

STROKE PREVENTION AND MANAGEMENT

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2014

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GUIDELINES.

STROKE

TARGET STROKE HONOR ROLL

GOLD PLUS



American
Heart
Association



American
Stroke
Association

**American Heart Association/American Stroke
Association**

Target Stroke Gold Plus Achievement Award

National recognition for following treatment guidelines in certain key measures at least 85 percent of the time, maintaining this performance level for 2 years

Gold Plus Quality Award

75% compliance to 7 out of 10 stroke quality measures during the 12 month period

Stroke “Brain Attack”

- ◆ “Stroke” is a term used to describe acute neurological changes lasting more than 24 hours by interruption in blood flow to a part of the brain.
- ◆ If blood flow ceases for an extended period of time the cerebral tissue involved dies, causing permanent neurological deficits.
- ◆ The penumbra is the area surrounding the infarct brain tissue.

Types of Stroke

- ◆ **Ischemic Stroke** (84% -86%)

Ischemic strokes are due to a blockage of the artery resulting in reduction of blood flow and cell death.

- ◆ **Hemorrhagic** (13%)

Occurs due to bleeding into the parenchyma of the brain.

TIA (Transient Ischemic Attack)

- ◆ TIA is a focal event: " a transient episode of neurologic dysfunction caused by focal brain, spinal cord, or retinal ischemia without acute infarction."
- ◆ TIA is a medical emergency.
- ◆ The Risk for a stroke after TIA is higher than thought.....
 - 10-15% patients have a stroke within 3 months, with half occurring within 48 hrs.

- Source: American Heart Association/American Stroke Association

Statistics

- ◆ Stroke is the 4th leading cause of death in the USA
- ◆ The leading cause of serious long term disability
- ◆ Each year approximately 795,000 people suffer a stroke
- ◆ 600,000 of these are first attacks
- ◆ 185,00 are recurrent attacks
- ◆ On average someone in the US has a stroke every 40 seconds
- ◆ Stroke cost the United States an estimated \$36.5 billion each year. This total includes the cost of healthcare services, medications to treat stroke and missed days of work.

Why the need for Prevention?

- ◆ 80% of strokes are preventable.
- ◆ Stroke survivors are at a high risk for another stroke, there is a high risk of recurrent stroke 1:5 recurrence in 3 months.
- ◆ 1:4 (25%-35%) of the 795,000 Americans who have a stroke each year will have another stroke within their lifetime.
- ◆ Mortality and disability after a recurrent stroke is higher than after the first stroke.
- ◆ It is projected that over the next 20 years the cost for treating stroke will rise.

Risk Factors and Management

□ **Transient Ischemic Attack (TIA):**

- ◆ Is an important predictor of stroke.
- ◆ The 90-day risk of stroke after a TIA has been reported as being as high as 17% with the greatest risk apparent in the first week.
- ◆ The distinction between TIA and ischemic stroke has become less important in recent years because the preventive approaches are applicable to both.

Risk Factors and Management

- **Hypertension the major cause of Stroke:**
Defined as a systolic blood pressure >140 mm Hg or diastolic >90 mm Hg.
Meta analysis of randomized controlled trials have shown that BP lowering is associated with a 30% to 40% reduction in stroke.

Recommendations:

BP reduction is recommended for both prevention of recurrent stroke and prevention of other vascular events in patients who had an ischemic stroke or TIA and are beyond the first 24 hours. (*Class 1; Level of Evidence A*)

This benefit extends to persons with or without a documented history of hypertension.

(An absolute target BP level and reduction should be individualized
(See 2014 Hypertension Guideline Management Algorithm))

Hypertension

Recommendations:

- ◆ Several life style modifications have been associated with BP reduction and are a reasonable part of a comprehensive antihypertensive therapy. (*Class 1a; Level of Evidence C*)

Examples are:

- ◆ Salt restriction
- ◆ Weight loss
- ◆ A diet rich in fruits and vegetables
- ◆ Low fat dairy products
- ◆ Regular aerobic physical activity
- ◆ Limited alcohol consumption
- ◆ The optimal drug regimen to achieve the recommended level of reduction.

The available data indicate Diuretics and ACEI are useful (*Class 1; Level of Evidence A*)

Diabetes

- ◆ It is estimated to affect 8% of the adult population in the United States.
- ◆ Prevalence is 15%-33% in patients with ischemic stroke.
- ◆ 9.1% of recurrent stroke has been estimated as being attributable to diabetes.

