Creating a Shared Vision

Reducing the burden of disparities in stroke across the 'community' of care

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Stroke Program

Disclosures

- The Stroke Ready project is funded by:
  - Office of The Director, National Institutes of Health (OD) and the National Institute On Minority Health and Health Disparities (NIHMD) U01 MD010579

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Disclosure #2

- I am an equal opportunity sports enthusiast

Objectives

Be able to:

1. Define stroke health disparities
2. Discuss factors that contribute to stroke health disparities in your community
3. Identify one strategy for reducing stroke health disparities
4. Name one opportunity for multi-sector collaboration within your community to address stroke health disparities

Stroke Stats

- 800,000 strokes per year
  - 140,000 deaths/660,000 survivors
- Leading cause of serious long-term disability

- 7 million stroke survivors
  - Approx. 70% are over age 65
- Prevalence set to increase to >10 million by 2030

Stroke Stats: Mortality

- 5th leading cause of death in US
  - 2013 – fell from 4th to 5th
  - 2008 – fell from 3rd to 4th

- 38% decline in stroke death rate nationally
  - 2000 – 2015: from 118.4/100,000 persons to 73.3/100,000 persons

- Overall improvements
  - modifiable risk factors
  - stroke treatment & care

Overall improvements, yet…

- Minority populations continue to experience significant racial/ethnic/socioeconomic disparities in morbidity and mortality
  - Cardiovascular disease
  - Diabetes
  - Asthma
  - Cancer: breast, prostate, colon
  - HIV/AIDS
  - Mental health
  - Chronic kidney disease
- Attributed to disparities in health & health care

Areas of Disparity

1. Health status
    - Risk factors
2. Incidence & prevalence of disease
3. Mortality rates
4. Access to, and utilization of, quality of care
    - Appropriate and timely treatment
5. Treatment outcomes
    - ↑ rates of disability
6. Disease burden
    - ↑ hospitalization rates
    - ↑ health care costs
    - ↑ costs of caregiving

Health and Health Care Disparities

What is health disparity?

- A higher burden of illness, injury, disability, or mortality experienced by one group relative to another.
- A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage.
- Disparity exists if a health outcome is seen to a greater or lesser extent between populations.

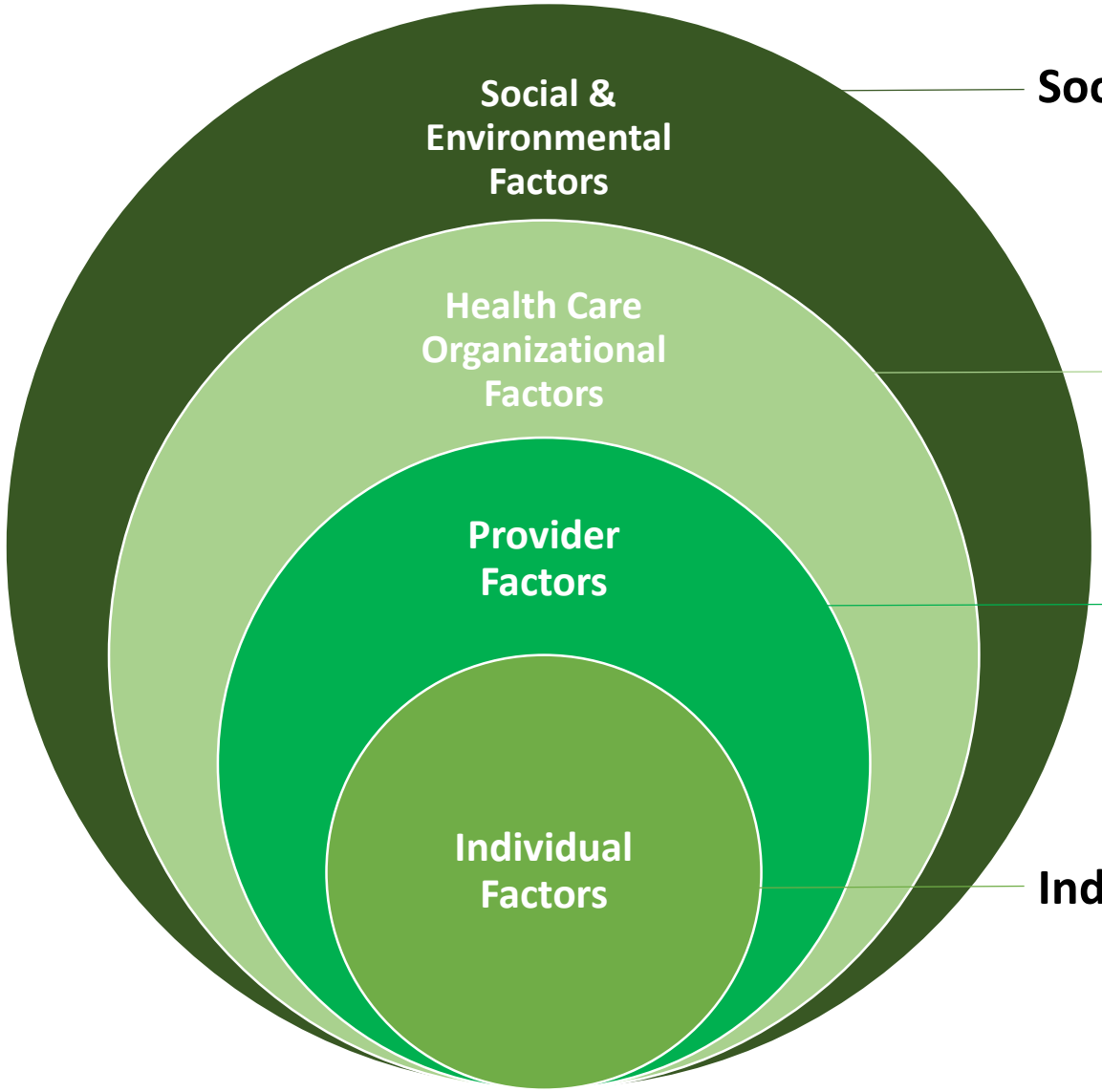
Health & Health Care Disparities

- Health care disparity
  - Differences in:
    - health insurance coverage
    - access to and use of care
    - quality of care
- Health and health care disparities
  - Differences that cannot be explained by:
    - variations in health needs
    - patient preferences
    - treatment recommendations
- Highly influenced by determinants of health
  - personal, social, economic and environmental factors
  - impacts individual and population health

Who's vulnerable to disparity?

- Race/ethnicity
  - People of color
- Age
  - Children
  - Older adults
- Gender
  - Women
- Socioeconomic Status
  - Low education
  - Low income
- Geographic location
  - Rural vs. Urban
  - Urban vs. inner-city
- Disability status
  - Those with special health care needs
  - Disabled
- Language
  - Spoken languages
  - American Sign Language (ASL)
- Sexual orientation
- Citizenship status
  - Differences based on length of time in the country, primary language, and immigration status

Determinants of Health: Factors that shape disparities



Social and environmental factors

- Forces outside the health care system affect individuals' health and ability to engage in healthy behaviors.

