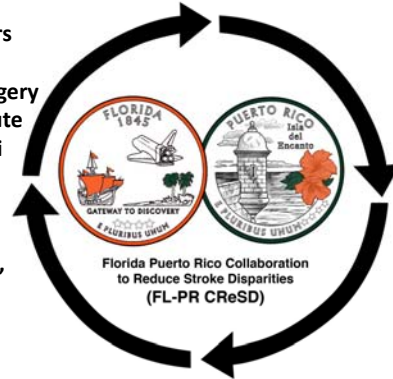


Closing the Gap: Florida Puerto Rico Collaboration to Reduce Stroke Disparities

Ralph L. Sacco, MS MD FAAN FAHA
Olemberg Family Chair in Neurological Disorders
Miller Professor of Neurology, Public Health &
Epidemiology, Human Genetics, & Neurosurgery
Executive Director, Evelyn McKnight Brain Institute
Miller School of Medicine, University of Miami
Jackson Memorial Hospital

Supported by grants
R37 NS 29993, U54 NS 081763, R01 NS 240807,
R01 42912, 047655, DE 13094,
Evelyn McKnight Brain Institute



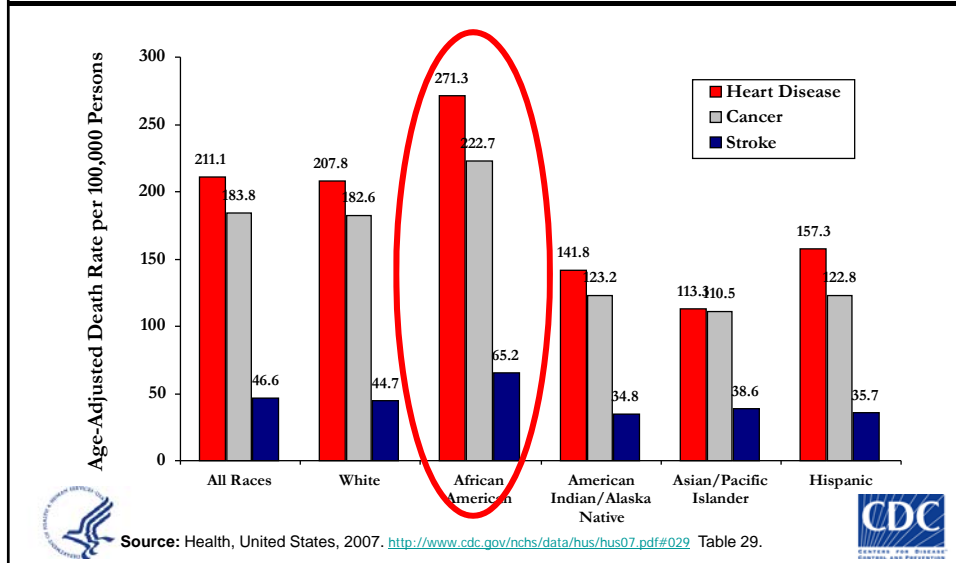
Florida Puerto Rico Collaboration to Reduce Stroke Disparities (FL-PR CReSD)

- Stroke Disparities in the US
- Design of FL-PR CReSD
 - FL PR Stroke Registry
 - Education Core
- Preliminary Data Review
- Next Steps

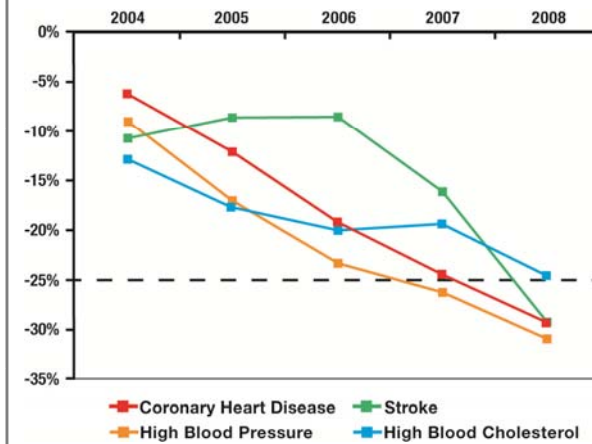


Heart Disease, Cancer, & Stroke: 2005

Age-Adjusted Death Rates per 100,000 Persons by Race & Hispanic Origin: U.S.



