



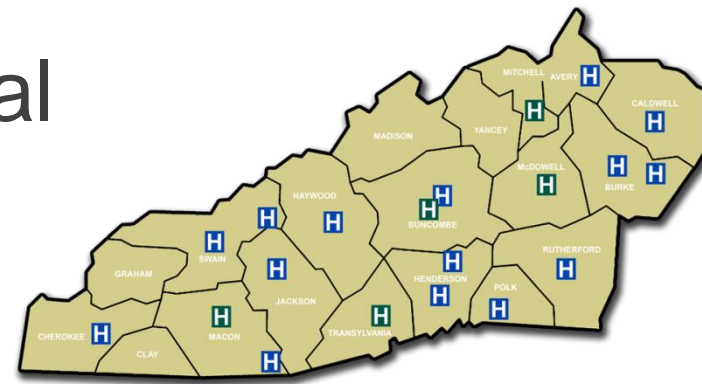
Mission Stroke Program

Robin Jones MSN, RN, CNRN, SCRNP
Stroke Program Manager
Mission Health System
Asheville NC

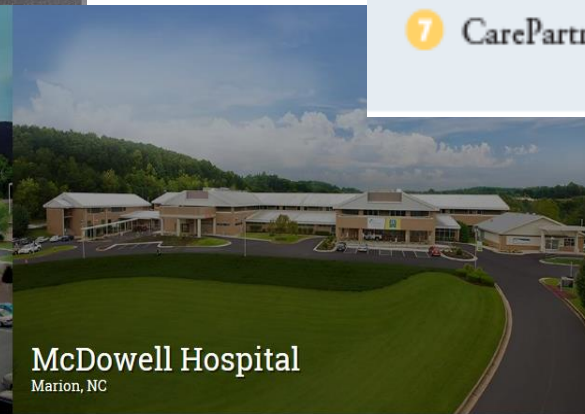
November 1, 2017

Mission Hospital

- Anchor hospital of Mission Health System
- Includes six hospitals plus an acute rehab hospital and children's hospital
- Regional referral center for western North Carolina
- Serving 1.5M+ people in 18 counties
- Mission Hospital: 763 Licensed Beds
- Centers of Excellence in **Neurosciences**, Heart, Orthopedics, Oncology, Trauma, Pediatrics, and Womens
- UNC Medical School Clinical Satellite
- Residency/Fellowship Programs

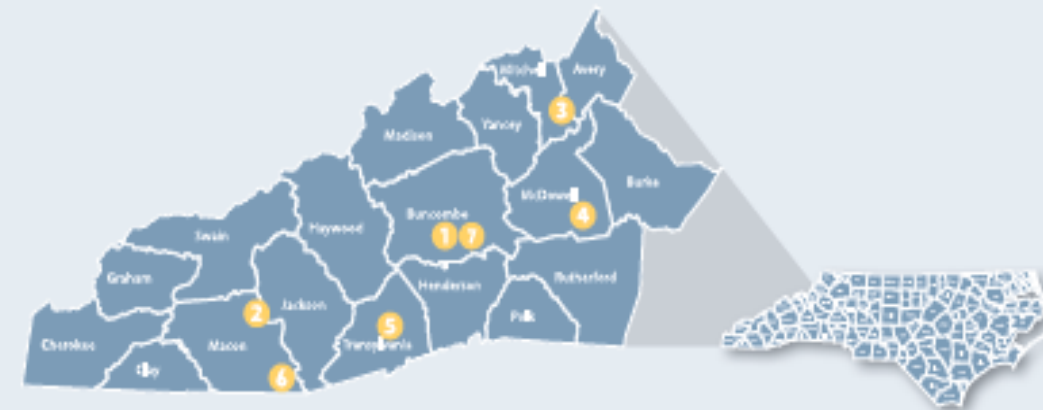


Member Hospitals

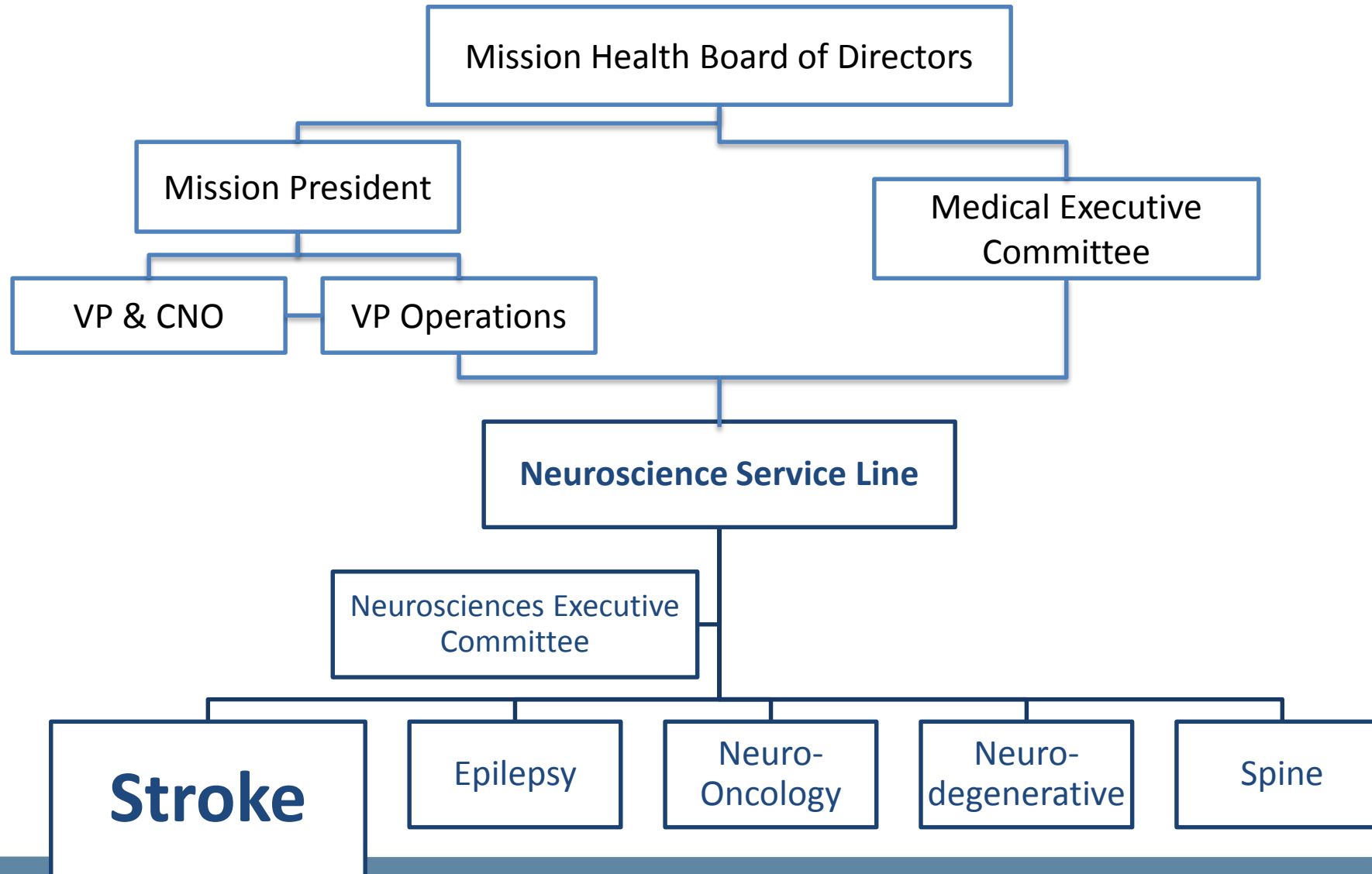


Mission Health Member Hospitals

- 1 Mission Hospital
- 2 Angel Medical Center
- 3 Blue Ridge Regional Hospital
- 4 McDowell Hospital
- 5 Transylvania Regional Hospital
- 6 Highlands-Cashiers Hospital
- 7 CarePartners

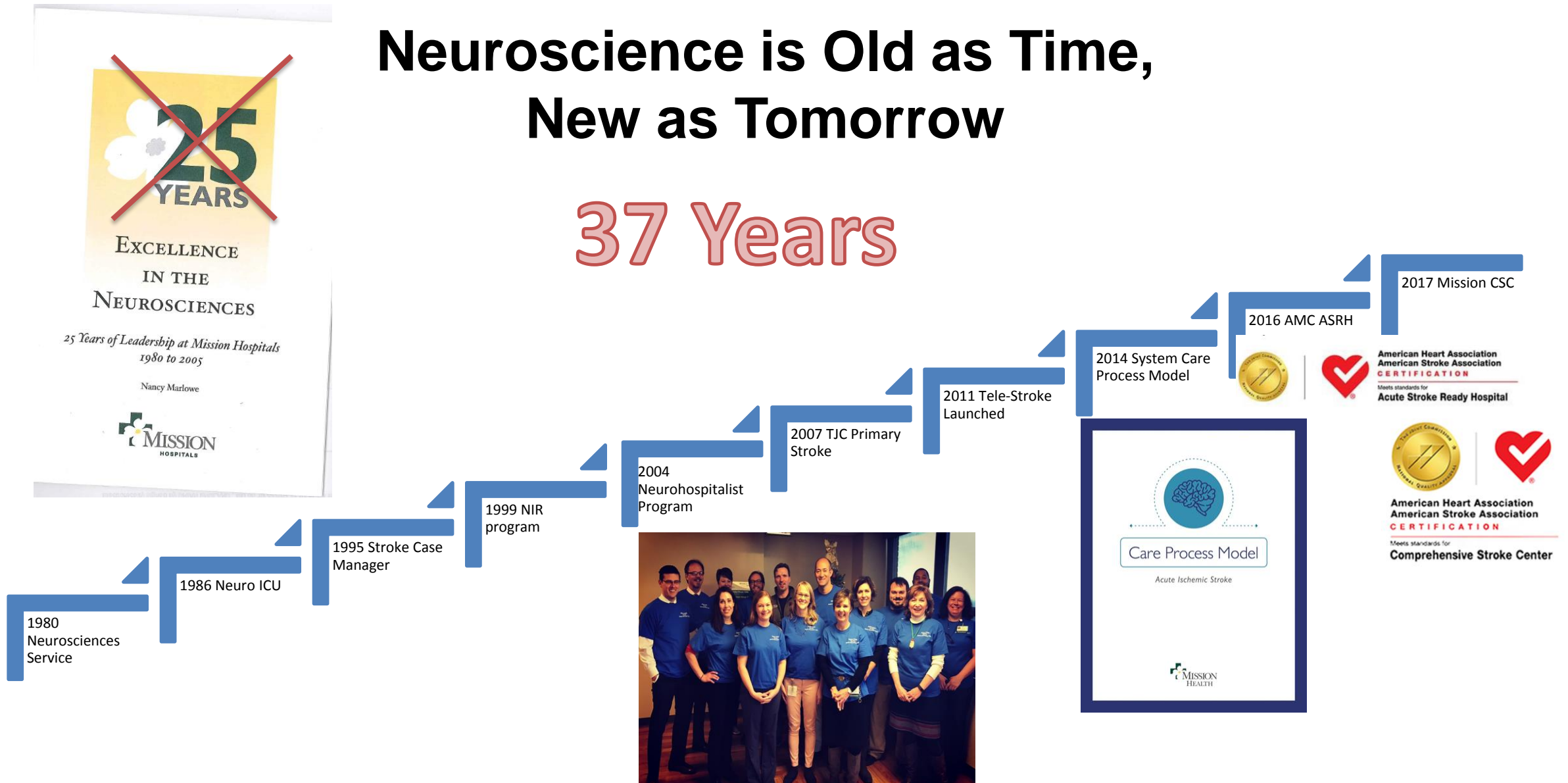


Neuroscience Service Line Structure



Neuroscience is Old as Time, New as Tomorrow

37 Years



Who We Are Today

- 24/7 on site Neurohospitalist
- 24/7 Interventional Neuro-radiology coverage
 - Ability to run 2 bi-plane Angio Suites if necessary
- 24/7 Neurosurgery coverage
- Radiology 24/7 coverage for system hospitals
 - Real time communication with radiologist (Primordial)
- Tele-Stroke coverage for 8 western NC hospitals
- Regional Transfer Center coordination
- 65 Bed Emergency Department
- Dedicated 14 bed NTICU for complex stroke patients
- Dedicated 34 bed Neuroscience Stroke Unit
- Research - COMPASS COMprehensive Post Acute Stroke Services
- Post acute stroke clinic with dedicated NP and RN navigator

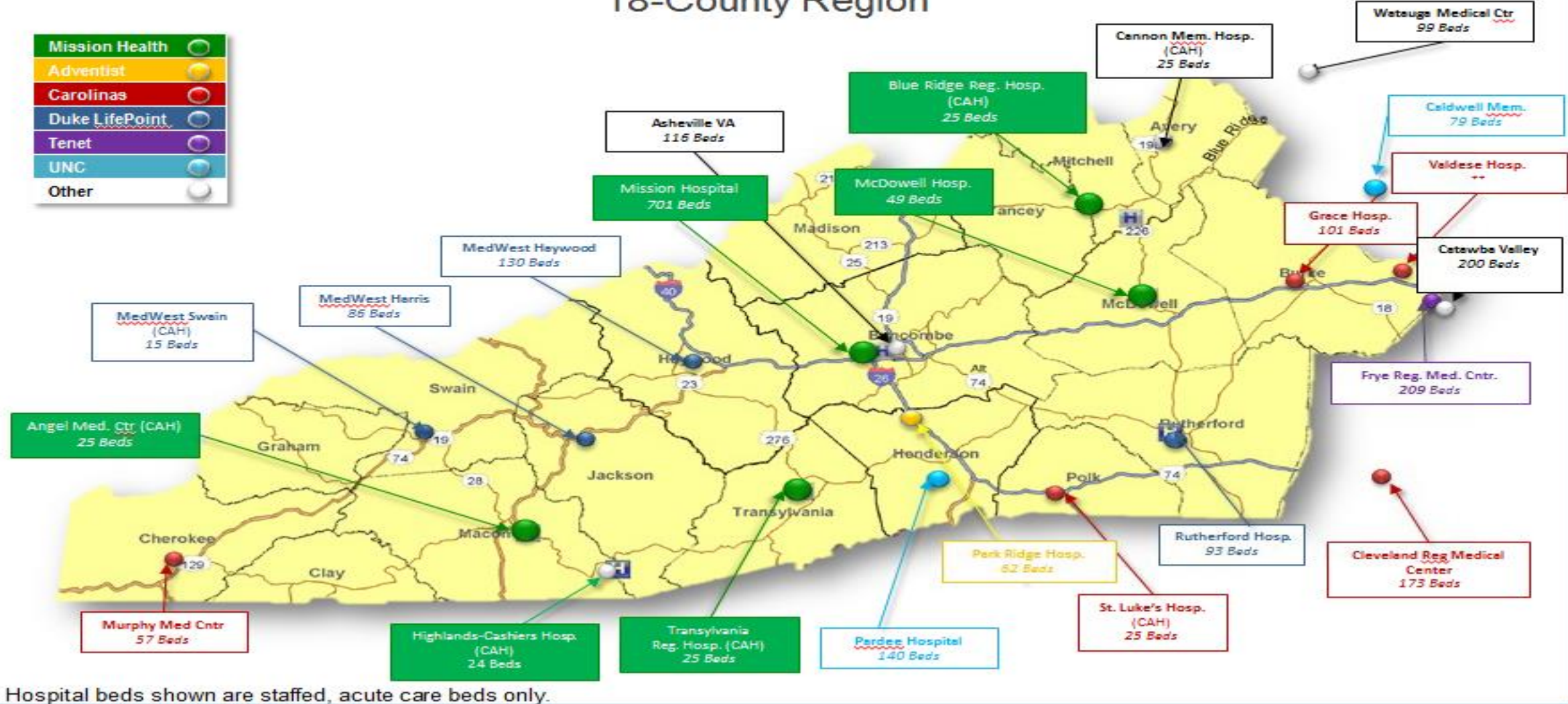


American Heart Association
American Stroke Association
CERTIFICATION
Meets standards for
Comprehensive Stroke Center