Health care organizational factors

- How health care is organized, financed, and delivered

Provider factors

- provider interactions
- provider bias
- cultural and linguistic barriers to patient-provider communication

Individual factors

- attitudes and beliefs
- perceived vs. actual/potential racial discrimination or bias in the health care system
- cultural identity

Disparities impact everyone

- Population is growing and becoming more diverse
- Limited gains in quality of care
- Unnecessary health care spending
- Poorer outcomes

What lies beneath

- Denial of disease
  - lack of awareness of susceptibility, incidence, and prevalence
- Lower health literacy
  - lack of education on risk factors & signs of stroke
  - lack of awareness/recognition of stroke symptoms
- Perceived or actual racial discrimination
- Cultural and language barriers
- Mistrust of the health care system
- Fatalism on prevention and treatment efforts
- Poor utilization – or overutilization – of medical services

Stroke Disparities

1. Greater Prevalence of Stroke Risk Factors

- Racial/ethnic minority groups experience higher rates overall

  - Stroke Risk Factors:
    - Hypertension – single most important modifiable risk factor
    - Diabetes
    - Heart Disease/A-fib
    - Lifestyle factors
      - Unhealthy diet
      - Lack of physical activity
      - Obesity
      - Tobacco & alcohol use
    - High Cholesterol

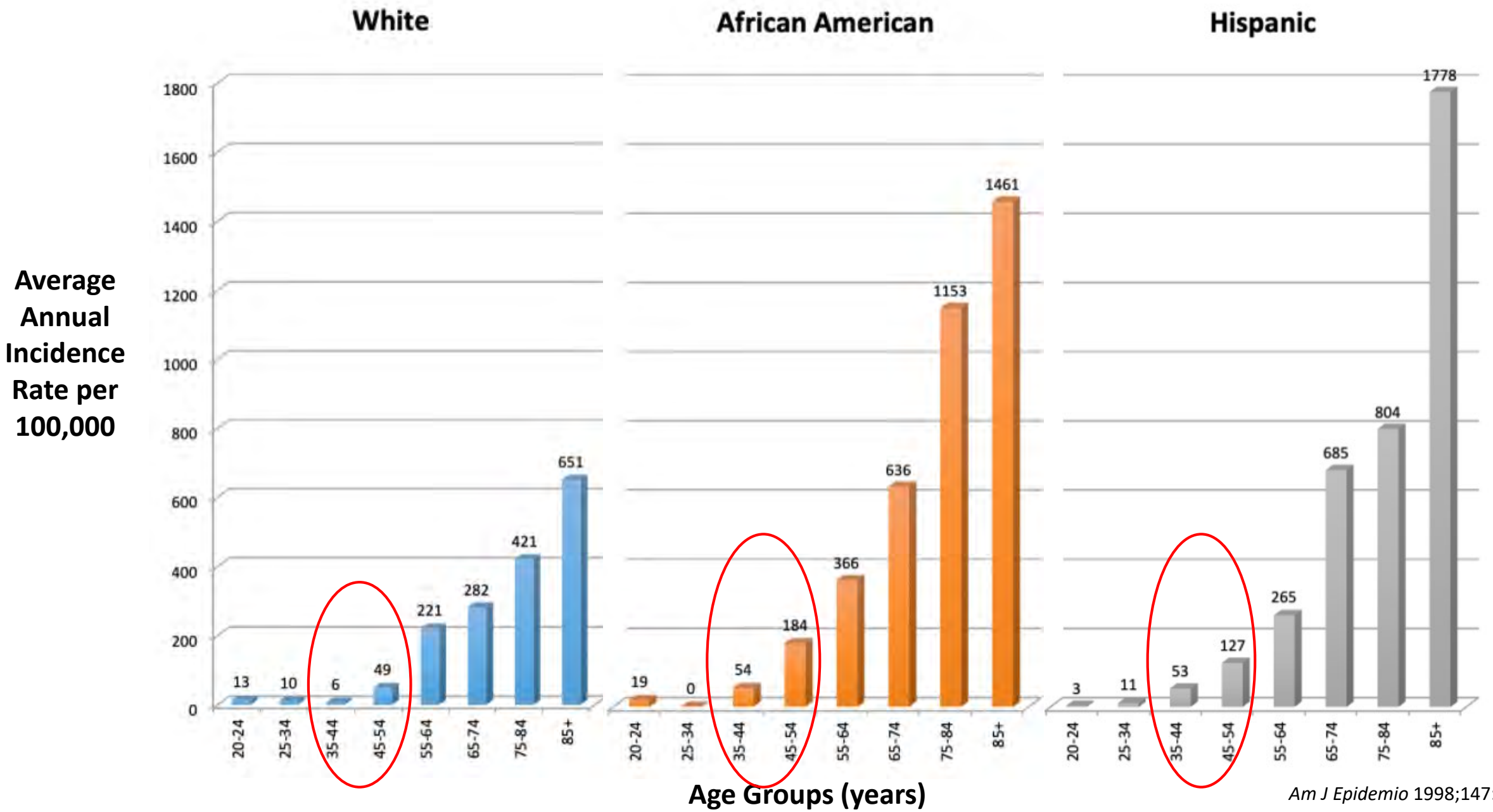
- Contributes to ↑ rates of stroke incidence & mortality

Stroke Risk Factors & Disparities

- Hypertension
  - 42% of African Americans have high blood pressure
    - ↑ rates compared to all other groups
  - Hispanic/Latinx are less likely to monitor BP/know BP level
- Diabetes
  - ↑ prevalence - African American, Hispanic, and Native American groups
- Disproportionate impact on younger age groups
  - significant ↑ in hypertension, obesity, diabetes, lipid disorder, and tobacco use
- Differences in presentation of risk factors
  - Women with stroke
    - higher prevalence of hypertension, A-fib, and pre-stroke disability

2. Increased Stroke Incidence

- Greater impact on
  - Racial/ethnic groups
    - Risk of having a first stroke is nearly twice as high for African Americans than Whites
  - Low education groups
    - Those with less than high school education
      - 3x more likely to have a stroke than those with college education
  - Younger age groups
    - Nearly one third (32%) of strokes occur among adults aged 35–64 years



Am J Epidemio 1998;147:259-68

3. Greater Rates of Mortality

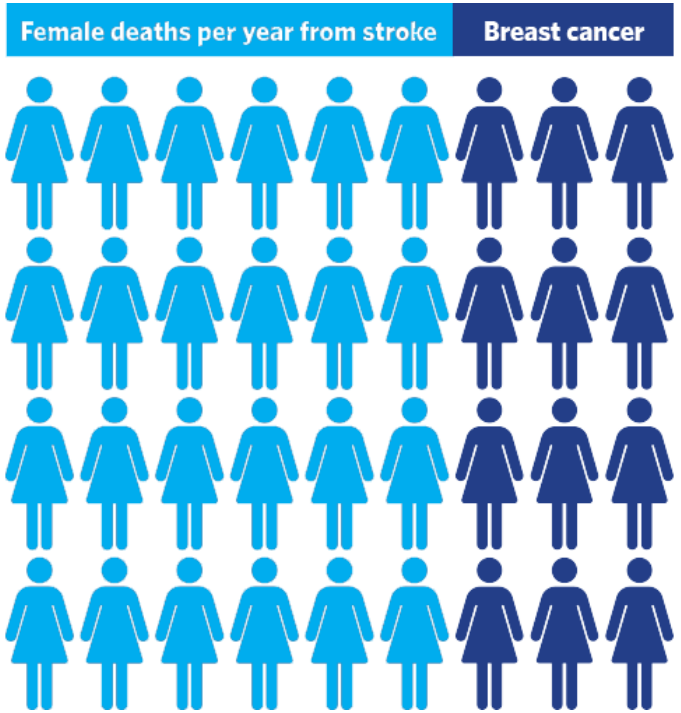
- African Americans – 3rd leading cause of death
  - Highest stroke death rate compared with other racial/ethnic groups
    - Stroke mortality 40% higher than Whites
    - Younger AA (aged 35-64) have 3 - 4x the risk of dying from stroke than Whites of the same age
      - ↑ prevalence of hypertension, diabetes and lower socioeconomic status

