VIDANT HEALTH™

Vidant Stroke Care

Ashley Elks BSN, RN, PCCN
Director Stroke and Neuroscience
Vidant Medical Center
Greenville, NC

Our mission

To improve the health and well-being of eastern North Carolina

Our vision

To become the national model for rural health and wellness by creating a premier, trusted health care delivery and education system

Our values

Integrity
Compassion
Education
Accountability
Safety
Teamwork

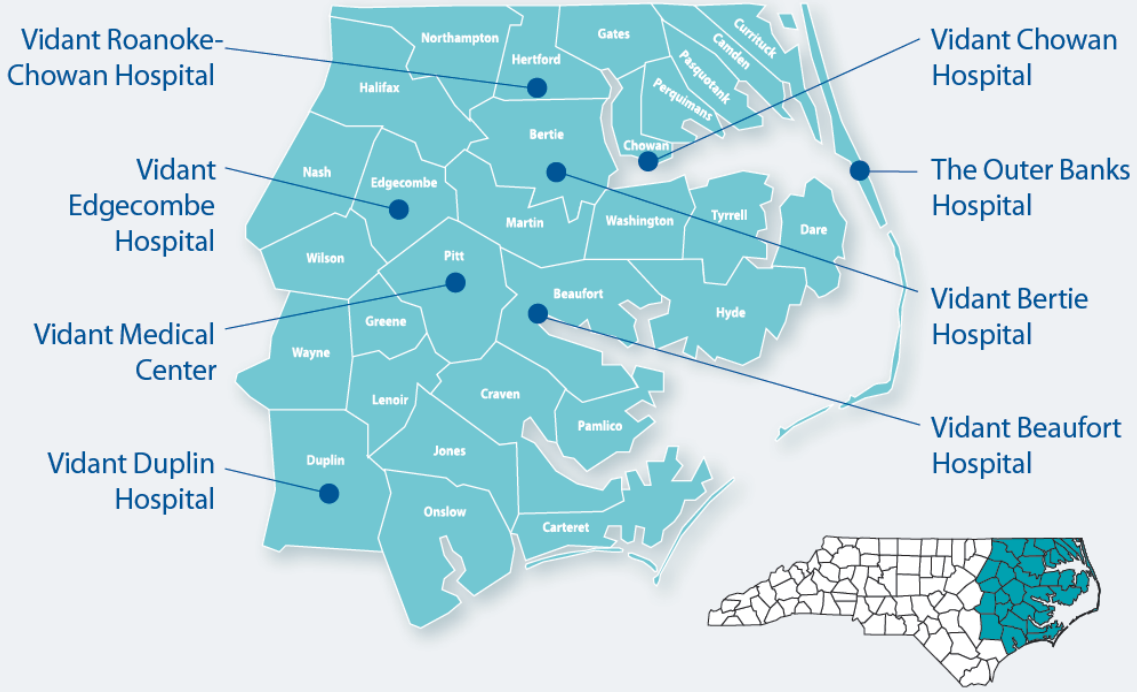
Vidant Health

- Not-for-profit hospital system
- Serves more than 1.4 million people in 29 eastern North Carolina
- Health system comprised of 8 hospitals (9 w/ addition of Halifax)
- Vidant Medical Center is the hub

System details

Licensed beds	1,512
Admissions	63,382
Outpatient visits	332,795
Emergency visits	272,477
Surgeries	46,558
Births	5,710
Total employees	12,389

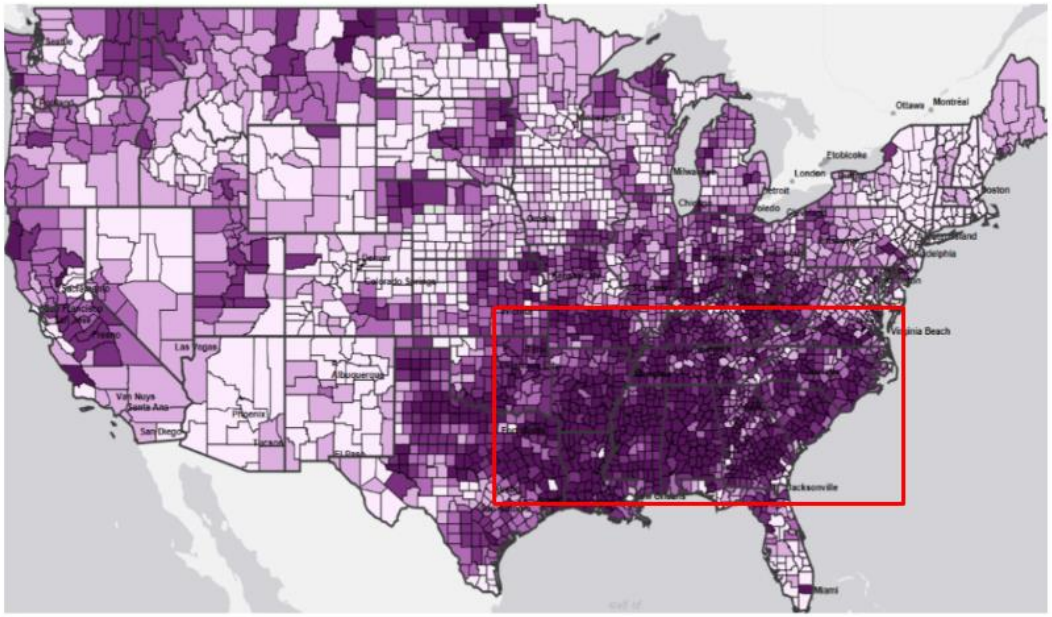
Based on fiscal year 2017 data.

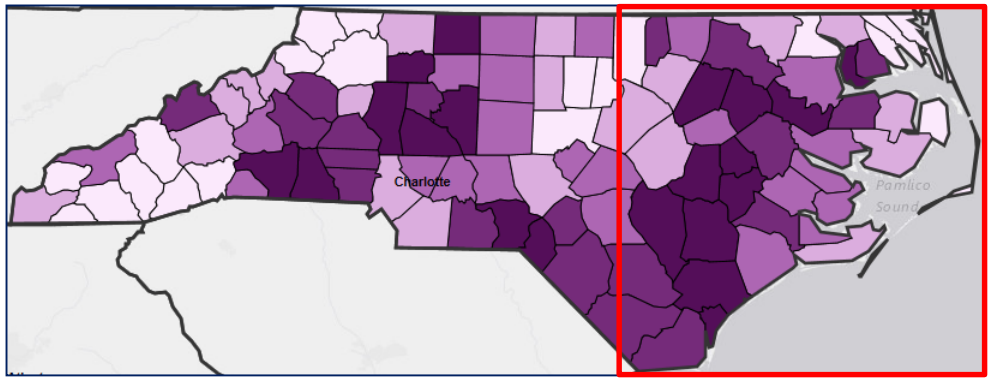


Vidant Medical Center

- Greenville, NC
- > 900 bed hospital
- Level 1 trauma center
- Comprehensive Stroke Center
- Regional referral hospital for the eastern 1/3 of NC
- Magnet® Facility
- Partnership with East Carolina University – Brody School of Medicine and College of Nursing

Buckle of the Stroke Belt



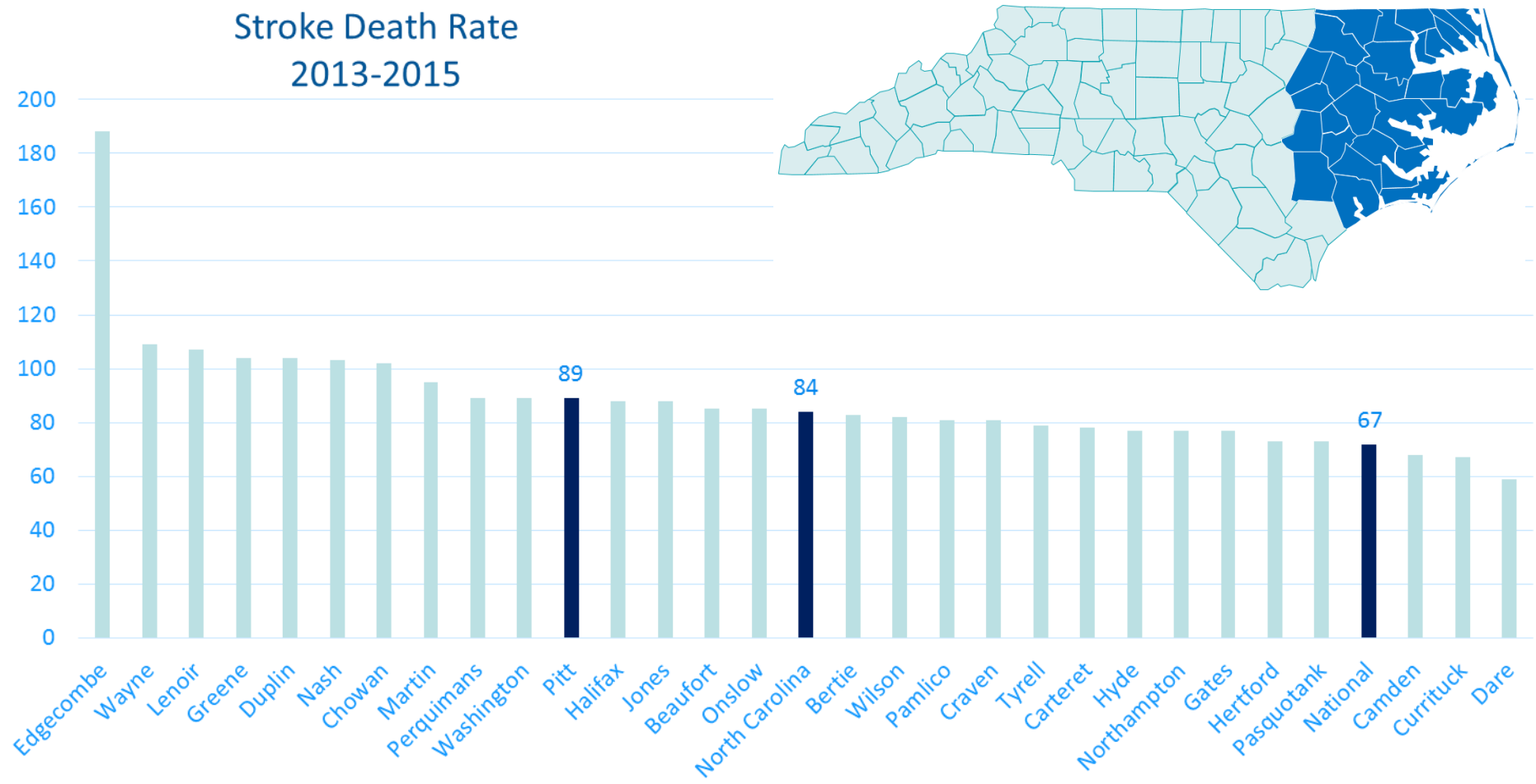


Stroke Deaths per 100,000
2013-2015

- The coastal plain of North Carolina is in the nation's "Stroke Buckle"
- Death rate from stroke is twice as high as the national average