Western North Carolina Hospitals

18-County Region



The Need for Standardized Stroke Care In Western North Carolina

1. McDowell
2. Blue Ridge
3. Transylvania
4. Angel
5. Highlands
6. Rutherford
7. Cherokee
8. Harris





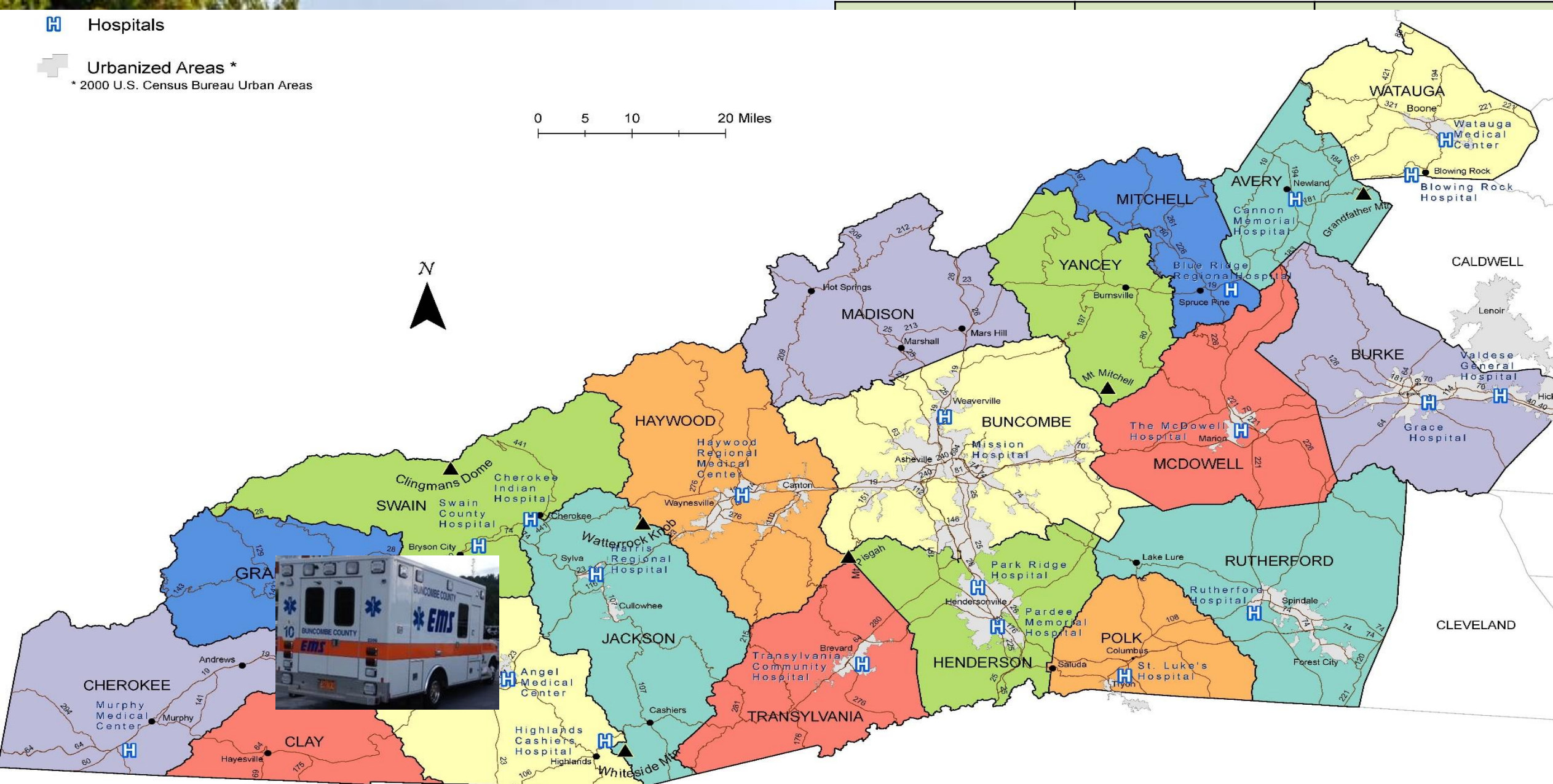
Hospitals



Urbanized Areas *

* 2000 U.S. Census Bureau Urban Areas

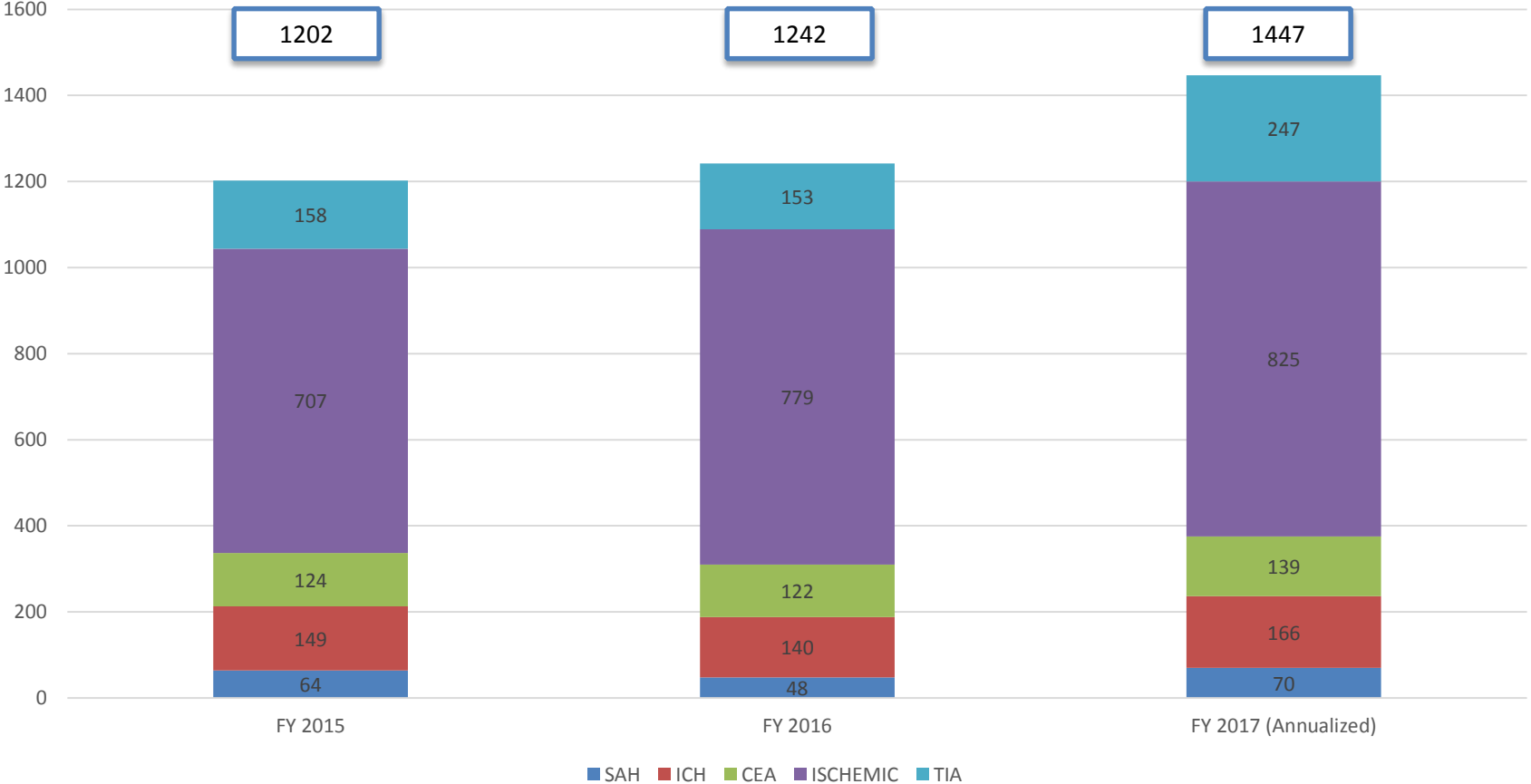
0 5 10 20 Miles



Mission Stroke: November 1, 2017

Who We Serve

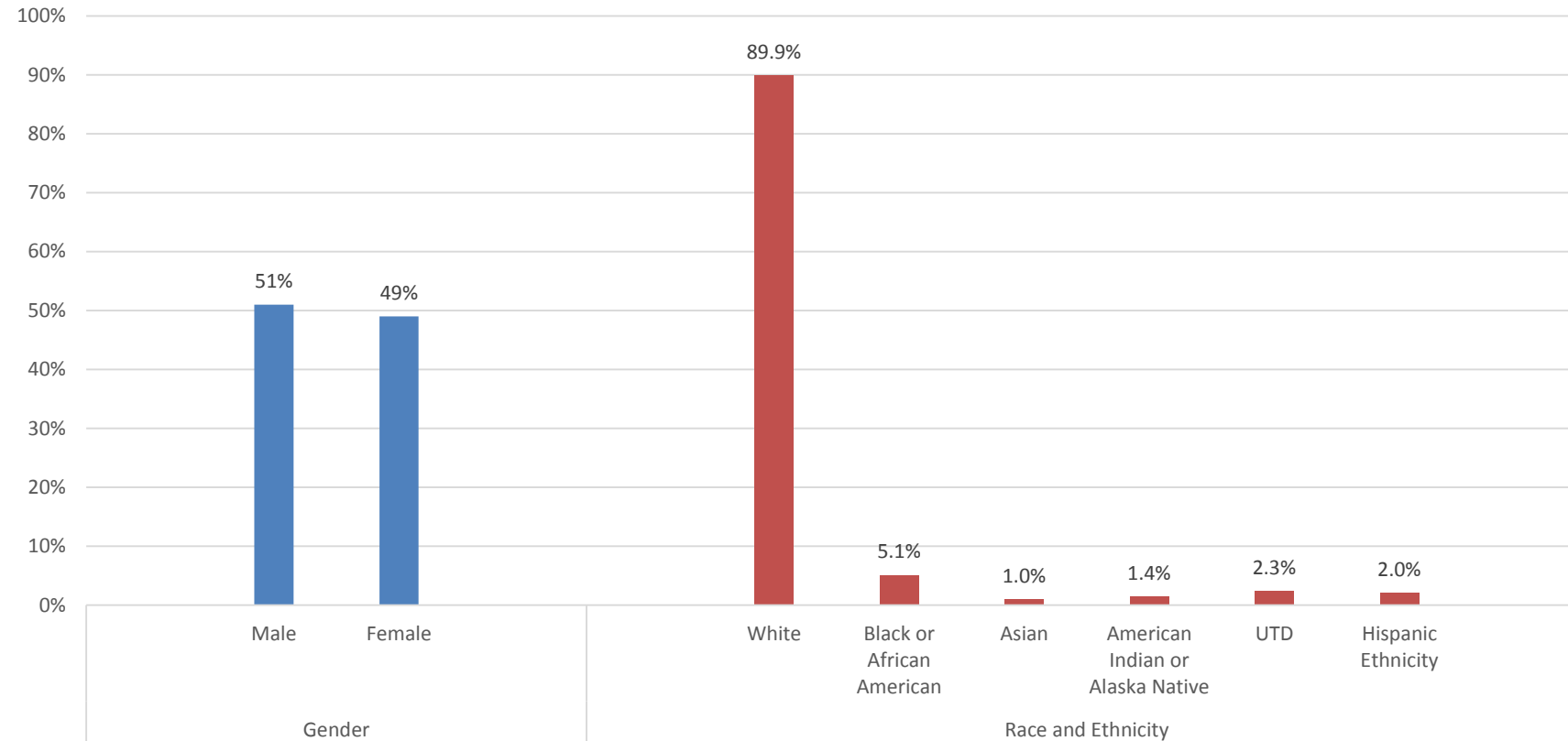
Stroke Volume (Trend by Year)



