

NC Stroke Care Collaborative: A brief history and update

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Mission of the NC Stroke Care Collaborative

- Measure, track, and improve the quality of acute stroke care in NC
- Identify and overcome barriers to timely receipt of appropriate acute stroke care
- Decrease death and disability from stroke through secondary prevention



Data elements

C troke Care	NCSCC Stroke	e Care Card v12.8					
ollaborative		resentation Data	Med. Record # Stroke ID				
1. Hospital Arrival: Date:/_/ ND □ Time:: ND □ 2. Hospital Arrival Mode: □ EMS (from home/scene) □ Private Transport/Taxi/Other □ Transfer from another hospital □ ND If arrived by EMS: 3. Call received by EMS: Date:/_ ND □ Time:: ND □ 4. Was there EMS pre-notification to this hospital? □ Yes □ No/ND 5. What was the patient's ambulatory status prior to admission? (Check noe) □ Able to ambulate independently (with or without device) □ With assistance (from person) □ Nable to ambulate	6. Presumptive Hospital Diagnosis (at time of admission, related to stroke; check one): Collected concurrently**[Ischemic Stroke Intracerebral Hemorrhage (ICH) Subarachnoid Hemorrhage (ISA) No Stroke Related Diagnosis Stroke NOS TIA Twhere was the patient when stroke was defected or when symptoms were discovered? (Check one) Not in a health care facility Chronic health care facility White in-patient in this hospital Outpatient health care setting Cannot be determined S. When was the patient Last known to be well? Date:	Check one) Check one) ED/J/rigent care Direct admit. nd via ED Imaging suite prior to ED ND ON One of the prior to ED ND ON One of the prior to ED ND ONE of the prior to ED ONE of the prior to	13. Was brain imaging performed at this hospital as part of the initial evaluation for this episode of care or event? Ves. after ED admission NoND NO (outside imaging prior to transfer or patient is DNR/CMO) Yes, prior to ED admission at this hospital FYES: 13a. Date/Time of initial brain imaging: Date: ND ND Time: ND Time: ND Time: ND Time: ND ND Time: ND ND				
	Demogr	raphic Data					
15. Race (check all that apply): White Black/African American	16. Hispanic (Latino): Yes No ND T. Gender: Male Fernale ND 18. Insurance: (check at thet apply) Medicare Self pay Medicare Self poy VA/Champus/Other ND	19. Documented past medical history of: (check all that apply) Stroke					
	t-P	A Data					
20. Was IV t-PA initiated for this pati	ient at this hospital?	If q.20 is NO and 21b not checked: 24. Identify reason(s): (check all that app	ly) □Collected Concurrently ^^				
# g. 20 /s YES: 20a. What were the first blood press SBP/DBP (mmHg)/_ Slucose (mg/dt) 20b. If IV 1-PA was initiated >50 minu eligibility or medical reasons d	— ☐ ND ☐ N	□ Contraindication Contraindications Include: SBP-185 or DBP-110mm; Seizure at onset, Recent surgeryArauma (<15 days); Recent Intercentaio or spind surgery, head traume, or stroke(<3 mo.); History of intracranial hemorrhage or brain anaurysm or vascular matformation or brain tumo; Active internal bleeding (<2 days); Platelest <100,000, PTP-40 sec after heparin use, or PT> 15 or INR> 1.7, or known bleeding diathesis; Suspicion of SAH Warning Warnings Include: Stroke severity (NIHSS>22); Glucose < 50 or >400 mg/dij, Left heart thrombus; Increased risk of bleeding due to, pericarditis, subscute bacterial endocarditis; Hemostatic defects including those 2nd to severe hepatio or neal disease; Prog-					
□ c. IA catheter based reperfusion a Date:/_/ □ ND If q. 20 is YES or 21b is checked: 22a. Complications of thrombolytic	Time:	nancy, Diabetic hemorrhagic retinopathy or other hemorrhagic ophthalmic dx, tic thrombophieblis or occluded AV cannula at infected site, currently receivin anticoagulants N or IA tPA given at outside hospital Failure to dx in 3 hour limit Advanced age In-hospital delay Delay in patient arrival Severity too mild No IV access Patient/family refused Orac team unable to determine eligibility Reason not documented CT findings United the company of the company Life expectancy <1 year or severe					
□ None □ Symptomatic ICH w □ Life threatening, serious systemic □ Other serious complications □ Un ## 21b is checked: 22b. Were there bleeding complicati IV 1-PA? □ Yes, detected prior to transfer □	ithin 36 hours of t-PA hemorrhage within 36 hours of t-PA iknown/Unable to determine ions in a patient transferred after						

