

# Hampton Roads Community Stroke Awareness Survey

## *Initial Review & Results*

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*Sentara VB/SI Stroke CNS/Program Coordinator*

*Teacher, Eastern Virginia Medical School*

# Why Survey Residents on Stroke?

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- Knowledge of warning signs and risk factors vary throughout the country, but most surveys still estimate naming 3 of each at less than 20% despite public education strategies
- Any surveys in Virginia? None that we could find publically with more than 50 patients (*if you have this let me know!*)
- 2015 report by the VDH indicated stroke as the 4th leading cause of death for Virginians with a total cost at 882 million dollars for in-patient hospital charges that year alone
- CDC indicates that 80% of strokes in the US are preventable
- Patient delays of recognition/response still a main cause of tx delay
- What does OUR community know? How do they want education?

# Why Social Media?

- Mass access to people... that take quizzes!
- 45% of the VA population is on Facebook
- Facebook accounts for over 42 percent of monthly social media visits
- The average time spent on Facebook per visit is 35 minutes up from 20 minutes previously



## VIRGINIA

VA - 8,525,660 population (2018 est.) - State Area: 39,594 square miles

State Capital City: Richmond - population 192,913 (2006)

6,193,567 Internet users as of June/10, 77.8% of the population, per IWS.

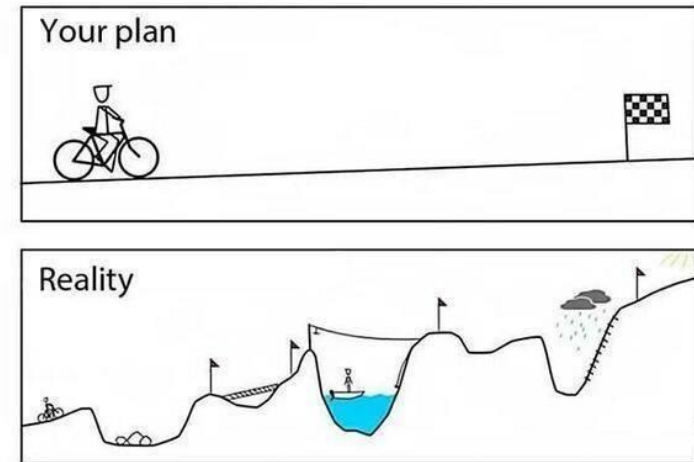
3,574,060 Facebook users on March 31/11, 44.9% penetration rate.



# IRB Approval

- 4 Revisions
- Exempt review
- Approve all advertising
- Longer approval process than planned
- 2 month delay from original timeline
- But, approved!
- EVMS IRB# 19-05-XX-0120

<input type="checkbox"/>	EXEMPT REVIEW: Insert the Category number below that supports the type of review: -- Choose One -- CLICK HERE AND PRESS F1 FOR NUMBER OF COPIES TO SUBMIT: ▶ 2
	(1) Research in Educational Setting involving normal educational practices. (2) Educational Tests, Survey Procedures, Interview Procedures, or Observe Public Behavior <u>unless</u> subjects can be identified <u>and</u> disclosure place subjects at risk of criminal & civil liability. [Does not apply to those <18 years old. Therefore, defaults to expedited or Full Board review.]



# Survey Process

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- Goal of 200 respondents
- Primarily Facebook with no “boosts” or “ads” to promote
- SurveyMonkey platform for electronic survey
- Skip logic survey with a minimum of 21, maximum of 22; able to eliminate respondents if exclusion criteria present (<18 y/o, outside HR)
- Estimated time for participation of the electronic survey is fifteen minutes
- Data collection will be July 1, 2019 and October 31, 2019 (4 months)
- A social media post will not be repeated in the same page more than once in a given 14-day period. All posting will be in accordance with rules and regulations on the social media platform utilized. Exact template.

# Survey Components

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1. Demographic components (8 questions)
2. Stroke & CC history (3 questions)
3. Knowledge (5-6 questions, most free text)
4. Attitude, Perceptions, Preferences (5 questions)


Total questions: 21-22

# How did survey perform?

- Total of 211 respondents, goal of 200 😊
- Shared twice by local Sentara hospital- once in August, once in October
- Shared multiple times by Hampton Roads' stroke coordinators and their family members (thank you all for this)



# Sharing on Social Media (free!)



**We want to hear from you!**  
**Tell us what you know about STROKE.**  
**Please take our 15-minute survey on Stroke Awareness!**

**Kevin Houston** ▸ We Are Norfolk  
August 5, 2019

Hello We Are Norfolk!

My name is Kevin, I'm a current med student at EVMS. A little about me, I've lived in Norfolk 5 years now, originally from Winchester, VA. Thank you for letting me be a part of this group the last few months! Tony said I could post if it was within the rules of the page. (I'm not getting anything out of this other than information for my project, but let me know if I need to take this down). I'm leading a passionate team of students at EVMS trying to better understand our community and how much residents of Hampton Roads know about stroke and stroke risk factors. Please consider taking our short survey! Below is our post approved by the EVMS IRB. Thank you for your consideration 😊 Have a wonderful Monday!


Your opinion is important! Eastern Virginia Medical School, The Virginia State Stroke System Task Force, and Sentara Healthcare invite you to participate in an online survey, "Stroke Community Awareness." We would like to invite you to participate in this research study, which is being conducted by medical students at Eastern Virginia Medical School

You must be 18 years or older to participate in this survey and a Virginia (VA) resident of Norfolk, Portsmouth, Virginia Beach, Suffolk, Chesapeake, Hampton, or Newport News.

Please only complete the survey once.

<https://www.surveymonkey.com/r/CommunityStrokeAwareness>

Advertising approved by EVMS IRB# 19-05-XX-0120



**Sentara Virginia Beach General Hospital**  
October 22, 2019 · 🌐

Your opinion is important! Eastern Virginia Medical School (EVMS), The Virginia State Stroke System Task Force, and Sentara Healthcare invite you to take the "Stroke Community Awareness" online survey created by medical students at EVMS.

You must be 18 years or older to participate in this survey and a Virginia (VA) resident of Norfolk, Portsmouth, Virginia Beach, Suffolk, Chesapeake, Hampton, or Newport News.

