

NC DETECT

Stroke Advisory Council

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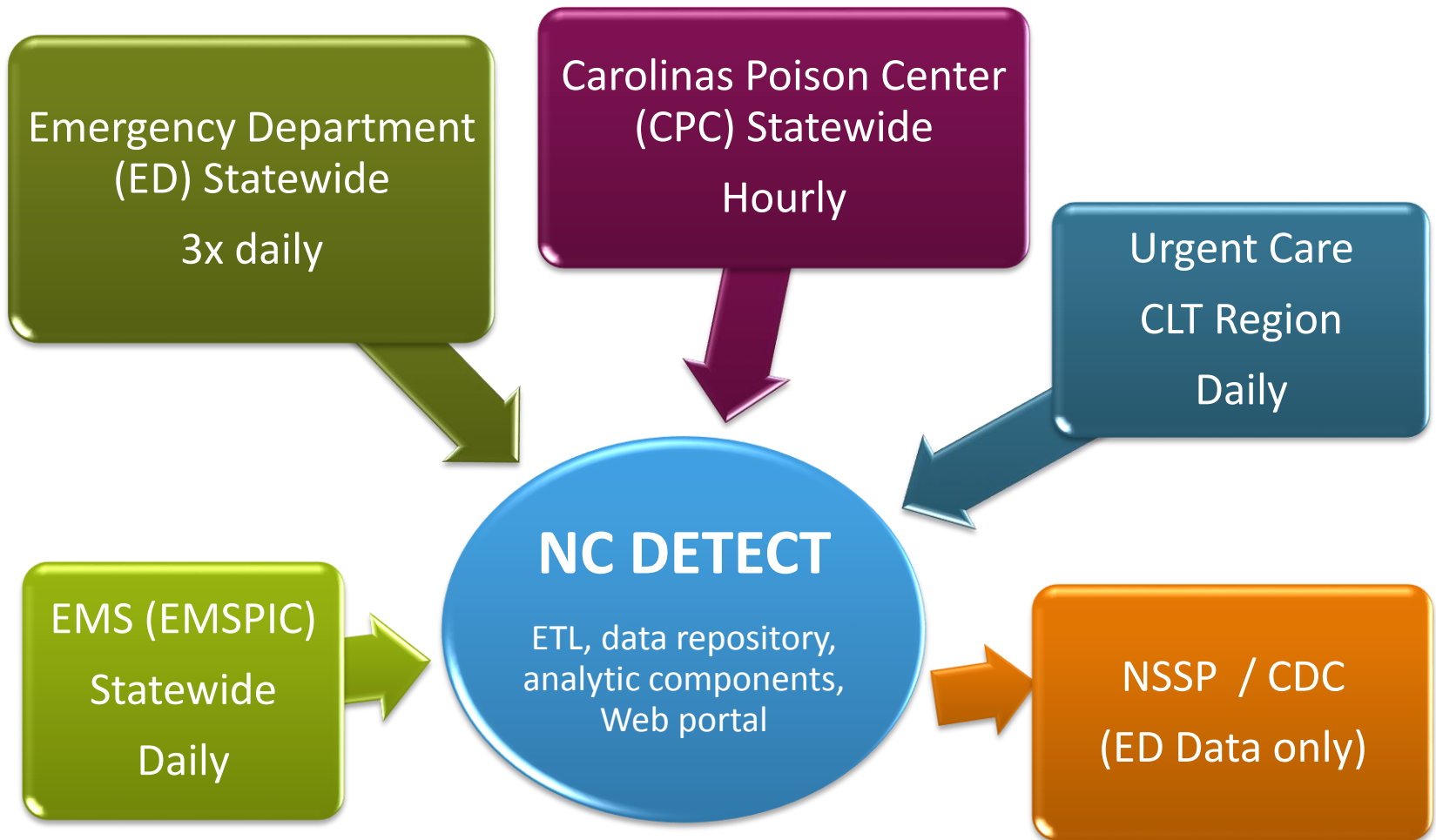


THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

NC DETECT Background

- Based on efforts dating back to 1999
- 2005-Present: Mandatory reporting of civilian emergency department (ED) data
 - Statewide as of 2008
- **Core** funding by NC DPH Communicable Disease Branch with CDC funds
 - Additional funding from Injury & Governors Highway Safety Program