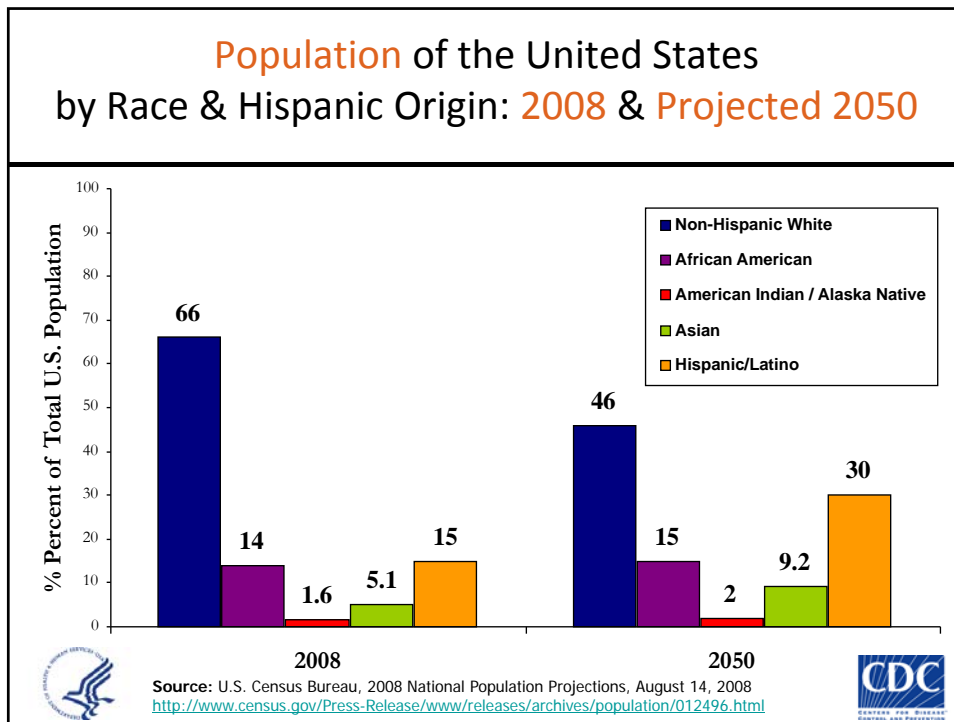
2010 AHA Impact Goal Results



Lloyd-Jones, D.M. et al. *Circulation* 2010;121:586-613

CHD -35.7%
Stroke -32.5%
HBP -27.7%
CHOL -22.1%





Disparities in Stroke Risk Factors and Ideal Cardiovascular Health

- African American’s and Hispanics have a greater risk of stroke and particularly ICH and certain infarct subtypes
- Disparities in vascular risk factors contribute to most of these disparities
- Less is known about Hispanics, the fastest growing population in the US
- Stroke prevention and treatment need enhancement in the African American and Latino community

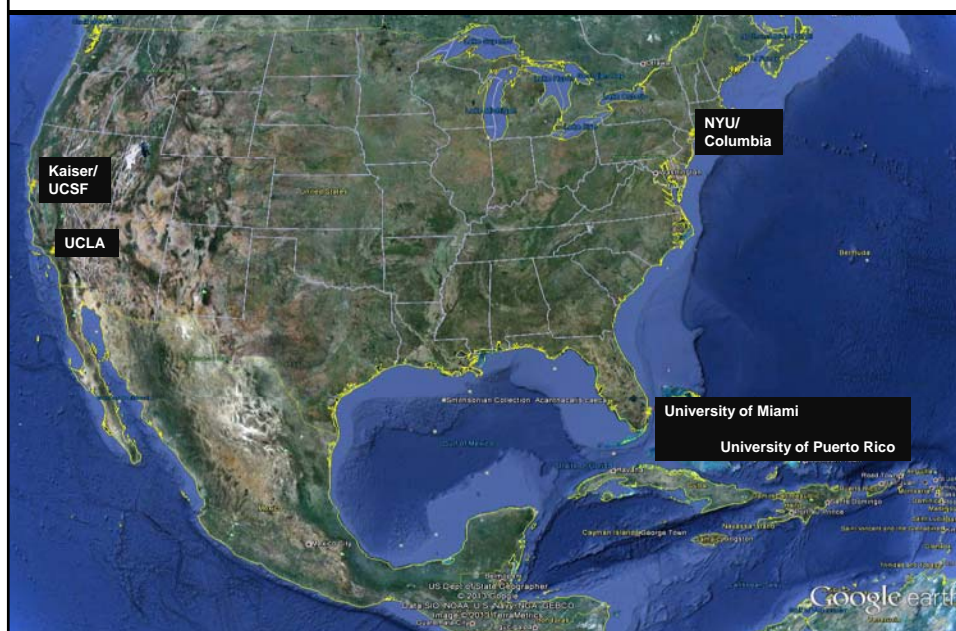
NINDS Stroke Prevention Intervention Research Program (SPIRP)