	In-Hosi	oital Data					
25. Hospital Admission:			ent or caregiver provided smoking cessation				
Not admitted, death Not admitted, death		counseling?	ant or caregiver provided smoking desisation				
☐ Not admitted, death	Skip to Q49	☐ Yes ☐ No	ND NA CI				
☐ Not admitted, observation only		35. Was patient	prescribed antihypertensive medication at discharge?				
☐ Admitted for elective carotid endarterectomy ☐ Part of stroke clinical trial	STOP -patient ineligible	☐ Yes ☐ N					
Hospital Admission Date://		36. Was antithro	36. Was antithrombotic medication prescribed at discharge?				
Hospital Admission Date://		☐ Yes ☐ N	o/ND □ CI □ Collected Concurrently**				
26. Where was this patient cared for and by whom?		IF YES:					
In stroke unit ☐ Yes ☐ No/ND Neurology admi		36a. Which antithrombotic(s) were prescribed? (Check all that apply) ☐ Antiplatelet ☐ Anticoagulant					
Stroke consult Yes No/ND Other service ad	tmit ☐ Yes ☐ No/ND	☐ Antiplate	iet Li Anticoaguiant				
		37. Lipid profile: <u>Units:</u> □ mg/dl □mmol/liter					
27. Was patient NPO throughout the entire hospital s	tay?	HDL					
☐ Yes ☐ No/ND*		LDL	LDL ND HgB A1c % ND				
29a. Did patient die on the day of arrival or the 1st day	after arrival?	Total	□ ND				
□ No □ Yes → Skip to Q49		38a. Were stating	s prescribed at discharge?				
30. Was patient restricted to comfort measures only I	by physician. APN, or	IF NO/ND:	A STATE OF THE STA				
PA? Skip	to Q33	38b. Is there a	documented reason why statins were not prescribed?				
☐ Yes, day of arrival or 1st day after arrival → (Om	it Q34-41 & 46-47)	☐ Yes ☐ N	Io/ND				
☐ Yes, day of arrival or 1st day after arrival ☐ Yes. 2nd day after arrival or later ☐ Yes. timing unclear ☐ No	eed to Q31.	IF YES: Statin I	Medication Name & Dose				
□ Yes, timing unclear □ No □ ND (Om	it Q34-41 & 46-47)	38e. Statin med	lication				
31b. Was VTE prophylaxis administered?		Statin dos	e mg /day				
Yes, date of initial administration://_	Date ND	40 Mas atd-155	sillation/flutter (AE) or parameteral AE decurrents				
□ No/ND			rillation/flutter (AF) or paroxysmal AF documented pisode of care?				
31c. What type of prophylaxis was given? (check all	that apply)	☐ Yes ☐ N					
☐ Low dose unfract, heparin (LDUH) ☐ Low molec, w		(IF q.19 or q.40 YES)					
☐ Factor Xa Inhibitor ☐ Warfarin		 If history of AF or PAF or dx this admission, was anticoagulation med, prescribed upon discharge (e.g. Warfarin, unfractionated hep- 					
☐ Venous foot pumps ☐ Intermittent p		arin IV, LMW heparin)?					
☐ Oral factor Xa Inhibitor ☐ Graduated or ☐ ND or none of the above	ompression stockings	42 Mary adjust to a total for a UR daylor this advisor to					
	0.000000	42. Was patient treated for a UTI during this admission? ☐ Yes ☐ No/ND					
IF 'Oral factor Xa' is checked: Is there a documented in Factor Xa Inhibitor for VTE? ☐ Yes ☐ No	eason for using Oral		IF YES:				
		43. Did patient i	have a foley catheter during this admission?				
IF not documented or none of the above types of pro 31d. Is there a documented reason why VTE prophyla	phylaxis apply: axis was not given?	☐ Yes, in pla	ace on arrival No admission Unable to determine				
☐ Yes ☐ No/ND		☐ Yes, after admission ☐ Unable to determine					
32. Was antithrombotic therapy received by the end of	of day after ARRIVAL?	44. Did patient experience a DVT or PE during this admission?					
☐ Yes ☐ No/ND ☐ CI		☐ Yes ☐ N	o/ND				
33. Did patient die on the 2nd day after arrival or later?	,	45. Was patient treated for hospital-acquired pneumonia during this					
		admission? □ Yes □ No/ ND □ CI					
□ No □ Yes → Skip to Q49		Li res Li Nov ND Li Ci					
	Discha	rge Data					
46. Did the patient and/or caregiver receive stroke	48. What was the pat		51. Was a stroke order set used for this admission?				
education and/or resource materials?	status at dischar	ge? (check one)	☐ ED only ☐ Both ED and In-patient				
(check all that apply)	Able to ambulate (with or without d		☐ In-patient only ☐ None				
Personal modifiable risk factors Yes No/ND	☐ With assistance	(from person)	52. Discharge disposition: (check one)				
Stroke warning signs and symptoms ☐ Yes ☐ No/ND How to activate EMS for stroke ☐ Yes ☐ No/ND	☐ Unable to ambul		☐ Home ☐ Hospice - Home				
Follow-up after discharge ☐ Yes ☐ No/ND	□ND		☐ Hospice - Health care facility				
Medications prescribed ☐ Yes ☐ No/ND	48b. Modified Rankir	T 4 1					
47. Was the patient assessed for or received	at discharge: Not performed /	(ND (0.0)	☐ SNF				
rehabilitation services?	inot performed /	(U-0)	☐ Inpatient rehabilitation☐ Long-term care				
Yes No/ND	49. Date of Discharge		☐ Intermediate care facility				
If YES, Check all that apply:	/		☐ Other ☐ Expired				
☐ Received rehab services during hospitalization	50. Final Hospital Dia	agnosis	☐ Left against medical advice/AMA				
☐ Transferred to rehab facility	(check only one): ☐ Ischemic Stroke		☐ ND / unable to determine				
☐ Ineligible to receive rehab services	☐ Intracerebral Hemo	orrhage (ICH)	100.00.4				
☐ Referred to rehab services after discharge ☐ Patient/family refused rehab services	☐ Subarachnoid Hem	emorrhage (SAH)					
C . www.stariny related reliate services	☐ No stroke related d ☐ Stroke NOS	54. ICD-9 principal discharge diagnosis:					
	☐ TIA						