Please only complete the survey once: <https://bit.ly/2N6fCkb...> See More




**We want to hear from you!**  
**Tell us what you know about STROKE.**  
**Please take our 15-minute survey on Stroke Awareness!**

2 Likes 2 Shares

Like Comment Share

current med student at EVMS. A little about me, I've lived in originally from Winchester, VA...



**Kai Spooner Funk** shared **Kevin Houston's post**  
Friend

Aug 9, 2019 · 🌐 · Hello We Are Norfolk! My name is Kevin, I'm a current med student at EVMS. A little about me, I've lived in Norfolk 5 years now, originally from Winchester, VA. Thank you for letting me be a part of this group the last few months! Tony said I could post if it was within the rules of...


👍 Sarah Cullen Lamb



**Sarah Cullen Lamb** ▸ Seven Cities Sport Bikes

Aug 5, 2019 · 🌐 · ...area that ride that have been affected by stroke (which is what I do ALL day) Fun fact: fastest growing group for stroke? People under 45 years old. That's most of you except Matt Lamb and Richard Bell. So, please take like 10 mins or less and complete our survey about what you...


👍 Matt Lamb, Richard Bell and 7 others



**Katharine Tiffany Biagi** shared **Sarah Cullen Lamb's post**  
Friend


Aug 9, 2019 · 🌐 · Hampton Roads friends, please take this check survey! (scroll down)

👍 You and 1 other




**Joseph Stacy** shared **Sentara Virginia post**  
Family member

Oct 29, 2019 · 🌐 · ...Medical School (EVMS), The State Stroke System Task Force, and Sentara f o take the "Stroke Community Awareness ated by medical students at EVMS. Y r older to participate in this survey an




**We want to hear from you!**  
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**We want to hear from you!**  
**Tell us what you know about STROKE.**  
**Please take our 15-minute survey on Stroke Awareness!**


3 Likes 1 Share



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August 23, 2019 · 🌐

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**We want to hear from you!**  
**Tell us what you know about STROKE.**  
**Please take our 15-minute survey on Stroke Awareness!**

5 Likes



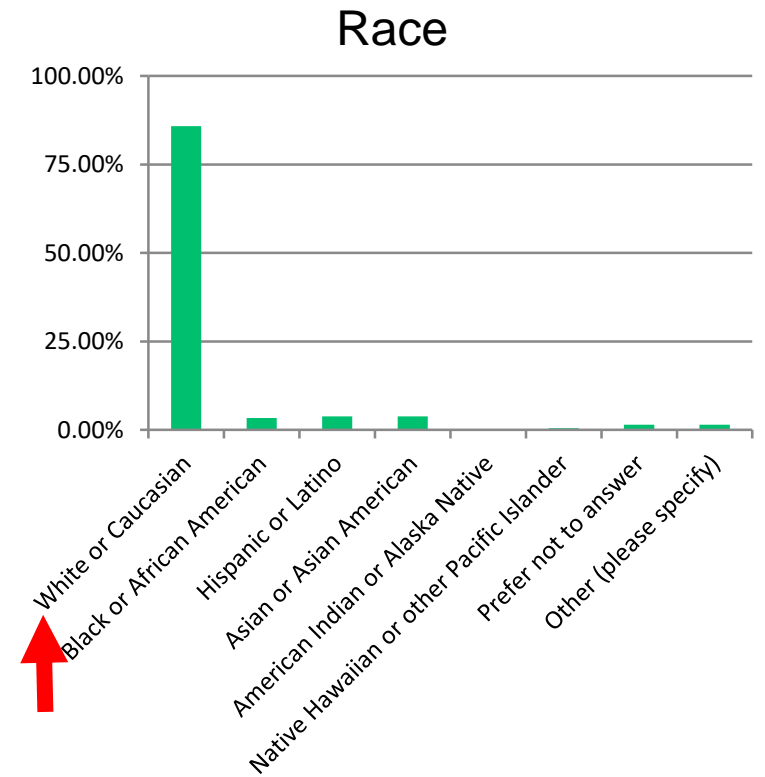
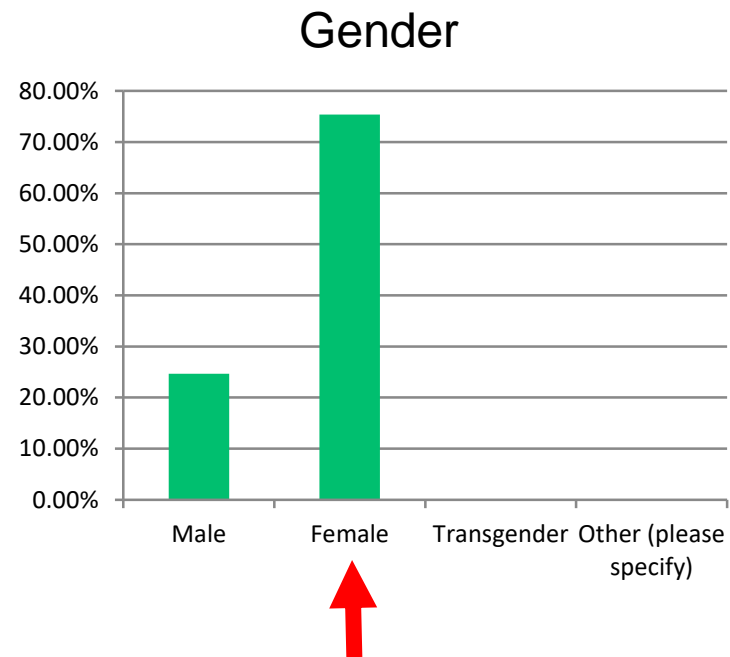
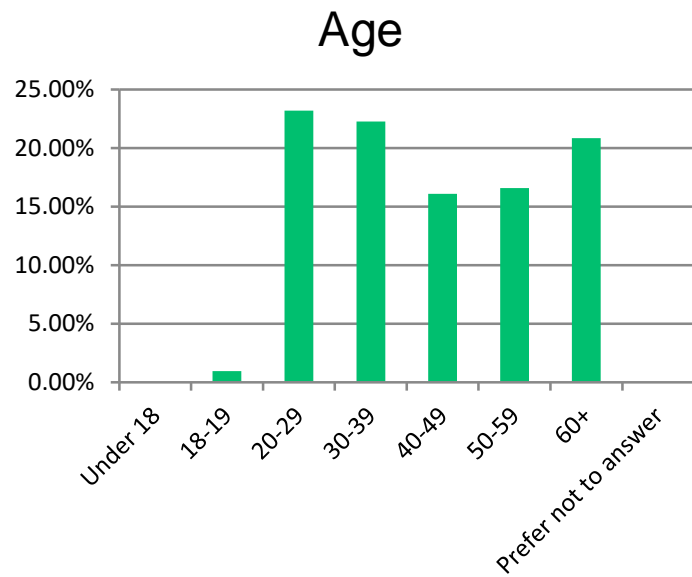
# Who took the survey?