Who We Serve

Demographics

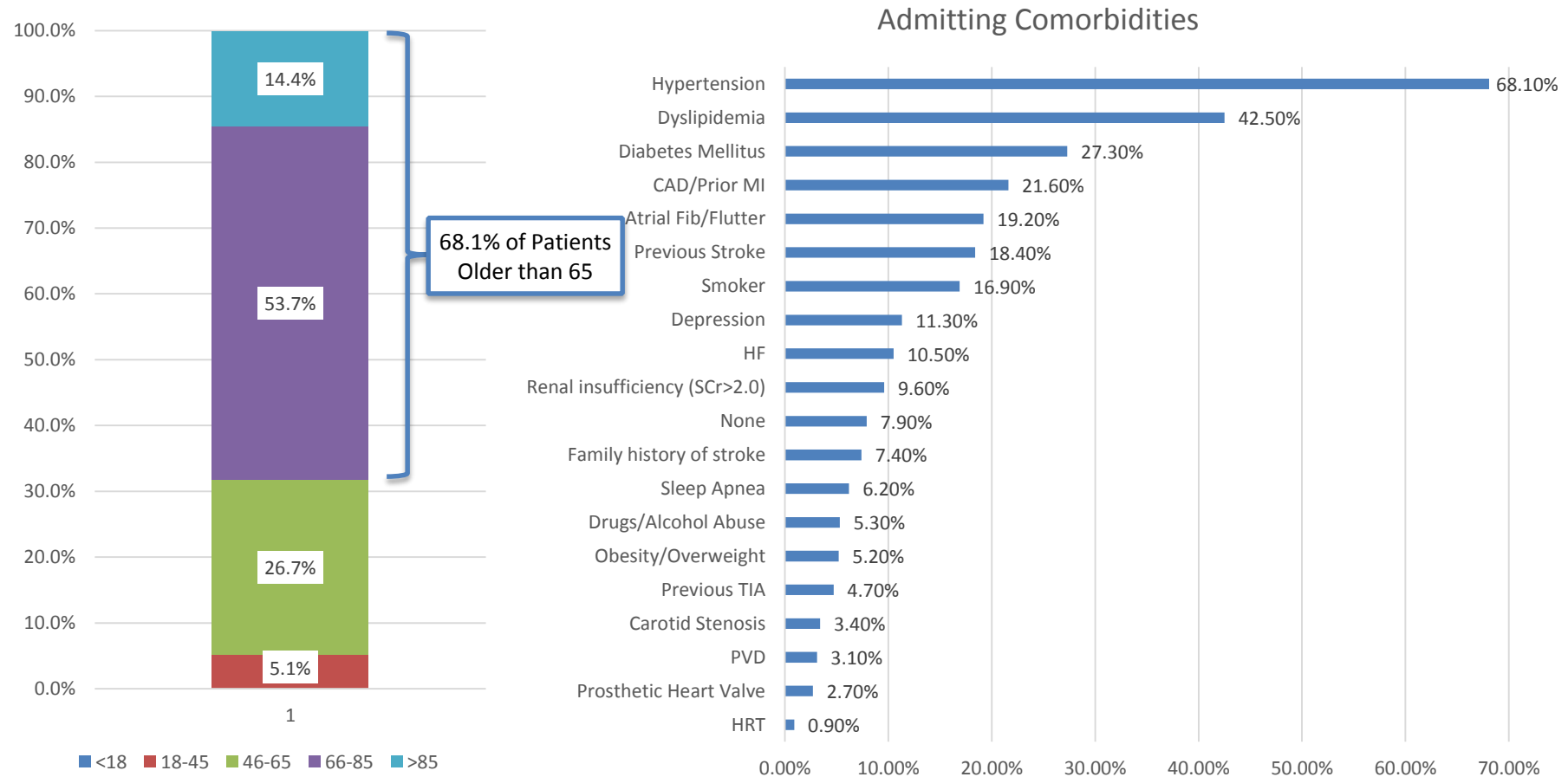
FY 2016



Who We Serve

Age and Co-Morbidities

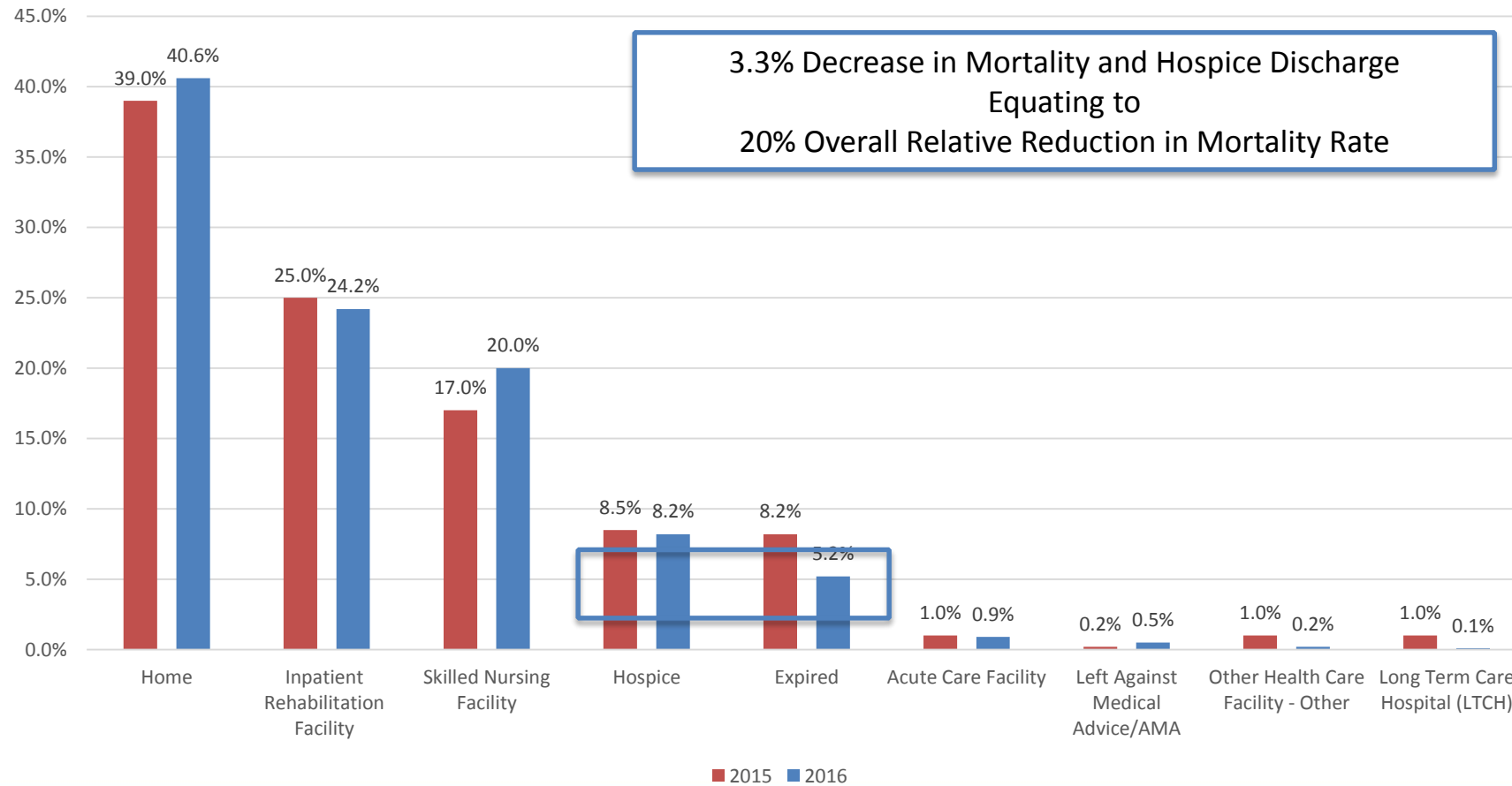
FY 2016



Who We Serve

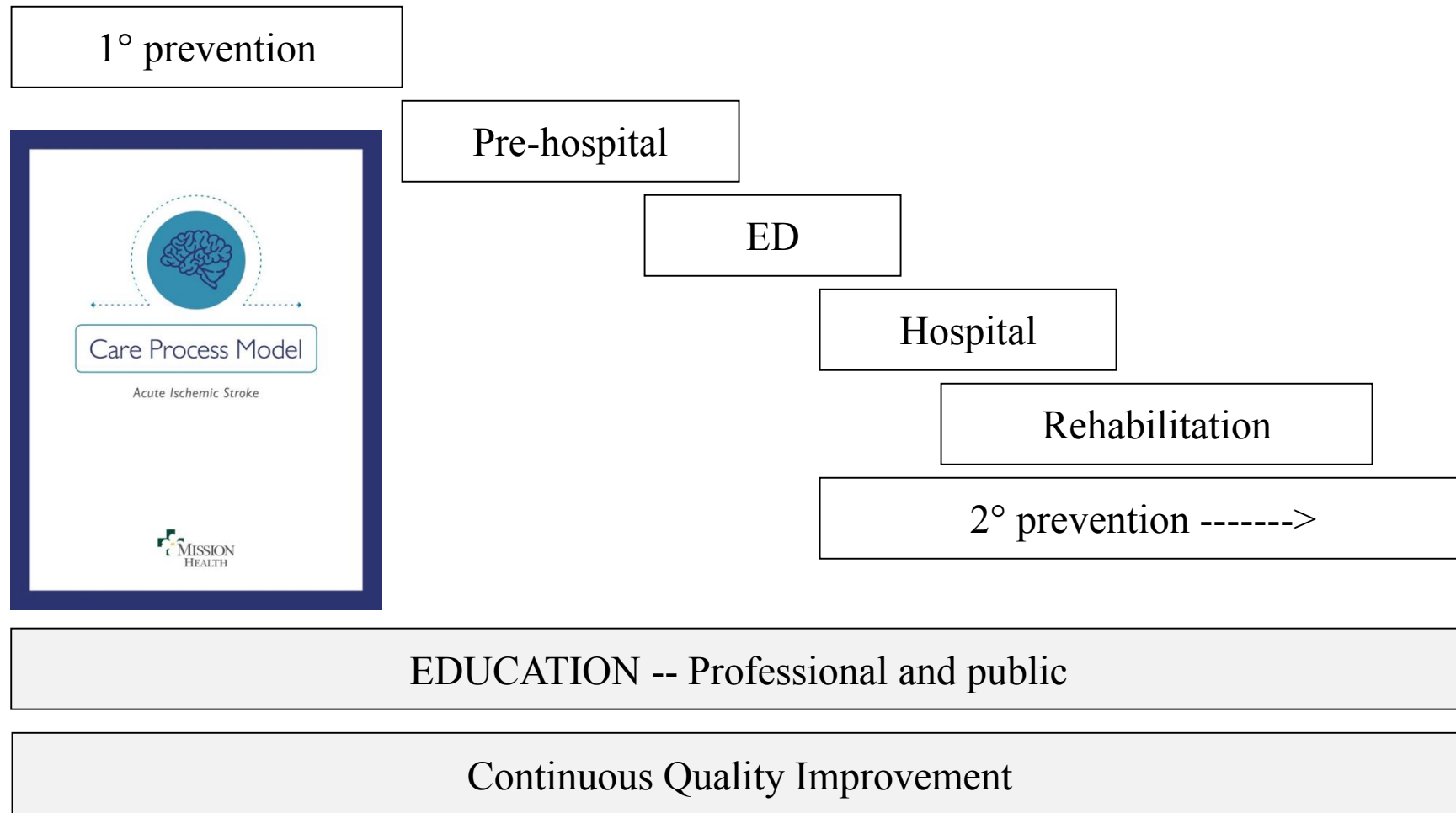
Discharge Disposition

FY 2015- 2016



Mission Stroke Program

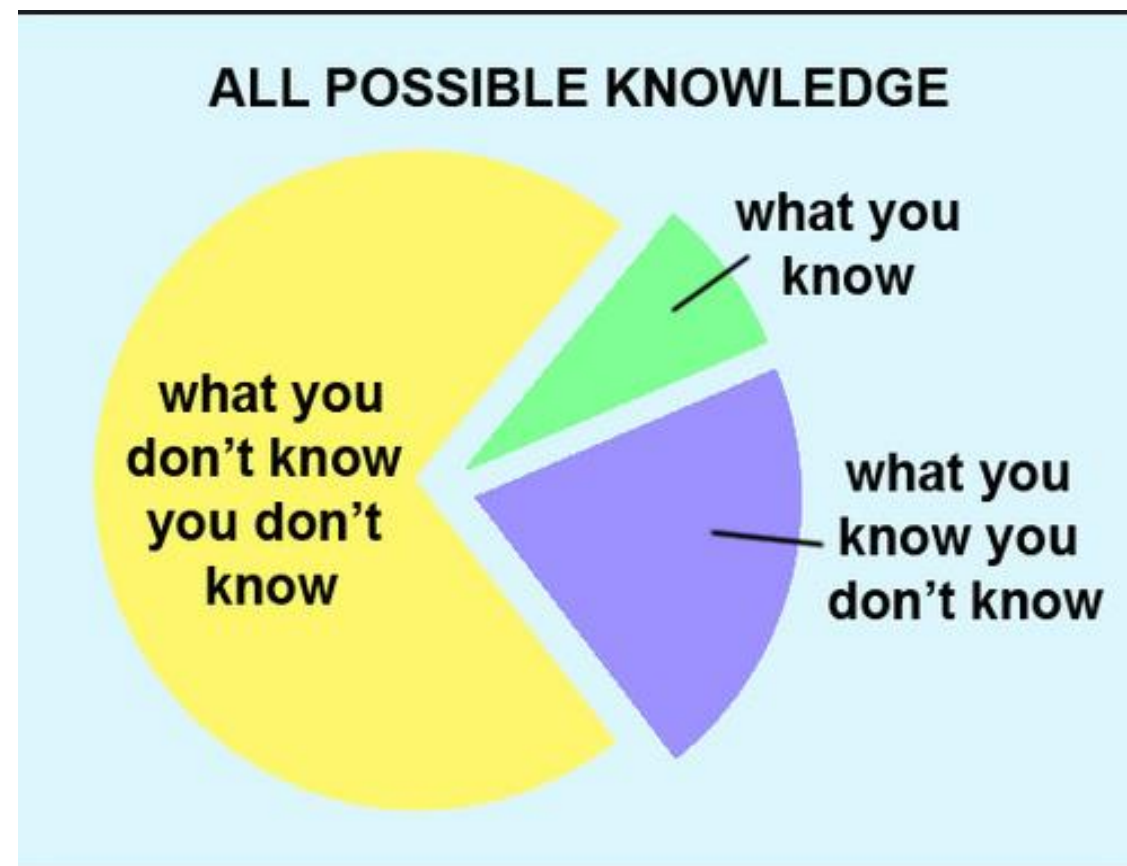
A Continuum of Care Approach

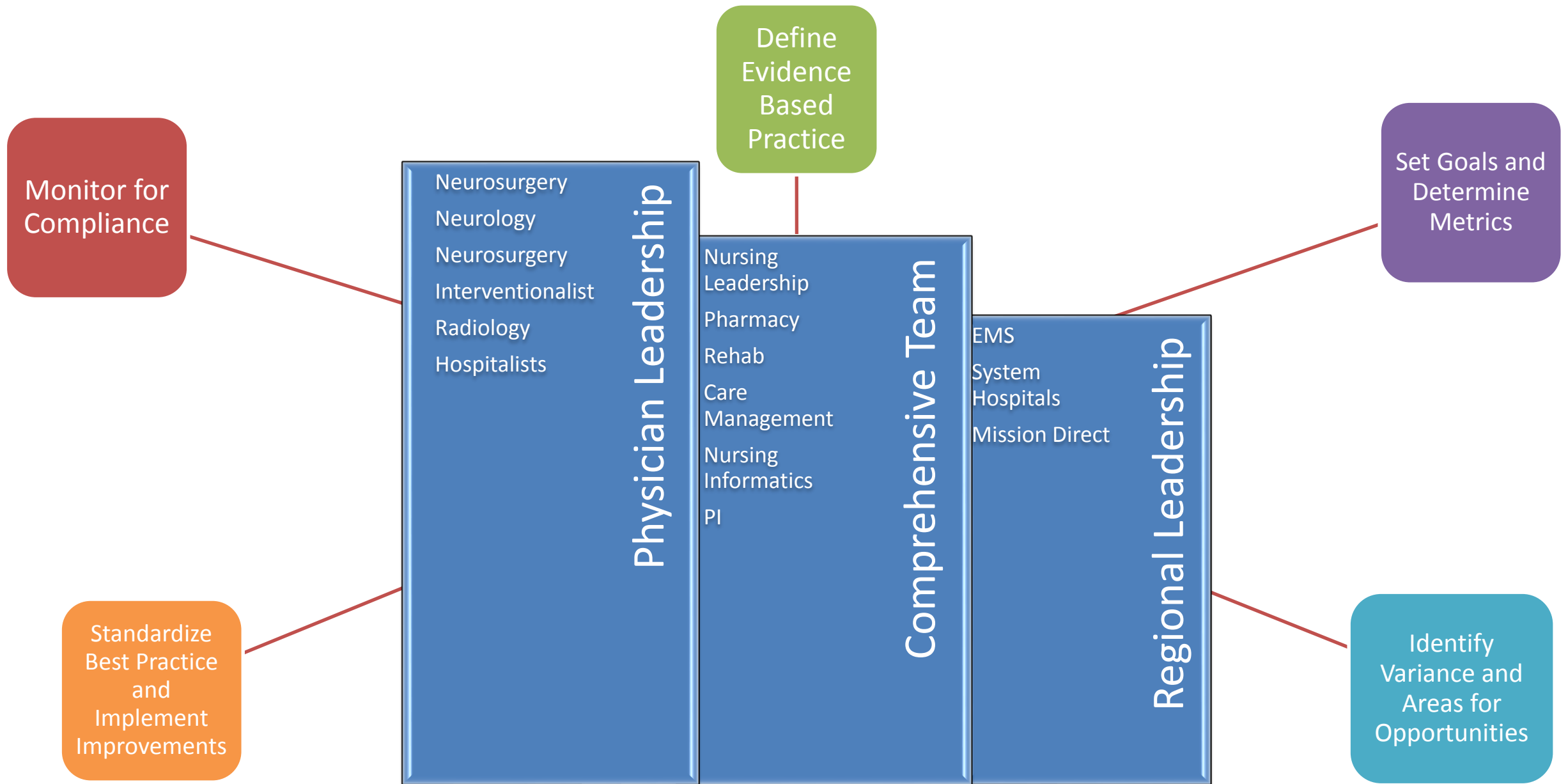


The Start of the CPM-----What's a CPM?