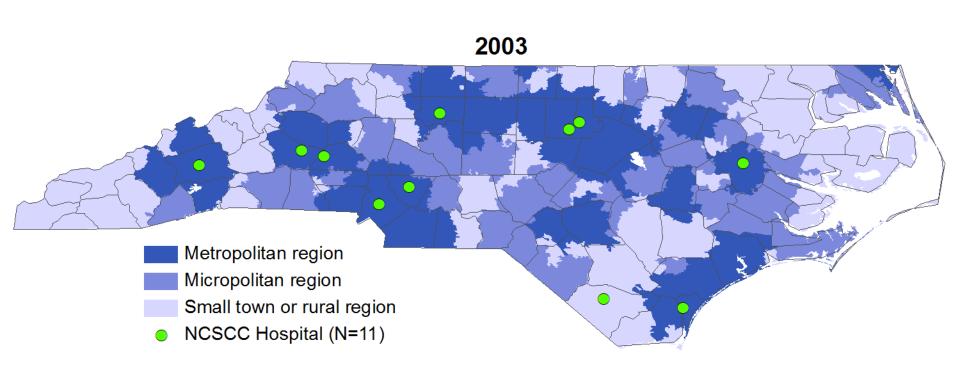


NCSCC Performance Measures Report July 1, 2014 to December 31, 2014 Case Listing for Performance Measures Report - Hospital (N = 72)