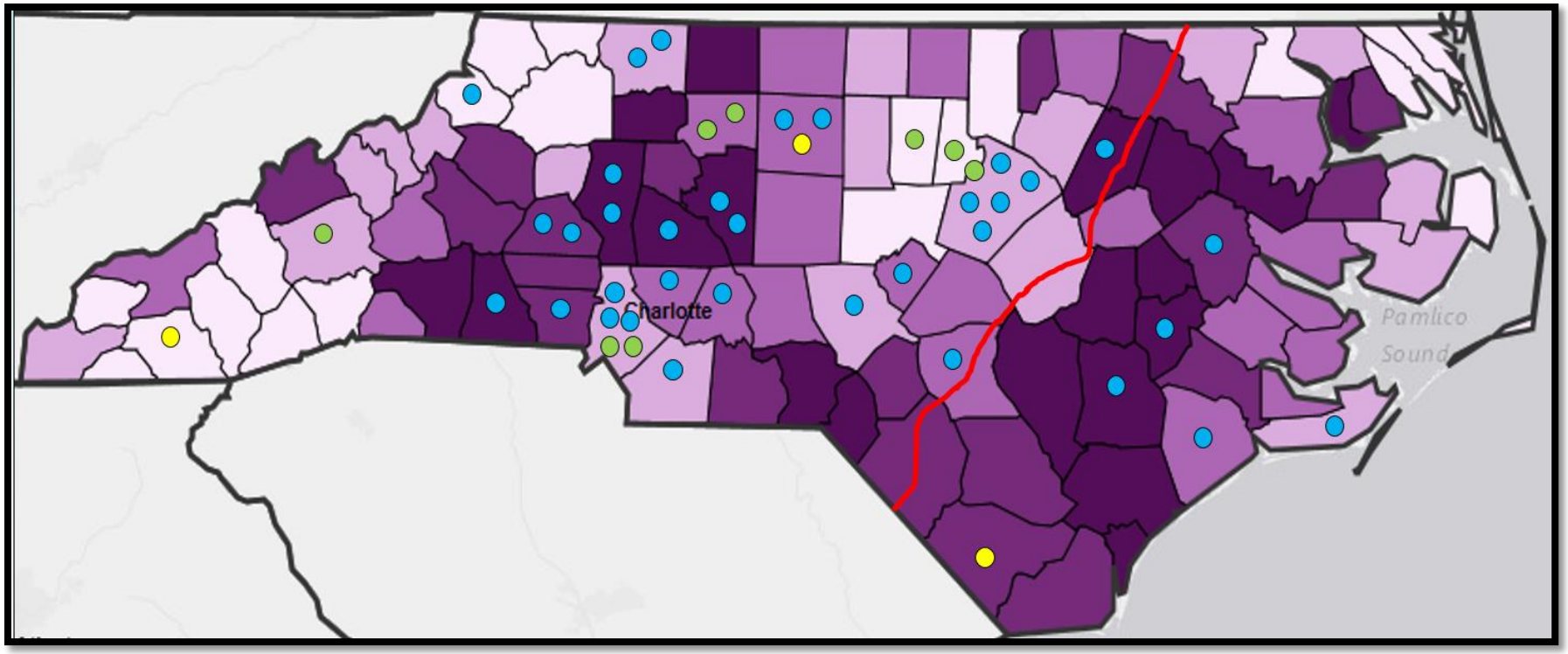
Source: CDC Interactive Atlas of Heart Disease

Buckle of the Stroke Belt



Source: CDC Interactive Atlas of Heart Disease

Stroke Certifications



- TJC Comprehensive Stroke Centers
- TJC Primary Stroke Centers
- TJC Acute Stroke Ready Hospitals
- I95

Stroke Systems of Care

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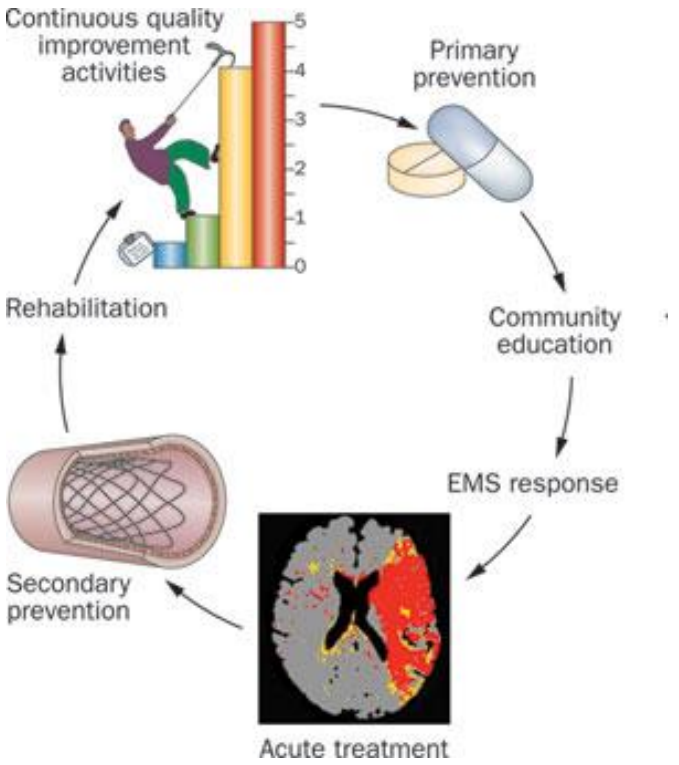
Spring 2016

- Vidant committed to building a reliable system of care providing a comprehensive continuum of care for all hospitals in ENC
- Identify and address potential obstacles to success
- Ensure effective interaction and collaboration
- Promote use of an organized, standardized approach
- Establish regional clinical alignment and resource effectiveness



"Individual brilliance is inadequate in the absence of system organization"

Intentional Strategies

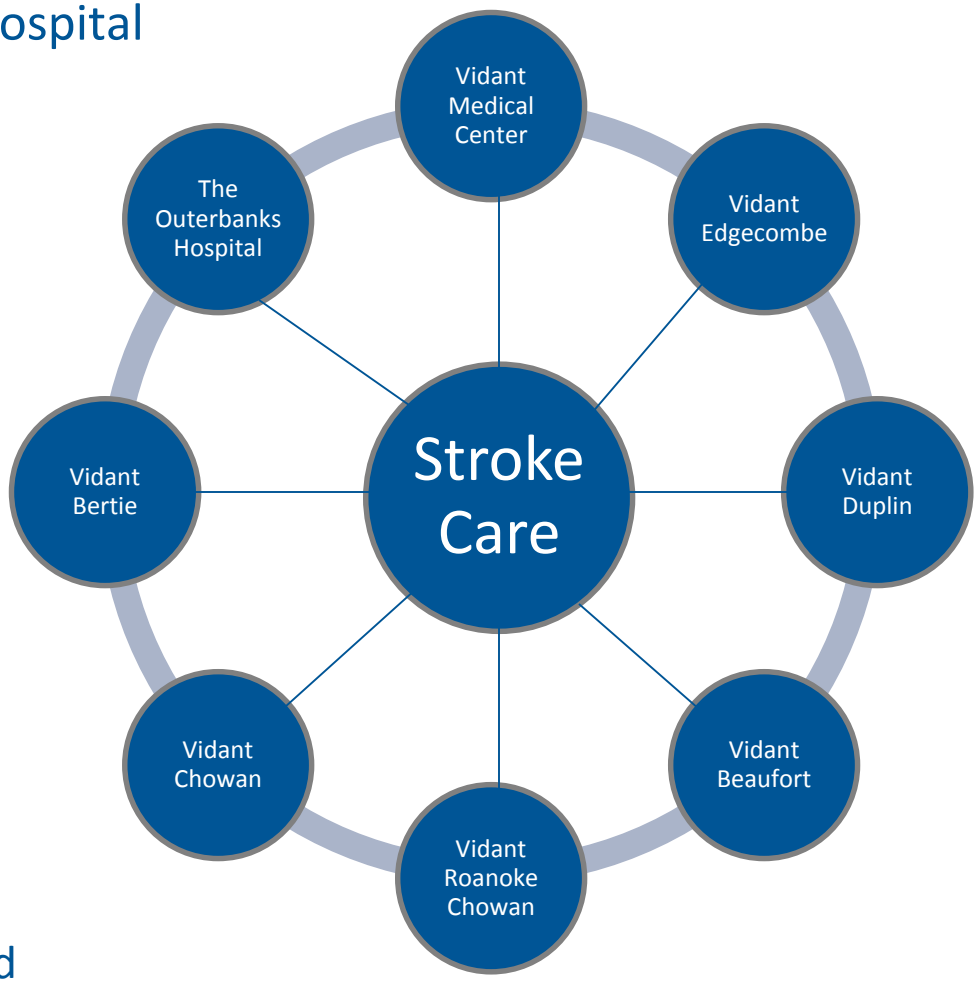
- VH Regional Stroke Committee
- Tele-stroke Program
- Collaborative Initiatives with Vidant EastCare and EMS
- Centralized Data Abstraction
- System Stroke Certification
- Eastern North Carolina Stroke Network Committee
- Regional Education and Communication Plan

VH Regional Stroke Committee

- Stroke Coordinators from every VH hospital

- Monthly meetings
  - Build concept of “system-ness”
  - Review tele-stroke / GWTG data
  - Celebrate successes
  - Share expertise and experience

- Standardization of all things stroke
  - VH Stroke Policies
  - VH Stroke Scorecard
  - Centralized data abstraction
  - System stroke certification
  - Standardize community outreach and screening processes



EMS and Vidant Eastcare Partnership

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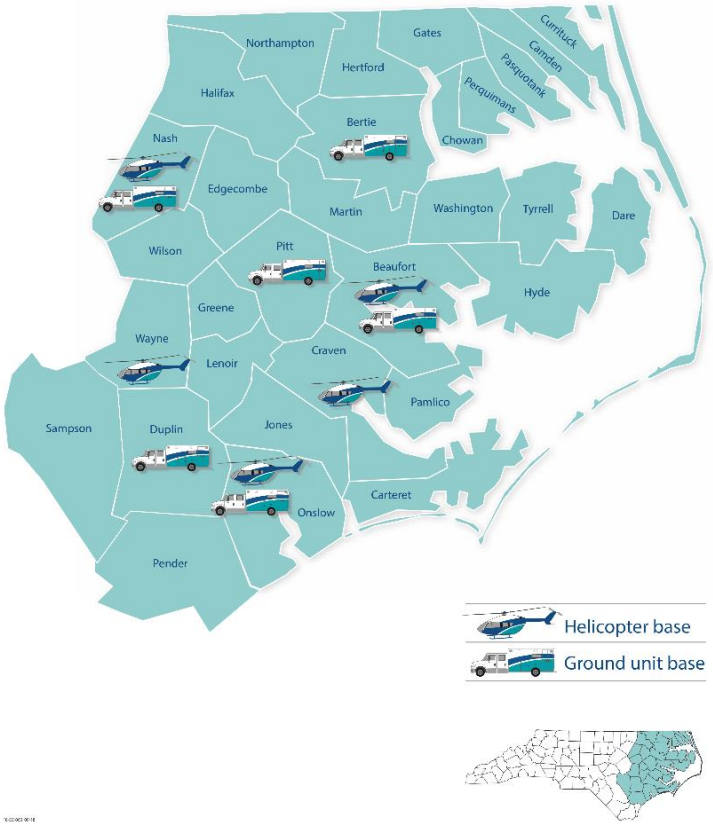
- In 2018, received stroke patients from over 30 EMS agencies
- Vidant EastCare, air (5) and ground medical transport service
- Integral part of our stroke program
  - Stroke committees
  - Joint PI initiatives
  - Outreach
  - Education

VIDANT™ EastCare

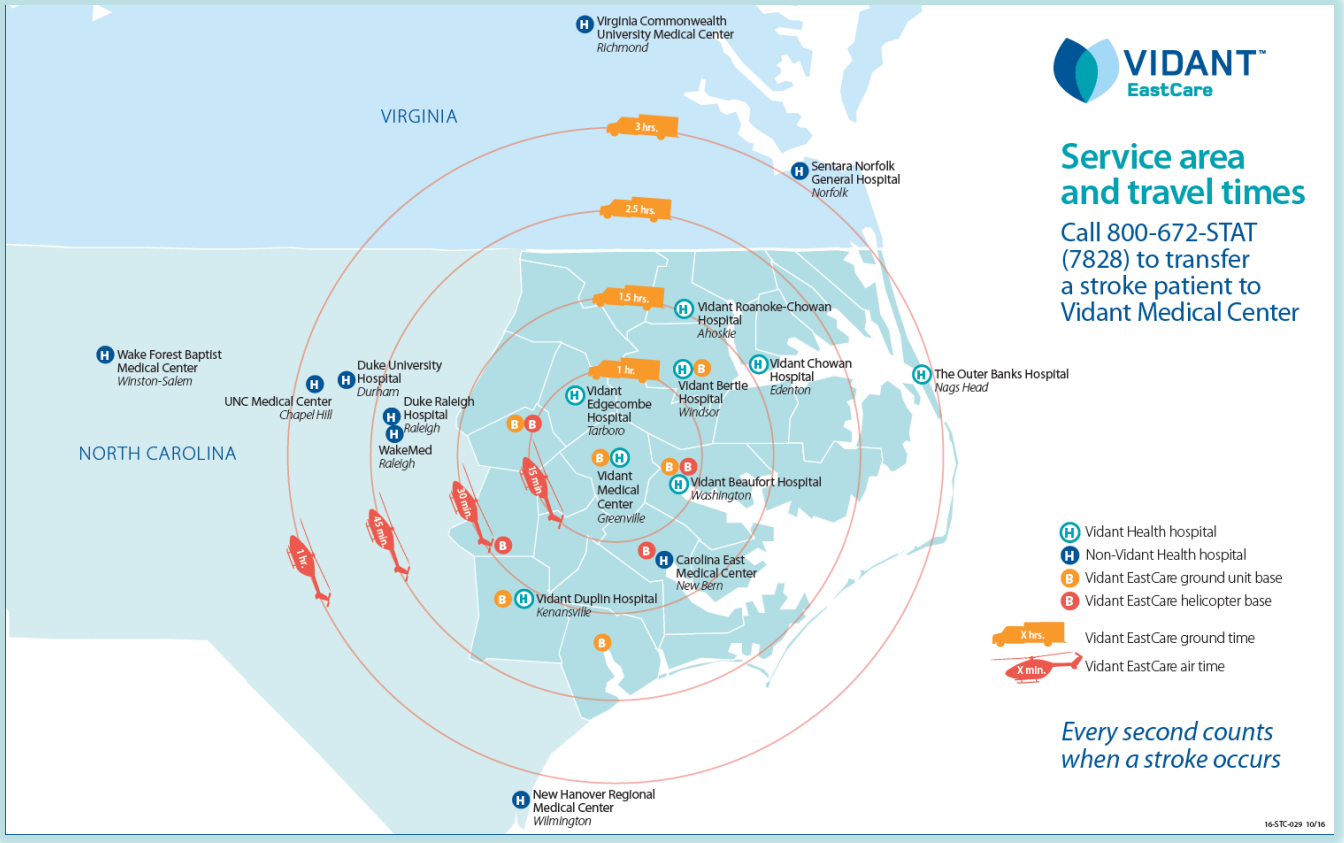
SERVICE AREA



Collaborative Initiative with EastCare and EMS

Old process:

- Regional physician arranging route of transport / Transport of post t-PA patients via BLS ground truck / Transport activated after patient accepted



Current process:
Auto-activation of EastCare (early notification)
t-PA, endovascular candidates and head bleeds to transport via ALS (safest & fastest route)

Patient Feedback

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Old process:
Feedback given as requested

New process:
Feedback provided on all patients transferred to VMC

HAR	Admit Date	StrokeType	EC Alert	Alert Type	Activated	False Activa	EM	Race Score	EMS FollowUp
VMC	12/01/2018 0:	CodeStroke	Y	Page	12/01/2018 11:0	N	EastCareAir		Transferred from Duplin- Not a TPA candidate due to ICH. Stroke work up continued on admission.
VMC	12/02/2018 0:	CodeStroke	Y	Page	12/02/2018 7:54	N	Pactolus		Patient not a TPA candidate due to CT revealing an ICH. Stroke work up continued on admission. Great Job!
VMC	12/02/2018 0:	CodeStroke	Y	Page	12/02/2018 15:4	N	GFR		Patient not a TPA candidate due to taking Xarelto with NIHSS 26. CTA negative for LVO. Stroke work up continued on admission. Good job!
VMC	12/03/2018 0:	TPA	Y	Page	12/03/2018 9:09	N	GFR		Patient received TPA. CTA negative for LVO. Stroke work up continued on admission. Great Job!

Tele-Stroke Program

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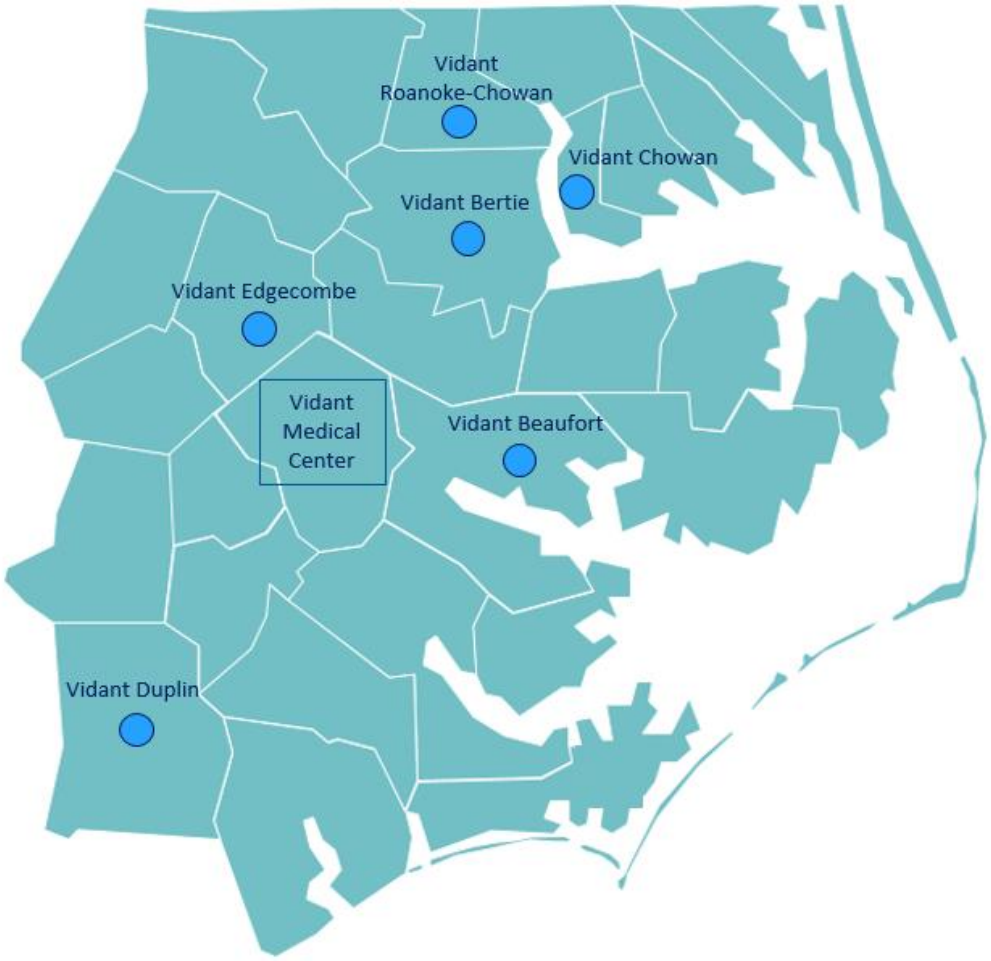
Old Process: VMC phone recommendation for t-PA and transfer

New Process = Tele-stroke!

- In 2015, VMC received $640,000 to implement Tele-stroke at VCOM hospitals
- Partnership with Wake Forest Baptist
- 6 VCOM hospitals went live with Tele-stroke in Spring 2016



Centralized Data Abstraction

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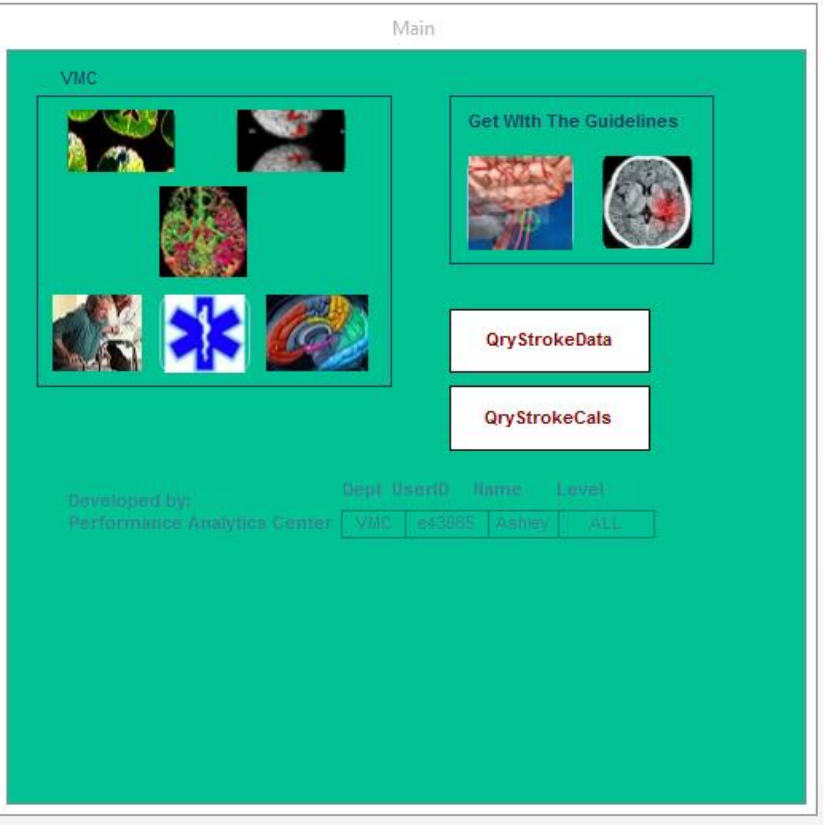
Old process: No stroke data collected by VCOM hospitals

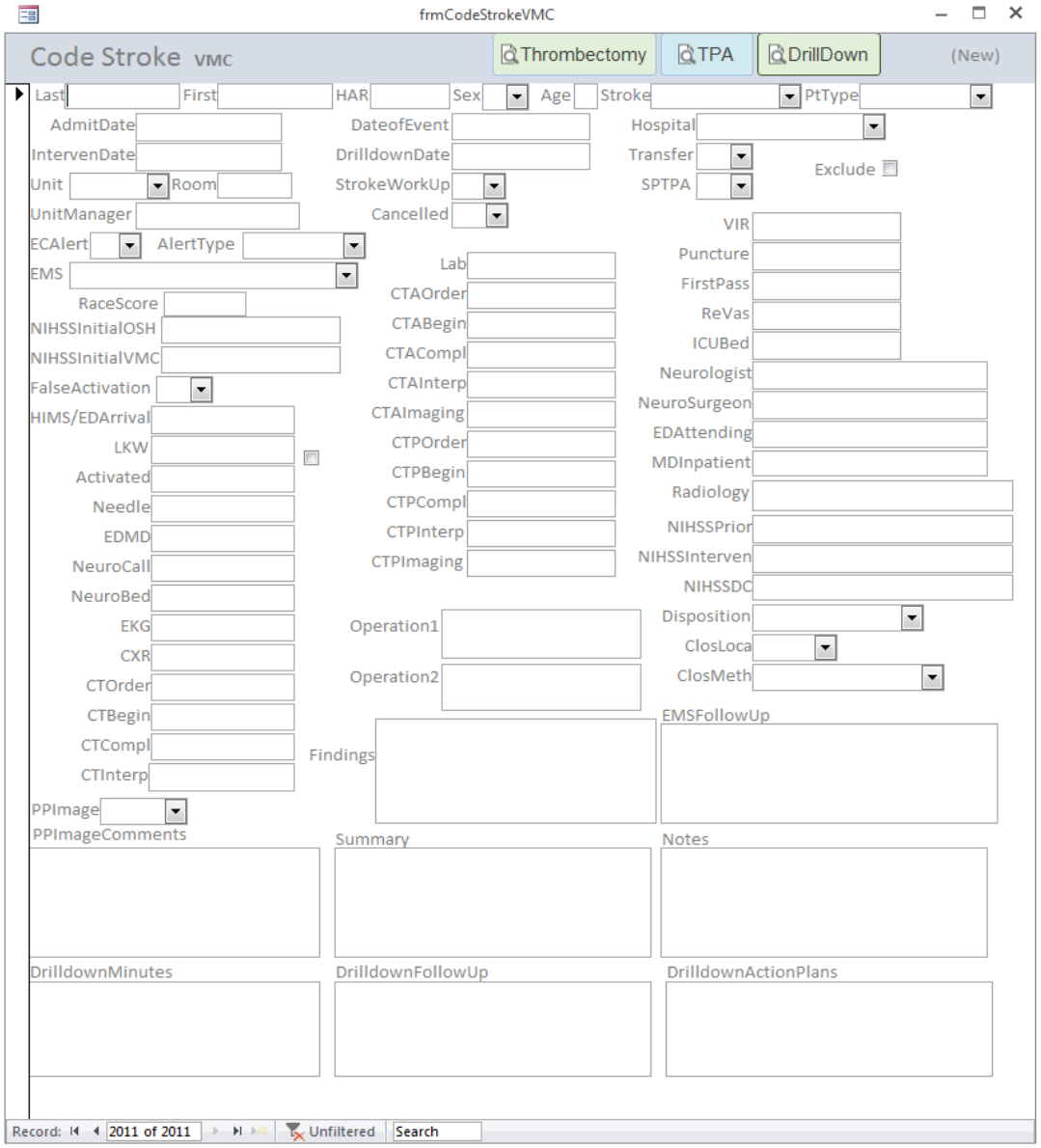
New Process:

- GWTG- Stroke
  - Moved to 100% abstraction for health systen
  - Abstracted by VMC Stroke Quality Nurse Specialists
  - Benchmark against each other & system
  - Transparency, collaboration, system performance improvement initiatives

- VH- Code Stroke Database
  - Real time collection and reporting of acute stroke metrics