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- ✓ Let's review general demographic information
- ✓ Limitations based on population generalizability
- ✓ How to improve our reach for future surveys

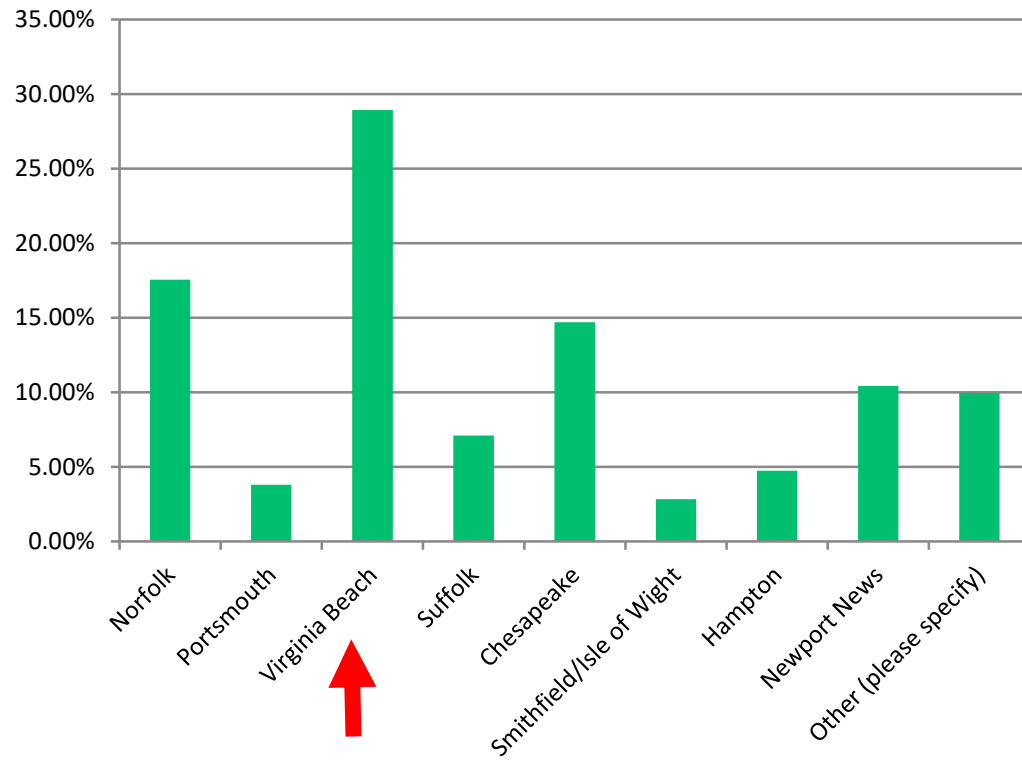
# Respondents- Demographics

- ☺ No difference in age groups. Not just “young people”
- ☹ Skewed to white females... becomes a study limitation