- Hispanics – 4th leading cause of death
  - Stroke death rate trend reversed
    - 2000–2013 - 3.6% **decline** per year
    - 2013–2015 - 5.8% **increase** per year

Women and Stroke

- 3rd leading cause of death
  - 60% of stroke deaths
  - Stroke kills twice as many women as breast cancer

- 1 in 5 women will have a stroke in her lifetime
  - 55,000 more women have strokes than men
  - African American women are nearly twice as likely to have a stroke as White women
    - ↑ hypertension, obesity, & diabetes



4. Poorer Utilization of Stroke Treatment

- tPA treatment - low nationally: 2.4%
  - Certain groups less likely to receive tPA
    - African Americans - 1.8%
    - Older adults, women & low education/income groups

- Barriers to utilization
    - Knowledge that treatments exist
    - Recognition of stroke symptoms
    - Awareness of need to take action
      - Calling 911*
    - Pre-hospital delay
    - Hospital delay

Geographic differences in utilization

- Geographical barriers
  - Proximity to/availability of health providers
  - Transportation
  - Insurance coverage
  - Financial resources

- Regional variations in tPA use

Skolarus et al. *Stroke* 46.7 (2015): 1890-1896

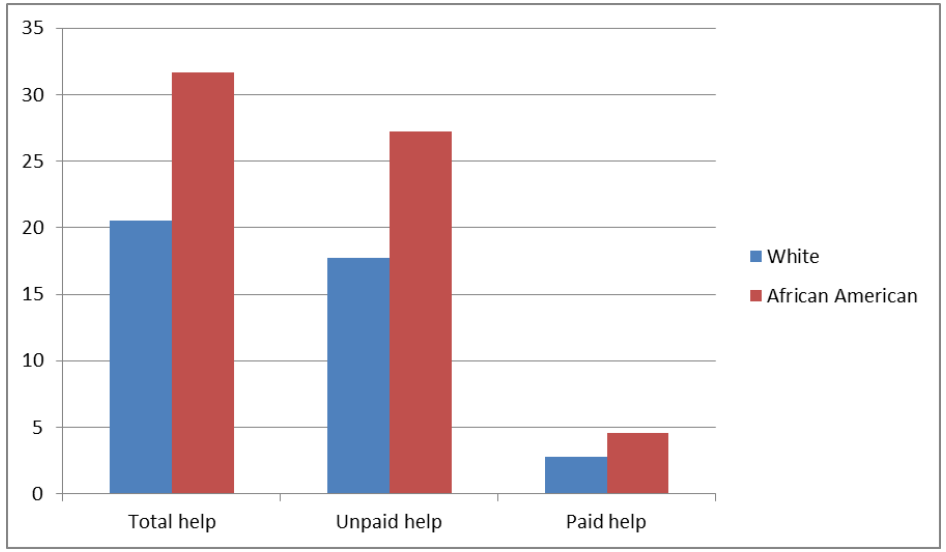
5. Poorer Outcomes Post-Stroke

- Greater likelihood of depression, poorer quality of life, increased risk of institutionalization
  - Examples:
    - African Americans
      - Greater level of stroke severity
      - Higher rates of post-stroke disability
      - Greater likelihood of second stroke
      - Poorer rates of follow-up
    - Women
      - Poorer functional outcomes
      - More depression
      - Lower quality of life
      - Greater likelihood of institutionalization

6. Increased Burden of Stroke

- ↑ Hospitalization rates
  - African Americans - almost double the rate of Whites
  - Increasing impact on younger people
    - Approx. 34% are < 65 years old

- Annual economic burden
  - Costs for stroke care - $34 billion
  - Caregiving costs - $40 billion
  - + financial burden of racial disparities - $24 billion
    - more chronic conditions
    - lower average education
    - correlated with poorer health & premature death



Racial differences in hours of weekly help

Burke, J., et al. Neurology. 83(5):390-397, July 29, 2014.

What’s next?

How do we address disparities in stroke?

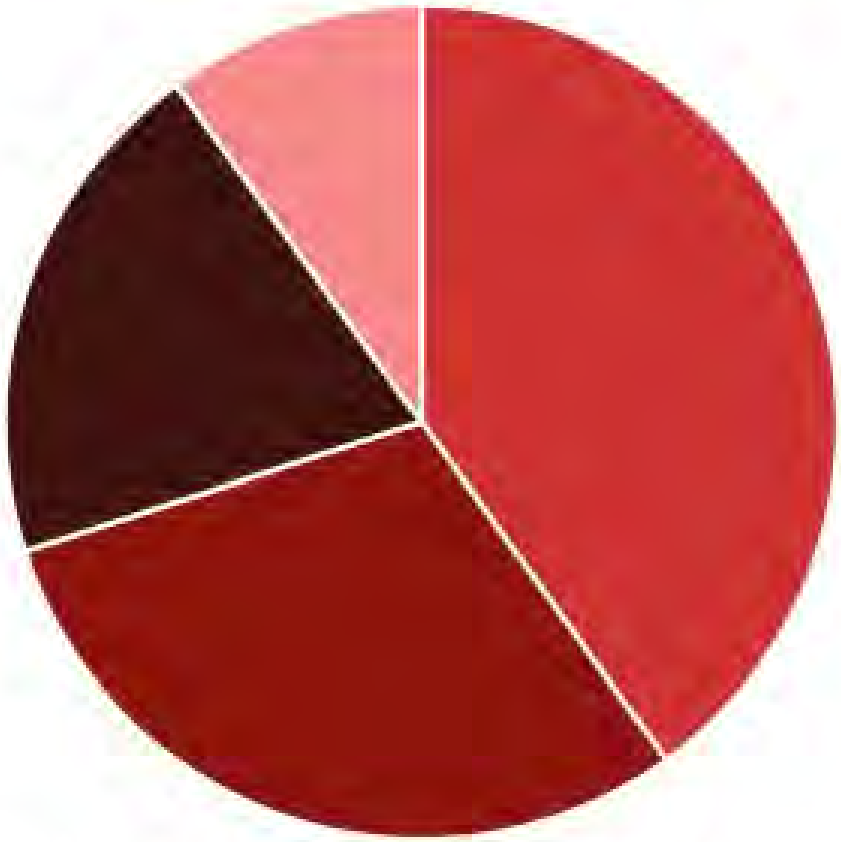
Reducing Stroke Disparities:

A national, state, & local priority

- Develop, implement, and evaluate interventions to prevent cardiovascular diseases and their risk factors.
- Decrease disparities in stroke care and overall burden of stroke on individuals, families, communities, and businesses.
- Build community capacity to implement policies for change.
- Increase adoption & dissemination of evidence-based interventions among racial & ethnic minority populations.

We can’t do it alone

- Socio-economic factors, 40%
- Health behaviors, 30%
- Healthcare, 20%
- Physical environment, 10%



Social determinants’ role in health

Source: University of Wisconsin, Population Health Institute, percentage estimates of impact on patient health.

Where do we begin?