Stroke Source – VH Code Stroke Database





Stroke Source – VH Code Stroke Database

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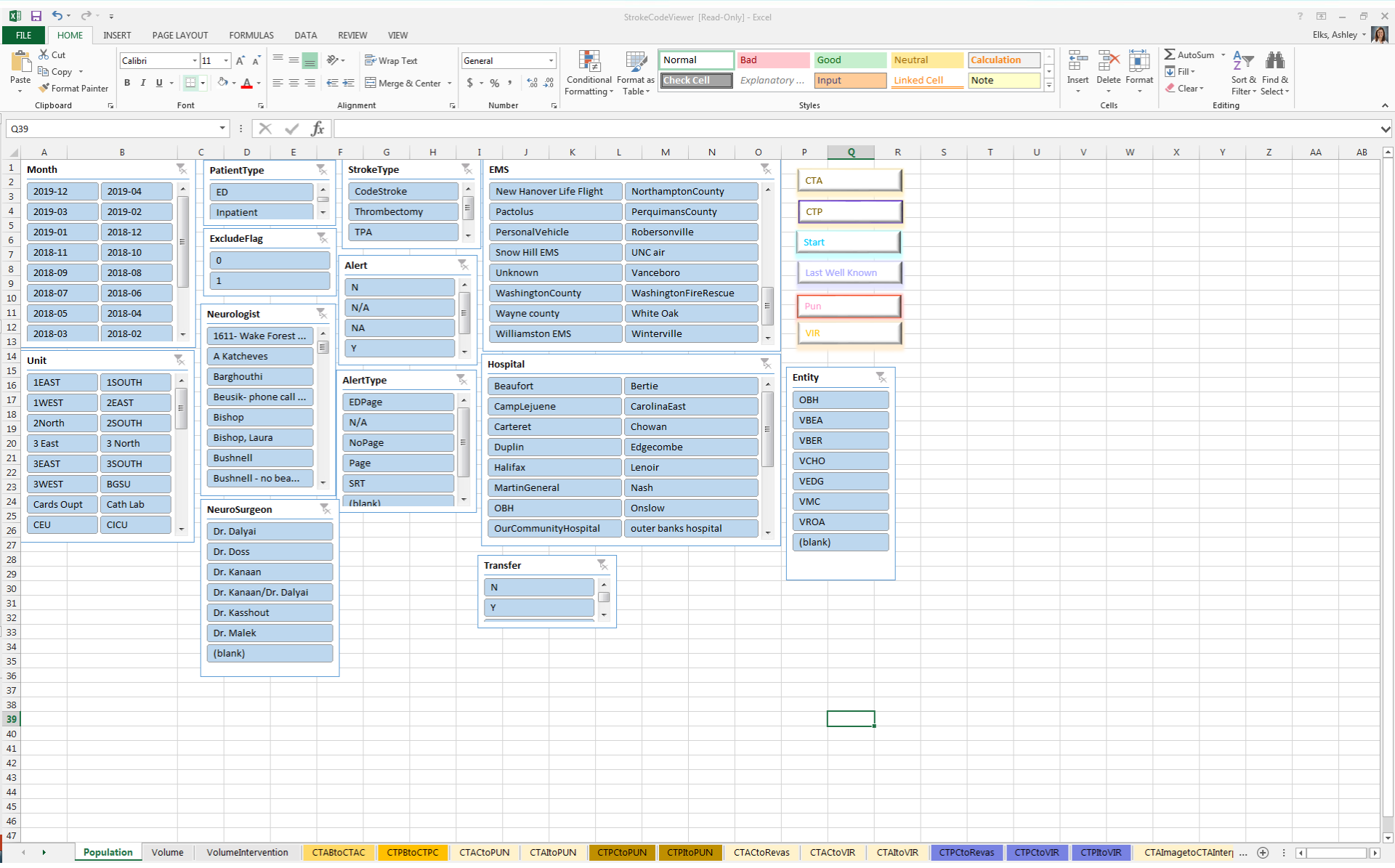
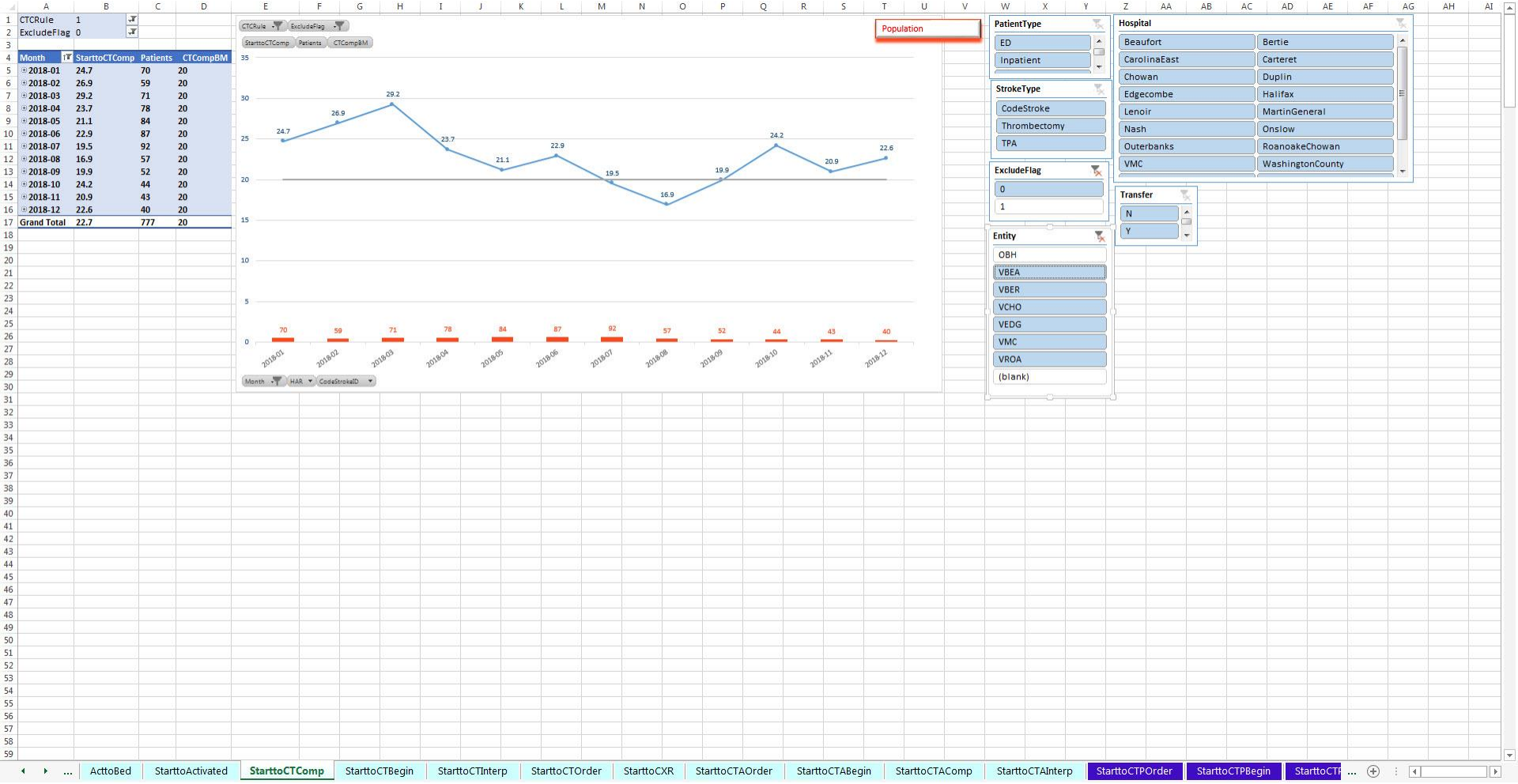
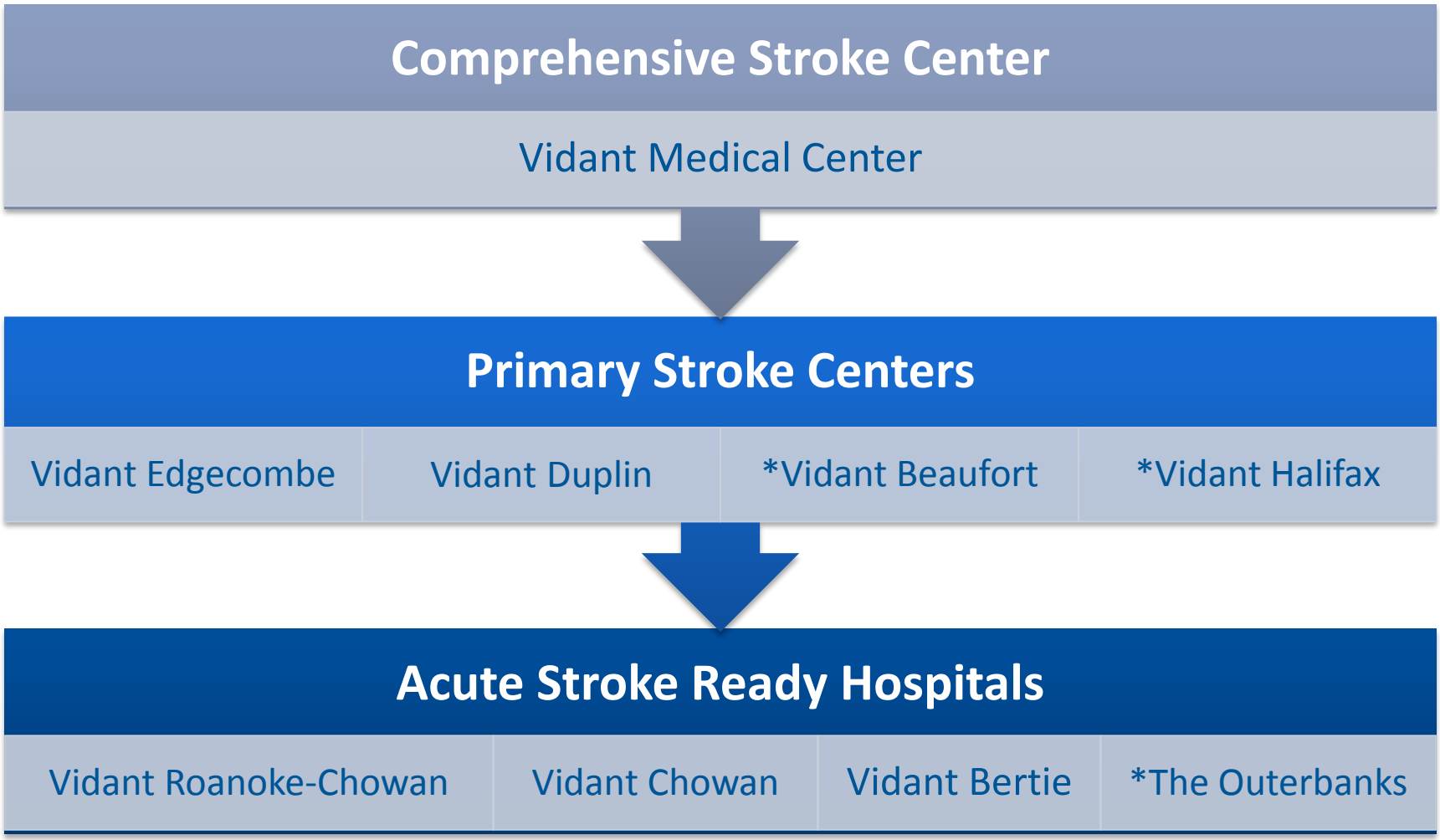


Stroke Source – VH Code Stroke Database



System Stroke Certification



** Pending certification*

System Stroke Certification

VCOM

- Established regional stroke leaders
- Centralized data abstraction
- Certification tool kits
- Gap analysis
- Mock survey(s)
- NCSA grants

VMC

- 24/7/365 endovascular coverage
- Auto-acceptance for acute stroke patients
- In-house stroke team
- Opening of the NSICU
- Regional Stroke Coordinator

Advanced Imaging

- Release of DAWN and DEFUSE III

$$\frac{\text{TISSUE}}{\text{TIME}}$$

- CTA capability in the region
- Share acute stroke protocols
- CTA training program

Patient Feedback

Your team recently transferred a patient to our Stroke Center for further treatment. The patient follow-up information is listed below.