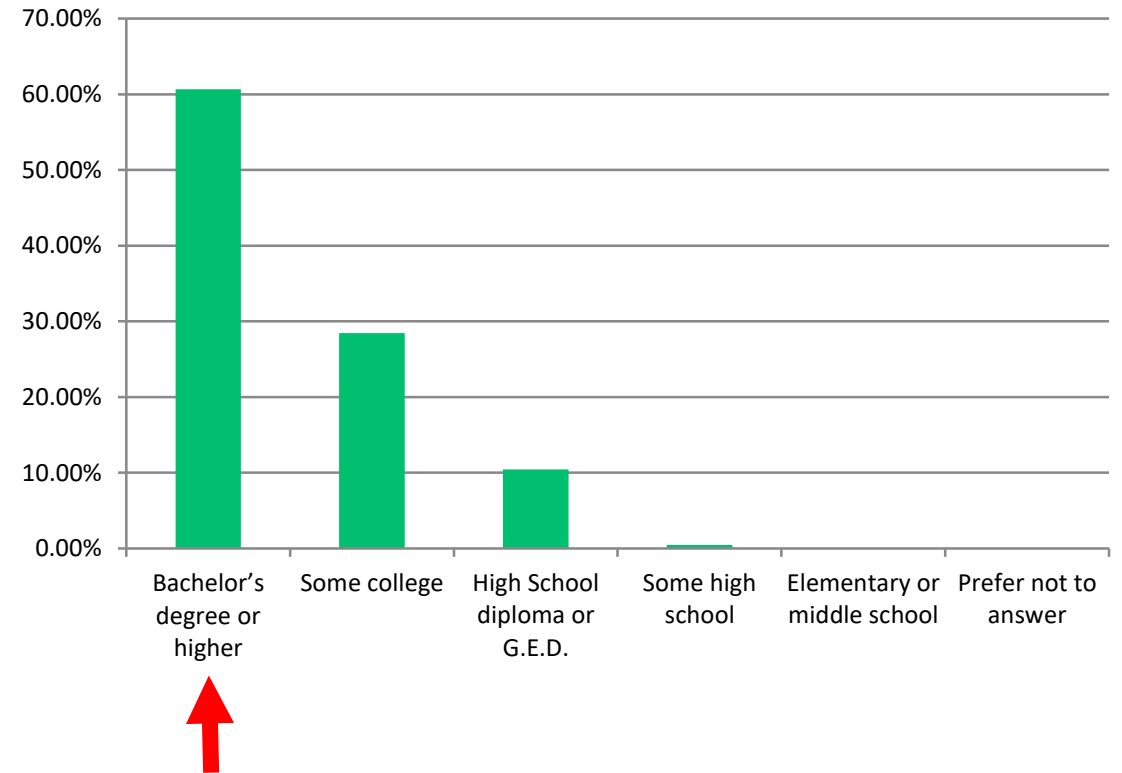


# Respondents- Demographics

Area of residence

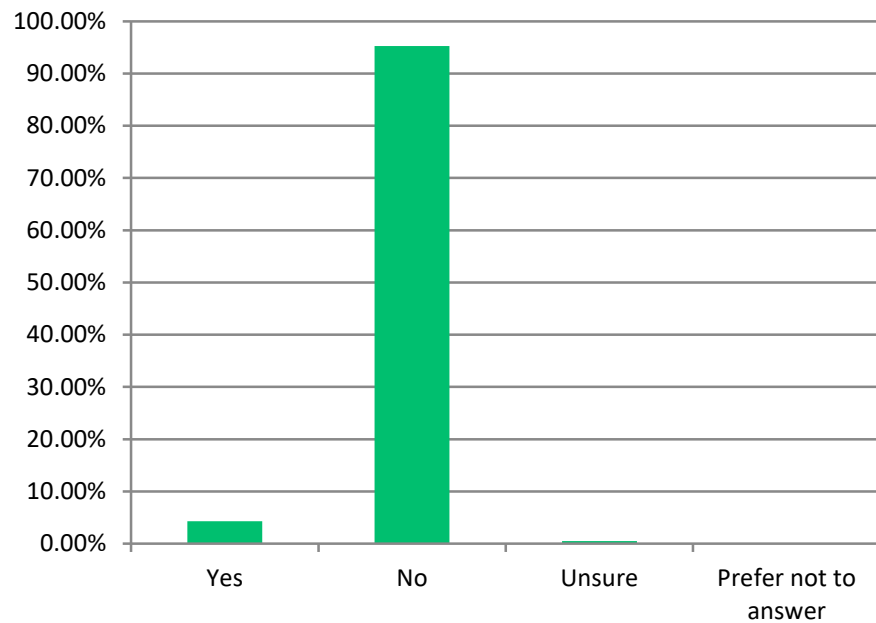


What is the highest level of education you completed?

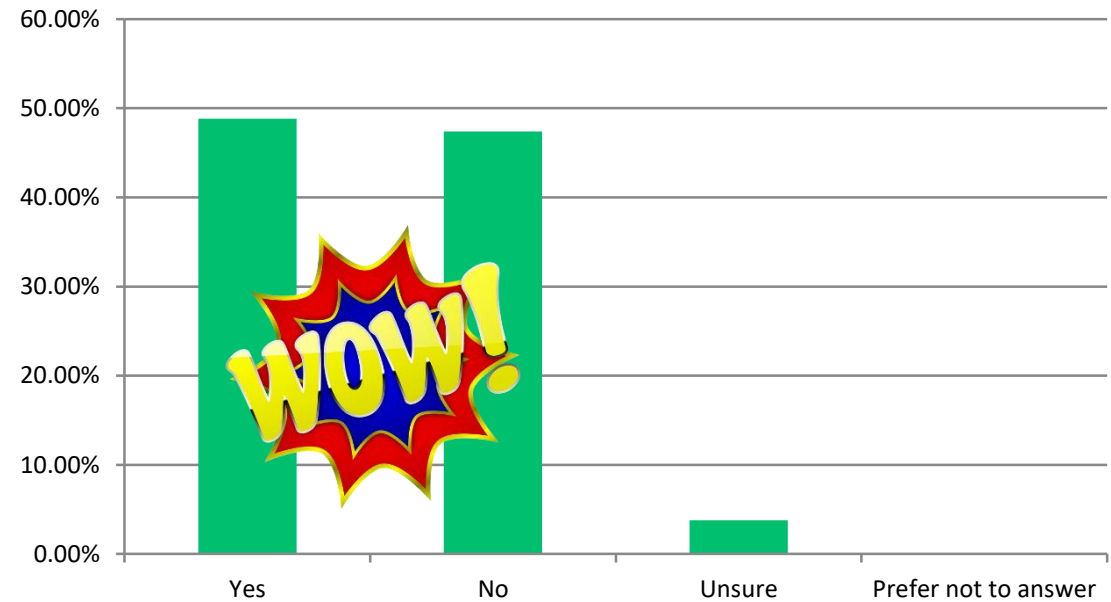


# Respondents- Demographics

Have you ever been diagnosed with a stroke?



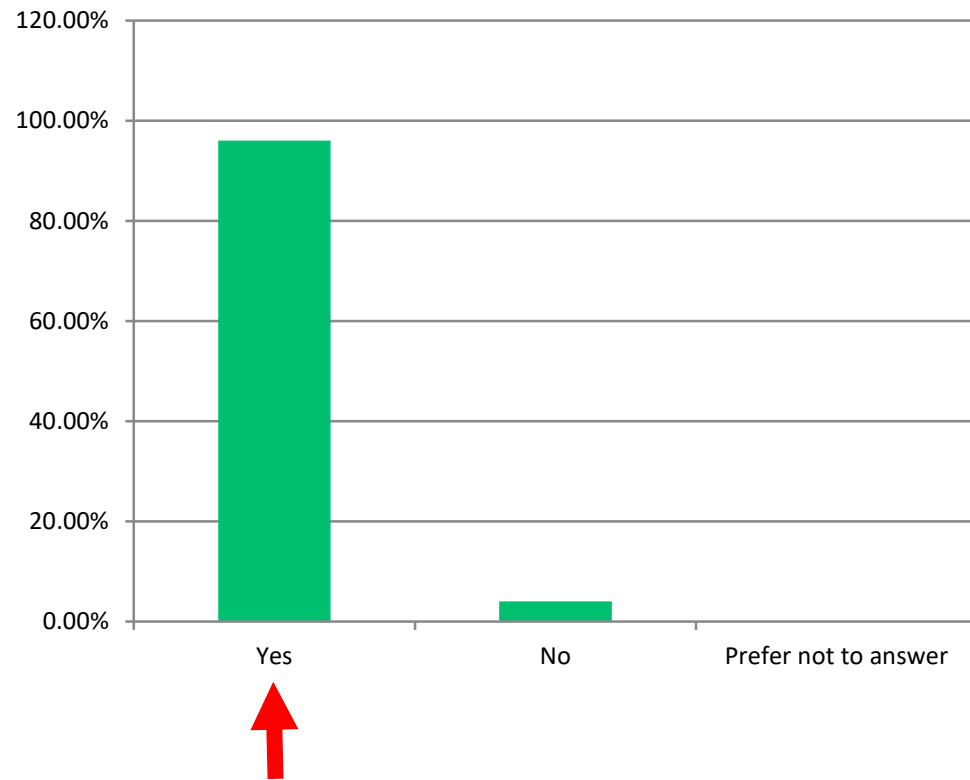
Do you have a family member who has had a stroke or been diagnosed with a stroke?