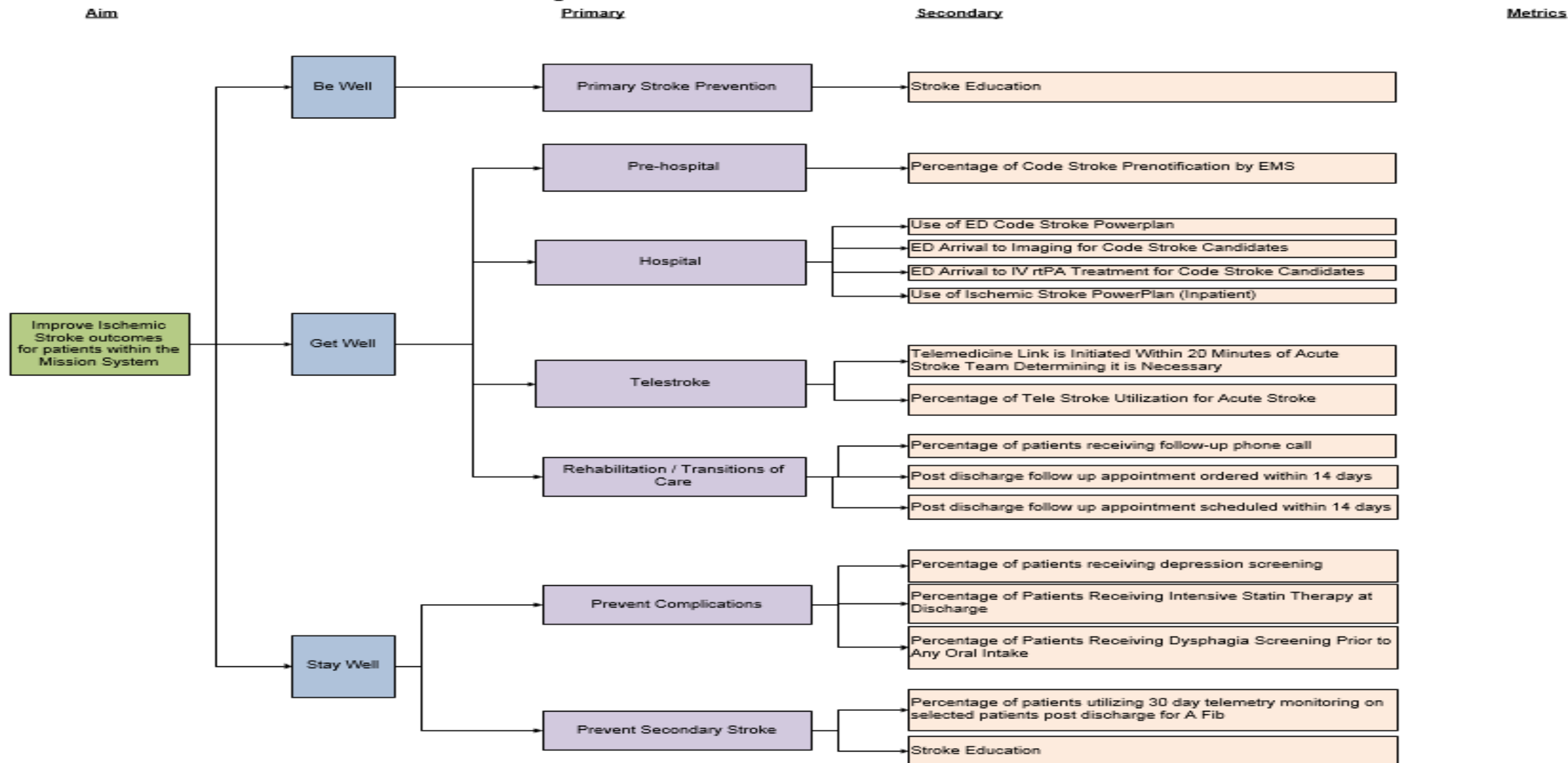
Care Process Models strive to ensure that all care delivered by the health system, regardless of a patient's location in the continuum, is medically necessary, the leading edge in medical science, and the appropriate treatment intensity. Put into effect, these models will systematize treatment processes across all hospitals and practices, improving consistency as well as effectiveness.

- Does everyone have what they need to be successful
- It takes a village
- Data, Experts, Team
- Best practice in action and touching the patient

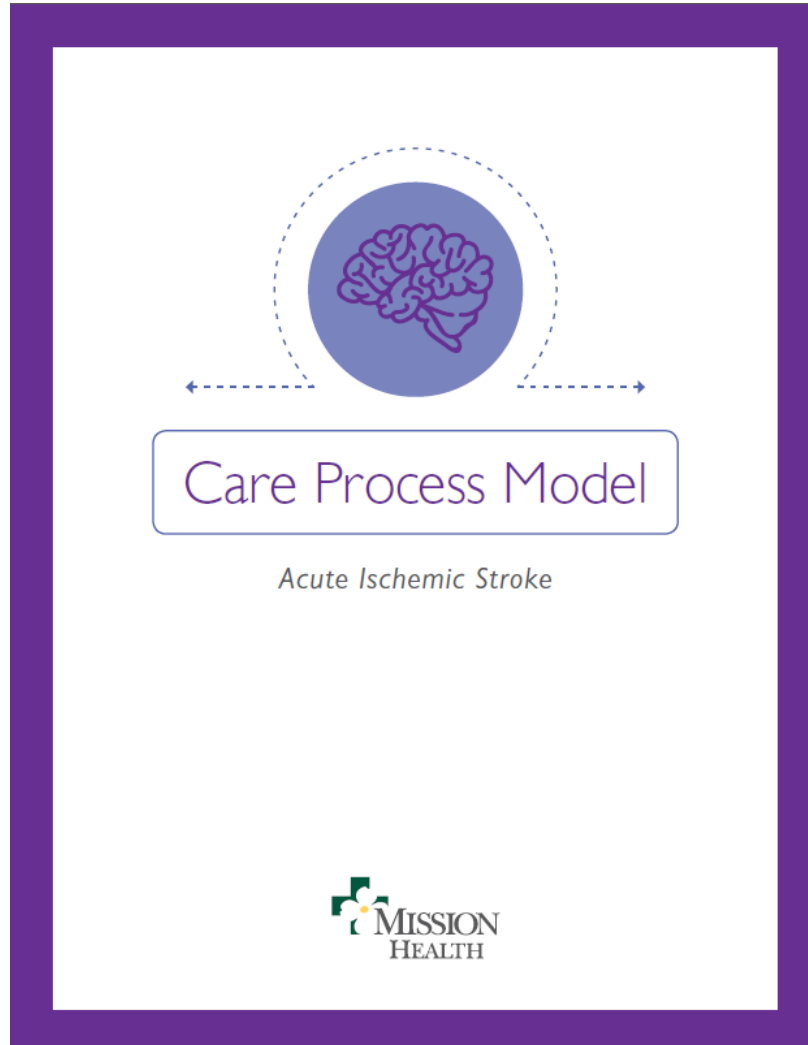




Ischemic Stroke Care Process Model - Driver Diagram



Acute Ischemic Stroke CPMs

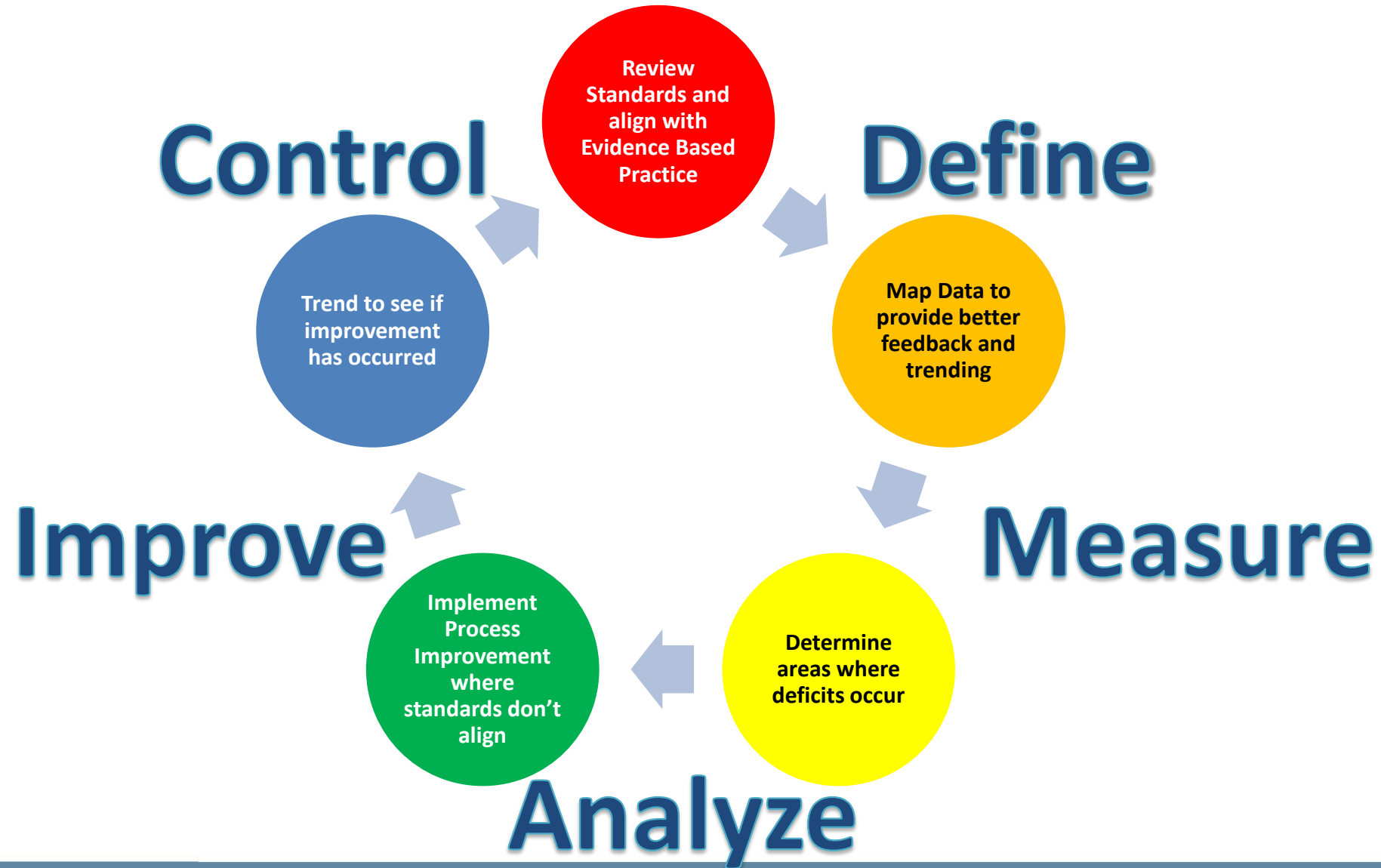


Clinical Programs are agreed upon, interdisciplinary, patient-centered, disease-focused, care delivery systems that are informed by a series of evidence-based Care Process Models.

October 2014 Acute Ischemic Stroke CPM team was formed. Representatives from all Mission Health Hospitals, physicians, allied health, nursing, rehabilitation, outpatient and emergency services

- Extensive literature review
- Agreed upon goals and quality metrics
- Incremental roll out of standardized order sets and electronic documentation tools
- CPM's are reviewed annually and/or revisions as evidence changes

CPMs Interface with Continuous Process Improvement



Care Process Model

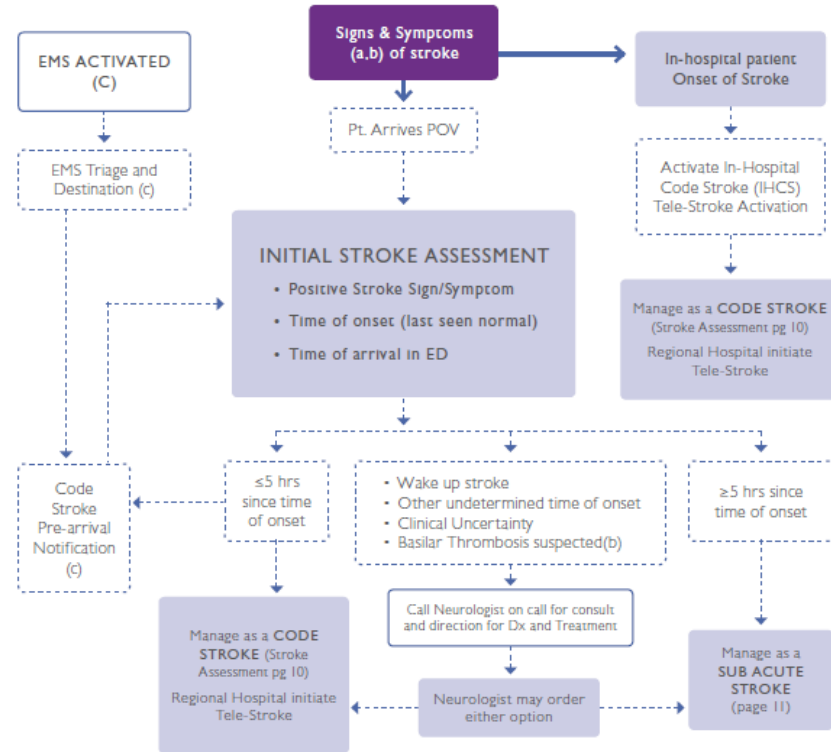
ACUTE ISCHEMIC STROKE

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DIAGNOSIS & CLASSIFICATION ALGORITHM

- | | | |
|--|--|---|
| <p>(a) Signs and Symptoms - Think FAST</p> <ul style="list-style-type: none"> Sudden numbness or weakness of face, arm, or leg – especially unilateral Sudden confusion or speech impairment Impairment in one or both eyes Sudden trouble walking, dizziness or loss of balance or coordination Severe headache with no known cause (not as stand alone symptom) | <p>(b) Basilar Thrombosis</p> <ul style="list-style-type: none"> Diplopia Major paralysis Depressed level of consciousness (progressive over time or waxing and waning over short periods) Difficulty swallowing, dysphagia Ataxia Vertigo | <p>(c) EMS pre-assessment and transport</p> <ul style="list-style-type: none"> Use EMS suspected stroke assessment tool by county protocol Code Stroke preactivation protocol |
|--|--|---|



8 | 32

Care Process Model

ACUTE ISCHEMIC STROKE

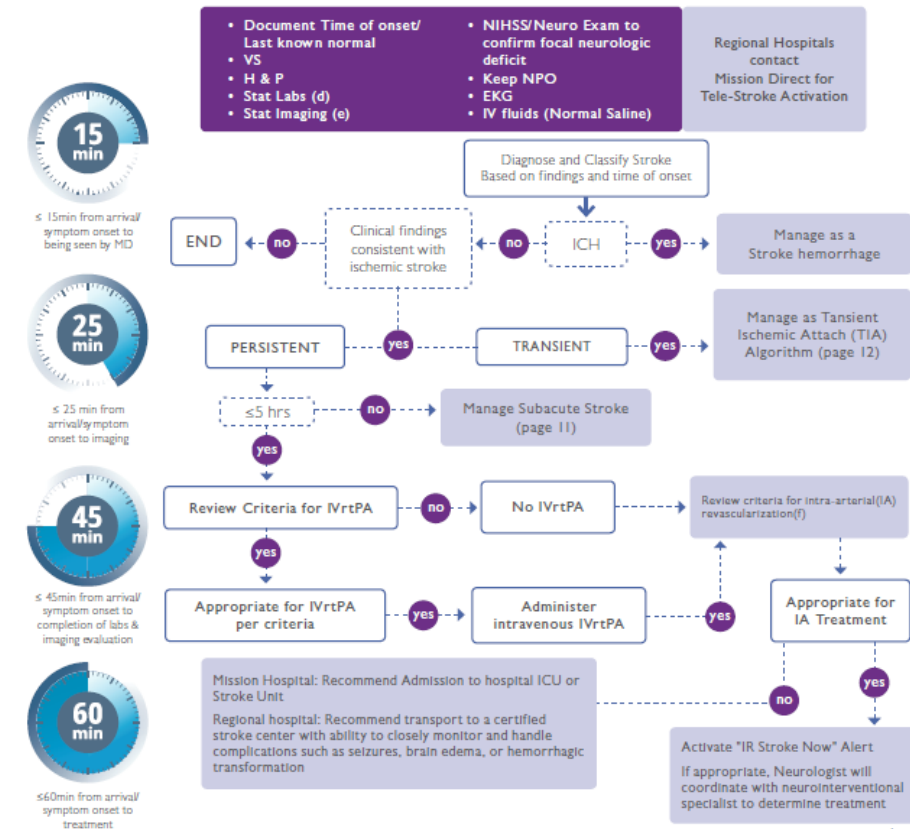
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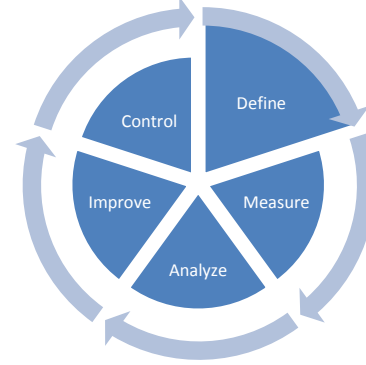
CODE STROKE / TELE-STROKE ALGORITHM

