identify surgical patients who should benefit from training for surgery.
- Provide pre-hab risk assessment, medical problem management, education, and follow-up.
- Target modifiable risk factors including optimizing glycemic control, assessing and mitigating diabetes-related complications, improving nutrition, medication review and adjustment, behavioral health issues, teaching mindfulness techniques, exercising and empowering smoking cessation, and encouraging exercise and weight loss as needed.



# DFSC Diabetes Pre-hab Program Flow

- Each patient receives personalized pre-hab educational information.
- Patients with poor glycemic control are referred to providers skilled in managing diabetes.
- Labs and data are captured for patients at their initial visit (prior to surgery), the day of surgery, the day of discharge, 30 days post-op and 6 months post-op.
- Data is abstracted and entered into the SCSQC data platform.
- De-identified data is shared with DFSC for further analysis.



# DFSC Diabetes Pre-hab Patient Education

## Diabetes Handbook

What is Diabetes?

### What does diabetes do to my body?

- Diabetes is a serious disease that makes me have too much glucose ("sugar") in my blood; it is sometimes called "high blood sugar".
- Type 1 and Type 2 Diabetes will not go away.
- Diabetes can be controlled.

### How does diabetes change the way my body uses food for energy?

- Most of the food I eat is turned into sugar by my body.
- My body needs **insulin** to carry sugar (energy) from the blood to my cells to live.

### There are different types of diabetes:

#### Type 1 Diabetes:

- My body makes little or no insulin.
- I must take insulin shots every day to control my blood sugar.
- I need to exercise and eat a healthy diet.
- I got this type of diabetes when I was a child or adult.

#### Type 2 Diabetes:

- My body does not make enough insulin or my body can't use it properly.
- I may be able to control my blood sugar with exercise and a healthy diet.
- I may need diabetes pills to control my blood sugar.
- I may need to take insulin shots to control my blood sugar.
- There may be other members of my family who have diabetes.

**ANKLE PUMPS:** Ankle pumps can help prevent circulation problems, such as blood clots. Do ankle pumps by pointing and flexing your feet.

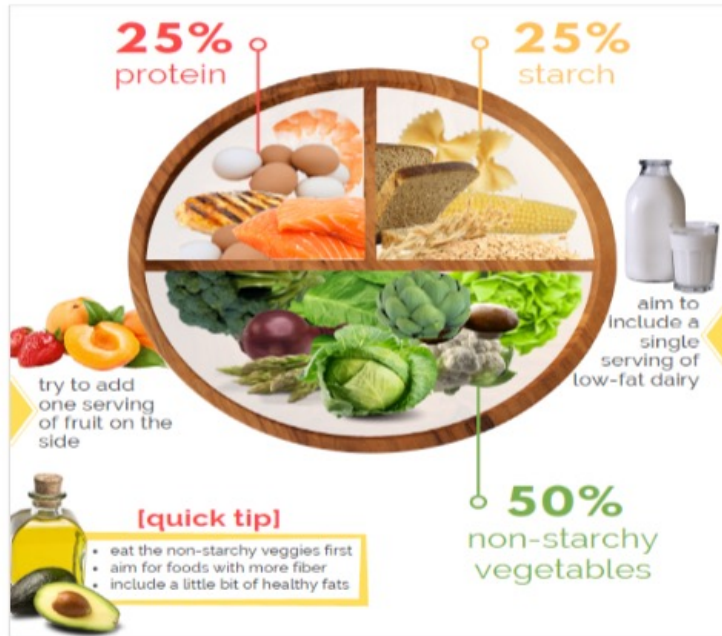
**HIP FLEXION:** Slowly bend your hip and knee. Hold for 5 seconds, then slowly lower your leg to the starting position.

**ADDUCTOR SQUEEZE WITH TOWEL or BALL:** Lie on your back with a ball or towel between your legs (thighs and knees). Squeeze the pillow as hard as you can for 10 seconds. Relax.



### What should I eat?

A Balanced Plate for Diabetes



estimating portions.

When planning a meal, use the following portion sizes as a guide:

### Handy Guide

Your can be useful in

# DFSC Diabetes Pre-hab Program: Timeline

## Year 1

- ✓ Recruit hospitals
- ✓ Create metrics and evaluation template
- ✓ Develop pre-hab protocol
- ✓ Create data collection process
- ✓ Establish facility pre-hab process
- ✓ Enroll patients

## Year 2

- Full implementation of pre-hab program at sites
- Begin data analysis
- Manage emergent diabetic surgery patients

## Year 3

- Review outcomes data to improve best practices
- Expand pre-hab component to other common surgeries





# DFSC Diabetes Pre-hab Program

## Expected Results

- Improve modifiable risk factors before surgery, during hospitalization for surgical procedures, and post-surgery
- Improve surgical morbidity rates
- Overall healthier lifestyle following surgery that is sustainable over the long-term

To request more information,  
please contact:  
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