The SPIRP mission is to eliminate disparities in stroke outcome in the United States

Four research centers will develop and implement high-impact, culturally-appropriate interventions and prevention programs aimed at minority racial/ethnic groups, as well as those who are socioeconomically disadvantaged



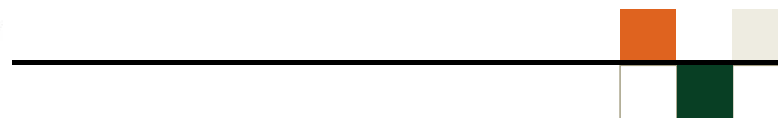
NINDS SPIRP Centers



FL-PR Collaboration to Reduce Stroke Disparities (FL-PR CReSD)

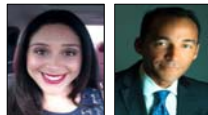
Our vision is to eliminate disparities in stroke prevention and care among Hispanics and underserved populations

By leveraging resources and collaborations across NINDS,UM, AHA, UPR, and HIMA, we aim for all patients who have had a stroke to receive the best possible care and achieve the best outcomes

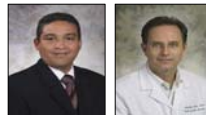
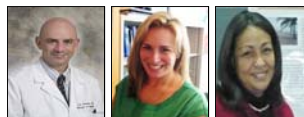


FL-PR CReSD Team

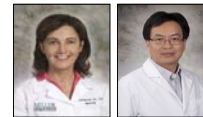
Core A:
Administrative Core



Core B:
Research/Education Training
Plan Core



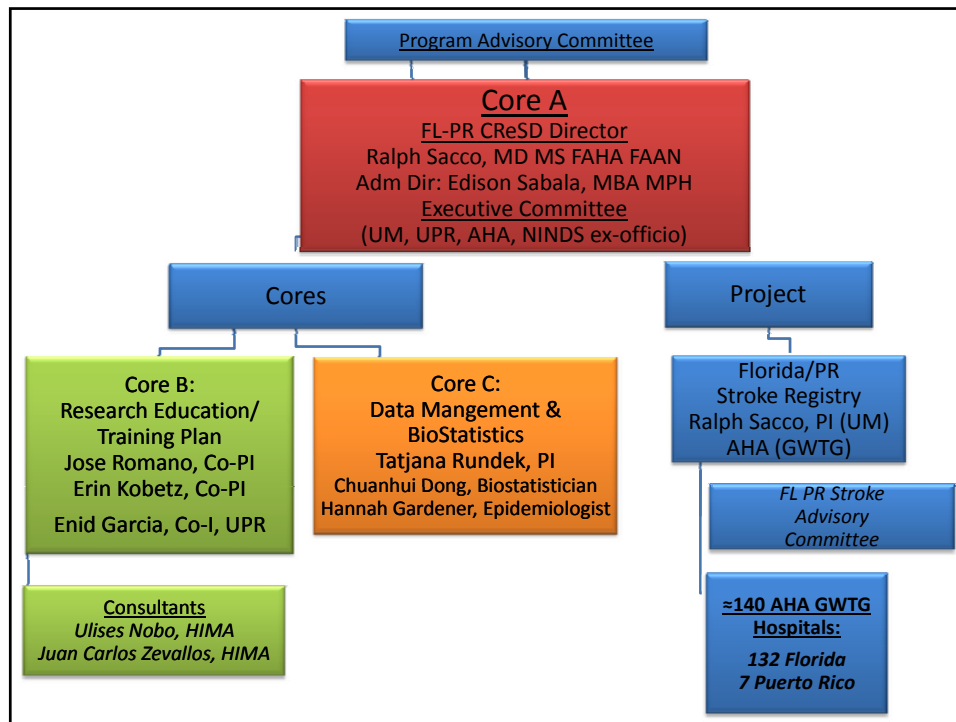
Core C:
Data Management/
Biostatistics Core