- | | |
|--|---|
| <p>(d) Stat Labs</p> <ul style="list-style-type: none"> Glucose (CBG) CMP, Magnesium, CBC w/diff, PT/INR, aPTT, Troponin, & ECG <p>(e) Stat Imaging</p> <ul style="list-style-type: none"> Order Code Stroke CT non-contrast to rule out hemorrhage CTA (brain through aortic arch) of available (unless contraindicated) Should not delay administration of IVrtPA | <p>(f) Intra-arterial IA therapy: Consider intra-arterial revascularization (i.e. mechanical thrombectomy) if large proximal vessel occlusion is present. Consider clinical evidence and imaging: Clinical evidence may include NIHSS > 8, basilar syndrome, and cortical syndrome. Imaging: CTA/CT to evaluate for large vessel occlusion and perfusion mismatch.</p> |
|--|---|

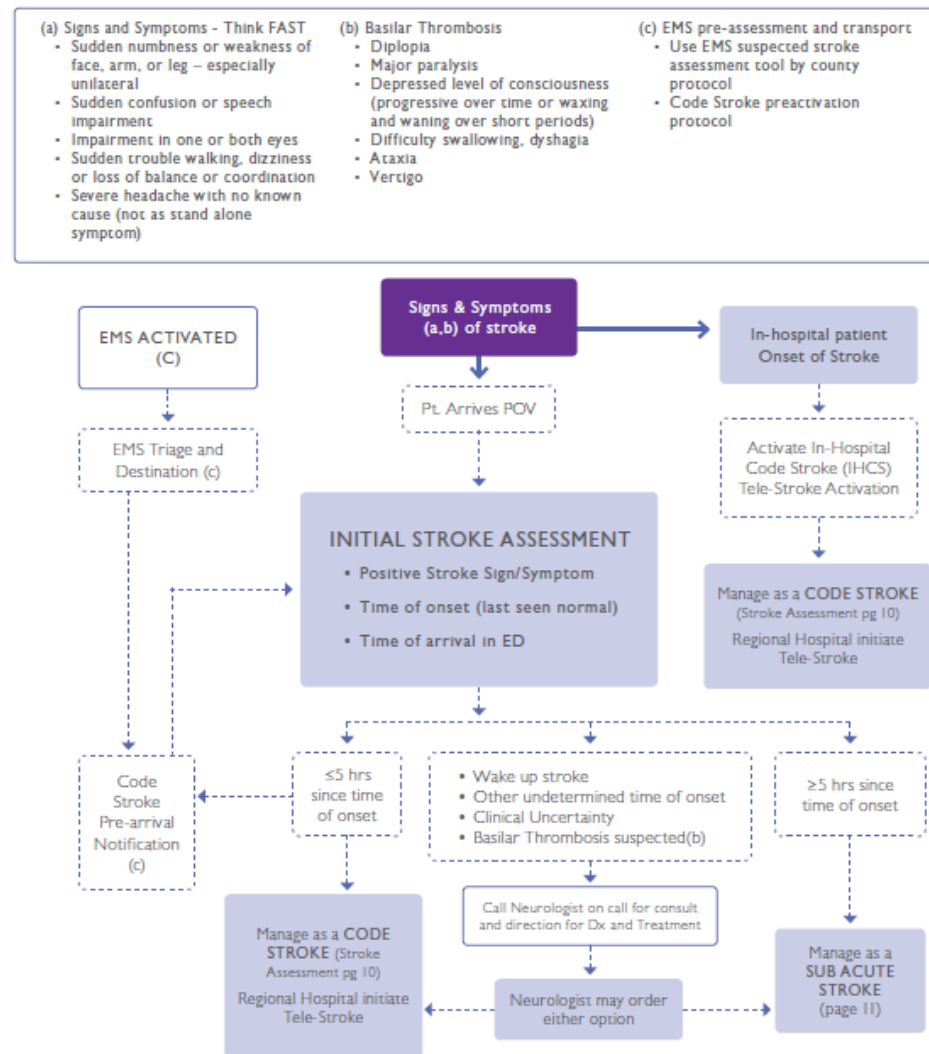
STROKE ASSESSMENT



10 | 32



DIAGNOSIS & CLASSIFICATION ALGORITHM



- Standardized assessment & triage
- Tele-radiology
- Tele-neurology
- Universal EMR documentation forms
- Centralize data abstraction and reporting

Care Process Model

ACUTE ISCHEMIC STROKE

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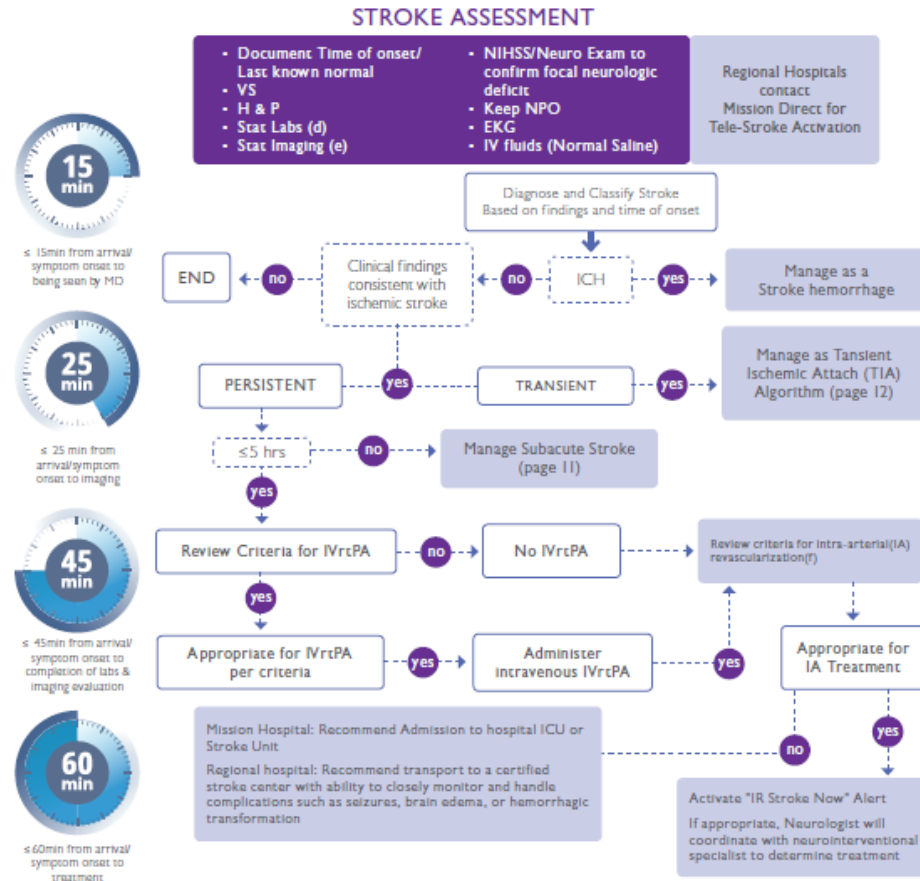


CODE STROKE / TELE-STROKE ALGORITHM

- (d) Stat Labs
- Glucose (CBG)
 - CMP, Magnesium, CBC w/diff, PT/INR, aPTT, Troponin, & ECG

- (e) Stat Imaging
- Order Code Stroke CT non-contrast to rule out hemorrhage
 - CTA (brain through aortic arch) if available (unless contraindicated)
 - Should not delay administration of IVrtPA

- (f) Intra-arterial IA therapy: Consider intra-arterial revascularization (i.e. mechanical thrombectomy) if large proximal vessel occlusion is present. Consider clinical evidence and imaging: Clinical evidence may include NIHSS >8, basilar syndrome, and cortical syndrome. Imaging: CTA/CT to evaluate for large vessel occlusion and perfusion mismatch.



- System wide education for all ED providers
- Expanded NIHSS procedure and training
- Standardization of “Code Stroke” orders
- Assessment and standardization of supplies & resources (pharmacy formulary)

ED Code Stroke Plan

View

Orders for Signature
Plans
Document In Plan
Medical
EMTALA Patient Transfer Plan (System)
Alteplase/Activase IV (tPA) for Ischemic Stroke Total
ED Code Stroke Plan (System) (Discontinued)
Suggested Plans (0)
Orders
☒ Admit To/Condition/Code Status
☒ Vital Signs/Monitoring
☒ Diet
☐ Activity
☐ Consults
☒ Respiratory
☐ Rehab Services
☒ Laboratory
☒ Radiology
☐ Diagnostic Tests
☒ Treatments/Nursing
☐ Medical Supplies
☒ Medications
☒ Continuous Infusions
☐ Order Sets
☐ Sterile Processing
☐ Miscellaneous
☒ Non Categorized
Medication History
Medication History Snapshot
Reconciliation History

Displayed: All Active Orders | All Inactive Orders | All Orders | All Statuses
Show More Orders...

				Order Name	Status	Details
⚡	\$			Admit To/Condition/Code Status		
		<input checked="" type="checkbox"/>		Code Status	Ordered	09/05/16 16:17:00, Full Resuscitation, Full Resuscitation
		<input checked="" type="checkbox"/>		Vital Signs/Monitoring		
		<input type="checkbox"/>		Neuro Checks	Discontin...	09/05/16 16:17:00, As Directed, PRN Order, Per Protocol
		<input checked="" type="checkbox"/>		NIHSS	Ordered	09/05/16 16:17:00, ONCE, Nursing, complete prior to tPA administ...
		<input type="checkbox"/>		Vital Signs	Discontin...	09/05/16 16:17:00, Per Protocol
		<input checked="" type="checkbox"/>		CBG, Nsg	Ordered	09/05/16 16:17:00, Stat
		<input type="checkbox"/>		Continuous ECG Monitoring	Discontin...	09/05/16 16:17:00, Yes, Critically Ill, Stat
		<input type="checkbox"/>		Neuro Checks	Discontin...	09/05/16 17:10:00, As Directed, PRN Order, Q15M x 2 hours, then Q...
		<input type="checkbox"/>		Vital Signs Parameters	Discontin...	09/05/16 17:10:00, Notify Provider, of SBP greater than 180 or DBP ...
		<input type="checkbox"/>		Vital Signs	Discontin...	09/05/16 17:10:00, Q15M x 2 hours, then Q30M x 6 hours. Based o...
		<input checked="" type="checkbox"/>		Diet		
		<input checked="" type="checkbox"/>		NPO Diets	Ordered	09/05/16 16:17:00, NPO
		<input type="checkbox"/>		Respiratory		
		<input type="checkbox"/>		EKG (AMC)	Completed	09/05/16 16:17:00, Stat, Abnormal EKG/Arrhythmia For ALL EKG's please use the following beeper numbers: MMH: ...
		<input type="checkbox"/>		Laboratory		
		<input type="checkbox"/>		Diff,Auto	Completed	Collected Y/N, Stat, 09/05/16 16:21:54, Blood, 09/05/16 16:21:54, 09...
		<input type="checkbox"/>		Prothrombin Time/INR (PT/L...	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		CBC w/Diff	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		APTT (PTT)	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		Magnesium (Mg), Serum	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		Metabolic Panel Comprehens...	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		Troponin I	Completed	Stat, 09/05/16 16:17:00, Blood, 09/05/16 16:17:00
		<input type="checkbox"/>		Radiology		
		<input type="checkbox"/>		DX Portable Chest (DX Chest Portable)	Completed	Stat, 09/05/16 16:17:00, Portable, Respiratory Distress Syn, Rad Typ...
		<input type="checkbox"/>		CT Code Stroke w/Contrast	Completed	Stat, 09/05/16 16:17:00, Stretcher, No Oral Contrast / Yes IV Contra...
		<input checked="" type="checkbox"/>		Treatments/Nursing		
		<input checked="" type="checkbox"/>		Review/Update Patient Preferred Pharmacy	Ordered	09/05/16 16:16:38 Ordered by System

Details

Alteplase/Activase for Ischemic Stroke

	Component	Status	Details
	Alteplase/Activase IV (tPA) for Ischemic Stroke Total Dose not to exceed 0.9 mg/kg (System) (Planned Pending)		
	Admit To/Condition/Code Status		
	Physician: Please refer to Reference Text for Criteria and Follow Up		
	Vital Signs/Monitoring		
<input checked="" type="checkbox"/>	Vital Signs Parameters		Notify Provider, of SBP greater than 180 or DBP greater than 105, Altepla...
<input checked="" type="checkbox"/>	Vital Signs		Q15M x 2 hours, then Q30M x 6 hours. Based on Alteplase (tPA) start ti...
<input checked="" type="checkbox"/>	Neuro Checks		As Directed, Q15M x 2 hours, then Q30M x 6 hours. Based on Alteplase (...)
<input checked="" type="checkbox"/>	Tongue/Oral Cavity Check		Q15M, x 2 hours, then Q30M x 6 hours. Based on Alteplase (tPA) start ti...
	Medications		
	May give labetalol prior to alteplase (tPA) for SBP greater than 185 or DBP greater than 110.		
<input type="checkbox"/>	labetalol		10 mg, Inj, IV Push, Q10M, T;N, Duration: 2 doses IV Alteplase (tPA) - Full Dose for Ischemic Stroke: Labetalol 10 mg IV ov...
	Full Dose: Total Dose 0.9 mg/kg (Max dose 90 mg). Bolus is 10% of total dose.		
	MD should enter a patient weight for dosing in the Comment Section of the med order.		
<input checked="" type="checkbox"/>	alteplase		0.09 mg/kg, Inj, IV Push, ONCE, STAT, Duration: 1 doses IV Alteplase (tPA) - Full Dose for Ischemic Stroke: Bolus equals 10% of t...
<input checked="" type="checkbox"/>	alteplase		0.81 mg/kg, IVPB, IV Piggyback, ONCE, STAT, Duration: 1 doses IV Alteplase (tPA) - Full Dose for Ischemic Stroke: Infusion dose equals 9...
<input checked="" type="checkbox"/>	Sodium Chloride 0.9%		Duration: 2 hr, Infuse over 15 mins (see comment) Infuse 50 mL over 15 minutes (200 mL/hr) x 1 after Alteplase (tPA) to ens...
	Non Categorized		
<input checked="" type="checkbox"/>	SubPhase Initiator		

ED Hemorrhagic Stroke (Non-Traumatic ICH/SAH) Go-Live August 2016 System Wide

	Component	Status	Details
ED Hemorrhagic Stroke (Non-traumatic ICH/SAH) Plan (System) (Planned Pending)			
Vital Signs/Monitoring			
<input checked="" type="checkbox"/>	Vital Signs		Q15M, Until Stable.
<input checked="" type="checkbox"/>	Maintain SBP mmHg Less Than		140
<input checked="" type="checkbox"/>	Maintain DBP mmHg Less Than		90
Diet			
<input checked="" type="checkbox"/>	NPO Diets		NPO
Laboratory			
<input checked="" type="checkbox"/>	CBC w/Diff		Stat, Blood, Nurse Collect
<input checked="" type="checkbox"/>	Metabolic Panel Comprehensive (CMP)		Stat, Blood, Nurse Collect
<input checked="" type="checkbox"/>	Troponin I		Stat, Blood, Nurse Collect
<input checked="" type="checkbox"/>	Prothrombin Time/INR (PT/INR)		Stat, Blood, Nurse Collect
<input checked="" type="checkbox"/>	APTT (PTT)		Stat, Blood, Nurse Collect
Radiology			
<input checked="" type="checkbox"/>	CT Angio Neck/Head (CTA Angio Neck/Head w/ IV C...		Stat, Stretcher, No Oral Contras...
<input checked="" type="checkbox"/>	DX Portable Chest (CXR DX Portable)		Stat, Unlisted - please enter fre...
Treatments/Nursing			
<input checked="" type="checkbox"/>	Neuro Checks		Q1H, Notify Physician for decli...
<input checked="" type="checkbox"/>	Rapid Bedside Dysphagia Screening (Nsq)		Prior to anything by Mouth.
<input checked="" type="checkbox"/>	Bed Position (HOB Elevated)		Other, Maintain HOB 30 degre...
<input checked="" type="checkbox"/>	Miscellaneous Nursing Order/Communication		Maintain Temperature less tha...
Medications			
Warfarin Reversal			
	Physician/Provider must select and initiate a subplan.		
	Without Bleeding or Minor Bleed		
	Vitamin K should be used for patients in whom INR reversal within 24 hours is acceptable.		
	Vitamin K Subplan (System)		
	Major Bleed		
	Factor IX Complex (Profilnine SD) should be reserved for patients who require emergent INR reversal to 1.4 or lower within 30 minutes or for those who have a contraindication to FFP fluid volumes.		