Subject ID	Discharge Date	Туре	PM1	PM2	PM3	PM4	PM5	PM6	PM7	PM8	PM9	PM10	PM11	PM12	PM13	DFC
NCSCC_	09/12/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	Yes	Yes	-	Yes	Yes	-	-	Yes
NCSCC_	09/16/2014	Transient ischemic attack	-	Yes	-	-	Yes	No	-	No	-	-	-	-	-	No
NCSCC_	09/18/2014	Ischemic stroke	Yes	-	-	-	Yes	-	No	-	-	-	No	-	-	No
NCSCC_	09/20/2014	Transient ischemic attack	-	Yes	-	-	Yes	Yes	-	No	-	-	-	-	-	No
NCSCC_	09/26/2014	Ischemic stroke	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes	-	Yes	No	-	-	Yes
NCSCC_	09/27/2014	Ischemic stroke	Yes	Yes	1	1	Yes	Yes	No	Yes	-	Yes	No	1	-	No
NCSCC_	09/29/2014	Transient ischemic attack	1	-	1	1	Yes	-	1	-	-	1	-	-	-	Yes
NCSCC_	09/30/2014	Ischemic stroke	Yes	Yes	-	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	-	No
NCSCC_	10/01/2014	Ischemic stroke	Yes	-	-	No	Yes	-	No	-	-	-	Yes	Yes	-	No
NCSCC_	10/02/2014	Transient ischemic attack	-	Yes	-	-	Yes	Yes	-	Yes	-	-	-	-	-	Yes
NCSCC_	10/03/2014	Transient ischemic attack	-	Yes	-	-	Yes	Yes	-	Yes	-	-	-	-	-	Yes
NCSCC_	10/04/2014	Transient ischemic attack	-	No	-	-	Yes	Yes	-	No	-	-	-	-	-	No
NCSCC_	10/07/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	No	Yes	-	Yes	No	-	-	No
NCSCC_	10/07/2014	Ischemic stroke	-	Yes	-	No	-	Yes	No	Yes	-	Yes	No	Yes	-	No
NCSCC_	10/08/2014	Transient ischemic attack	-	-	-	-	Yes	-	-	-	-	-	-	-	-	Yes
NCSCC_	10/15/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	No	Yes	Yes	Yes	No	-	-	No
NCSCC_	10/15/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes
NCSCC_	10/17/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	Yes	Yes	-	Yes	No	-	-	Yes
NCSCC_	10/21/2014	Ischemic stroke	Yes	-	-	-	-	-	-	-	-	-	Yes	Yes	-	Yes
NCSCC_	10/22/2014	Transient ischemic attack	-	Yes	-	-	Yes	-	-	Yes	-	-	-	-	-	Yes
NCSCC_	10/24/2014	Ischemic stroke	Yes	-	-	-	Yes	-	No	-	-	-	No	-	-	No
NCSCC_	11/10/2014	Ischemic stroke	Yes	-	-	-	No	-	No	-	-	-	No	-	-	No
NCSCC_	11/12/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	No	Yes	-	Yes	Yes	-	-	No
NCSCC_	11/12/2014	Ischemic stroke	Yes	Yes	-	-	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-	Yes
NCSCC_	11/17/2014	Ischemic stroke	Yes	-	-	-	Yes	-	Yes	-	-	-	Yes	-	-	Yes
NCSCC_	11/18/2014	Ischemic stroke	Yes	-	-	-	No	-	No	-	-	-	Yes	-	-	No

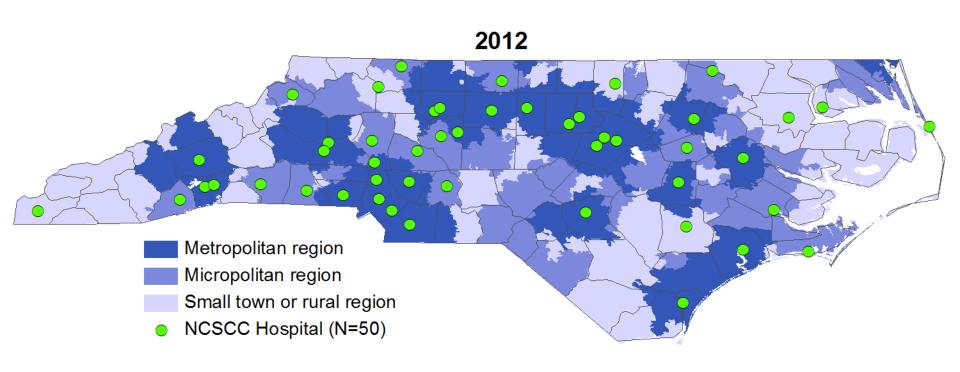


Growth of the NC Stroke Care Collaborative





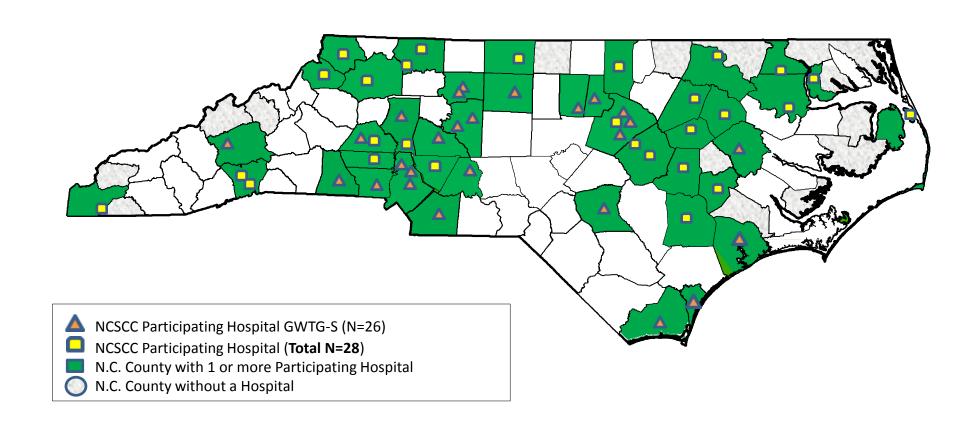
Growth of the NC Stroke Care Collaborative