Patient/HAR	DOB	Alteplase Admin	Adm. Date	Telestroke Consult	Hospital/EMS
XXX	XX/XX/XXXX 66 yrs old	**No**	2/12/2019	Yes	Hospital XXX

Clinical Presentation	PI for Review	Door to Needle Time	Comments		Patient Outcome
XXX is a 66 year old man who presents with a chief complaint of weakness. Patient states that he experienced sudden onset left upper extremity weakness, left lower extremity weakness, right facial numbness and slurred speech starting at around 0900 this morning. He was taken to XXX where CTA of the head showed left ICA and right PCA occlusions. Patient did not have tPA administered and was sent here for consideration of thrombectomy. Patient states he continues to feel weak on his left side of his body, has numbness in his face, blurry vision and has difficulty speaking. He denies history of strokes, hypertension, hyperlipidemia. He does smoke daily. He denies associated chest pain, shortness of breath, nausea, vomiting, back pain, tremors, neck pain. He did not take anything for his symptoms. Nothing worsens his symptoms.	**DIDO: 227 min**	Arrival Date & Time: N/A Bolus Date & Time: N/A	NIHSS on admission: 13 NIHSS at D/C: 4 DTN: N/A		Patient was admitted to NSICU on 2/12/19, S/P VIR for angiogram for Acute right ICA thrombectomy with dissection. Patient had LUE weakness and pronator drift and LLE drift, with movement at a 4/5. Post procedure, patient was placed on a Heparin drip per protocol which was transitioned to Lovenox SQ for discharge home. On 2/14/19, Left side drift has resolved prior to discharge. Patient will follow up with Dr Dalyai in his office. Pt d/c'ed home on 2/14/2019.

Regional Education and Communication

- Regional road trip
  - Dr. Dalyai (Endovascular Neurosurgeon) visiting the VCOM hospitals
  - Met with Regional Medical Directors, Stroke Coordinators and Administrators
  - Review stroke guidelines, transfer protocols, imaging,
  - Relationship building

- Annual Stroke / Neuroscience Conference

Eastern North Carolina Stroke Network Committee (ENCSN)

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About the Workshop

The Eastern North Carolina Stroke Network (ENCSN) is composed of an interprofessional group of health professionals whose focus is stroke education and stroke patient care. It is a practice improvement focused opportunity to learn with and from each other to improve outcomes related to stroke prevention and care.

- **Vision**: The vision of the ENCSN is to be recognized as a leading resource for voluntary collaboration on stroke best practices in Eastern NC communities.
- **Mission**: The mission of the ENCSN is to improve the prevention, treatment, and quality of stroke care in Eastern NC through a coordinated regional system.
- **Values**: The values of the ENCSN are prevention, education, and access to quality care.

Objectives

Upon completion of this workshop, learners will be able to:

- Discuss the effectiveness of the Telestroke program in early recognition, treatment, and referrals of stroke patients presenting to the Emergency Department
- Review the protocols used to manage stroke patients in the pre-hospital setting
- Describe the path to obtaining Primary Stroke Certification
- Discuss resources and roles that impact successful transitions of care to rehab setting
- Discuss with panel experts the challenges and successes of stroke care in Eastern NC

Target Audience

Physicians, Nurse Practitioners, Nurses, Pharmacists, Physical Therapists, Occupational Therapists, Speech Therapists, Emergency Medical Service personnel and others who comprise the interdisciplinary team needed to provide a comprehensive continuum of care to stroke patents.

ENCSN
Eastern North Carolina Stroke Network

- Key stakeholders across the region (planning committee)
- Pre-acute, acute, post-acute providers
- Regional performance improvement initiatives
- Sharing of expertise
- Free of charge

- Pearls and Pitfalls of NIHSS
- Door In Door Out
- Tackling Stroke Core Measures
- Transitions of Care Strategies
- Management of Mild / Rapidly Improving Strokes
- Tele-Stroke Strategies
- Stroke Patient, Family and Team Engagement
- Stroke Support Networks
- Dysphagia Screenings and Treatment
- Endovascular Therapy
- Cryptogenic Stroke
- Neurocritical Care

Advanced Stroke Life Support

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- Certified as an ASLS Training Center since 2012
  - Trained over 550 ASLS Providers
  - Located over 10 counties in ENC

- July 2017 – Trained 15 new ASLS Instructors (Duke Endowment Grant)
- Train the trainer model

ASLS Advanced Stroke Life Support ®

Timeline

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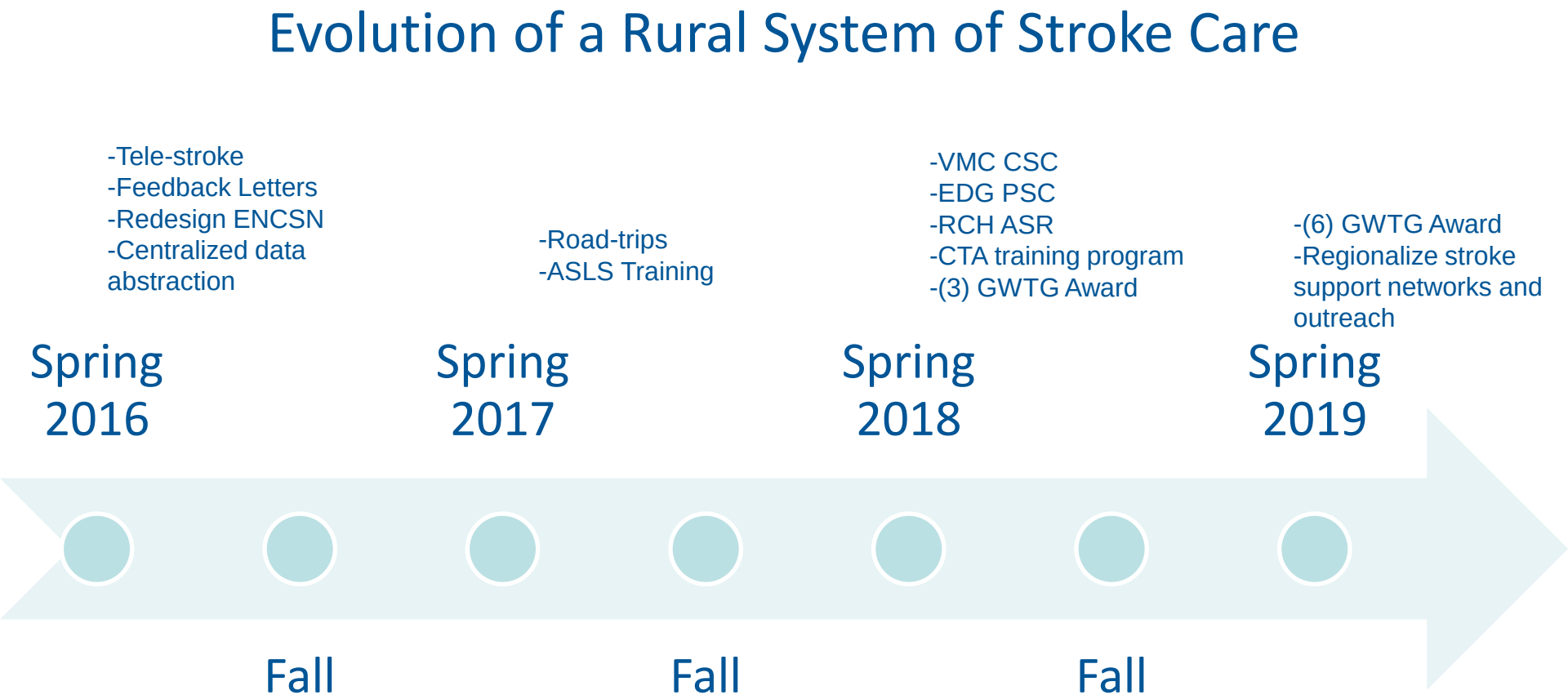
Evolution of a Rural System of Stroke Care

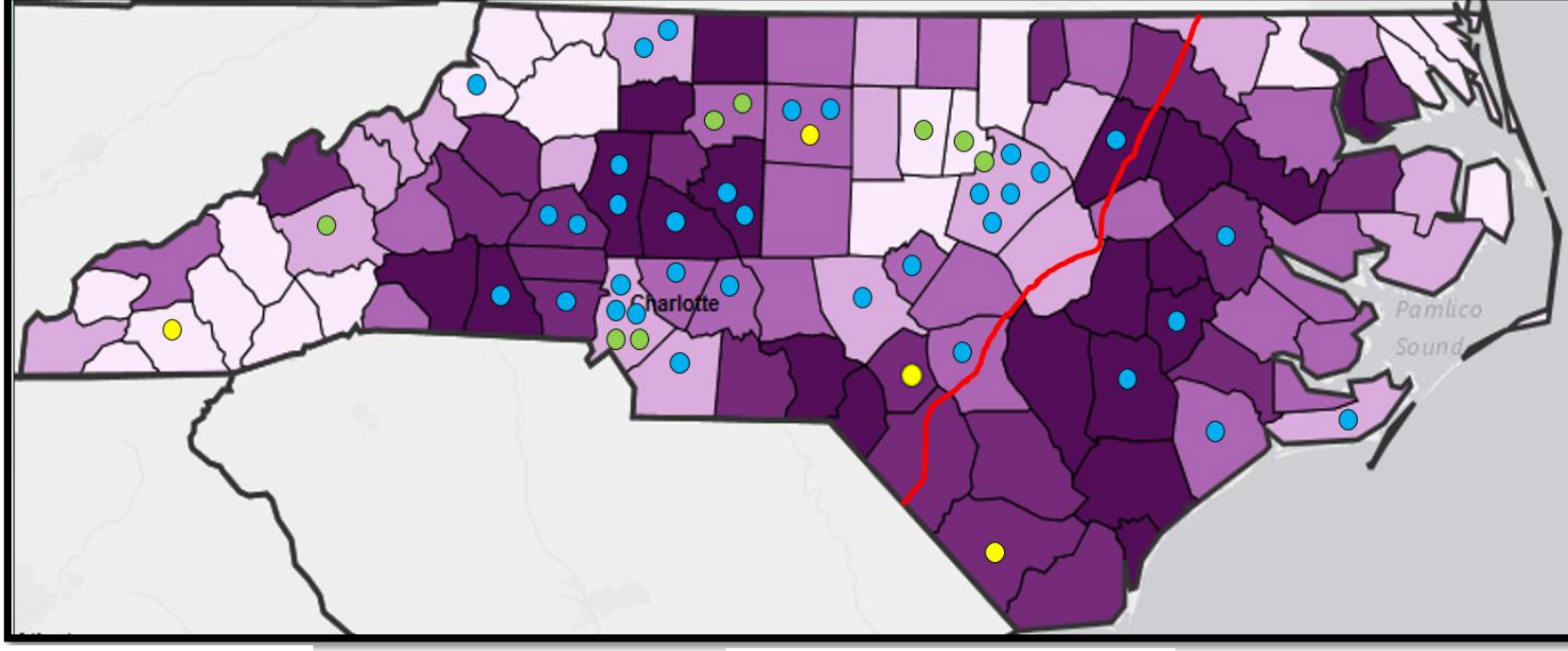


So what?

Vidant Community Hospital Stroke Care	
Stroke Metric	**Improvement**
Alteplase (t-PA) Administration	↑ 49%
Endovascular Treatment Rate	↑ 59%
Door in Door Out Time	↓ 17 minutes
Alteplase (t-PA) Administration Times (Door to Needle)	↓ 15%
VH Last Known Well to Alteplase (t-PA) Administration Time	↓ 11%

Before

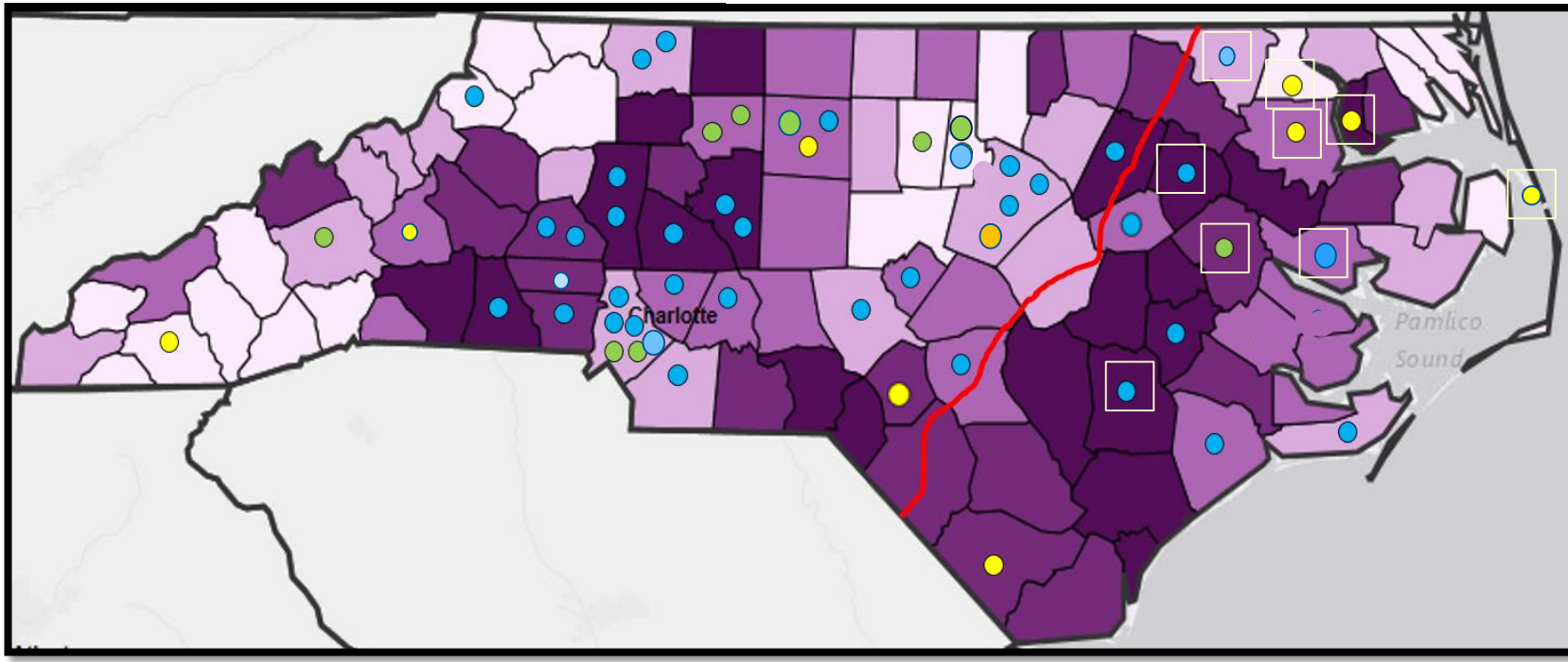
5 PSC
1 ASR



TJC Comprehensive Stroke Centers TJC Thrombectomy Capable TJC Primary Stroke Centers TJC Acute Stroke Ready

