Stroke: A Public Health Issue

American Heart Association / American Stroke Association
Cryptogenic Stroke Conference
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APHA is a global community of public health professionals and the collective voice for the health of the public. APHA is the only organization that combines 140 years of perspective, a broad-based constituency, and the ability to influence federal policy to advocate for and improve the public’s health.

Founded April 18, 1872
What Is Public Health?

“The science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals” (1920, C.E.A. Winslow).

• It is concerned with threats to health based on population health analysis

• The population in question can be as small as a handful of people or as large as the inhabitants of several continents
What Public Health Does

- Evaluate
- Monitor Health
- Diagnose & Investigate
- Inform, Educate, Empower
- Mobilize Community Partnerships
- Develop Policies
- Enforce Laws
- Link to / Provide Care
- Assure Competent Workforce
- System Management
- Research

Assurance
Assessment
Policy Development
Definition: Population Health

“The health outcomes of a group of individuals, including the distribution of such outcomes within the group”

David Kindig, MD, PhD & Greg Stoddart, PhD

The field of population health includes health outcomes, patterns of health determinants, and policies and interventions that link these two. It is different from public health, health promotion, and social epidemiology.
Leading Causes Of Death

- Heart disease: 611,105
- Cancer: 584,881
- Chronic lower respiratory diseases: 149,205
- Accidents (unintentional injuries): 130,557
- Stroke (cerebrovascular diseases): 128,978
- Alzheimer's disease: 84,767
- Diabetes: 75,578
- Influenza and Pneumonia: 56,979
- Nephritis, nephrotic syndrome, and nephrosis: 47,112
- Intentional self-harm (suicide): 41,149

CDC 2013
The Stroke Problem In The U.S.

- 800,000 new or recurrent strokes yearly
- $34 Billion annual costs
- 87% ischemic; 13% hemorrhagic
- Fifth leading cause of death
- A leading cause of serious long-term disability in the US
- 200,000 are cryptogenic

Ischemic subtypes:
- 20% Cardioembolic
- 30% Large Vessel
- 30% Cryptogenic
- 15% Small vessel
- 5% Other
Disability Associated With Stroke

- Remaining hemiparesis: 50%
- Unable to walk without assistance: 30%
- Cognitive deficits: 46%
- Depressive symptoms: 35%
- Aphasia: 19%
- Dependent on others: 26%
- Institutionalized: 26%

Significant Health Disparities Exist

Stroke, Age-Adjusted Death Rates per 100,000 Persons by Race & Hispanic Origin: U.S., 2005. CDC, NCHS, 2007
Prevention Works

An ounce of prevention is worth a pound of cure.
-- Benjamin Franklin
### Three Levels of Prevention

<table>
<thead>
<tr>
<th>Disease:</th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>General or At-risk</td>
<td>Exposed or Early disease</td>
<td>Advanced disease or Complications</td>
</tr>
<tr>
<td>Goal</td>
<td>↓ new cases</td>
<td>↓ severity ↓ complications</td>
<td>↓ impact ↓ deaths</td>
</tr>
<tr>
<td>Rationale</td>
<td>↓ risk by ↓ exposure</td>
<td>Early identification allows earlier treatment</td>
<td>Minimize impact of disease on person</td>
</tr>
<tr>
<td>Interventions</td>
<td>Education Prophylaxis Health promotion</td>
<td>Screening Early treatment Access to care</td>
<td>Treatment Rehabilitation</td>
</tr>
<tr>
<td>Evaluation (Outcomes)</td>
<td>↓ incidence of exposure</td>
<td>↓ incidence of disease ↓ morbidity</td>
<td>↓ prevalence ↓ morbidity ↓ mortality</td>
</tr>
</tbody>
</table>
Importance of Secondary Ischemic Stroke Prevention

Recurrent Stroke Rate Among Patients Discharged With a Primary Diagnosis of Stroke, South Carolina, 2002 (N=10,399)

- 1 month: 1.8%
- 6 months: 5%
- 1 year: 8%
- 4 years: 18.1%
Stroke Is Treatable
Public Awareness Is Essential

**FAST**

- **FACE**: Does the face look uneven?
  - ask the person to smile.

- **ARM**: Does one arm drift down?
  - ask the person to raise both of their arms.

- **SPEECH**: Does their speech sound strange?
  - ask the person to repeat a simple phrase, such as, "the grass is green."

- **TIME**: If you notice any of these signs, it's time to call 9-1-1!
  - call 9-1-1 if any of these signs are observed.
Stroke Is Preventable

- 80% can be prevented
- Long term morbidity can be mitigated
- Preventive steps include
  - Hypertension control
  - Tobacco control
  - Salt reduction in food
  - Lowering cholesterol
  - Weight control
  - Physical activity
Shifting To Multidisciplinary Interventions Beyond Health Care

Population Based Stroke Interventions

Physical Inactivity

- Building walkable, bikeable communities
- Fix playgrounds
- Reinstate physical activity in school
Population Based Stroke Interventions

Nutrition

- Eliminating trans fats
- Menu labeling
- Reducing the salt in food
- Cholesterol reduction
- Eliminating food desserts
Population Based Stroke Interventions

Tobacco Control

- Tobacco is the number one preventable cause of death
  - 400,000 deaths
  - Numerous morbidities
- Starts in early adolescence & adulthood
- Costs everyone
- There are individual & community based solutions
  - Health education
  - Cessation therapy
  - Smoke free policy & laws
  - Reduce access to youth
Population Based
Stroke Interventions

Blood Pressure Control

• Early identification & population based screening
• Individual factors
  – Self monitoring of BP
  – Weight control
  – Tobacco
  – Salt reduction
• Environmental stress reduction
Questions
ABOUT APHA
The American Public Health Association champions the health of all people and all communities. We strengthen the profession of public health, promote best practices and share the latest public health research and information. We are the only organization that influences federal policy, has a 140-plus year perspective and brings together members from all fields of public health. Learn more at www.apha.org.