1) Create a shared vision and value of health equity

2) Increase community capacity to shape health outcomes

3) Foster multi-sector collaboration

4) Address determinants across factor levels

FIGURE S-1 A conceptual model for community-based solutions to promote health equity.
The National Academies of Sciences, Engineering, and Medicine, 2017

Patients don’t say:
“I have a social determinant of health deficiency.”

They say “I’m hungry.”
They say “I don’t have a ride.”
They say “I’m lonely.”
And often times they say nothing at all.

Sachin H. Jain
President/CEO, CareMore Health System; Adjunct Professor, Stanford University School of Medicine
https://www.linkedin.com/feed/update/urn:li:activity:6528713249658142720


STROKE
READY

Flint, MI

- 2018 Population: 96,448
  - 2010: 102,434
  - 1960: 200,000
- Collapse of automotive industry, deindustrialization

- 60% African American
- 40% of population live in poverty
  - National 14.5%

Photo: Mott.org

Flint Demographics

	Flint, MI (% of population)	State of Michigan (% of population)
Education:		
Less than high school diploma	25.9%	11%
High school graduate	84%	90%
Bachelors degree	11.9%	28.1%
Unemployment Rate	9.7%	5.4%
Disability (> age 65)	18.1%	10.4%
Households without a motor vehicle	18.81%	7.97%
No insurance	11.9%	28.1%

- Additional factors:
  - Aging population
  - Aging provider population
    - Shortage
    - Difficulty attracting workforce
- **Water crisis**
  - Fear/concerns for safety
  - Uncertainty
  - Mistrust
  - Anger
  - Stress

Stroke disparities in Flint

- High stroke hospitalization rates
  - Genesee County 32.9/10,000
  - Michigan 27.1/10,000

- Low stroke treatment rates
  - Flint has the lowest acute stroke treatment rate of any community of its size in the US.
    - Average treatment rate of 2.2% - **half the national average**
    - Even the very best regions within Flint only perform at the national average (4.2%)

- Needs assessment conducted to determine underlying causes and barriers

A Shared Vision

- Community-academic partnership established to improve the cardiovascular health of Flint.
- Community-based participatory research (CBPR) approach
  - Research with a community
- Community partners and academic partners share decision-making power and project responsibilities

Community needs assessment

- 332 individuals at four churches
- Assessed:
  - Level of stroke preparedness
    - Recognition of signs of stroke and calling 911
  - Stroke self-efficacy
    - Confidence in ability to take action when seeing signs of stroke
- Both determined to be low
- High interest (>90%) in learning more about stroke

Individual and Community Determinants of Calling 911 for Stroke Among African Americans in an Urban Community

Lesli E. Skolarus, MD; Jillian B. Murphy, MPH; Marc A. Zimmerman, PhD; Sarah Bailey, MA; Sophronia Fowlkes, BA; Devin L. Brown, MD; Lynda D. Lisabeth, PhD; Emily Greenberg, BA; Lewis B. Morgenstern, MD

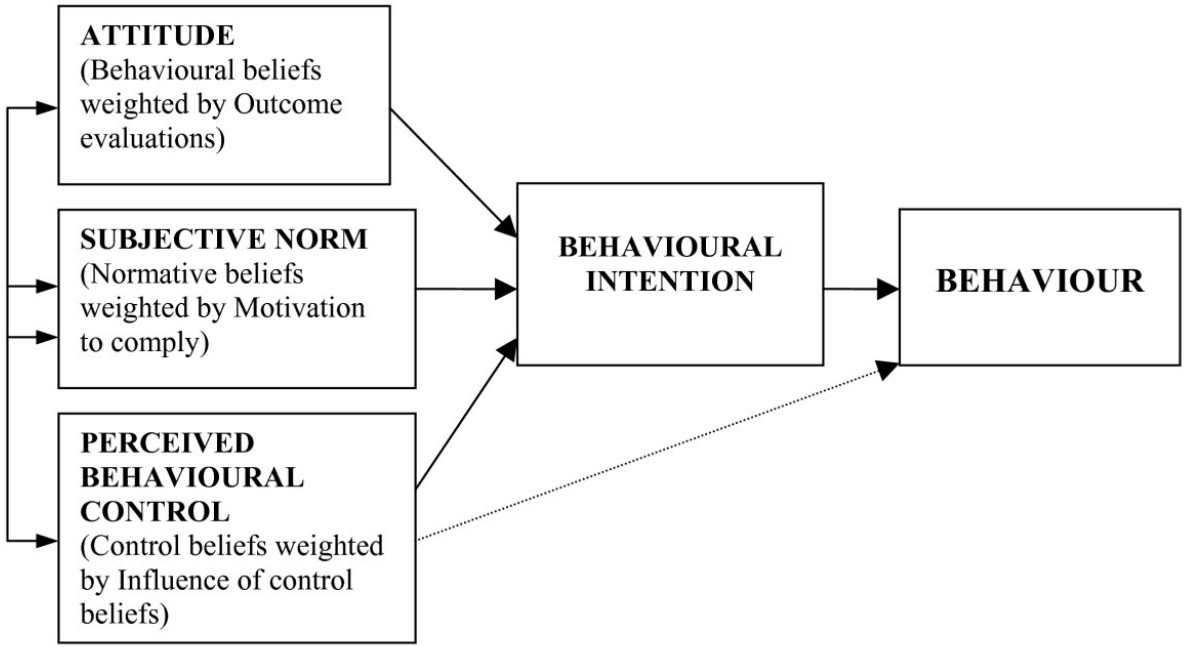
Stroke 2011 Jul; 42 (7): 1862-6

Pilot intervention

- PRAISE – faith-based stroke preparedness intervention
  - 3 predominantly African American churches
  - 2 educational workshops – 90 minutes each
    - Delivered by trained peer educators
  - Increased stroke preparedness & stroke self-efficacy
- Community feedback was obtained following the workshops to:
  - Explore barriers to access/utilization of care
  - Determine feasibility of a community-wide program

Behavior Change Theory

- Assessment of community feedback, guided by the Theory of Planned Behavior, led to recognition of barriers in the decision to call 911, which can significantly increase time to treatment.



Barriers to access/utilization of care

- Examples from community feedback:
  - “If I call 911, they won’t know what to do with me. I’ll be sitting in the ED forever.”
  - “There is nothing that can be done for a stroke.”
  - “I don’t know how to check for a stroke.”
  - “It costs too much to take an ambulance.”
- Limitations of current messaging (FAST) assessed.
- Led to development of the current *Stroke Ready* program.

What is Stroke Ready?

Stroke Ready is a community-based health promotion program that aims to educate and empower members of the Flint community to:

1. Recognize signs of stroke, and
2. Call 911 and get to the hospital for medical treatment as soon as stroke symptoms start!

Intervention Arms:	
Hospital	Community
• Partnered with local hospitals to improve & streamline stroke care procedures	• Partnering with local organizations to improve stroke preparedness community-wide

Overall goal: to increase acute stroke treatment rates in the Flint community.

Message Development

- Addressed barriers to current messaging (FAST)
  - Call 911 AND get to the hospital as soon as symptoms start.
  - There is medicine to treat stroke.

- Positive messaging perspective
  - Integrated into each component of the intervention
    - There is something that can be done for stroke. (e.g. Stroke is treatable)
    - Each person has the power to help someone they care about by calling 911.
    - Increasing the perception of having the ability to perform the behavior (of calling 911).
    - Stroke is not a secret worth keeping.