NC DETECT Data: daily, no pre-filtering



NC DETECT ED Data Elements

- Patient and Visit IDs
- Hospital
- Date of Birth, Sex
- Race, Ethnicity
- City, County, State, ZIP
- Arrival Date/Time
- Transport Mode to ED
- Insurance Coverage
- Chief Complaint
- Initial ED Temp & BP
- Triage Notes
- ED Disposition
- Diagnosis Codes (ICD-9/10 CM)

Key Considerations

Strengths

- Near Real Time
- Statewide
- Free text + diagnosis codes can provide unique context

Limitations

- Diagnosis code order unreliable
- Secondary data from EHRs & billing systems; very limited control over data entry

NC DETECT ED Data

# EDs	125 24/7/365 Civilian EDs
ED Visit Volume by Day	Average daily new = 15,000 Average daily total = 90,000
ED Visit Volume by Year	2016 = 5,157,810 2017 = 5,203,336

Accessing NC DETECT ED Data

- Health department and data provider affiliated → <https://ncdetect.org> & click on Account Request
- Public Health Researchers:
<https://ncdetect.org/data-requests-for-applied-public-health-research/>

CD-Related Publications Using Retrospective Data

- Evaluation of the NC Smoke-free Restaurants and Bars Law (2013)
- Mayer DK et al. ORIGINAL REPORTS – Health Services and Outcomes: Why Do Patients With Cancer Visit Emergency Departments? Results of a 2008 Population Study in North Carolina
- Rappold AG et al. 2011. Peat Bog Wildfire Smoke Exposure in Rural North Carolina Is Associated with Cardio-Pulmonary Emergency Department Visits Assessed Through Syndromic Surveillance
- Lippmann et al. COPD-Related ED Visits in North Carolina: Hospitalizations and Return Visits.
- Dieu et al. Asthma-Related ED Visits in NC, 2010-2014.

Quick & Preliminary Analyses

Sample Record Level Data

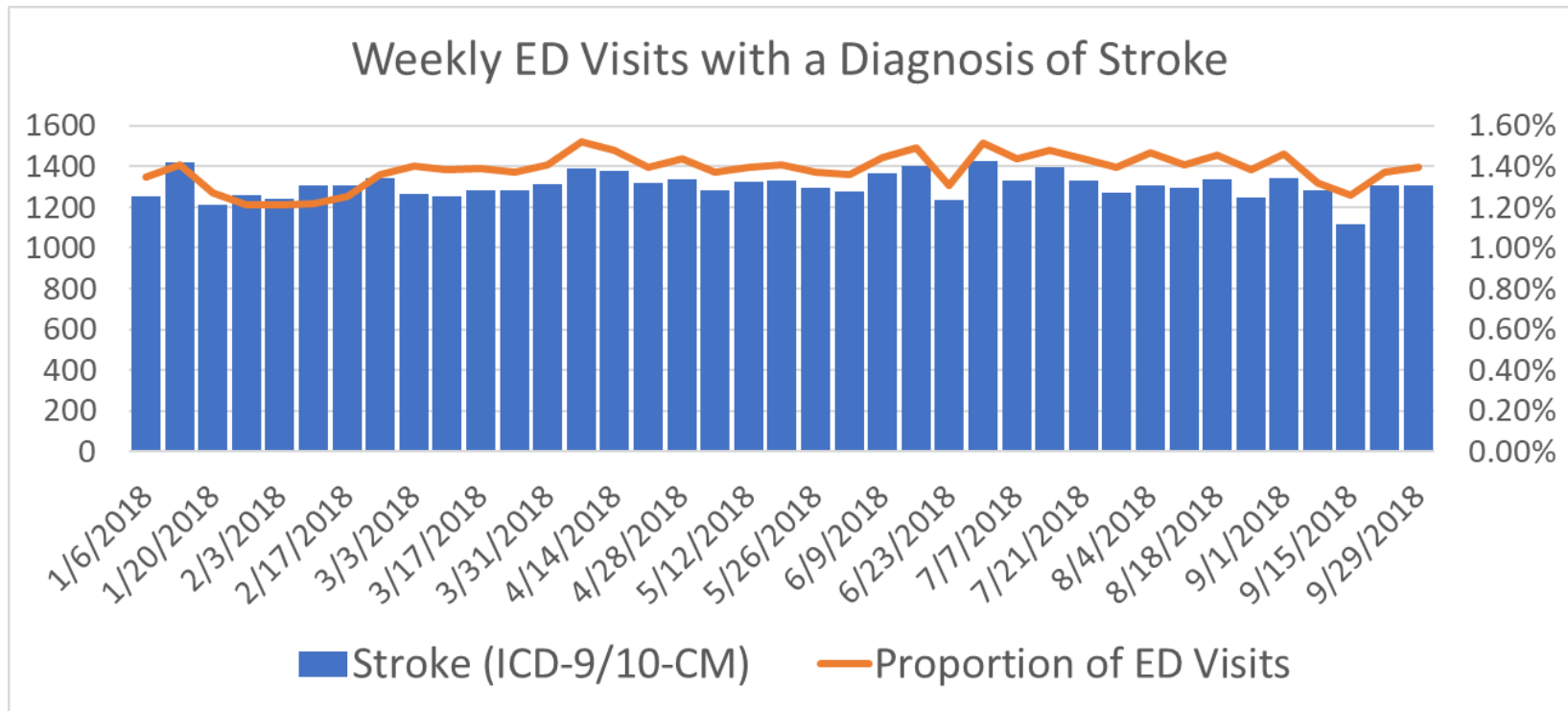
Age	57
Free Text	STROKE LIKE SYMPTOMS / brought by ems from home, called for stroke alert
BP	121/68
Transport Mode	Ground Ambulance
Disposition	Transferred
Diagnoses	I42.9 - CARDIOMYOPATHY, UNSPECIFIED *-* I63.9 - CEREBRAL INFARCTION, UNSPECIFIED
Insurance Coverage	Medicare