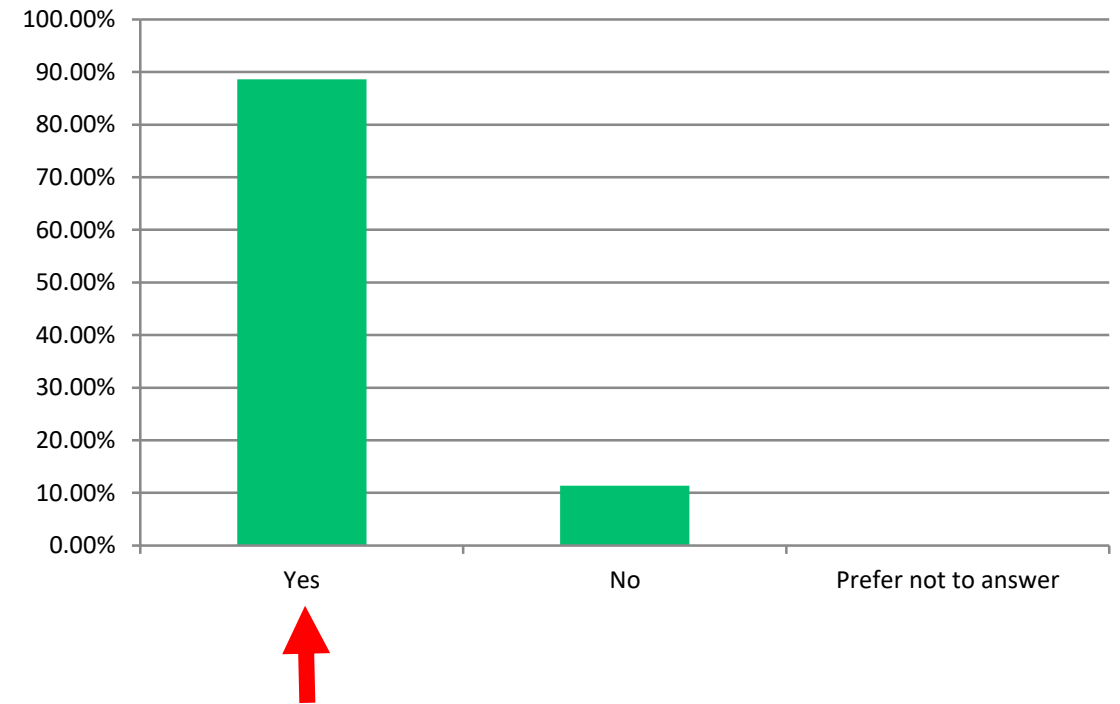
# Respondents- Demographics

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Do you have health insurance?



Have you seen a doctor or provider in the last 12 months?