Pre-testing Stroke Ready

- Focus groups and interviews
  - 39 people from various community locations throughout Flint
- Participants were asked:
  - what feelings they attached to messages
  - what they thought of messages & pictures
  - understanding of content
- Feedback:
  - Preferred pictures of actual people
  - “stroke treatment is a limited time offer” message to “if you see any sign of stroke, Act FAST, and get treatment.”
  - Pictures of diverse groups of people

Community Partnerships

- Involvement of community partners and organizations
- Development of Community Advisory Board (CAB)
  - Provide invaluable insights
    - “This community has gone through a lot to test our trust.”
    - “Stroke is not a secret worth keeping”

Multi-sector collaboration:

- Any organizations that employ people!
- Support groups
- Churches & faith-based organizations
- Pharmacies
- Farmer's Markets
- Barber shops/beauty salons
- Laundromats
- Senior centers
- Soup kitchens/food banks
- Chamber of Commerce
- Neighborhood advocacy groups
- Community centers (YMCA)
- Civic organizations (Rotary, Lyons, etc.)
- Grocery stores
- Public libraries
- Primary and Secondary schools
- Universities, Colleges, Extension programs
- Community-academic partnerships
- Health Coalitions
- Communication organizations (movie theaters, radio, TV)
- Cultural organizations (art councils, community theaters)
- Area Agencies on Aging

Building community capacity: Peer educators

- 15 trained peer educators
  - Community members
    - Hired on a rotating basis dependent on needs of programming
    - Paid training
  - UM Flint Nursing students
    - Community Health clinical rotation
      - 3 during Fall term; 3 in Winter term; 2 Spring/Summer term
  - UM Flint MS Health Education intern
    - Interpreted intervention for Deaf community

STROKE READY

Peer educators in action!


TIME IS
EVERYTHING!
STROKE READY


AN OPEN DOOR
A HELPING HAND

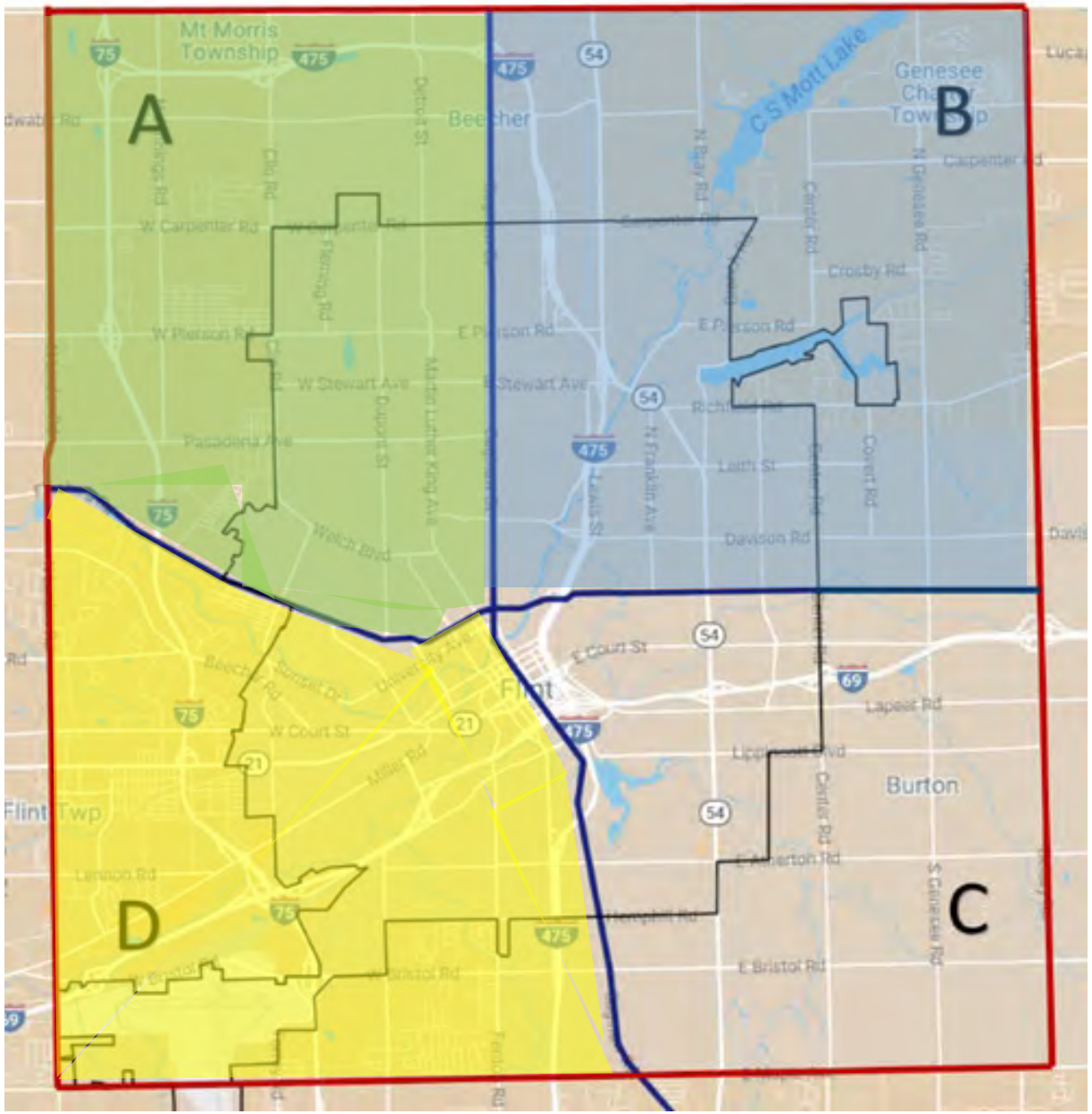

STROKE READY


TIME IS
EVERYTHING!