AHA Staff:
Julia Mora
Kathy Fenelon
Carla English
Sandra Diaz-Acosta
Jeffrey Walker

Consultants:





FL-PR Stroke Registry Goals

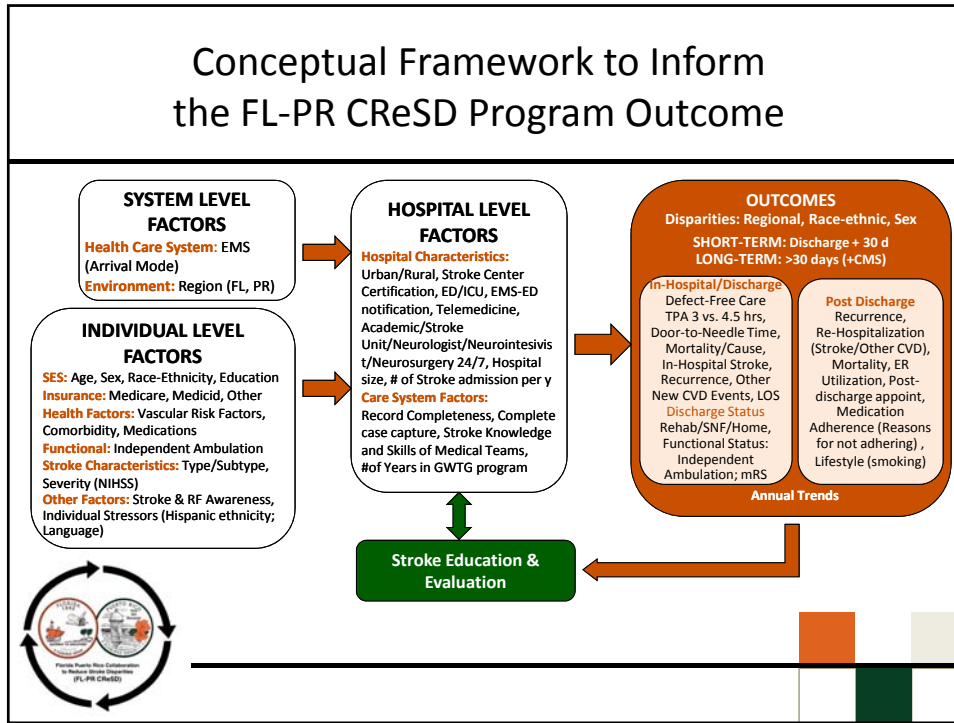
To evaluate for disparities in stroke performance metrics individually and for overall rates of “defect-free care” by race and ethnicity and geographic regions in Florida and Puerto Rico.

To investigate the frequency of disparities at 30-days post stroke in outcomes, medication adherence, and lifestyle modifications by race, ethnicity and regions.

To assess the frequency of disparities in longer term outcomes among Medicare patients within the FL PR Stroke Registry and the relationship of these outcomes with acute stroke performance metrics.

To conduct annual education programs among hospital stakeholders with a focus on identifying and implementing specific culturally-tailored quality improvement programs to address these disparities and evaluate effectiveness by analyzing temporal performance trends.





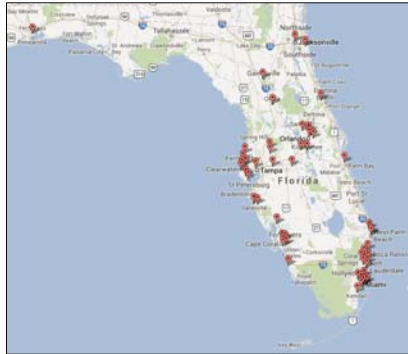
FL-PR Stroke Registry Timeline

Fiscal Project Year	Year (01)				Year (02)				Year (03)				Year (04)				Year (05)			
Study Activities	Quarter 1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Train manager; Initiate FL-PR Stroke Committee; Obtain Permission from Hospitals to join the voluntary registry	█																			
Aggregate data from hospitals who agree in a database; Begin data analyses and annual interval data analyses by Core C; Quarterly Adv Com Teleconferences		█	█	█																
Annual Stakeholders Meeting to review results; Stroke Disparities Education by Core B; Share best practices																				
Extra baseline data & more 30Day Outcome data; Assess temporal changes in performance measures																				
Evaluate 30day outcomes and adherence data; Analyze Hispanic subgroups by Core C																				
Obtain CMS data for matched dataset analyses for longer term outcomes by Core C																				