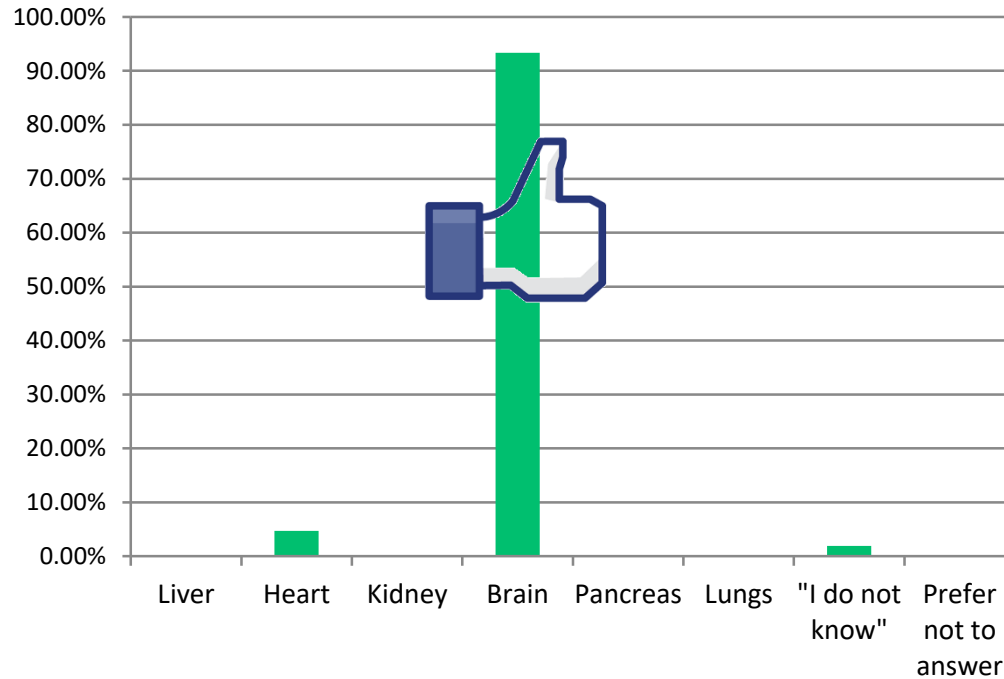
# Summary: Demographics

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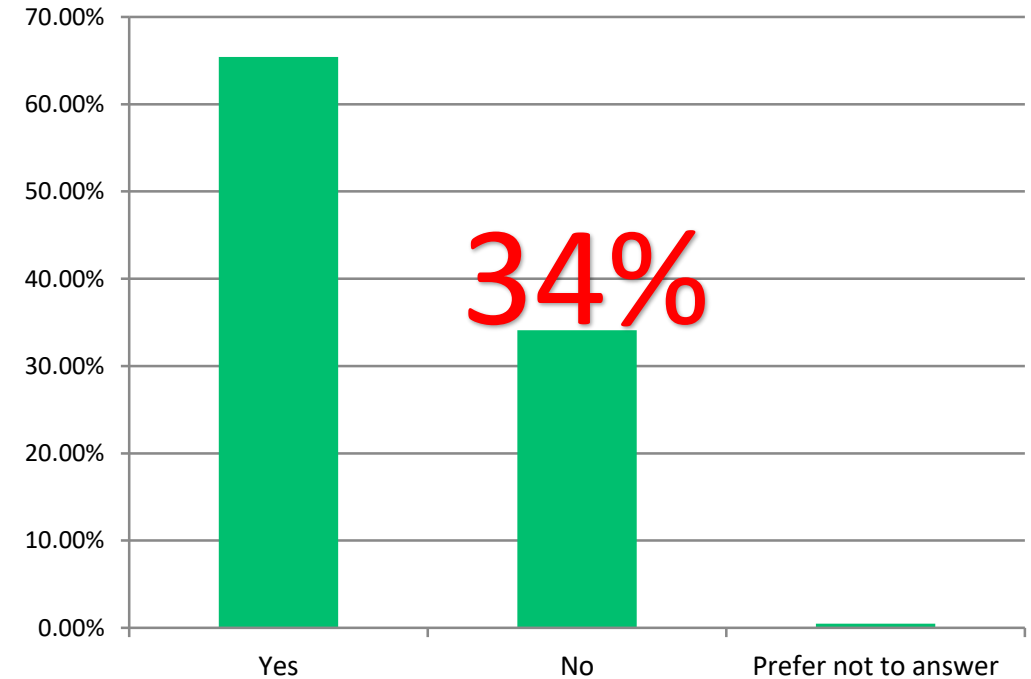
- ✓ Limitations on population
- ✓ Limits generalizability of these results
- ✓ White, Female, Educated (bachelor's), with Health Insurance
  
- ✓ How to improve reach for future surveys- target minority groups

# Stroke Knowledge

What is the main body part most affected in a stroke?



Have you heard of the FAST or BEFAST acronym?



# BEFAST/FAST- What does it mean?

## face arm stroke time

Facial drooping, Arm weakness, Speech difficulties and Time to call emergency services.  
Balance eyes face arms speech time  
Facial drooping, asymmetrical smile, speech, time  
Face, (raise) Arms, Smile, Talk  
Balance, Eyes, Face, Arm, Speech, Time  
Face, Arms, Speech, Time  
**FACE, ???, SMILE, TONGUE**  
Face, arms, speech, time  
Facial drooping, arm weakness, speech difficulty and time to call  
**Face, arm, smile and ?**  
Face arm speech time  
Balance eyes face arms speech time  
Face, arm, speech, time to call 911  
**Balance eyes face arms (don't know S and T)**  
**Face, arm, speech, time Did not hear of BEFAST so had to look that one up**  
(F)acial Asymmetry, (A)rm Weakness, (S)lurred Speech, (T)ime (reference to importance of face, arm weakness, speech, time balance, eyes, face, arm, speech, time  
Face, Arm, Speech, Time  
**Face, Asymmetrical, Slur, Tongue?**  
Face drooping, Arm weakness, Speech, Time  
Face arm speech  
Facial weakness, arm/upper body weakness, speech issues, time/call 911  
Face, arms, speech,  
Balance, Eye, Face, arm, speech, time  
Face speech tongue  
Face droop, arm weakness, speech, time to call Balance, eyes, face, arm, speech, time  
Facial drooping, Arm weakness Speech slurring, Time to call EMS  
Face (drooping) Arms (weakness or only one lifting) Speech and Time  
Balance Eyes Face Arms Speech Time  
Face, Arm, Speech, Time  
**I don't remember**  
Facial drooping, arm weakness, speech difficulty and time  
Face drooping Arm limp Speech slurred T-?  
Face, Arms, Steadiness, Time  
balance, eyes, face, arm, speech, time  
Balance, Eyes, Face, Arms, Speech, Time  
Balance, face, arm, speech, time  
face droop, arm weakness, speech slurred, time to call EMS  
Face, arms, speech, and I forget T! Effectively looking for unilateral weakness and abnormal  
Face Arm Slurred Time to call 911  
Face, Arm, Speech and Time

## Not sure

F= Facial Drooping A= Arm weakness S= Speech T= Time to call 911  
Facial drooping, arm numbness/tingling, speech, time  
Face, Arms, Strength, Time  
Balance Eyes / Face Arms Speech Time  
**Can't remember**  
FAST = Face, Arm, Speech, Time  
Face, arms, speech, time  
Face arms speech  
Face arm speech time  
**Can't remember :(**  
**Face Asymmetry Speech Time ???** is, I dunno  
**Face Airway? Smile Time**  
Face, arms, smile?, unknown  
Balance, Eyes, Face, Arms, Speech, Time.  
**Face, arm, speech, ?**  
Arm impairment slurred speech Time is of the essence  
ing, Arm weakness, Speech difficulties, Time to call ar  
**have heard of it.**  
**AST but don't remember what it means.**  
face arms speech time  
**not remember.**  
**ns to get to the hospital asap**  
speech Time  
speech Time  
speech slurring, time  
arm weakness,  
**I just have hear of F**  
**I forget.**  
Facial drooping Arms weak Speech slurring Time  
droopy face, weak arms, difficulty speaking, time  
Face Arm Speech Time  
Balance Eyes Face Arm Speech Time  
Face Arms Speech Time  
Face, Arms, Speech, Time  
Face, arm, strength, time