2019

1 CSC
8 PSC
5 ASR



Future Program Growth and Development

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- Increase volume of complex stroke and neuroscience referrals
- Increase Interventionalist from 2 to 4
- Full Neurointensivist model
- Retention of t-PA patients and complex strokes in the region
- Expand regional outpatient Neurology services
- Tele-Neurology and Tele-Speech
- System-wide participation in stroke clinical trials and research
- Regionalize post-acute services, transitional care services and stroke support network

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Stroke Support Networks

Jordan Sheets, BSN, RN, SCRN

Components of the Stroke Support Network

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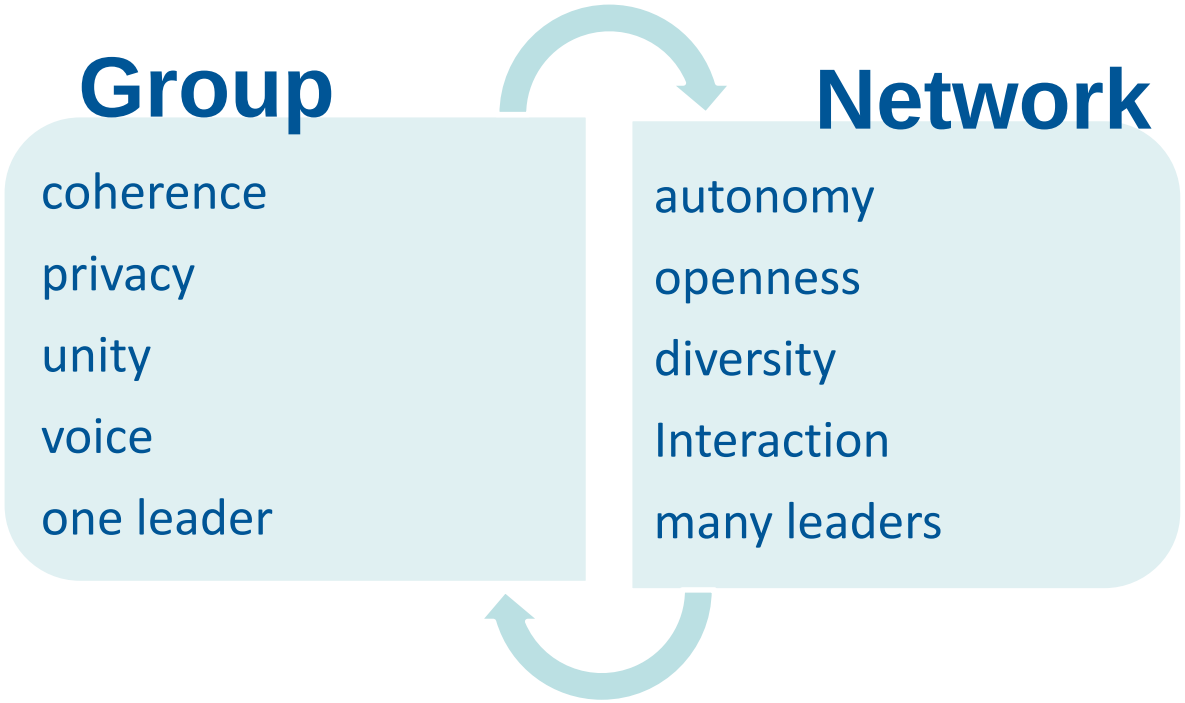
Share.
Learn.
Gain.
Redefine.

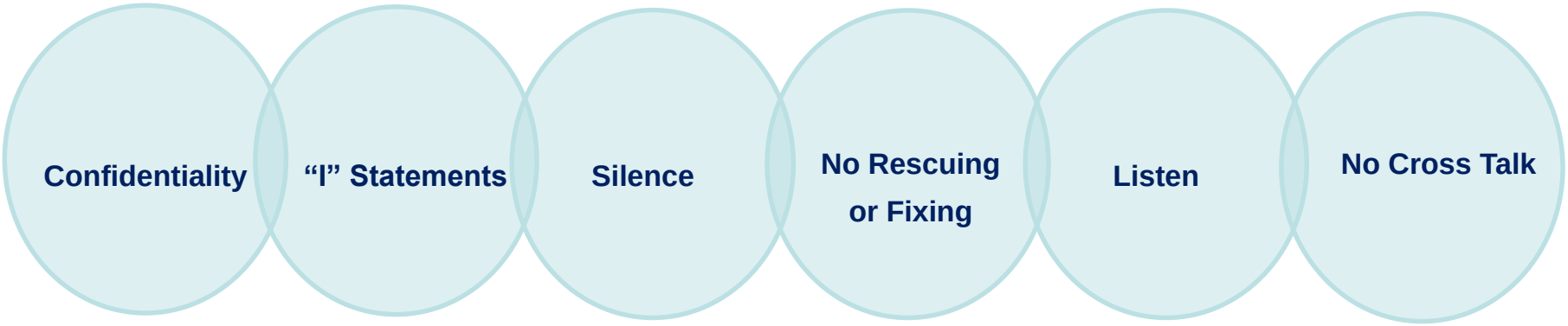
Mission Statement

To provide stroke survivors and c… …onment to learn about stroke recovery, rehabi… …, and prevention; foster independence, hope and encouragement; be in community that allows for sharing of successes, challenges and goals.

“Group” vs. “Network”



Environment Guidelines



Meeting Hot Topics

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- Role of Spirituality
- Coffee and Conversation
- Laughing Yoga
- The Use of Therabands
- Adaptive Home Equipment
- Adaptive Recreation
- Planting and Goal Setting
- Pop-Up Grocery Store Tour
- Living with Aphasia
- Understanding Medications
- Safety at Home
- Seated Yoga
- Government Advocacy for Stroke
- Stroke and Depression
- A Night for Caregivers

Connections for Growth

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- Lessen the stigma associated with stroke survivors and their disabilities
- Opportunity for laughter that would seem inappropriate to the average person, but provides joy for the stroke survivor and caregiver
- Fight against loneliness / hopelessness / bitterness
- Appoint a person / couple responsible for welcoming new members
- Invite nurses / therapist / volunteers from the acute stay or rehab

Support Network Pearls

- Have at least three “traditions”
  - May cookout
  - Christmas party
  - Monthly birthday celebrations
- Word choices
  - Do not use words like “stroke patient”, “victim”, “handicapped” or “brain damaged”
  - What is the difference you see in **“caretaker”** and **“caregiver / carepartner”**
- Arrangement of your space
  - Make sure your room is handicap accessible

Where do you start?

1. Set goals.
2. Find facilitators.
3. Form a committee.
4. Create mission statement.
5. Craft a name.
6. Find a time and place.
7. Identify resources.
8. Market your group.
9. Brainstorm members.
10. Sent personal invites.

First Meeting

- Experiences are counted, not people.
- Power of the opening question.
- Let the group / network do the planning – ask them questions
  - What are you struggling with the most?
  - What do you need more information about?
  - Do you feel welcomed?
  - What are you goals for a support group?
- HAVE REFRESHMENTS!

Potential Meeting Places

- Hospital rehab unit
- Outpatient rehab facility
- Local skilled nursing facility
- Churches
- Community center
- Senior citizen center
- Library
- School

circles

Market the Network

- National Stroke Group Registry – American Stroke Association and National Stroke Association
- Personal invites mailed to home address
- Inpatient / Outpatient rehab facilities
- Skilled Nursing Facilities
- Churches
- Hospital calendar / website
- Social media

Growth & Development Barriers

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- **failure to establish a consistent meeting schedule**
- lack of attention from leader(s)
- inconvenient space
- no established process for inviting survivors
- missed connections
  - Always get a name, phone number and address
  - Ask questions like, “Is there anything I can do to help you and your family before I see you next month?”
- not keeping an attendance roster and following-up the next week

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Community Outreach and Education

Jordan Sheets, BSN, RN, SCRN

Community Outreach and Education

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- What's the big deal?
- Is it worth our efforts?
- Do lemons stop a stroke?

Strong presence in the community and education and outreach a program priority

Community Resource Guide

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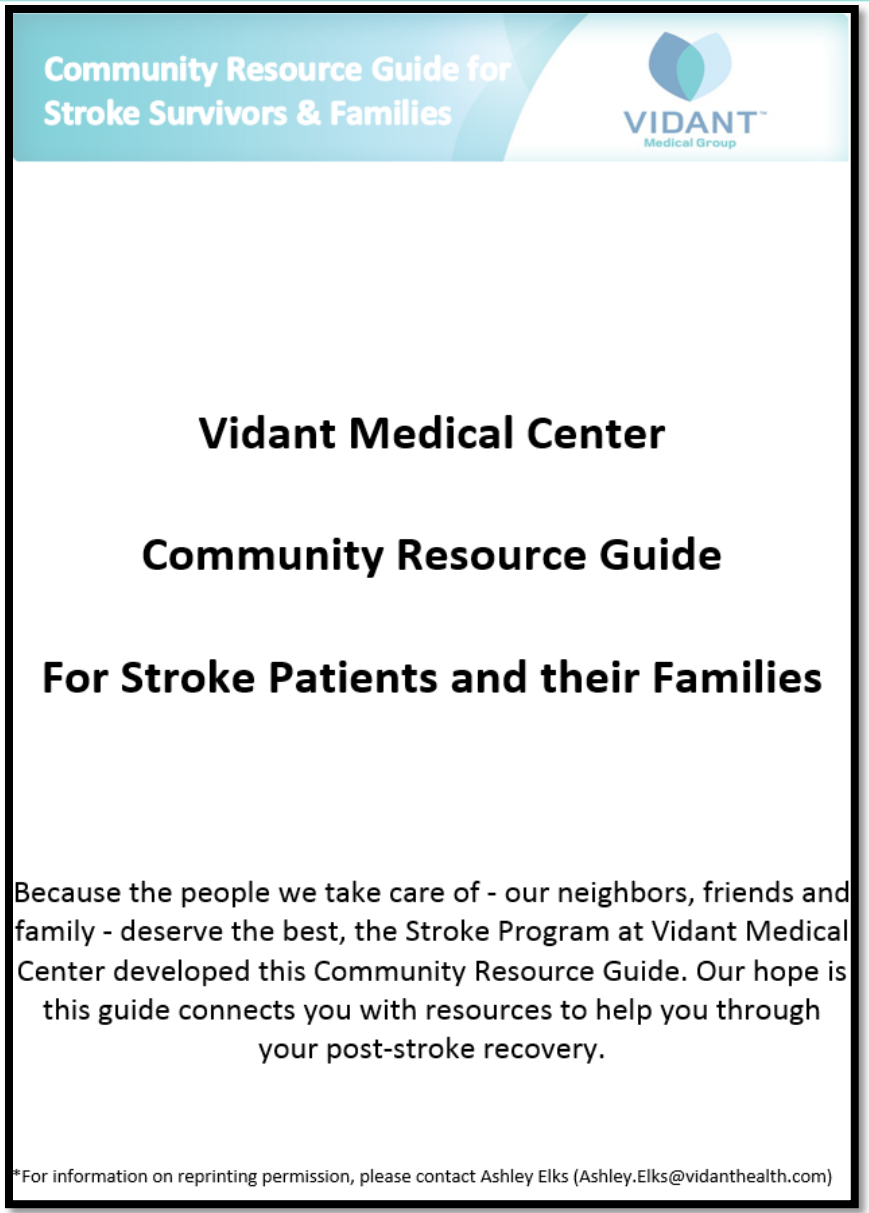