Sample Record Level Data

Free Text Mvc / pt driver in a vehicle that hit an embankment and rolled over, unsure if pt was wearing seatbelt. Pt self extricated himself...

Dx **S06.5X1A** - TRAUMATIC SUBDURAL HEMORRHAGE WITH LOSS OF CONSCIOUSNESS OF 30 MINUTES OR LESS, INITIAL ENCOUNTER *-* **I60.9** - NONTRAUMATIC SUBARACHNOID HEMORRHAGE, UNSPECIFIED *-* **S01.81XA** - LACERATION WITHOUT FOREIGN BODY OF OTHER PART OF HEAD, INITIAL ENCOUNTER *-* **R41.3** - OTHER AMNESIA *-* **S00.03XA** - CONTUSION OF SCALP, INITIAL ENCOUNTER *-* **S02.19XA** - OTHER FRACTURE OF BASE OF SKULL, INITIAL ENCOUNTER FOR CLOSED FRACTURE *-* **S00.11XA** - CONTUSION OF RIGHT EYELID AND PERIOcular AREA, INITIAL ENCOUNTER *-* **Z23** - ENCOUNTER FOR IMMUNIZATION *-* **S06.6X1A** - TRAUMATIC SUBARACHNOID HEMORRHAGE WITH LOSS OF CONSCIOUSNESS OF 30 MINUTES OR LESS, INITIAL ENCOUNTER *-* **V89.2XXA** - PERSON INJURED IN UNSPECIFIED MOTOR-VEHICLE ACCIDENT, TRAFFIC, INITIAL ENCOUNTER