Florida Public Risk Collaborative
 for Medical Stroke Outcomes
 (FL-PR CReSD)

FL-PR Stroke Registry Confirmed Hospitals

– 63 GWTG Sites as of Feb, 2014



53 Hospitals



9 Hospitals



FL-PR Stroke Registry Advisory Committee Members



Current Members	Institution	City
Ralph Sacco, MD – Chair	UM Miller School of Medicine & Jackson Memorial Hospital	Miami
FL Members	Institution	City
Indrani E. Acosta, MD	Florida Hospital-Altamonte Campus	Altamonte Springs
Evan Allen, MD	Florida Hospital-Orlando	Orlando
Scott Burgin, MD	Tampa General Hospital	Tampa
Bo Dandapani, MD	Holmes Regional Medical Center & Viera Hospital	Melbourne
Antonio Gandia, MD	Mount Sinai Medical Center	Miami Beach
Jonathan Harris, MD	Holy Cross Hospital & Broward Health North	Ft. Lauderdale
Wayne Hodges, RN, PMD	UF Health Hospital - Jacksonville	Jacksonville
Ridwan Lin, MD, PhD	Broward Health - North	Pompano
James Meschia, MD	Mayo Clinic Florida	Jacksonville
Nils Mueller-Kronast, MD	Delray Medical Center & St. Mary's Medical Center	Ft. Lauderdale
Terry Neill, MD	Sacred Heart Hospital	Pensacola
David Rose, MD	Tampa General Hospital	Tampa
Charles Sand, MD	St. Joseph's Hospital	Tampa
Scott Silliman, MD	UF Health - Jacksonville	Jacksonville
Michael Waters, MD	UF Health - Gainesville	Gainesville
Juan Carlos Zevallos, MD	Florida International University	Miami
PR Members	Institution	City
Enid Garcia, MD, MPH	University of Puerto Rico	San Juan, PR
Ulises Nobo, MD	HIMA San Pablo Hospital - Caguas	Caguas, PR
Julio Rodriguez- Colon, MD	HIMA San Pablo Hospital - Bayamon	San Juan, PR
AHA Members	Institution	City
Sandra Diaz-Acosta	American Heart Association	Guaynabo, PR
Carla English	American Heart Association	Birmingham, AL
Kathy Fenelon	American Heart Association	Tampa
Bruce Inverso	American Heart Association	St. Petersburg
Julia Mora, MSHSA	American Heart Association	Hollywood, FL
Mary Robichaux	American Heart Association	Marietta, GA
Jeffrey Walker	American Heart Association	Hollywood, FL
UM Members	Institution	City
Maria Ciliberti, MPH	University of Miami	Miami
Hannah Gardner, ScD	University of Miami	Miami
Jose Romano, MD	UM Miller School of Medicine & Jackson Memorial Hospital	Miami
Tatjana Rundek, MD, PhD	University of Miami	Miami
Edison Sabala, MBA, MPH	University of Miami	Miami

Research/Education Training Plan: Core B

- **Target various stakeholders:**
 - Large regional outreach and implementation across Florida and Puerto Rico: Stroke center personnel (physicians, nurses, stroke coordinators, others HCP)
 - Primary care physicians and neurologists in SoFl & PR
 - Health care trainees, future researchers
- **Provide training and education on:**
 - Stroke care, stroke prevention
 - Disparities in health care, stroke disparities
 - Research into health care & stroke disparities
 - Diverse techniques: lectures, small groups, webinars, online



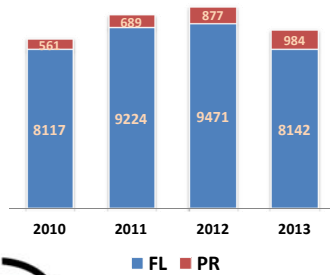
FL-PR Stroke Registry

A First Look at the Data

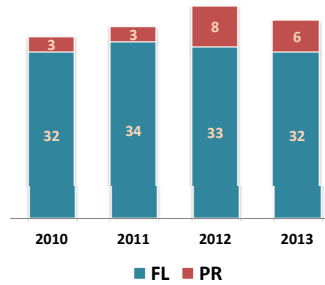


Total Case Number and Site Number, 2010-2013

No. Stroke Cases
(Total =38,065; FL =34,954; PR =3,111)