Balance Eyes Face Arm Speech Time  
Face Arms Speech Time  
Face, Arms, Speech, Time  
Face, arm, strength, time  
facial droop, arm drift, speak, time  
Face, arms, speech, time or Balance, eyes, face, arms, speech, time  
Balance, Eyes, Face, Arm, Speech Test  
Balance, eyes, face, arms, speech, time  
Face arms speech time  
Face droop Arm drift Speech difficulty Time to call  
Face, arms, speech, act fast  
Facial Droop Arm drift Slurred speech Time is critical  
Face Arms Speech act fast!  
Balance, eyes, face, arms, smile, time  
Balance, Eyes, Face, Arms, Speech, Time  
Face arms speech tongue  
**Can't remember**  
Facial droop, arm drift, speech, time  
Balance, Eyes, Face, Arms, Speech, Time  
Face Arms Speech Time  
Face (drooping) arm speech time  
Face droop, arm weakness, speech, time  
Balance, eyes, face, arms, speech, time  
Balance, Eyes, Face, Arms, Speech, Time  
Face arm speech time Not sure about Belfast  
Face, Arms, Speech, Time  
Face drooping arm weakness, slurred speech, time to call 911.  
Face Arm Speech Time  
Balance eyes face arms speech time  
Balance, eyes, face, arms, speech, time  
Face (drooping) Arm (weakness) Speech (slurring) Time (to call emergency :  
Smile, Time sensitive  
face, speech, time. A= not sure  
**can't tell you specifics... just have heard of the term**  
Face, arms, speech, time  
face, arm speech time  
balance eyes face arms speech headache  
Facial drooping, Arm weakness, Speech difficulties and Time



# Stroke Knowledge: Any S/S of CVA?

Weakness of one side, or both, of body, droopy face, affected speech, blurred vision  
Paralysis of body(1 side), **tightness of chest**  
Confusion, drooping face, worst headache ever  
Balance, dizziness, slurred speech, arm drooping, numbness on extremities  
Numbness, partially paralyzed, impaired speech, dizzy, unable to do all or some of FAST  
Facial droop, slurred speech, left or right sided weakness  
Facial drooping, arm weakness, trouble speaking, confusion, loss of balance  
DIFFICULTY W/SPEECH OR WALKING, CONFUSION, UNEQUAL PUPILS, TONGUE TO ONE SIDE WHEN U STI  
Drooping face, slurred speech, loss of consciousness, off balance,  
Facial drooping, weakness on one side, slurred speech or inability to form complete sentences, confusion, numbness  
Numbness. Slurred speech . Drippy face  
Paralysis on 1 side, smile lopsided, pain in arms  
**pain in chest and head**  
Difficulty speaking, slurred speech, facial droop, weakness on one side of the body  
One sided weakness, aphasia, facial droop, blurred vision, difficulty swallowing  
**Pale** Confusion/disoriented **Half of face is numb/won't react** **Smell burning toast** **Difficulty speaking**  
Paralysis (arm, face), slurring of words, confusion  
trouble talking, headache  
Drooping face, numbness on one side of the body, trouble speaking, trouble walking  
Paralysis, slurred or difficult speech, memory loss  
spacing out, vomiting, feeling like you have influenza.  
Facial droop Sudden weakness Impaired balance Visual impairment  
Eyes, face becomes part droopy, difficulty speaking  
**chest pain**  
Facial changes, numbness on left side of body.  
Left arm numbness, slurred speech, difficulty walking, blurred vision, facial weakness  
Facial Asymmetry, Slurred Speech, Arm Weakness, Balance Deficits, Sudden Changes in Vision, Hearing, Dizziness  
one sided weakness either arm or leg, drooping face, slurred or difficult speech, dizziness, decreased balance, decreased  
Eyes stare, can't talk or make sentence, arm numb or can't move, tongue crooked to one side, face droop  
Slurring words, asymmetrical smile, weakness on one or both limbs, unable to speak, tongue is deviated to one side  
Facial drooping, weakness on one side of the body, headache, issue with speech  
slurred speech facial droop  
Facial drooping, slurred speech, inability to speak, confusion, extremity weakness on one side, difficulty swallowing, :

Loss of balance, change in vision, facial droop, uneven arms, change/difficult speech, uneven smile  
Droopy side of face, speech issues  
Slurred speech, paralysis  
slurred speech, face drooping, loss of memory  
Slurred speech, weakness on one side of body, facial droop  
Confusion, weakness on one side, not able to speak.  
Unilateral or bilateral extremity weakness or deficits, vision changes, headache, slurred speech, facial droop, aphasia  
weakness on one side of the body, altered mental status, facial drooping, drooling  
Facial droop, weakness on one side, confusion, trouble speaking, imbalance  
Facial droop, slurred speech, arm numbness  
Severe headache, slurred speech, or difficulty speaking. pupils uneven, difficulty moving or controlling your limbs,  
Headache, facial droop, weakness on one side of body, aphasia  
Facial droop, slurred speech, numbness on one side  
facial droop, weakness on one side, blurry vision, headache, mouth slurry words or mumbling, just staring  
balance, slurred speech, weakness, face drooping  
facial drooping, slurred speech, headache, arm drop  
drooped face, weakness in the arm, slurred speech  
Dizzy, numb, off balance, slurred speech, weakness, paralysis, ha  
Mouth not right. Headaches.  
Slurred speech, balance off, right side paralyzed, or partial paralyzed, blank stare  
Facial expressions on one side of the face may not work. Memory issues  
slurred speech, face drooping, arm weakness, confusion, difficulty with coordination, cognition issues, poor recall, di  
Difficulty breathing,  
Headache, tingling in extremities  
Intense headache, drooping on one side of the face, confusion, fatigue  
confusion, difficulty speaking  
disoriented, mobility, balance, motor skills, eating, visual, and, depending on location, resp  
walking difficulty  
Slurred speech Weakness in the limbs Sagging facial muscles  
Assymetrical face, poor balance, slurred speech, numbing, unable to smile, paralyzed on one side of the body  
Slurred speech. No speech. Paralyzed on one side.  
Slurred speech, confusion, headache, facial droop, one sided numbness.  
slurred speech, unable to use one side of the body, unconsciousness,  
Disorientation, language impairment and trouble with movement  
headache, slurred speech, confusion, one sided weakness, drooling, difficulty walking and ambulating

# Stroke Knowledge...what do you do?

What should you do if you think someone (or yourself) is having a stroke? If you cannot think of a response, please leave blank

Seek immediate medical attention	Call 911	(Call 911
Call an ambulance.	Call 911	(call 911
Call 911	Call 911 get to ER	(Call 911
911	Emergency medical attention	Call 911 and get them to a stroke center ASAP
Call 911	Call 911 immediately	(Call 911
Call 911	Note the time, call 911	(911 and elevate head
Call 911	call 911	Call 911 ASAP
Call 911	Call 911	(Call 911
Take them to an ER fast af.	service	(Hospital
Dial 911 immediately.	911	(Call 911 immediately
Call 911	the ER	Call 911, ask them to push against your fist, act fast- time is key
go to the hospital ASAP	to ER	(Lay them down with head slightly propped up, call emergency ser
Call 911	to emergency room	(Call 911
Call 911	to ER	Immediately call 911 and stay with the person to insure they don't
Call 911 or go to er	Call 911	(Call 911
Call Emergency Services.	call 911	(Call 911
Get them to Norfolk general ED asap	ER ASAP	(Call 911.
Cal 911	Call 911	(Seek immediate medical attention
Call 911		(Call an ambulance.