Community Resource Guide for Stroke Survivors & Families

VIDANT Medical Group

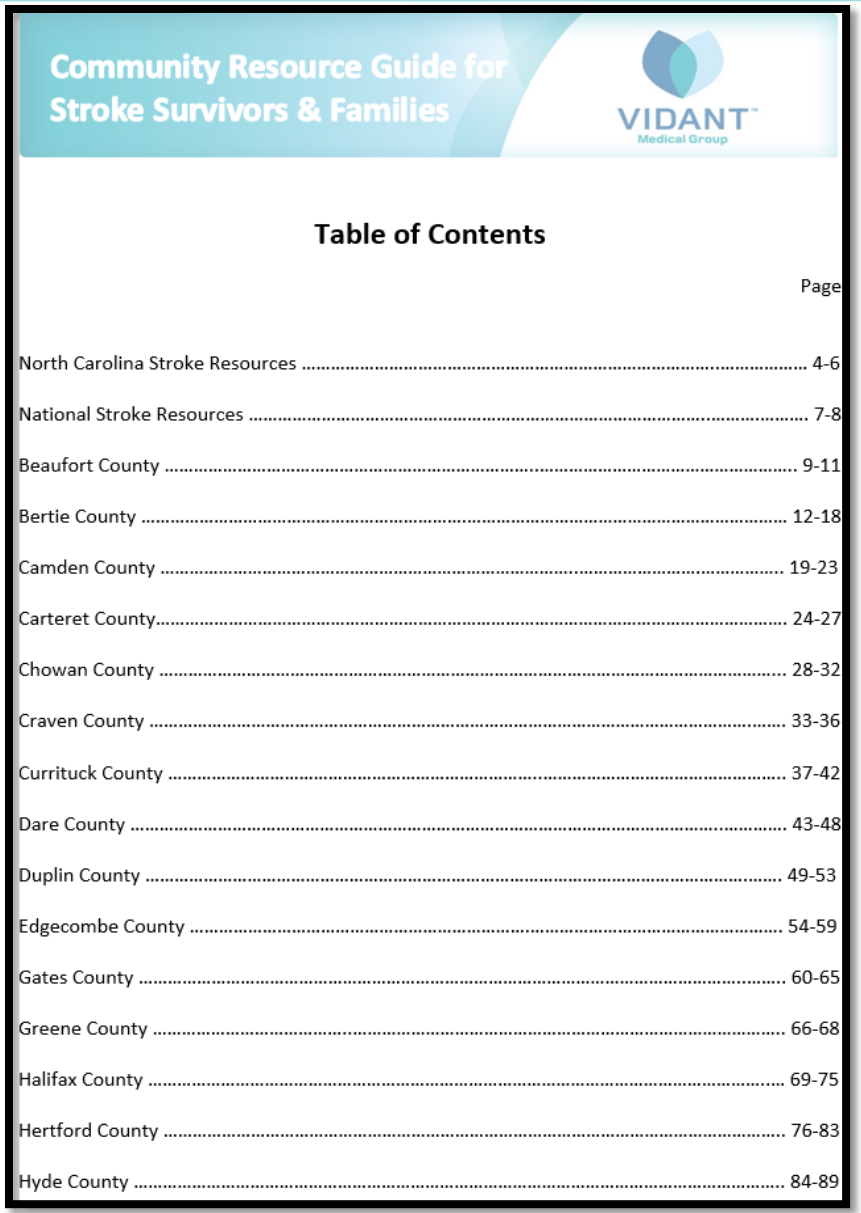
Vidant Medical Center

Community Resource Guide

For Stroke Patients and their Families

Because the people we take care of - our neighbors, friends and family - deserve the best, the Stroke Program at Vidant Medical Center developed this Community Resource Guide. Our hope is this guide connects you with resources to help you through your post-stroke recovery.

*For information on reprinting permission, please contact Ashley Elks (Ashley.Elks@vidanthealth.com)



Community Resource Guide for Stroke Survivors & Families

VIDANT Medical Group

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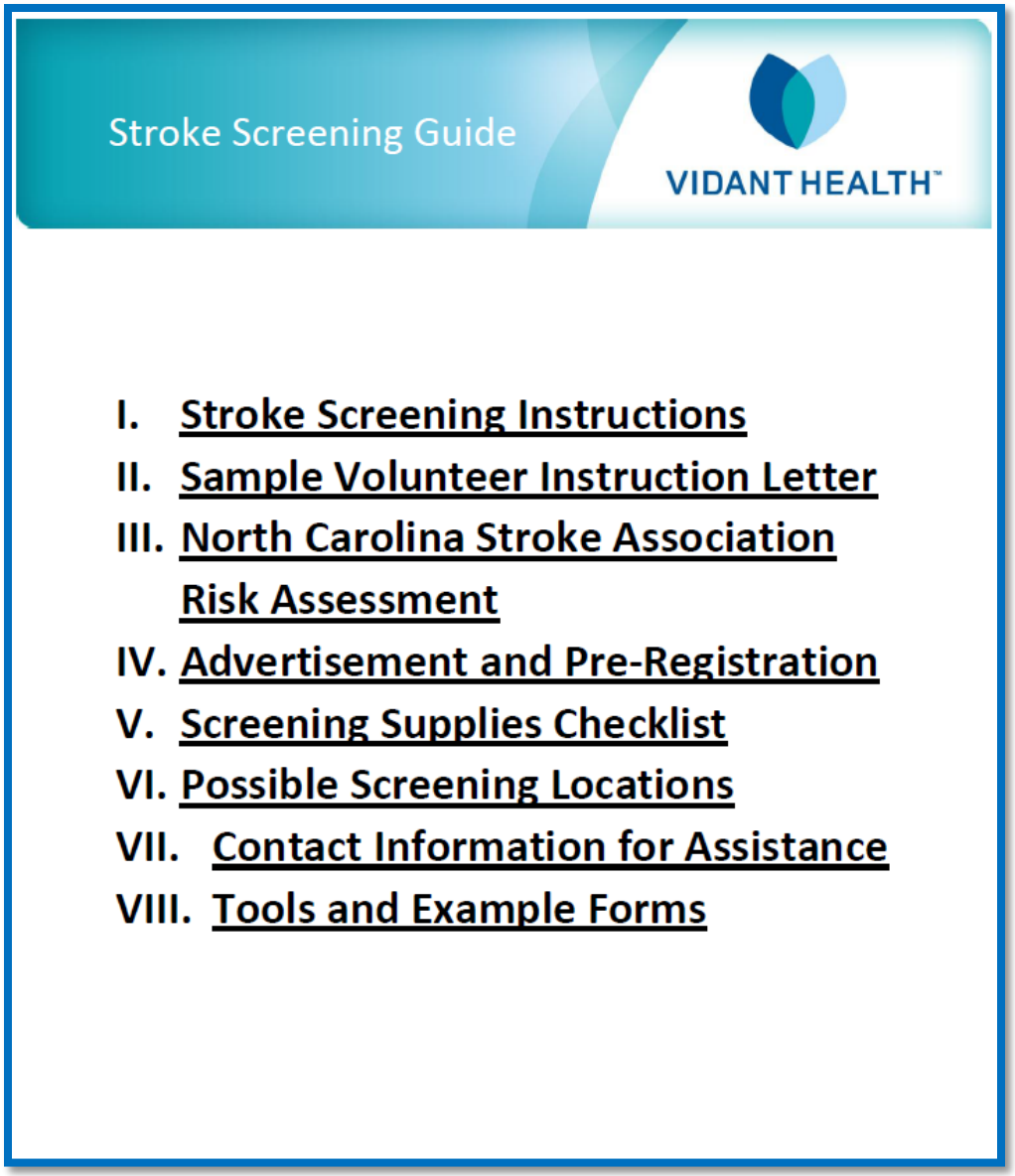
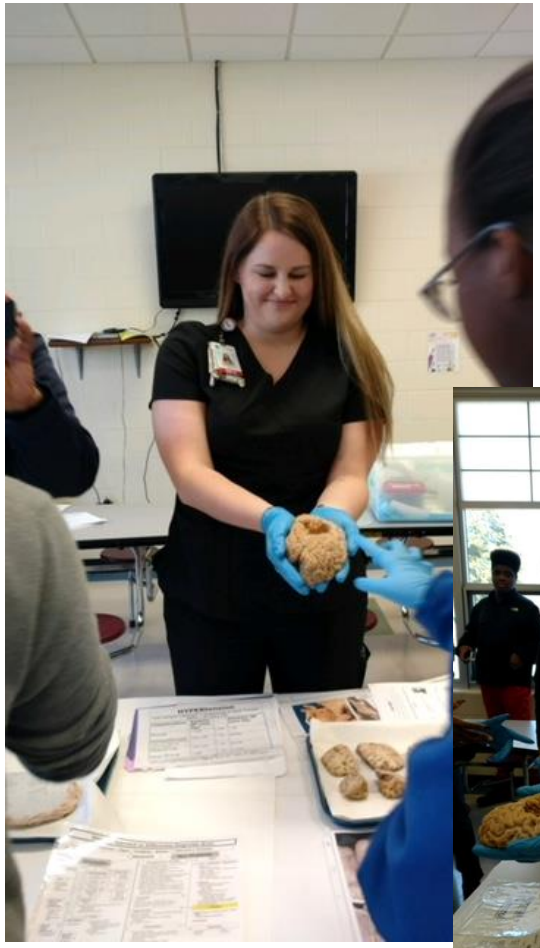


- Old process: No screenings / no standardization
- Current process: Standardized process for community outreach and education
- "The Vidant Way"

Creative Strategies to Outreach

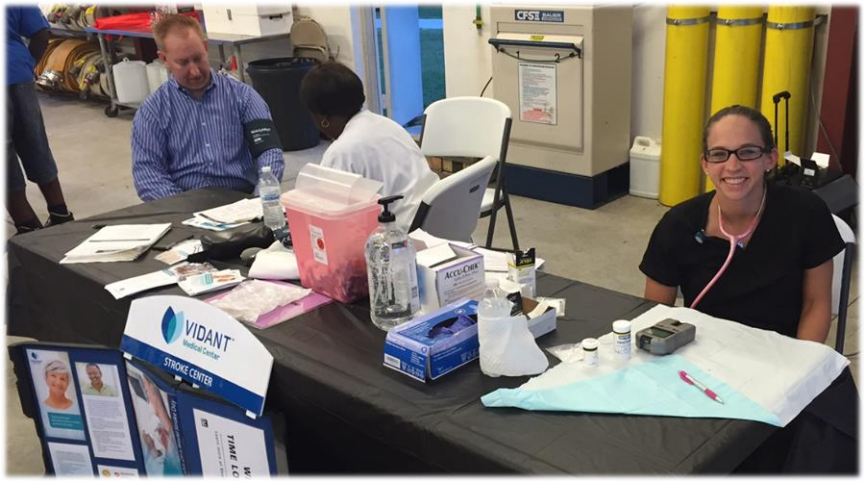
- Being a part of the community
  - “Strike Out for Stroke” stroke team baseball game
  - “Strokes for Stroke” painting and mini-golf
  - Basketball game with B.E.F.A.S.T. magnets given on admission (Go Pirates!)
  - Incorporate into CPR training for all Pitt County 7th graders

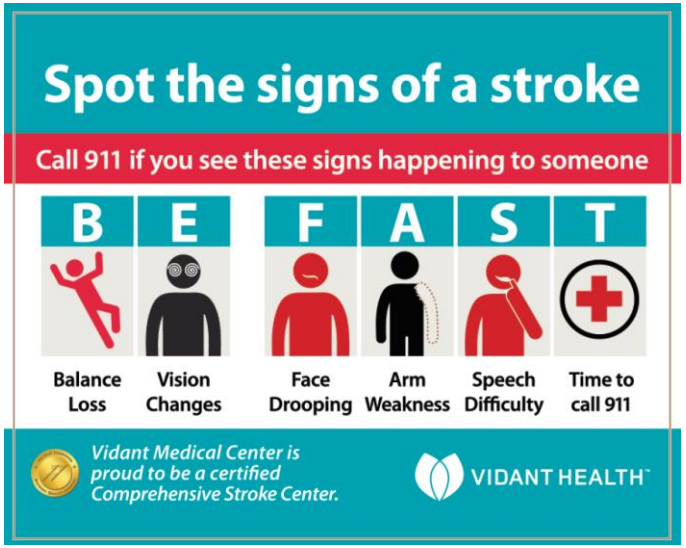
Creative Strategies to Outreach



Creative Strategies to Outreach

- Hope Lodge Senior Group
- WITN Local News Station
- Local Fire Station
- Chamber of Commerce
- AHA Heart and Stroke Walk
- Local Businesses
- Local News Station
- Local churches
- Talk of the Town Radio
- Five Prime Radio Group
- Daily Reflector