Medications	
Warfarin Reversal	
	Physician/Provider must select and initiate a subplan.
	Without Bleeding or Minor Bleed
	Vitamin K should be used for patients in whom INR reversal within 24 hours is acceptable.
	Vitamin K Subplan (System)
	Major Bleed
	Factor IX Complex (Profilnine SD) should be reserved for patients who require emergent INR reversal to 1.4 or lower within 30 minutes or for those who have a contraindication to FFP fluid volumes.
	FFP should be used for those patients in whom INR reversal within 12 hours is acceptable and those who can tolerate FFP fluid volumes
	FFP Subplan (System)
	Profilnine Subplan (System)
Dabigatran Bleeding Mgmt/Reversal	
	Dabigatran (Pradaxa) Mild to Moderate Bleeding Subp...
	Dabigatran (Pradaxa) Severe or Life Threatening Bleedi...
	Provider Note: Use of reversal agent should be reserved for patients requiring emergent surgery or other invasive procedures that can not be delayed for at least 8 hours and for which normal hemostasis is required. Patients should have also received a dose of dabigatran (Pradaxa) within the last 48 hours. Reversal is not intended for use for elective procedures or surgeries.
	Dabigatran (Pradaxa) Emergent Preoperative Reversal ...
Anticoagulant Reversal	
	Enoxaparin (Lovenox) and other LMWH Reversal for A...
	Rivaroxaban (Xarelto) Moderate to Severe Bleeding Ma...
Antiplatelet Reversal	
	Platelet Antagonist Bleeding Management Subplan, E...
Blood Pressure Management	
	Goal BP < 140/90
	Labetalol (Trandate) Escalating Dose Plan (System)
	niCARDipine (Cardene), Intracranial Hemorrhage (ICH...

- Included evidence-based guidelines for primary & secondary prevention, acute and hospital phase of care
- Embedded CPGs in provider and patient educational materials
- Standardized patient/caregiver education booklet

Care Process Model

ACUTE ISCHEMIC STROKE

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Summary of Select Recommendations for Secondary Stroke Prevention
From the American Heart Association (AHA)/American Stroke Association (ASA)

Section	2014 Recommendation	Description of change from 2011
Hypertension	Initiation of BP therapy is indicated for previously untreated patients with ischemic stroke or TIA who, after the first several days, have an established BP \geq 140 mmHg systolic or \geq 90 mmHg diastolic (Class I; level of evidence B). Initiation of therapy for patient with BP < 140 mmHg systolic and < 90 mmHg diastolic is of uncertain benefit. (Class IIb; level of Evidence C). Resumption of BP therapy is indicated for previously treated patients with known hypertension for both prevention of recurrent stroke and prevention of other vascular events in those who have had an ischemic stroke or TIA and are beyond the first several days (Class I; Level of Evidence A).	Clarification of parameters for initiating or resuming BP therapy
Dyslipidemia	Statin therapy with intensive lipid-lowering effects is recommended to reduce risk of stroke and cardiovascular events among patients with ischemic stroke or TIA presumed to be of atherosclerotic origin and an LDL-C level \geq 100 mg/dl with or without evidence for other ASCVD (Class I; Level of Evidence B).	Revised to be consistent with wording in the 2013 ACC/AHA cholesterol guideline
Glucose Disorders	After a TIA or Ischemic Stroke, all patients should probably be screened for DM with testing of fasting plasma glucose, HbA1C or an oral glucose tolerance test. Choice of test and timing should be guided by clinical judgment and recognition that acute illness may temporarily perturb measures of plasma glucose. In general HbA1C may be more accurate than other screening tests in the immediate post event period (Class IIa; Level of Evidence C).	New recommendation

Depart Quality Indicator Ischemic Stroke

To be completed on all
Ischemic Stroke patients

PowerChart Clinical Summary 12/21/2013

<input type="radio"/>	Diagnosis	
<input type="radio"/>	Medication Reconciliation	
<input type="radio"/>	Medication Instructions	
<input type="radio"/>	Glucose Management	
<input type="radio"/>	D/C Anticoagulation Therapy	
<input type="radio"/>	Hospital Course	
<input type="radio"/>	D/C PHYSICIAN	
<input type="radio"/>	DIET	
<input type="radio"/>	ACTIVITY/CALL DR	
<input type="radio"/>	School / Work Excuse	
<input type="radio"/>	FOLLOW UP	
<input checked="" type="radio"/>	Discharge Orders	
<input type="radio"/>	D/C QUALITY	
<input type="radio"/>	Services Arranged	
<input type="radio"/>	D/C Nurse	

Present on Admission	Present on Admission
AMI	
CABG	
CHF	
Ischemic Stroke	<input type="checkbox"/> None <input type="checkbox"/> Mediastinitis
Pneumonia	<input type="checkbox"/> Catheter-associated urinary tract infection
	<input type="checkbox"/> Vascular catheter-associated infection
	<input type="checkbox"/> Object left in during surgery
	<input type="checkbox"/> Embolism
	<input type="checkbox"/> Blood incompatibility
	<input type="checkbox"/> Falls

Present on Admission

AMI

CABG

CHF

Ischemic Stroke

Pneumonia

Valve

Quality Indicators for Stroke

Did the patient receive
IV t-PA?

- ☐ Yes
☐ No

Did the pt receive
endovascular treatment?

- ☐ Yes
☐ No

Select documented stroke etiology **R**

- ☐ Cryptogenic stroke (Stroke of undetermined etiology)
☐ Large artery atherosclerosis (Intra or extracranial large artery atherostenosis \geq 50% proximal to infarct)
☐ Cardioembolism (e.g., arterial fibrillation/flutter, prosthetic heart valve, recent MI)
☐ Small Vessel / Lacunar Stroke (e.g., subcortical or brain stem lacunar infarction $<$ 1.5cm)
☐ Stroke of other determined etiology (e.g., dissection, vasculopathy, hypercoagulable or hematologic disorders)

Hemorrhagic Complication After Acute Stroke Treatment on Imaging:

- ☐ Symptomatic: Neuro worsening of NIHSS increasing \geq 4
☐ Asymptomatic

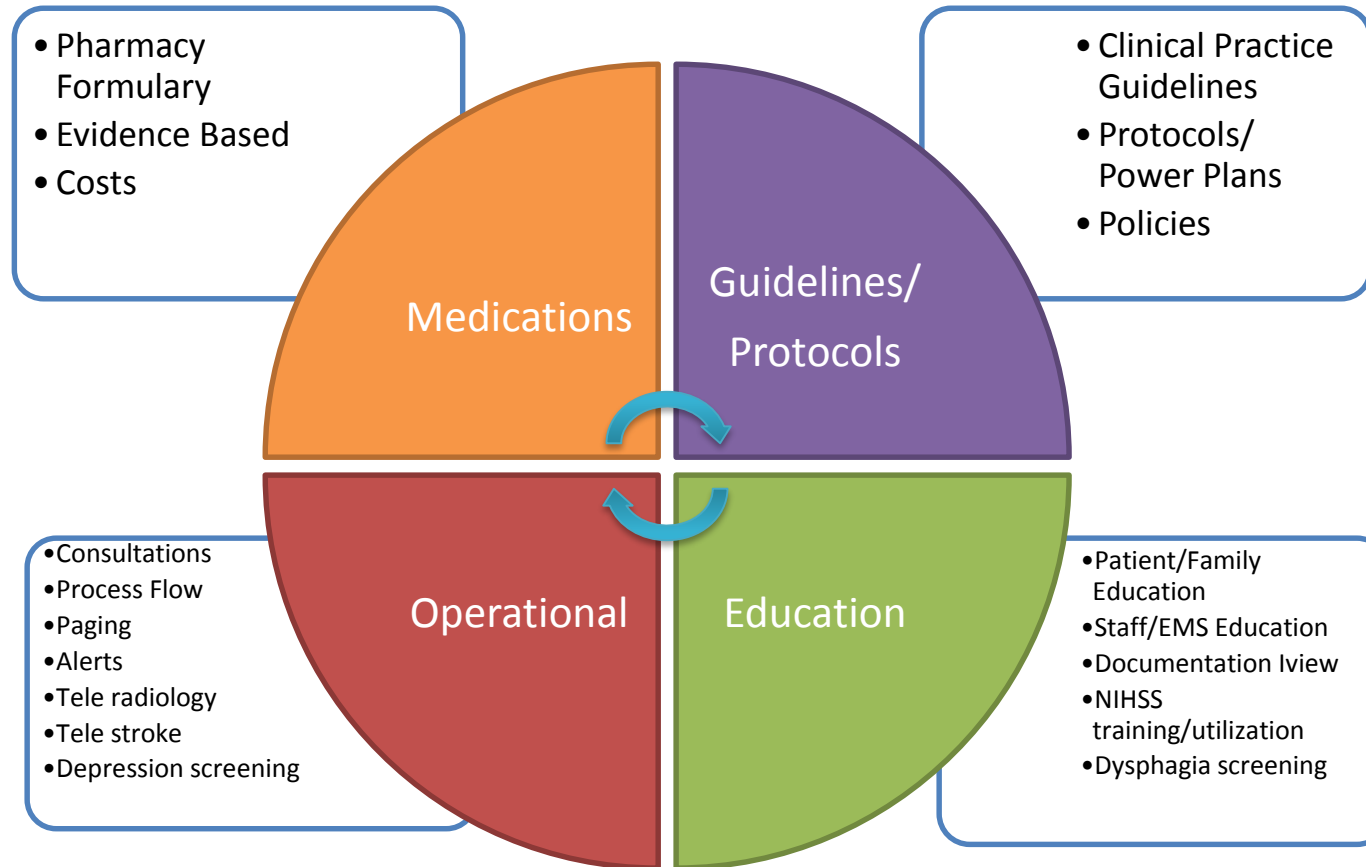
IF Parenchymal Hemorrhage CHOOSE ONE

- ☐ HI1: Small Petechiae Within Infarction
☐ HI2: More Confluent Petechiae Within Infarction Without Space Occupying Mass Effect
☐ PH1: Hematoma Involving $<$ 30% of Infarcted Area Without Significant Space Occupying Mass Effect
☐ PH2: Hematoma Involving $>$ 30% Of Infarcted Area With Significant Space Occupying Mass Effect or Hematoma Outside the Infarction

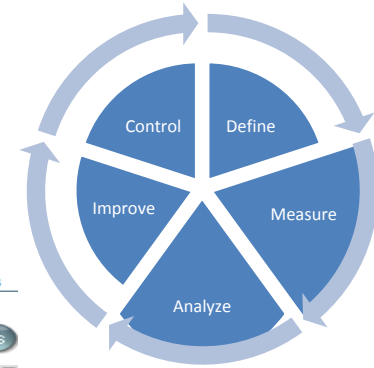
Choose ALL That Apply

- ☐ IVH
☐ SAH
☐ RIH (Remote site of intraparenchymal hemorrhage outside of the area of infarction)
☐ Other:

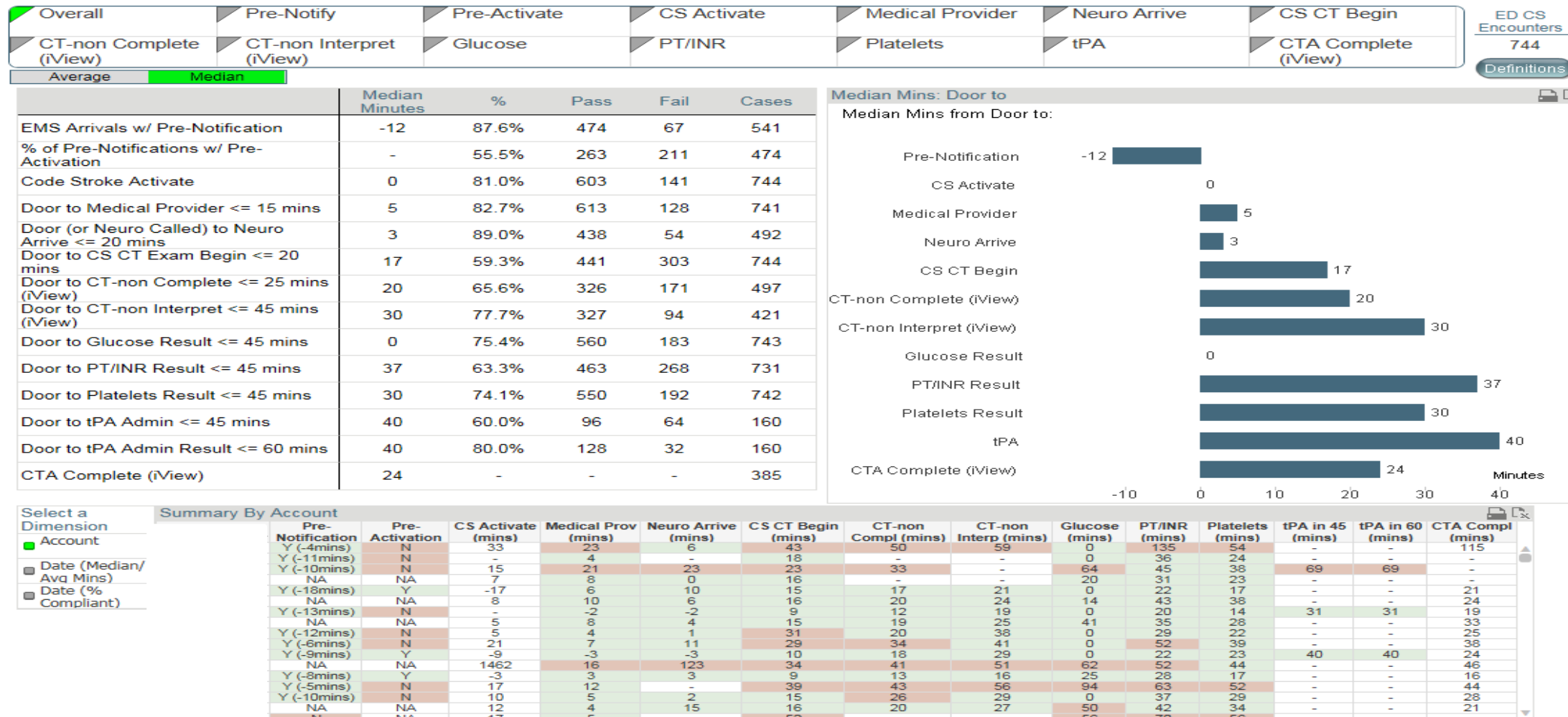
Final Product & Standardization



Creating the Advanced App



Actionable Data



Reporting Out and Partnering With

- Weekly report out with continually expanding data points to lay out where process failures occurred disseminated to
 - ED Managers
 - CT Managers
 - Lab Managers
 - Physician Leads
- Monthly system meetings to discuss
 - Reoccurring process issues
 - Lessons learned
 - Celebrate best practice and times



MOCK CODE STROKE SIMULATION MCDOWELL HOSPITAL, MARION, NC June 6, 2017



Scenario

- 50 yo female arrives via POV to MCD ED. Patient's daughter states patient was normal at breakfast at 0730 and went into the living room to watch TV. After cleaning up the kitchen, at approximately 0745, the daughter states she walked into the living room to find her mother slumped over on the couch. She had assistance getting the patient in vehicle. She states that she lives less than half a mile away and said it would be quicker to drive her in.