STROKE READY

Stroke Ready

Multi-level intervention



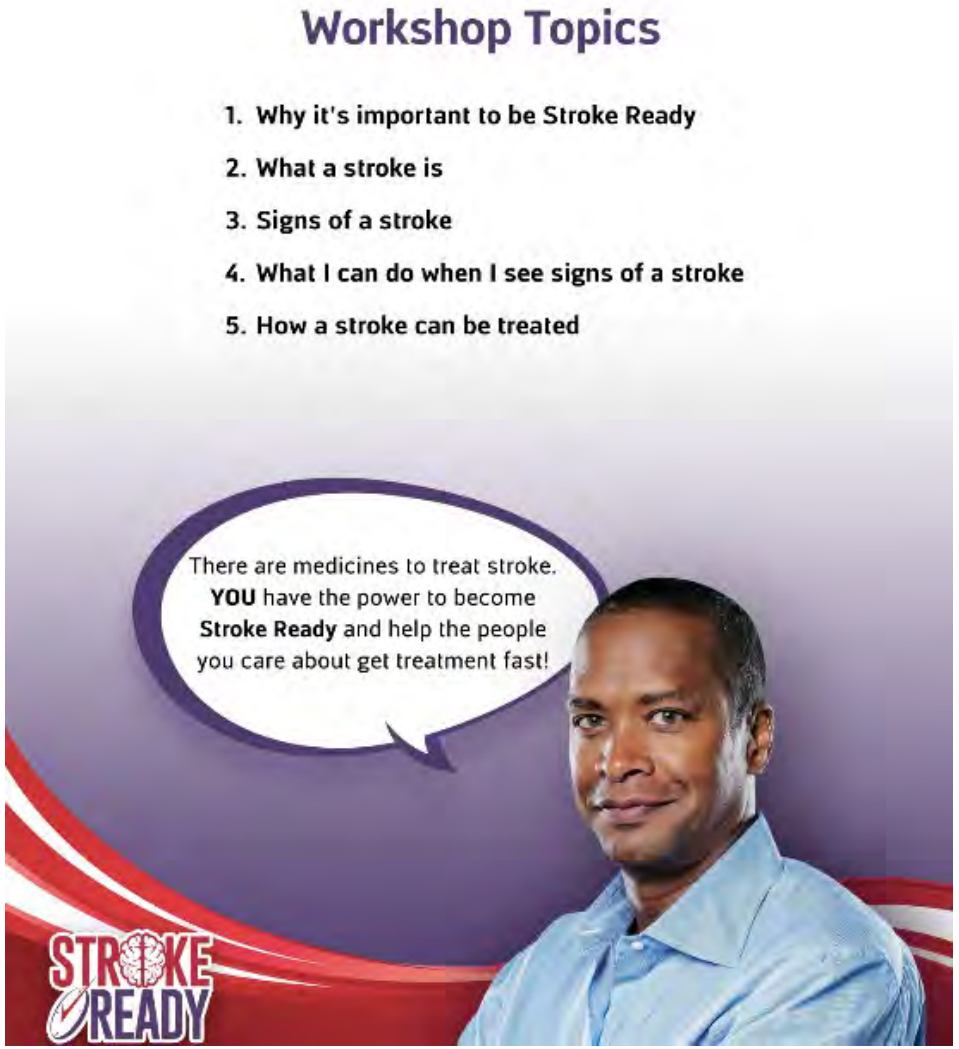
Flint Community

- Parameters
- Divided into 4 quadrants
  - Population differences by geographical area
  - Ease of implementation
  - Opportunity for adaptation
  - Ability to measure changes

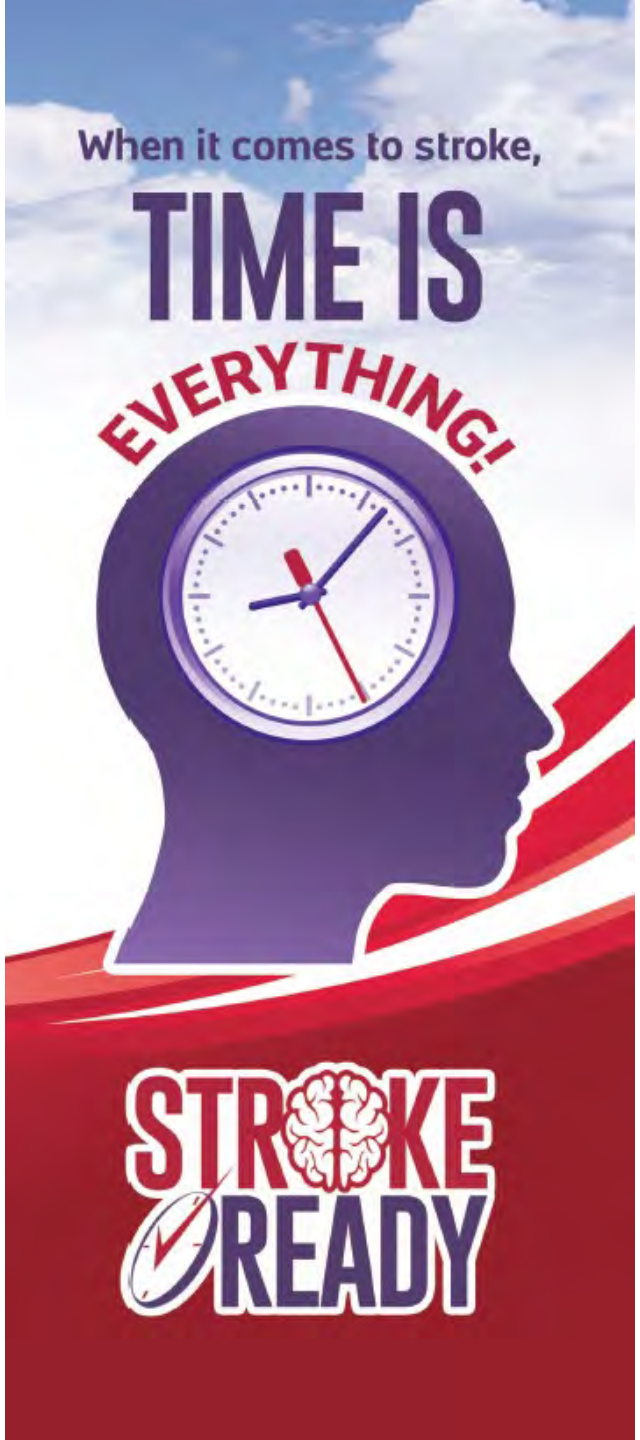
Community intervention methods

- Peer-led Workshops
  - Local peer educators deliver workshops
- Mailers
- Print, broadcast, digital & social media campaigns
  - Posters
  - PSAs (radio & TV)
  - Stroke Ready website
  - Facebook page
  - Instagram
  - Coasters
- Think Fast music video/song
  - English version
  - American Sign Language version with captioning

Workshops



- Workshops:
  - ❖ Free educational sessions delivered by a trained peer leader
- Variety of lengths
  - 60, 30, 15, and 5 minute length options
  - 60 & 30-minute: workbook, interactive activities, demonstration of what stroke is/how TPA works, and role play
  - 15 & 5-minute: brochure & action plan


When it comes to stroke,
TIME IS
EVERYTHING!
STROKE READY

STROKE...

1. ...is when a clot gets trapped in your brain and causes part of your brain to die.

2. Stroke Happens

- Stroke is common!
- Someone has a stroke every 40 seconds.
- Disability caused by stroke can leave a person unable to do normal, everyday activities.

Stroke is an EMERGENCY!

THE LONGER A STROKE GOES WITHOUT TREATMENT, MORE OF THE BRAIN DIES!

STROKE... IT'S NOT A SECRET WORTH KEEPING

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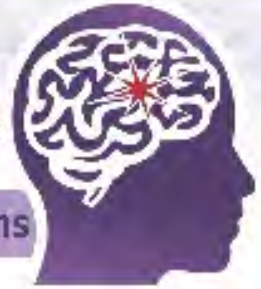

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3. Don't be silent about signs of stroke!
If any of these signs suddenly happen, act FAST:

F

Face Drooping
- Uneven face
- Crooked smile
- Uneven eyebrows
- Face/smile looks twisted

How To Check:
- Have the person smile.
- Is one side of their mouth drooping?
- Is one eye drooping?

A

Arm Weakness
- Weakness on one side
- Dropping things
- Can't lift arm
- One side shutting down

How To Check:
- Have the person raise both arms.
- Does one arm drift down?
- Are they dropping things?

S

Speech Difficulties
- Slurred speech
- Sentences are mixed up
- Trouble finding words
- Trouble understanding

How To Check:
- Have the person repeat a sentence.
- Are their words mixed up?
- Is their speech slurred?
- Do they have trouble answering a question?

Have you noticed any of these stroke signs?

T

Time To Call 911!

Get to the hospital **as soon as stroke symptoms start!**

Just one stroke sign is an emergency!

STROKE...

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Stroke is an EMERGENCY!