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Transitional Care Program

Pam Cowin, PhD, RN
Administrator, Transitional Care
Care Transformation
pcowin@vidanthealth.com

Background

- Population Health focus
- Value Based Models
- System-wide approach
- Cross Continuum

Goals

- Increase access to care
- Improve clinical outcomes
- Improve financial outcomes
- Promote positive patient experience
- Improve quality of health information
- Reduce avoidable hospital readmissions and emergency dept. visits

Population At Risk

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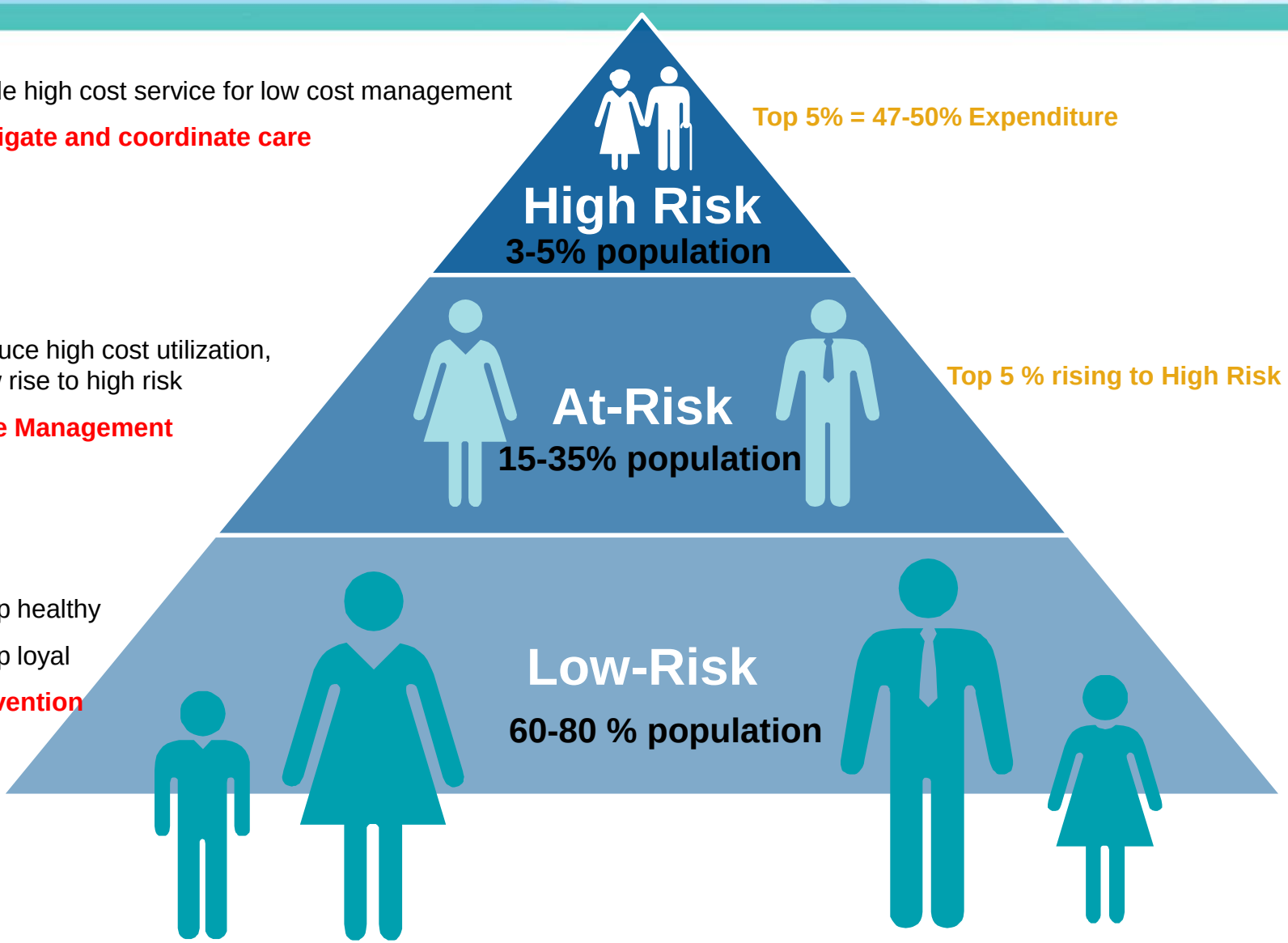
Trade high cost service for low cost management

Navigate and coordinate care



Top 5% = 47-50% Expenditure

Reduce high cost utilization, slow rise to high risk

Care Management

Top 5 % rising to High Risk

Keep healthy

Keep loyal

Prevention

Coordination Model

Acute Care

Risk Scoring & Stratification

- High & moderate risk management

Care Transformation Services

Transitional Care
Care Management
Community Paramedicine
Remote Home Monitoring
Disease Management

Community Based Care

- Cross continuum partnerships

Ambulatory Care

Care Transformation Services

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- Risk assessment and stratification
- SMART transitions
- Education & goal setting
- Care Gap closures & MyChart sign up
- Linking people to community services and providers
- Case management (chronic care and behavioral)
- Community care
- Patient Education and Engagement
- Social determinants of health assessment and intervention
- Post Acute Collaboration

Other Activities

- Readmission reviews
- Safety Catches
- Collaborative
- Care Pathways

Stroke Patients

- Goals are established for post-hospital care and care is coordinated based on the assessment of the patient and family needs
- Patients are referred to community resources to facilitate re-entry into the community
- Discharge planning and arrangements are based upon mutually agreed upon patient goals

Stroke Patients

- Referral & connectivity during acute phase
- 24 and 48hr post-discharge call, 7/30/60/90 day calls
- SMART transition
  - **S**igns & Symptoms (BE FAST)
  - **M**edications (high intensity statin, antiplatelet, anticoagulant)
  - **A**ppt (Neurology 14 days, PCP linkage)
  - **R**esults (what's pending, what's needed- cholesterol, triglycerides, PT/INR)
  - **T**each back / Tell us now
- Social Determinants of Health (SDOH)
- Stroke Support Network
- Modified Rankin 90 days

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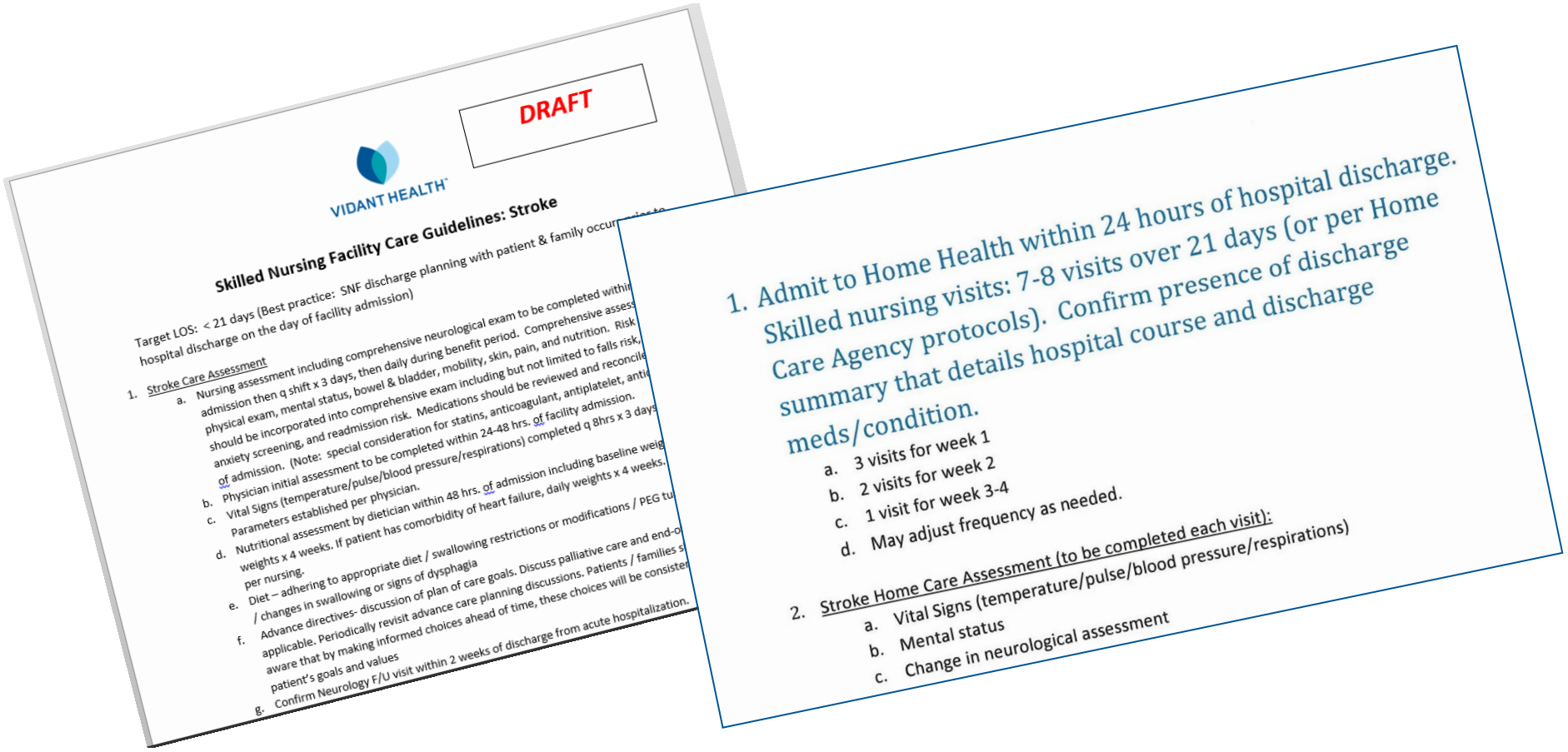
Remote Home Monitoring

- Biometric data
- RN monitoring
- Intervention, counseling, coaching
- Patient engagement & experience

Cross Continuum Collaboration

- Stroke Readmission Taskforce
- Post Acute Collaboration



DRAFT

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Skilled Nursing Facility Care Guidelines: Stroke

Target LOS: < 21 days (Best practice: SNF discharge planning with patient & family occur
hospital discharge on the day of facility admission)

1. Stroke Care Assessment
   a. Nursing assessment including comprehensive neurological exam to be completed within
   admission then q shift x 3 days, then daily during benefit period. Comprehensive assess
   physical exam, mental status, bowel & bladder, mobility, skin, pain, and nutrition. Risk
   should be incorporated into comprehensive exam including but not limited to falls risk,
   anxiety screening, and readmission risk. Medications should be reviewed and reconcile
   of admission. (Note: special consideration for statins, anticoagulant, antiplatelet, anti
   b. Physician initial assessment to be completed within 24-48 hrs. of facility admission.
   c. Vital Signs (temperature/pulse/blood pressure/respirations) completed q 8hrs x 3 days
   Parameters established per physician.
   d. Nutritional assessment by dietician within 48 hrs. of admission including baseline weig
   weights x 4 weeks. If patient has comorbidity of heart failure, daily weights x 4 weeks.
   per nursing.
   e. Diet – adhering to appropriate diet / swallowing restrictions or modifications / PEG tu
   / changes in swallowing or signs of dysphagia
   f. Advance directives- discussion of plan of care goals. Discuss palliative care and end-o
   applicable. Periodically revisit advance care planning discussions. Patients / families s
   aware that by making informed choices ahead of time, these choices will be consiste
   patient's goals and values
   g. Confirm Neurology F/U visit within 2 weeks of discharge from acute hospitalization.

1. Admit to Home Health within 24 hours of hospital discharge. Skilled nursing visits: 7-8 visits over 21 days (or per Home Care Agency protocols). Confirm presence of discharge summary that details hospital course and discharge meds/condition.
   a. 3 visits for week 1
   b. 2 visits for week 2
   c. 1 visit for week 3-4
   d. May adjust frequency as needed.

2. Stroke Home Care Assessment (to be completed each visit):
   a. Vital Signs (temperature/pulse/blood pressure/respirations)
   b. Mental status
   c. Change in neurological assessment

Key Takeaways

- Cross continuum collaboration is ESSENTIAL
- Partnerships bring value
- Keep it simple

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