Patient Presentation

- Right-sided gaze (eyes fixed to right, cannot move across midline)
- Garbled/slurred speech
- Left-sided weakness (arm does not move or lift, leg shows some movement but cannot lift)
- Pt not on blood thinners and has history of HTN, GERD, and palpitations
- VS: 178/94, 97% on RA, HR 68, resps 18



- After CT scan, telestroke with neurologist
- Neurological assessment—Right MCA occlusion
- Pt candidate for tPA and endovascular therapy
- Neurologist receives consent from family
- Orders emergency transport to Mission



Medtronic

Erika Prezas – EMS/Tele-stroke Coordinator Hits the Road with Stroke Education



Mock Code Stroke McDowell Hospital

Mock Code Stroke education

- Transylvania Hospital
- Angel Medical Center
- Highlands Hospital
- Blue Ridge Regional
- McDowell Hospital
- IR Stroke Now Mission

EMS Summer Camp
Teaching Hip Hop Stroke

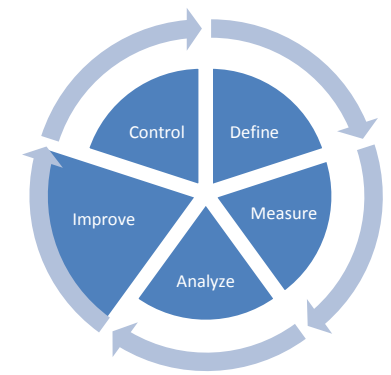


Want to join
us?

Erika.Prezas@msj.org

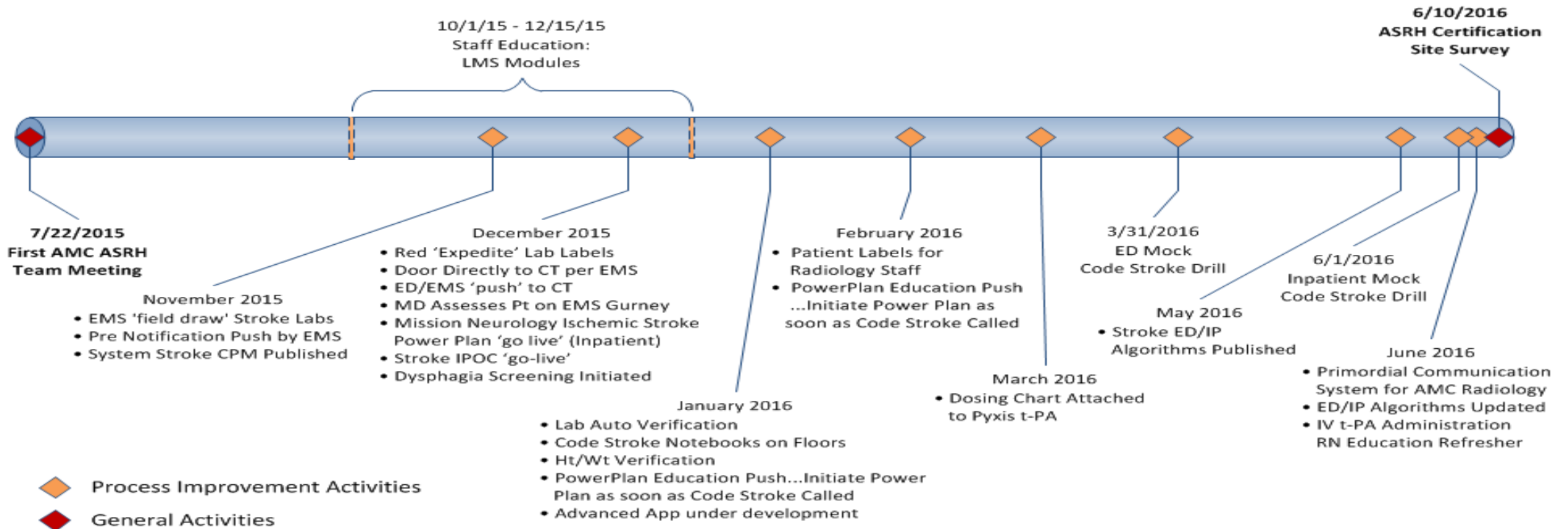


AMC ASRH Process Improvement Timeline



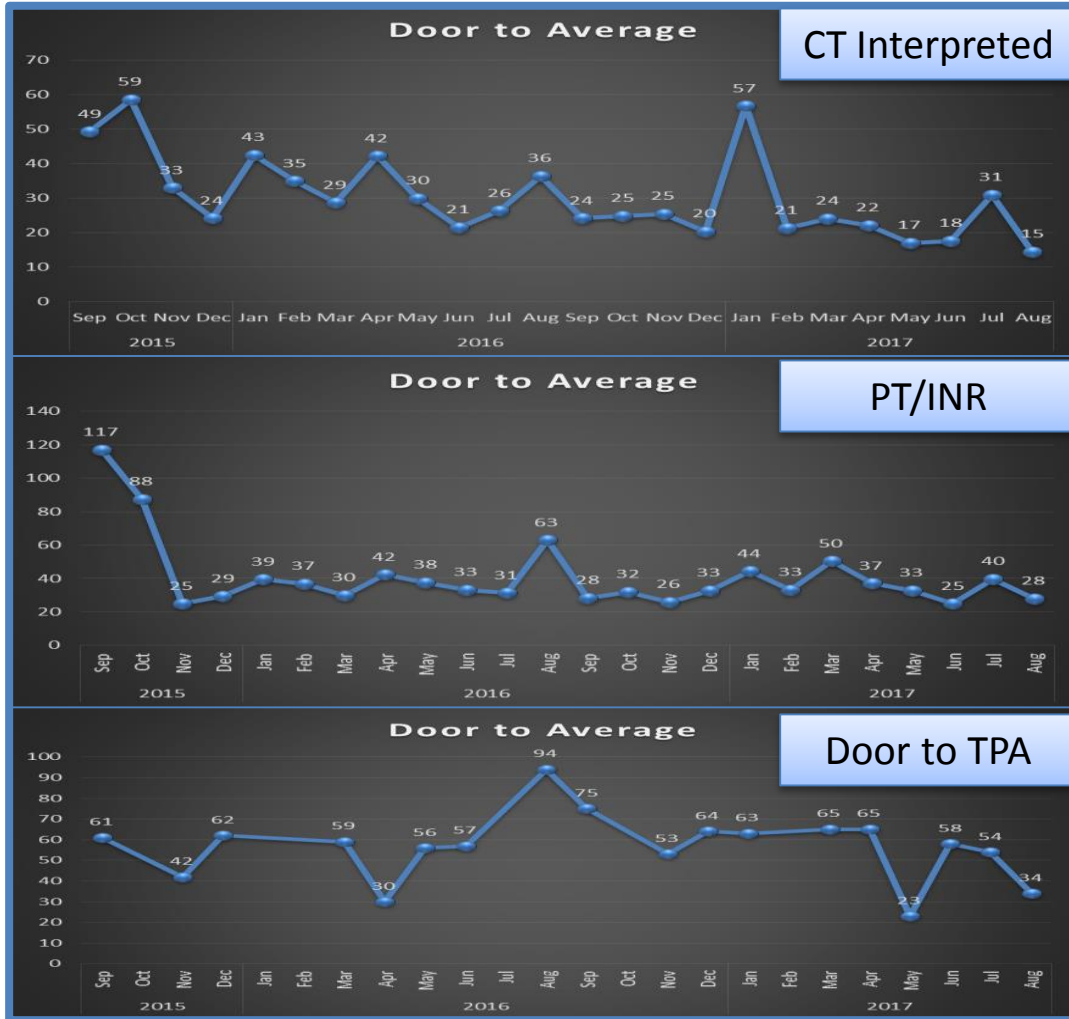
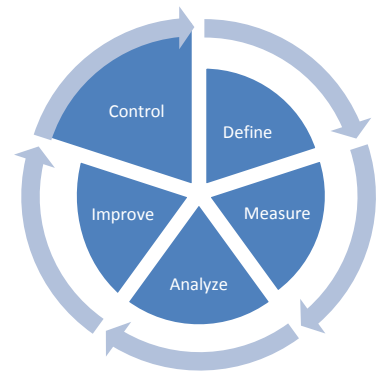
Process Improvement Initiatives Prior to 1st Official AMC ASRH Certification Team Meeting 7/22/2015:

- Alignment w/ Stroke Core Measures Oct 2014 – Mar 2015
- Stroke Care Process Model (CPM) Team Launch Oct 2014
- ED Code Stroke Power Plan (System) 'go live' 6/15/2016



Angel Medical Center

CHANGING THE CULTURE AROUND THE STROKE PROCESS



American Heart Association
American Stroke Association
CERTIFICATION
Meets standards for
Acute Stroke Ready Hospital

- Joint Commission Survey in June 2016

Thrombolytic Use

- 40% Growth in TPA use at Angel
- 200% Growth at McDowell

Voice of the Customer



- I was invited to the Community Relations Council at Angel recently to update them on the progress of a couple things I've been involved in recently. They also used that opportunity to have me share about the success of the ASRH program. I shared with these folks (all of which are community members) a story and they LOVED it! I thought I might send you the info for the newsletter if appropriate.
- ED nurses for the most part are innately competitive. This past April Angel ED provided excellent and prompt care to a patient presenting with stroke symptoms. This patient was brought in by EMS, evaluated by the MD, sent to CT and CTA, labs drawn, seen by neurology via tele-neurology and given TPA in 23 minutes!!!! Word spread fast and we then received word from Mission data analyst that that was the fastest door to TPA time for member hospitals! The nurse responsible was awarded a "brain pin" for her excellent effort that day.
- Three months later 2 nurses had a similar experience and gave TPA within 34 minutes of the patients arrival. **Knowing this was an excellent door to needle time, they couldn't wait to see me to brag!! I am thrilled that a little friendly competition is driving our stroke care to excellence! Our stroke patients benefit greatly from this excellent, timely care.** Their outcomes are and quality of life are better because of these amazing Angel nurses and their competitive nature.

Bringing it Back Home



Drilling Further

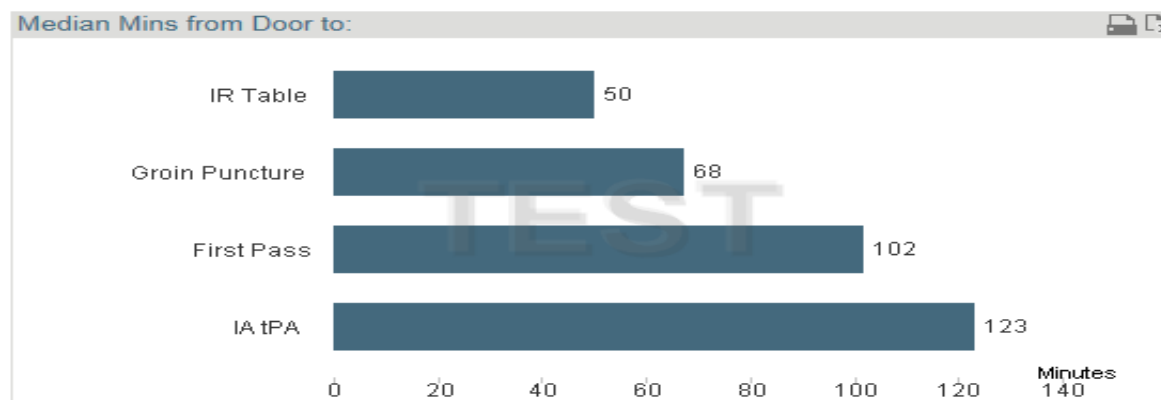
Overall	IR Table/Room	Groin Puncture	IA tPA	First Pass
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IR
Encounters
57