# Current Knowledge Sources

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## Discussion/Conclusions (based on these results)

- Healthcare providers- routinely discuss? Handouts?
- TV/Social Media- how are we utilizing this?
- General school education- what do we have for stroke awareness in public schools?
- Nurses and other healthcare professionals impact MANY people in their private lives, not just at work. Ensure your staff (everyone) is educated on the basics... it can save a life or a brain!

Healthcare  
Providers



General school  
education



Family relative with  
history of stroke

Friends

Media (TV/Social  
Media)



No stroke  
knowledge

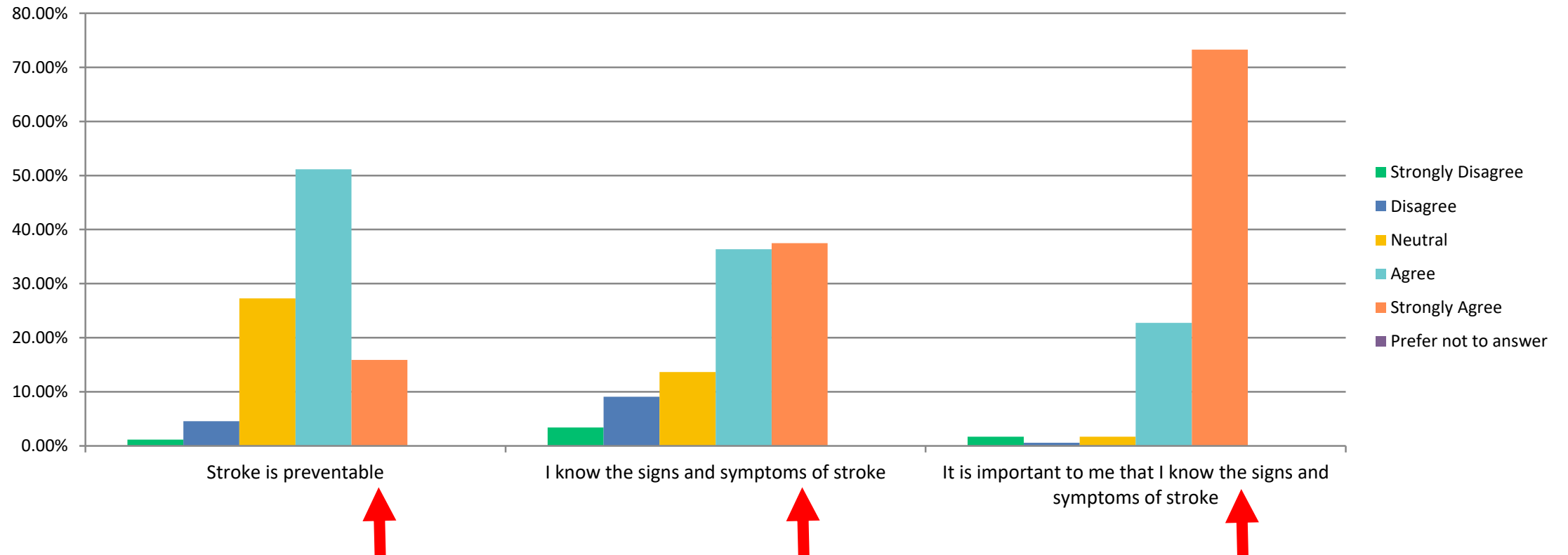
Prefer not to answer

Other (please  
specify)

Many "other" were either RNs or family members of nurses! 😊

# Attitudes/Perceptions

Please rate how much you agree with the following statements



# Education Preference

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## Discussion/Conclusions (based on these results)

- Healthcare providers should have access to resources
- TV/Social Media advertisements can be better utilized (especially since sharing on social media is free!)
- In person class? Say what? Before vs. After stroke- possibility of partnering?
- Newspaper/Magazine advertisements.... May not be time/money well invested.
- Many other responses.... Dr. Google/Self Research → what pulls up first in search engine results?

An in-person class

Social media  
(Facebook, Instagram,  
Twitter)

TV commercial

At my doctor's office

In the newspaper

Prefer not to answer

Other (please specify)



# Group Comparison Results... *interesting*

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If the respondent has a FAMILY member with stroke...

## Discussion/Conclusions (*based on these results*)

- How do we educate our stroke survivors?
- In the hospital? After?
- What is the support system they have after discharge?
- They share this knowledge with family....  
secondary & unintended primary prevention

# Study Limitations

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- Population skew
- Short survey window (*also don't do this near DNV survey*)
- Limited reach/shares
- Ability to skip/not answer
- No funding
- Large volume of qualitative data... useable, purposeful
- Volume of medical professionals responding (share sources)

# What Have We Learned

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- Social media can be a great platform to reach the public
- People are willing to take online survey for stroke
- Useful information can be obtained quickly to target specific focus items/areas/topics
  - ✓ Recognition of BEFAST/FAST
  - ✓ Prevention... BP checks, PCP, etc.
  - ✓ How people wish to receive education (social media survey however)
- Without funding you are limited on reach with this platform but... funding is not required. You can do this type of survey with limited resources.



# Next Steps

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- Further data analysis of responses/comparisons- bring on the math!
  - ✓ Qualitative review/analysis for trends
- Need funding for post promotion- able to reach large volumes of people relatively inexpensively
  - ✓ Virginia, 5.5 million on Facebook
  - ✓ 200\$ reaches up to 15,000 people
- Respond to your findings... give the people what they want
- Repeat! *Let's partner! Expand! Improve!*

# Questions?

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## **CONTACT INFO:**

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*SVBGH & SI Stroke CNS/Program Coordinator*

*Teacher, Eastern Virginia Medical School*

*Adjunct Faculty, Old Dominion University*