No. Sites
(Total =43; FL =35; PR =8)



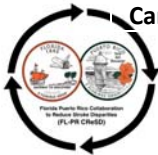
Socio-Demographics for Cases in FL and PR, 2010-2013

Demographics	All (n=38,065)	FL (n=34,954)	PR (n=3,111)
Age (yrs), Mean ± SD	69.8 ± 14.6	69.9 ± 14.4	69.5 ± 14.0
18-45, %	5.8	5.8	5.8
46-65, %	31.0	31.2	29.3
66-85, %	48.4	47.9	53.5
>85, %	14.8	15.1	11.3
Male, %	50.4	50.4	49.8
Female, %	49.6	49.6	50.2



Clinical Characteristics for Cases in FL and PR, 2010-2013

Vascular Risk Factor, %	All (n=38,065)	FL (n=34,954)	PR (n=3,111)
Current smoker	15.6	16.1	8.9
Hypertension	60.4	58.4	82.6
Diabetes mellitus	25.2	23.3	47.0
Dyslipidemia	33.7	34.6	23.6
Medical History, %			
AF	14.9	15.6	7.6
CAD/prior MI	20.9	20.7	24.1
PVD	3.6	3.9	0.2
Previous stroke/TIA	22.6	22.7	20.6
Carotid stenosis	3.6	3.8	1.4



GWTG, 2010-2013

7 Predefined Performance Measures

- ① IV t-PA 2 Hour
- ② Early Antithrombotics (2 days)
- ③ VTE Prophylaxis
- ④ Antithrombotics at discharge
- ⑤ Anticoagulation for AF at discharge
- ⑥ LDL <100 or ND-Statin
- ⑦ Smoking Cessation Counseling

&

Defect-free Care Measure



Achievement Measure Descriptions


1. IV t-PA Arrive by 2 Hour, Treat by 3 Hour

% of acute ischemic stroke patients who arrive at the hospital within 120 min. of time Last Known Well and for whom IV t-PA was initiated at this hospital within 180 min. of time Last Known Well

Numerator:

- Patients who received IV t-PA at this hospital ≤ 180 min from time last known well

Goal: 100%




Denominator:

- Patients with a diagnosis of ischemic stroke

Denominator Exclusions:



- Age < 18 years
- Stroke occurred while patient was an inpatient in your hospital
- Patients with a diagnosis of no stroke related diagnosis or TIA
- Received IV t-PA at an outside hospital
- Arrived at the hospital more than 120 min past the time last known well
- Arrival at the hospital is before the time last known well
- Documented reason for not initiating IV t-PA **AND** Any documented reasons listed under Contraindications/ Warnings for the 0-3hr Rx window are selected (including Rapid improvement or too mild)
- Undocumented time for Last Known Well
- IV t-PA initiated at this hospital **AND** Undocumented time for IV t-PA initiated at this hospital
- Clinical Trial
- Elective Carotid Intervention



GWTG Performance for ISC Stroke Cases in FL and PR, 2010-2013

Performance Measure: **rt-PA arrive <2 hr Tx <3 hr**

IV t-PA, arrive <2 hr Tx <3 hr	All		FL		PR	
	N	%	N	%	N	%
2010-2013	2,050	85.7	1,830	86.6	220	78.2
2010	441	76.0	405	77.0	36	63.9
2011	479	82.0	424	83.5	55	70.9
2012	612	91.7	543	93.0	69	81.2
2013	518	90.3	458	90.4	60	90.0

Achievement Measure Descriptions


3. VTE Prophylaxis

% of patients with an ischemic stroke, or a hemorrhagic stroke, or stroke not otherwise specified who receive VTE prophylaxis the day of or the day after hospital admission

Numerator:

- Patients who received VTE prophylaxis the day of or the day after hospital admission (not graduated compression stockings alone)
- Patients that receive Oral Factor Xa Inhibitor for VTE prophylaxis
- Patients with a contraindication to VTE prophylaxis

Goal: 100%




Denominator:

- Patients with a diagnosis of Ischemic stroke, Subarachnoid hemorrhage (SAH), Intracerebral hemorrhage (ICH), or Stroke not otherwise specified

Denominator Exclusions:



- Age < 18 years
- Stroke occurred while patient was an inpatient in your hospital
- Comfort Measures Only documented on day of arrival or day after arrival
- Patients who have a LOS less than 2 days
- Undocumented Admission Date
- Patients with a negative calculated time difference
- Not admitted
- Clinical Trial
- Elective Carotid Intervention



GWTG Performance for Cases in FL and PR, 2010-2013

Performance Measure: VTE prophylaxis

	VTE prophylaxis		All		FL		PR	
	N	%	N	%	N	%	N	%
2010-2013	26,465	81.8	24,047	81.8	2,418	63.5		
2010	5,945	71.3	5,502	71.3	443	31.8		
2011	6,804	70.4	6,251	70.4	553	44.7		
2012	7,351	88.5	6,671	88.5	680	72.4		
2013	6,365	96.1	5,623	96.1	742	88.3		

Achievement Measure Descriptions

6. LDL 100 or ND – Statin

% of Ischemic stroke or TIA patients with LDL \geq 100, or LDL not measured, or on cholesterol-reducer prior to admission who are discharged on Statin Medication

Numerator:

- Patients with LDL \geq 100 OR null OR on a cholesterol-reducer prior to admission who were discharged on Statin



Denominator:

- Patients with a diagnosis of ischemic stroke or TIA

Denominator Exclusions:

- Age < 18 years
- Stroke occurred while patient was an inpatient in your hospital
- Comfort Measures Only documented
- Patients who are discharged/transferred to hospice, discharged/transferred to another acute care facility, patients that expire, and patients that leave against medical advice
- No documented prior cholesterol-reducing therapy AND LDL < 100
- A documented reason for not prescribing Statin at discharge
- No documentation that the patient has evidence of atherosclerosis (for patients discharged before 10/1/2010)
- Not admitted as an inpatient
- Clinical Trial
- Elective Carotid Intervention



Goal: 100%

GWTG Performance for Cases in FL and PR, 2010-2013

Performance Measure: LDL 100 or ND-Statins

LDL 100 or ND-Statins	All		FL		PR	
	N	%	N	%	N	%
2010-2013	21,160	86.1	19,589	86.4	1,571	82.8
2010	5,128	79.8	4,808	80.0	320	78.1
2011	5,776	79.5	5,440	79.3	336	83.3
2012	5,568	91.5	5,122	92.4	446	80.9
2013	4,688	94.8	4,219	95.6	469	87.4

Achievement Measure Descriptions

GWTG Defect-free Measure

Defect-free measure gauges how well your hospital did in providing all the appropriate Interventions to every patient

Numerator:



- All patients which were included in the numerator for **all** of the measures that they were not excluded from

Denominator:

All patients which are included in the denominator for at least one of these measures:

- IV t-PA 2 Hour
- Early Antithrombotics (2 days)
- VTE Prophylaxis
- Antithrombotics at discharge
- Anticoagulation for AF at discharge
- LDL <100 or ND-Statin
- Smoking Cessation Counseling



Goal: 100%

GWTG Performance for Cases in FL and PR, 2010-2013

Defect-free Measure



Defect-free Measure	All		FL		PR	
	N	%	N	%	N	%
2010-2013	34,165	76.0	31,240	77.5	2,925	60.1
2010	7,983	66.2	7,440	68.3	543	36.8
2011	9,178	65.4	8,510	67.0	668	45.1
2012	9,183	82.8	8,362	84.6	821	65.0
2013	7,821	90.5	6,928	91.7	893	81.0

FL-PR CReSD

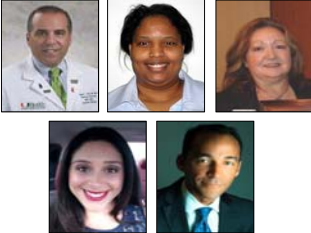
Closing the Gap - Future Plans:

- Moving Beyond Performance Metrics
- Race-ethnic and sex-specific stroke disparities adjusted for age, insurance status, and other factors
- Regional analyses (6 regions: 5 in FL and 1 in PR)
- Enhanced Data Collection including 30-day outcomes
- CMS-matched data for longer term outcomes
- Education Interventions and trend analyses
- Collaborative work across the Stroke Belt





FL-PR CReSD Team

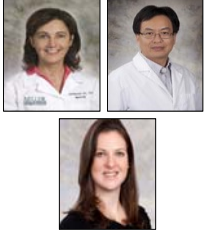
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