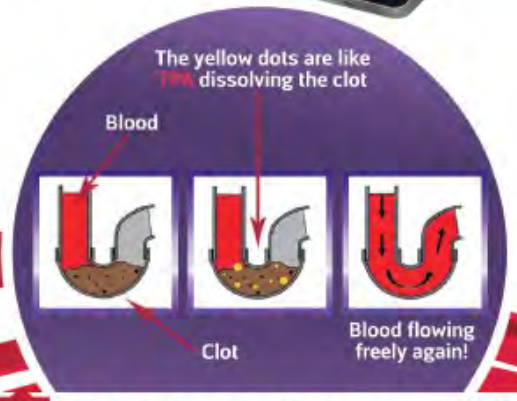
THE LONGER A STROKE GOES WITHOUT TREATMENT, MORE OF THE BRAIN DIES!

IT'S TREATABLE

4. There is **medicine,** called TPA, to treat stroke, – but it can ONLY be given at the hospital!

Remember: Time is everything!

- **Call 911** and get to the hospital as soon as stroke symptoms start!
- Faster treatment means better recovery.



5. TPA: The clot buster medicine

- Imagine the arteries in your brain are like pipes in your kitchen sink.
- Just like a clog in your kitchen pipes, during a stroke, a clot gets trapped and stops blood from flowing to parts of your brain.
- **TPA** is a medicine that dissolves the clot so that blood can flow freely through the brain again!


6. When you know the facts, you can react!
Over 100,000 people have been helped by getting the clot buster medicine because they spoke up!
Join them!
It's Easy as 1,2,3!
1 Recognize the signs of a stroke
2 Call 911 and get to the hospital fast
3 Write down the time symptoms started
STROKE READY
For more information log on to www.STROKEREADY.com

STROKE READY Action Plan

I, _____ ,
(write your name here)
make this pledge to myself and those I care about, that I am Stroke Ready to act FAST!

There are medicines to treat stroke!

I know that I need to **act FAST** if I see someone having any sign of stroke:

F ace drooping
A rm weakness
S peech difficulty
T ime to CALL 911!

If I see any of these signs, I will CALL 911 and get to the hospital as soon as symptoms start!

Signature: _____

Date: _____

Steps to follow:

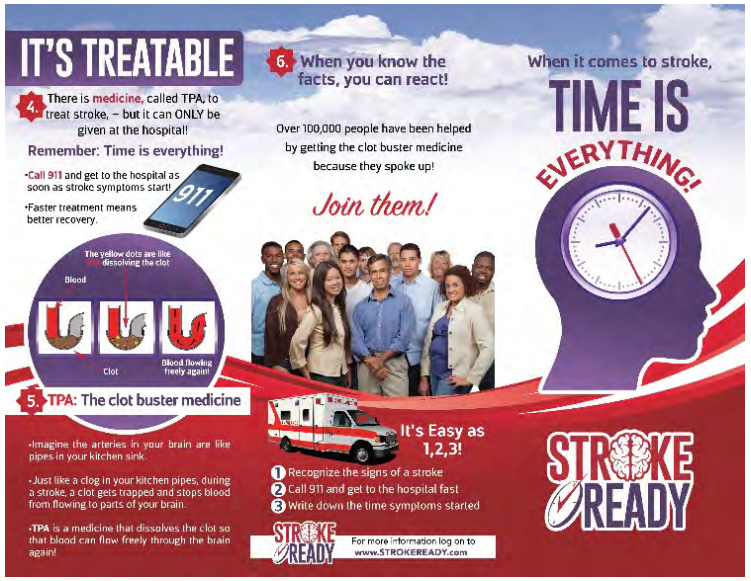
1. **Tell the 911 operator I think I am, or someone else is having a stroke.**
2. **Tell the 911 operator the address for where to send the paramedics.**
   - Since stroke can happen anywhere, where are places I spend time I might see someone having a stroke?
   - ☐ My home ☐ Work ☐ School
   - ☐ A Friend's or Relative's house
   - ☐ Other _____
3. **Write down, on paper or in my phone:**
   - ☐ The sign(s) of stroke the person is having
   - ☐ What TIME it was when stroke symptoms started
4. **Stay with the person until the paramedics arrive to take them to the hospital.**
5. **Tell the paramedics to alert the hospital that this person could be having a stroke.**
6. **Tell the paramedics what TIME it was when stroke symptoms started.**
7. **Take a deep breath! I've helped this person have a better chance of making a full recovery from stroke by getting them to the hospital FAST!**

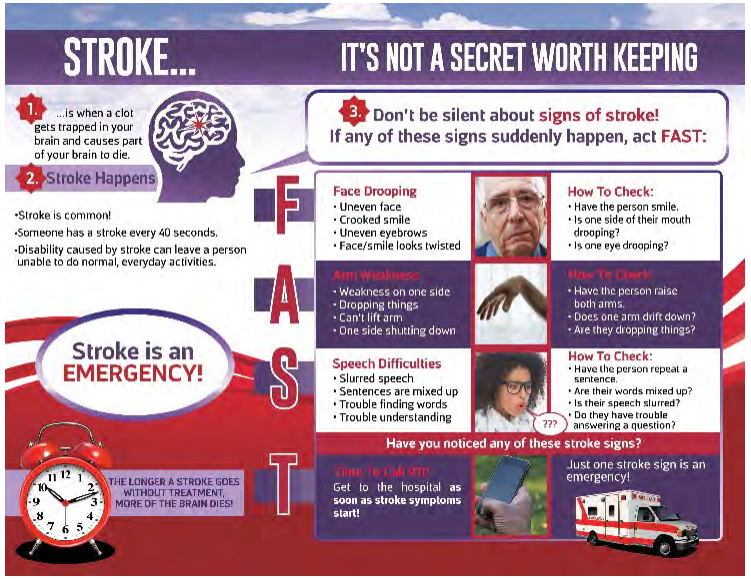
STROKE READY

For more information log on to www.STROKEREADY.com

Mailers

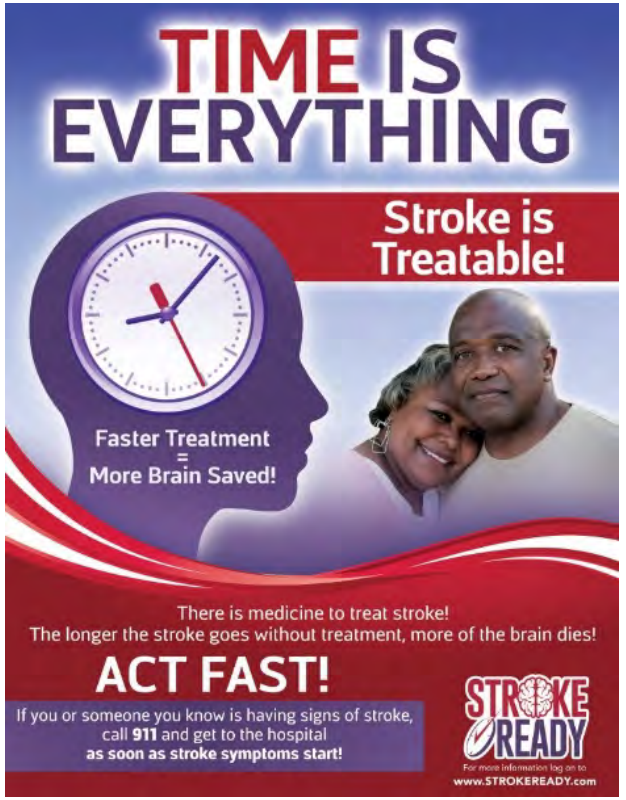
- Sent to all residential addresses within the Flint city limits.
  - Brochure
  - Action Plan
  - Magnet
  - Information letter