Definitions

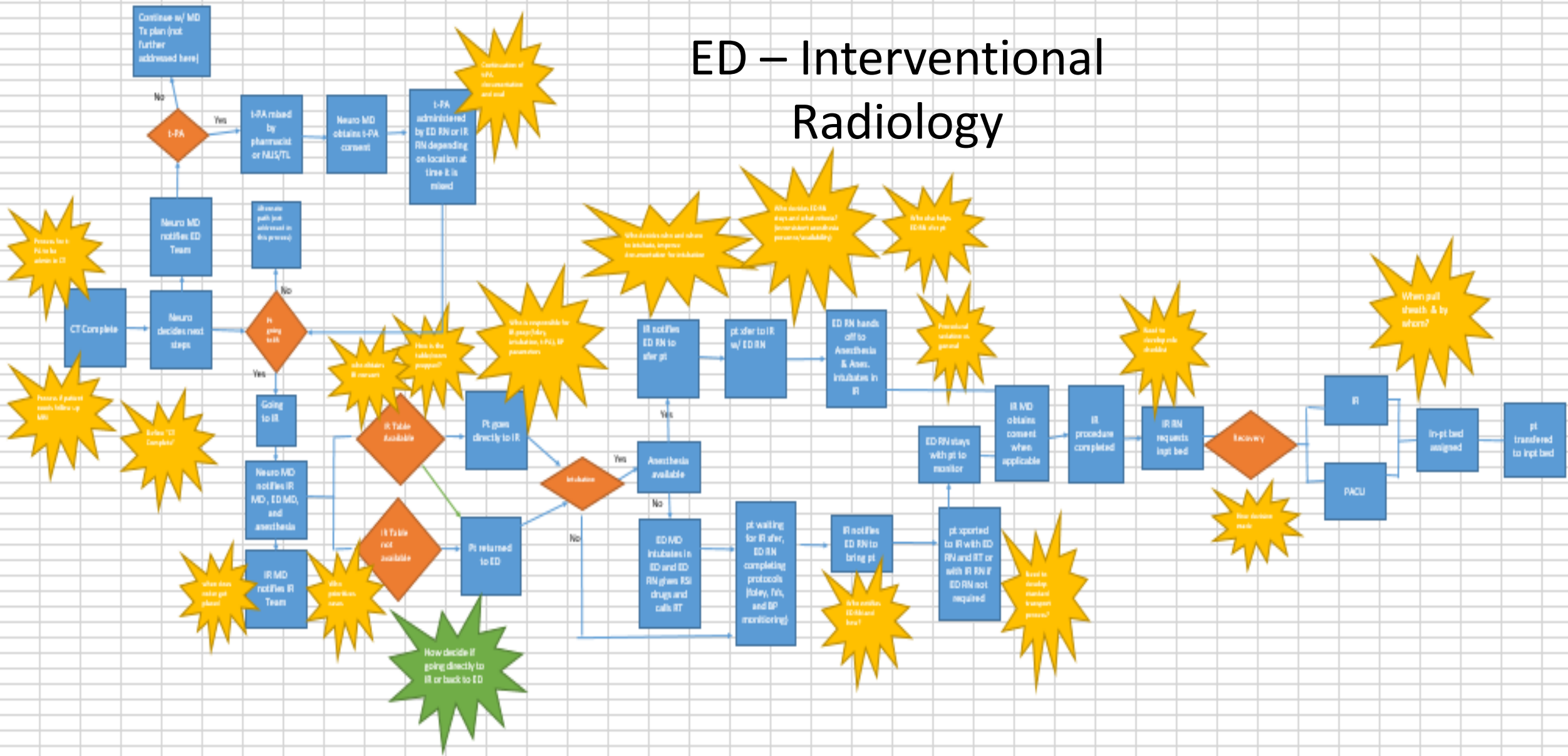
Average Median

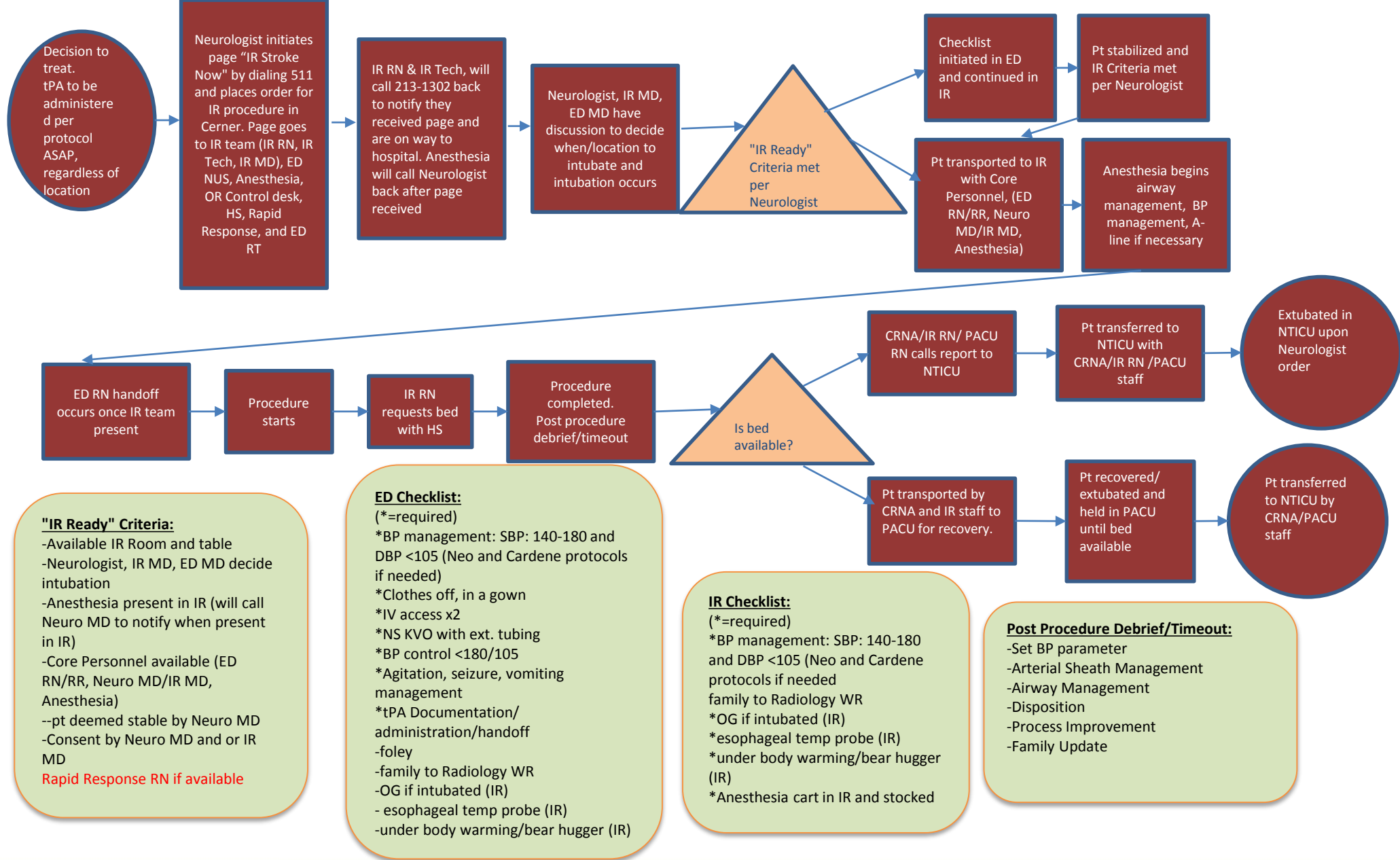
	Median Minutes	Cases
Door to IR Table	50	59
Door to Groin Puncture <= 90 mins	68	58
Door to First Pass	102	45
Door to IA tPA	123	6



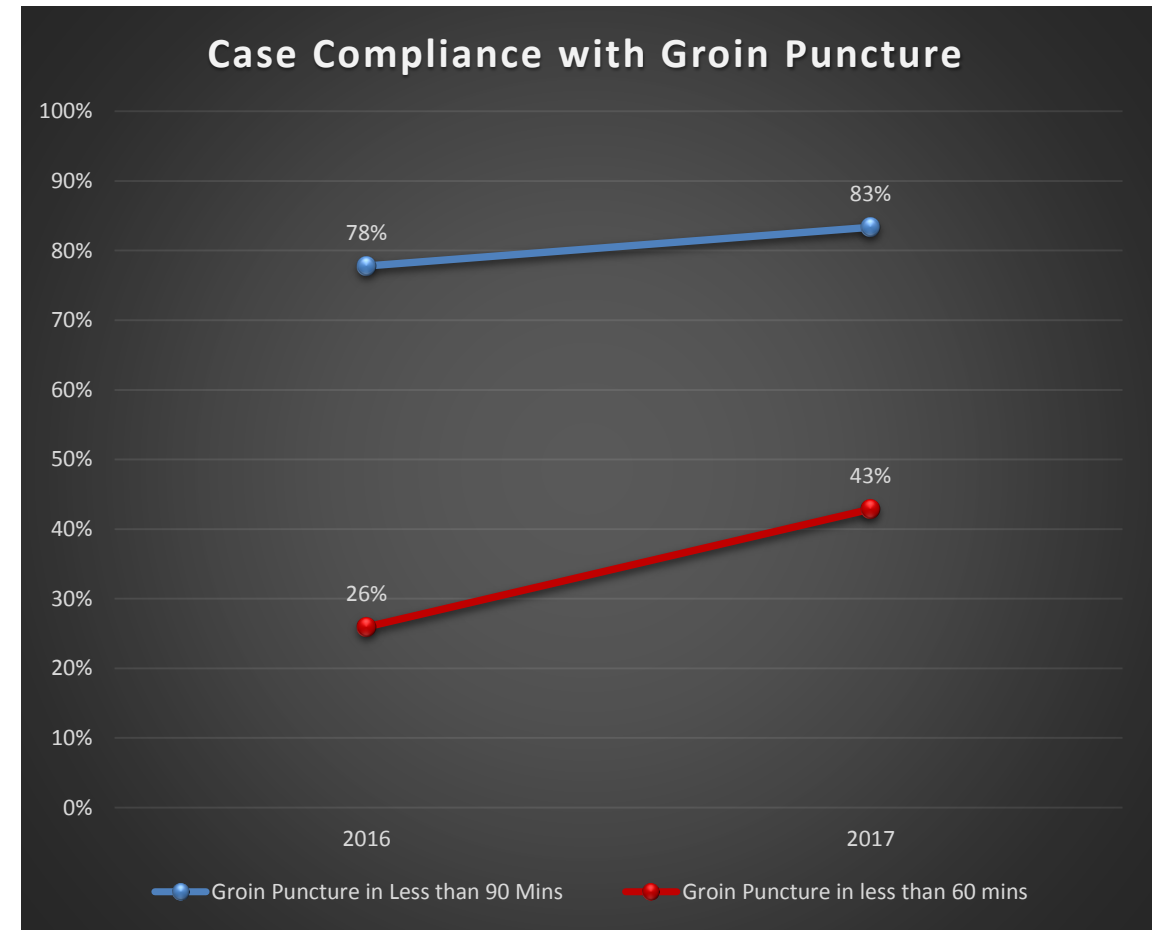
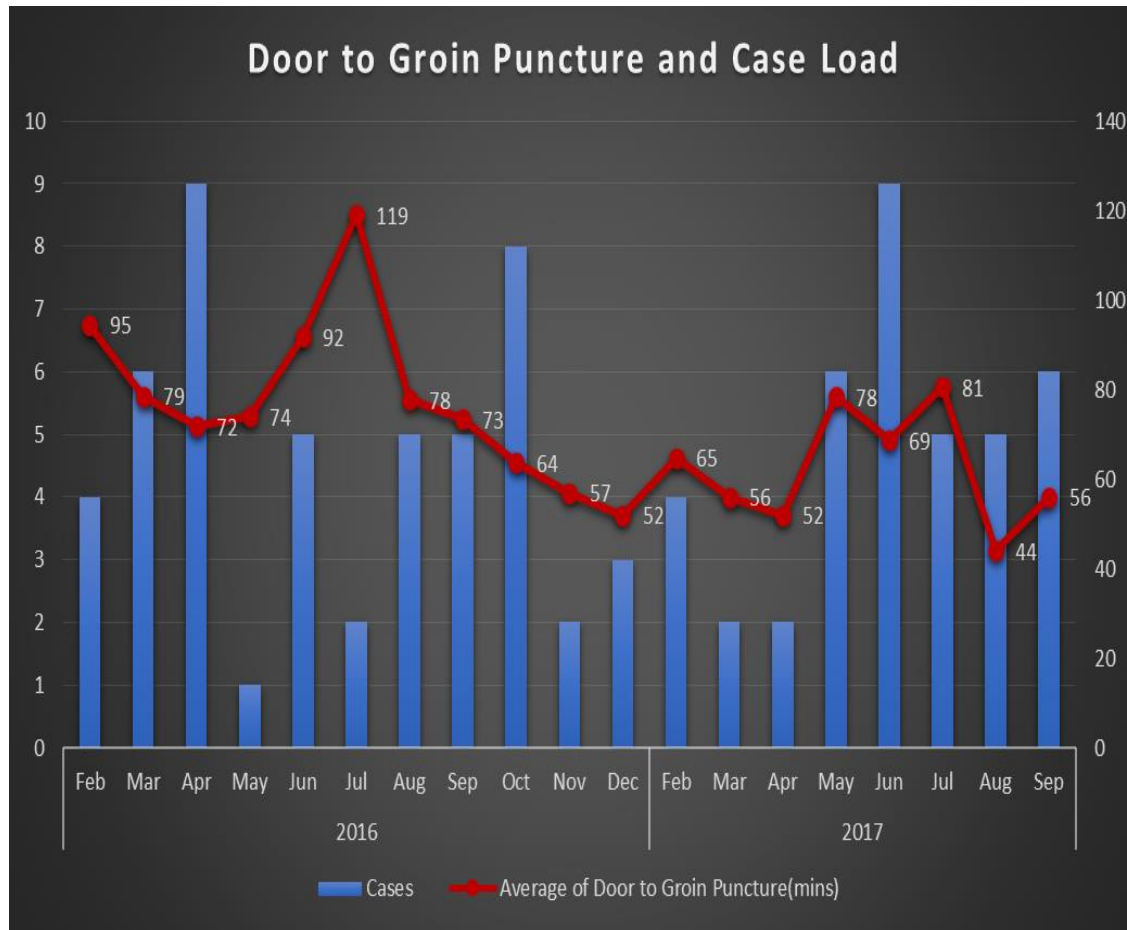
Select a Dimension	Summary By Account: Door to					
<input checked="" type="checkbox"/> Account	IR Table (mins)	Groin Puncture (mins)	First Pass (mins)	IA tPA (mins)	Affiliate Transfer LOS (mins)	Neurologist
<input type="checkbox"/> Date (Median/ Avg Mins)	11	14	50	-	91	
	6	20	-	-	-	
	20	33	67	-	-	
	26	40	72	-	-	
	26	41	75	-	53	
	29	43	64	-	-	
	32	46	-	-	-	
	36	48	79	-	-	

ED – Interventional Radiology





Seeing the Results



Case Presentation

Multi-facility Patient: Patient arrived to tele-stroke hospital by EMS, ED MD eval at **5 min**, CS activated at **1 min**, Neurologist called at **3 min**. Dr. Taylor provided telestroke consult, on **robot 15 mins** after call. CT Interpreted at 14 min NIHSS on arrival to McDowell was 25 **Alteplase given at 30 mins** and patient transferred to Mission at 61 min Taken to IR with plans for embolectomy but per Dr. Taylor the first pass shows that the left MCA is totally open. Patient discharged home with an **NIHSS of 1**.



COMPASS – Comprehensive Post Acute Stroke Services



WHAT IS COMPASS

North Carolina Stroke Care Collaborative

- A grant funded trial to investigate post-acute stroke care models that are aimed at improving patient functional outcomes and reducing readmissions.
- Improve secondary prevention
- Improve recovery and quality of life by linking the survivor and caregiver to needed resources
- Encourage self- management of care

UNC
UNIVERSITY OF NORTH CAROLINA
SCHOOL OF MEDICINE

Wake Forest®
Baptist Health

Data Quality and Performance Measure Report for Mission Hospital

Report includes discharges from 12/1/2016 through 03/31/2017
Data entered through 04/05/2017

Section A: Enrollment

Case Ascertainment Report	Date Range				Cumulative Total
	DEC2016	JAN2017	FEB2017	MAR2017	
Number patients screened	98	65	100	69	529
Number ineligible	69	35	68	40	340
Number enrolled	29	30	32	29	189

COMPASS clinic is held weekly at Mission Neurology Outpatient



All Stroke (Ischemic, ICH and TIA) patients discharged home are eligible for COMPASS services

Debbie Stamey & Melissa Hanrahan are Mission Hospital COMPASS coordinators

COMPASS TEAM ROLES

- Nurse navigator
 - Perform the 2-day follow-up phone call
 - Provide education prior to discharge
 - Coordinate appointments with NP and PCP
 - Provide community referrals (e.g. stroke survivor support group) and other support during the intervention
- Nurse Practitioner/Physician Assistant
 - See patients within 7 to 14 days in clinic for TCM billing
 - Provide referrals to home health, outpatient therapy, falls prevention, neurological assessment, cognitive and depression screen, medication management, secondary prevention
 - Support PCP, provide notes and communications related to post-acute care

How are we doing

- Began screening October 1, 2016
- 1056 patients screened for eligibility
- 642 no enrolled r/t discharge disposition or diagnosis
- 413 patients enrolled
 - Receipt of 2-day call 81%
 - Receipt of 7-14 day visit 45%
 - 9% No-Show rate for year
 - Reasons for no visit
 - Prefer f/u with PCP
 - Did not want to travel back to Asheville

Mission Hospital Comprehensive Stroke Certified July 2017





GREAT FUN
GREAT CAUSE
MAY 24
STROKES 4
STROKE PAINT
NIGHT
FUNDRAISER
FOR STROKE
CAMP 2017

Mission Health Stroke sponsors 4th annual
Retreat & Refresh Stroke Camp
September 8-10 at Lake Junaluska Conference
Center
For more info see a member of the Stroke
Team or www.strokecamp.org



If I had to send a message to people who are not familiar with stroke or professionals who only deal with the clinical aspect of stroke, it would be to never put the "stroke" ahead of individual.

Understand that we all have something to offer one another

STROKES for STROKE



These paintings were created by Mission team members to raise funds for Stroke Camp.

THANK YOU KAREN FOR YOUR
YEARS OF LEADERSHIP OF THE
NC SAC AND YOUR UNWAVERING
COMMITMENT TO IMPROVING
STROKE OUTCOMES IN NORTH
CAROLINA