Stroke Diagnoses by Week

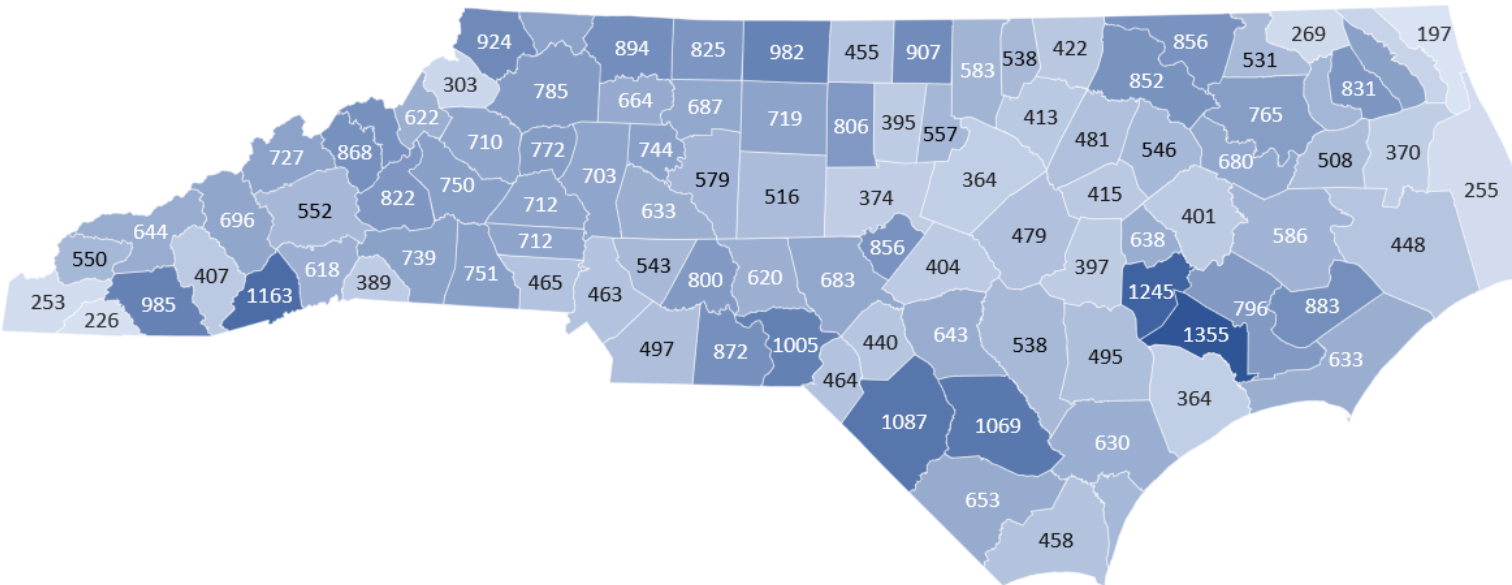


2017 Stroke ED Visits (any dx position)

2017 ED Visits with a Diagnosis of Stroke

Source: NC DETECT

Rate per 100,000 person-years

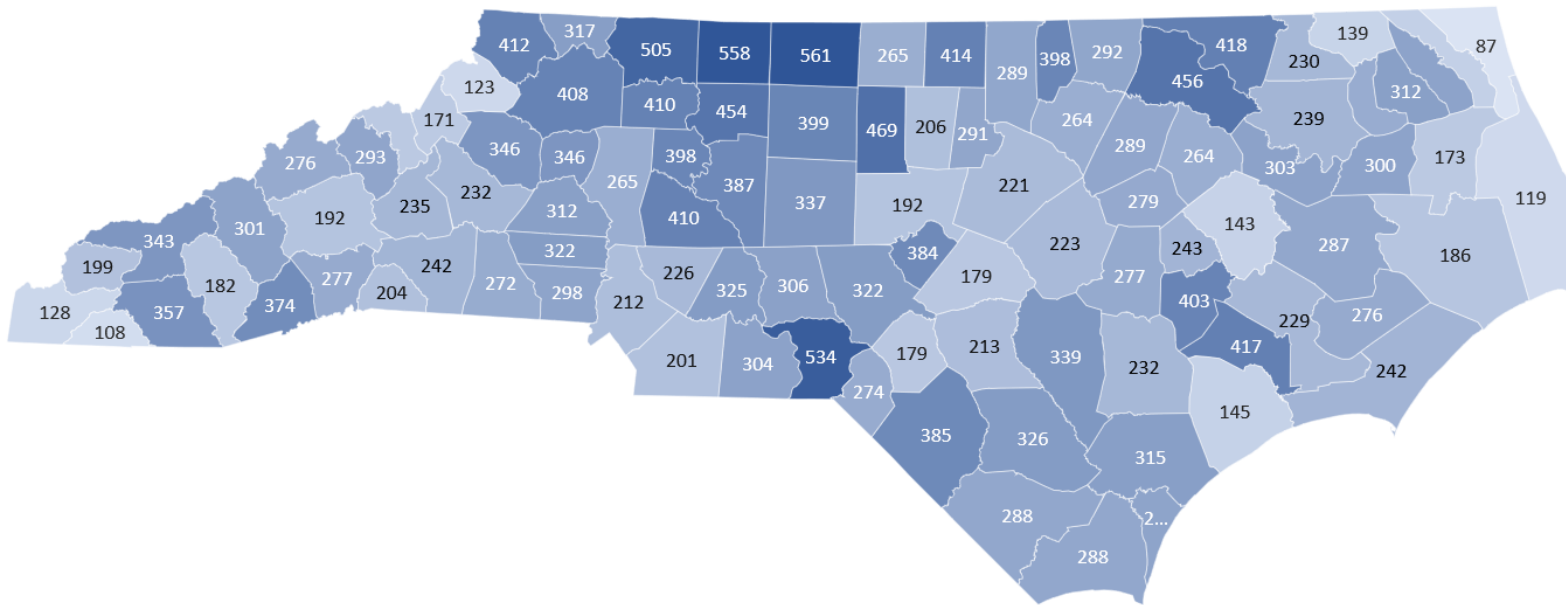


2017 Acute Stroke ED Visits (any dx position)

2017 NC ED Visits for Acute Stroke (I60, I61, I63 only)

Source: NC DETECT

Rate per 100,000 person-years



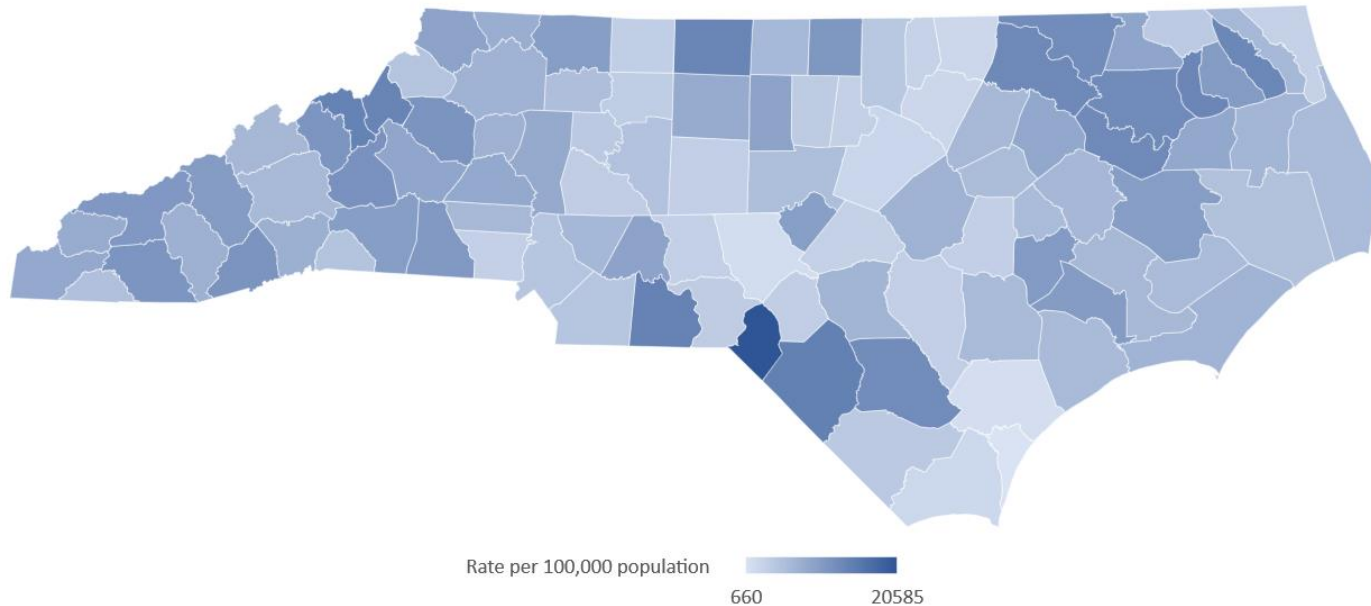
ED Visits for Stroke by Race

Race	Count	Rate per 100,000
American Indian or Alaska Native	647	376
Asian / Native Hawaiian or Other Pacific Islander	415	119.7
Black or African American	15746	665.9
White	40605	549.9
Other Race	1433	
Missing	530	
NC	59376	577

NC ED Visits for Hypertension (I10)

2018 NC ED Visits with a Diagnosis of Hypertension (I10)

Source: NC DETECT



14.4 % of 2018 YTD ED Visits have a hypertension diagnosis

Potential Deeper Dives

- Analysis of Co-Morbidities
- Free text data → Diagnoses
- Comparison to environmental indicators
- Data Validation with EHR record review

Thank you!!

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