Posters

- Posters are displayed at local businesses, churches, etc., within each quadrant



Broadcast media

- Stroke Ready Public Service Announcements (PSAs)
  - 2 PSAs being played on local radio stations and public access TV channel
    - 92.7 FM – Urban Adult Contemporary
    - 1420 AM WFLT – Urban Gospel
    - 92.1 FM WFOV – Community Radio

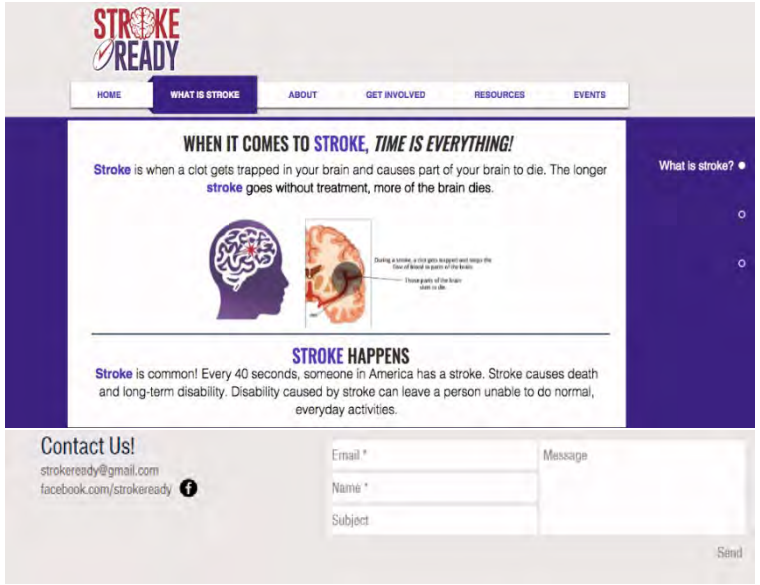
Digital/Social Media

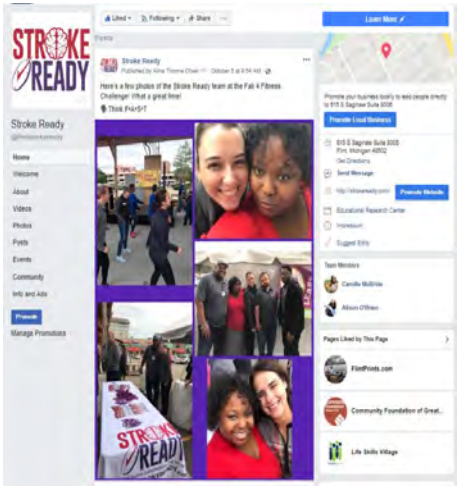
Website

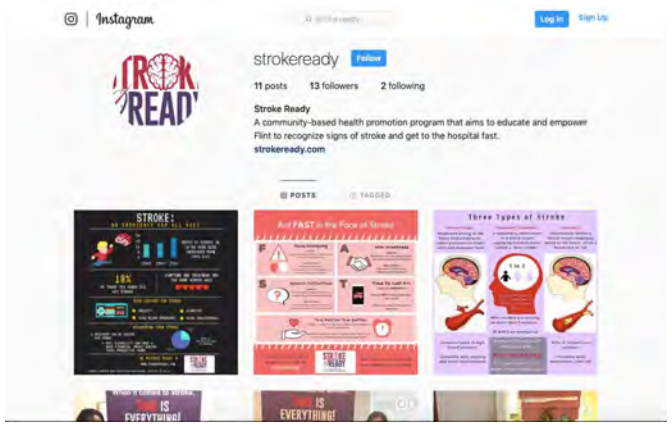
- www.StrokeReady.com
- Platform for all intervention components in one place

Facebook & Instagram

- Facebook.com/flintstrokeready
- @StrokeReady







Think Fast Music Video

- Composed and performed by Flint community members
- Lyrics reinforce stroke preparedness messaging
- Video component also reinforces recognition of signs of stroke.

  https://youtu.be/C_-jWApPmFE

- Shortened version played on radio stations

Adapting the Think Fast Music Video: Responding to the Community's Needs

- Collaborated with Hands of Praise Deaf Ministry & Choir to interpret Think Fast song for Deaf & Hearing-Impaired residents of the Flint community

Coasters

- Brainstorming with Community Health nursing students
- Distributed to restaurants in Flint

What we've done

- Creation of shared vision & community partnerships

What we've done

- **Creation of shared vision & community partnerships**
- Time taken to understand underlying factors & barriers
    - Lack of awareness of:
        - susceptibility, incidence, and prevalence of stroke
        - existence of treatment
        - signs of stroke/how to recognize them

What we've done

- **Creation of shared vision & community partnerships**
- **Time taken to understand underlying factors & barriers**
- All messages and materials were tailored to the community's educational needs
    - Stroke is very common here & these are the consequences
    - There's something you can do about it
    - It's treatable!
    - It's easy to remember & recognize stroke symptoms using FAST
    - Increasing awareness of need to take action/reducing pre-hospital delay
    - Describing how tPA works and comparing it to something relatable

What we've done

- **Creation of shared vision & community partnerships**
- **Time taken to understand underlying factors & barriers**
- **All messages and materials were tailored to the community's educational needs**
- Provided concrete examples & action steps
    - One stroke sign is an emergency
    - Ways you can check for signs of stroke
    - Treatment can ONLY be given at the hospital
    - Call 911 & get to the hospital as soon as symptoms start!
    - Action Plan card

What we've done

- **Creation of shared vision & community partnerships**
- **Time taken to understand underlying factors & barriers**
- **All messages and materials were tailored to the community's educational needs**
- **Provided concrete examples & action steps**
- Reinforced messaging across all materials

Lessons Learned

- Community partnerships are the key to success!
- Encourage feedback from community members
  - Listen to it!
- Ongoing assessment of what's working & what isn't
- Adapt your programming as appropriate

- Examples:
  - Community sponsored events
  - 5-minute intervention
  - 15-minute workshop
  - Deaf music video
  - Coasters

Where do we go from here?

Tying it all together

No ‘one’ of us has all of the answers!

- Recruit & partner with people from groups representative of those you serve
- Determine the needs of the community
  - Needs assessment
- Assess the strengths of the community
  - Network & partner with community organizations and thought-leaders
    - Find out what programs exist
    - Avoid duplication of efforts
    - Determine how you can collaborate

- Develop – and UTILIZE – networks to adequately address health disparities, across and throughout the continuum of care!

Community Ownership

- Local ownership of the project increases opportunities for acceptance, dissemination, implementation and future sustainability.

- Essential that health communication materials and messaging resonate with the community
  - Culturally-appropriate and relevant
  - Community reach and buy-in

- Involvement of peer leaders or community health workers

Community-Academic Partnerships

Benefit to the University	Benefit to the Community
"The university benefits by having gained access to community members through trusted partner organizations and having the ability to learn how to adapt to meet people's needs in order for interventions to be successful."	"Partnering on research projects helps community organizations to take measured risks and think outside of the box and helps organizations to evaluate their work and find out which components are the most impactful."

Executive Director
Presbyterian Villages, Flint, MI

Resources – refer to handout provided

- Funding resources
  - Recommendation: Develop strong community partnerships and co-apply for grants
- Links for evidence-based resources
- Examples of evidence-based interventions

Thank you!!

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