80% of NC population live in counties with a NCSCC participating hospital

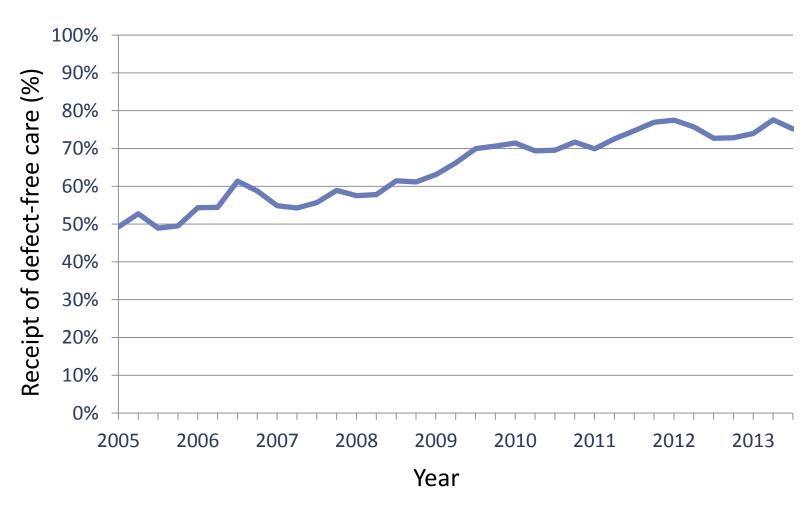


2015 NCSCC Hospital Participation (n=54)



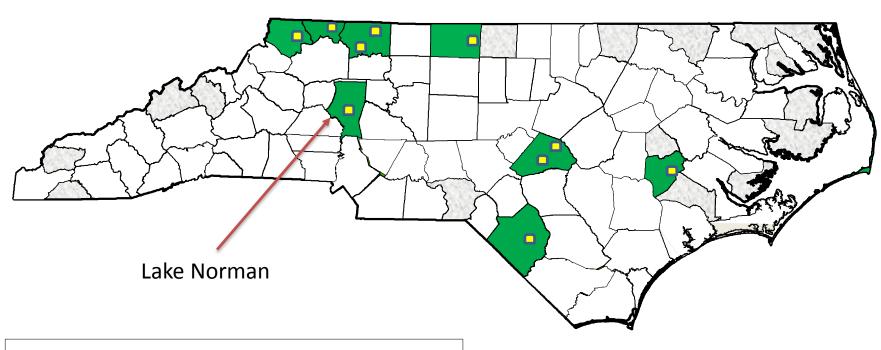


Improvement in acute stroke care in hospitals participating in NC Stroke Care Collaborative, 2005-2015





NCSCC Hospital Participation, 2018



- NCSCC Participating Hospital (Total N=10)
- N.C. County with 1 or more Participating Hospital
- N.C. County without a Hospital



What's next?

- Coverdell funding?
- New data acquisition models
- New partners/collaborators
- Sustainability
- Connection with primary prevention





Thank You

QUESTIONS



NCSCC – Stroke Performance Measures

PCNASR	NHIQM	NQF					Stroke
Measure	Number	Number	Performance Measure Name	IS	TIA	HS	NOS
1*	STK-1	0434	Venous Thromboembolism (VTE) Prophylaxis	X		X	X
2*	STK-2	0435	Discharged on Antithrombotic Therapy	X	X		
3*	STK-3	0436	Anticoagulation for AF	X	X		
4*	STK-4	0437	t-PA administered	X			
5*	STK-5	0438	Antithrombotic therapy by end of day 2	X	X		
6*	STK-6	0439	Discharged on statin medication	X	X		
7	-	0243	Dysphagia screening	X		X	X
8*	STK-8	0440	Stroke education	X	X	X	X
9	-	-	Smoking cessation counseling	X	X	X	X
10*	STK-10	0441	Assessed for rehabilitation	X		X	X
11	CSTK-01	1955	NIHSS score recorded	X			
12	·	0661	Door-to-image time	X		X	X
13	-	1952	IV-tPA within 60 minutes	X			