Recommendations:

- ◆ Use existing guidelines for tighter glycemic control and BP targets in patient with diabetes. Diet ,exercise, oral hypoglycemic drugs, and insulin are recommended to gain glycemic control.

Cigarette Smoking

- ◆ There is strong and consistent evidence that cigarette smoking is a major risk factor for ischemic stroke. The data broadly supports smoking cessation and is applicable to people who have already had a stroke or TIA.

Recommendations:

- ◆ Healthcare workers should strongly advise every patient with stroke or TIA who has smoked in the past year to quit.
(*Class 1;Level of Evidence*)

Avoid environmental (passive) tobacco smoke (Second hand smoke).

(*Class11a:Level of Evidence C*)

- ◆ Cessation Counseling, nicotine products, and oral smoking cessation medications are effective for helping smokers quit.

Atrial Fibrillation (AF)

- ◆ A major risk factor for stroke in the elderly.
- ◆ Women over 75 yo. are at greater risk than men, sometimes they are asymptomatic.
- ◆ It is a treatable condition.

Management:

- ◆ Use the CHADS-2 Score for Stroke Risk Assessment in Atrial Fib.
- ◆ Provide anticoagulation therapy.

Newer anticoagulants such as: apixaban, diabigatran, and rivaroxaban, are superior to warfarin and safer.

Warfarin is effective but can be difficult to handle.

Lipids

Patients with ischemic stroke or TIA with elevated cholesterol or comorbid coronary artery disease should be otherwise managed according to NCEP III guidelines, which include lifestyle modification, dietary guidelines and medication recommendations.

- ◆ Patients who had a stroke or TIA who cannot tolerate statins, other medications such as Niacin, Fibrates and cholesterol absorption inhibitors can be given.

Lipids

- ◆ Elevated total cholesterol or low-density lipoprotein cholesterol (LDL-C) is associated with increase risk of ischemic stroke.

Recommendations:

- ◆ For patients with atherosclerotic ischemic stroke or TIA and without known CHD, it is reasonable to target a reduction of at least 50% in LDL-C or target LDL-C of <70 mg/dl to obtain maximum benefit.
- ◆ Statin therapy with intensive lipid lowering effects is recommended to reduce the risk of stroke and cardiovascular events among patients with an LDL-C level > 100mg/dl.
- ◆ Patients with ischemic stroke or TIA with low HDL-C may be considered for treatment with niacin or *gemfibrozil*.
(Class 11b;Level of Evidence B)

Stroke Risk in Women

AHA/ASA recommended Guidelines for care providers:

- ◆ Screen Women for high blood pressure before prescribing oral contraceptives.
- ◆ Prescribe medication for pregnant women with moderately high blood pressure.
- ◆ Investigate whether patients had preeclampsia during pregnancy.
- ◆ Consider prescribing low-dose aspirin or calcium supplement.

Stroke Risk in Women

- ◆ It is the third leading cause of death in women.
- ◆ Risk factors that are unique to women are

Reproductive factors:

Pregnancy + preeclampsia

Oral contraceptives

Hormone Replacement Therapy

- ◆ ***Other risk factors include:***

Migraine with aura + smoking

Obesity

Metabolic syndrome

Cerebral vein thrombosis

Physical Activity

- ◆ Physical activity exerts a beneficial effect on multiple stroke risk factors.
- ◆ A recent review of existing studies on physical activity and stroke revealed that moderately or highly active persons had a lower risk of stroke incidence or mortality than did persons with low level of activity.
- ◆ Physical activity lowers blood pressure and weight, enhances vasodilation, improve glucose tolerance and promotes cardiovascular health.

Metabolic Syndrome

- ◆ The metabolic syndrome refers to the confluence of several physiological abnormalities that increase the risk of vascular disease.
- ◆ In patients with ischemic stroke ,the prevalence is 40%-50%.

Recommendation:

- ◆ Preventive care for patients with metabolic syndrome should include appropriate treatment for individual components of the syndrome that are also risk factors for stroke particular dyslipidemia and hypertension.
- ◆ Treat the underlying causes.

(Class 1:Level of Evidence A)

ALCOHOL CONSUMPTION

- ◆ There is strong evidence that chronic alcoholism and heavy drinking are risk factors for all stroke subtypes.

Recommendations:

Light to moderate levels of alcohol consumption (no more than 2 drinks per day for men and 1 drink per day for women who are not pregnant) may be reasonable: nondrinkers should not be counseled to start drinking. (*Class 11b; Level of Evidence C*)

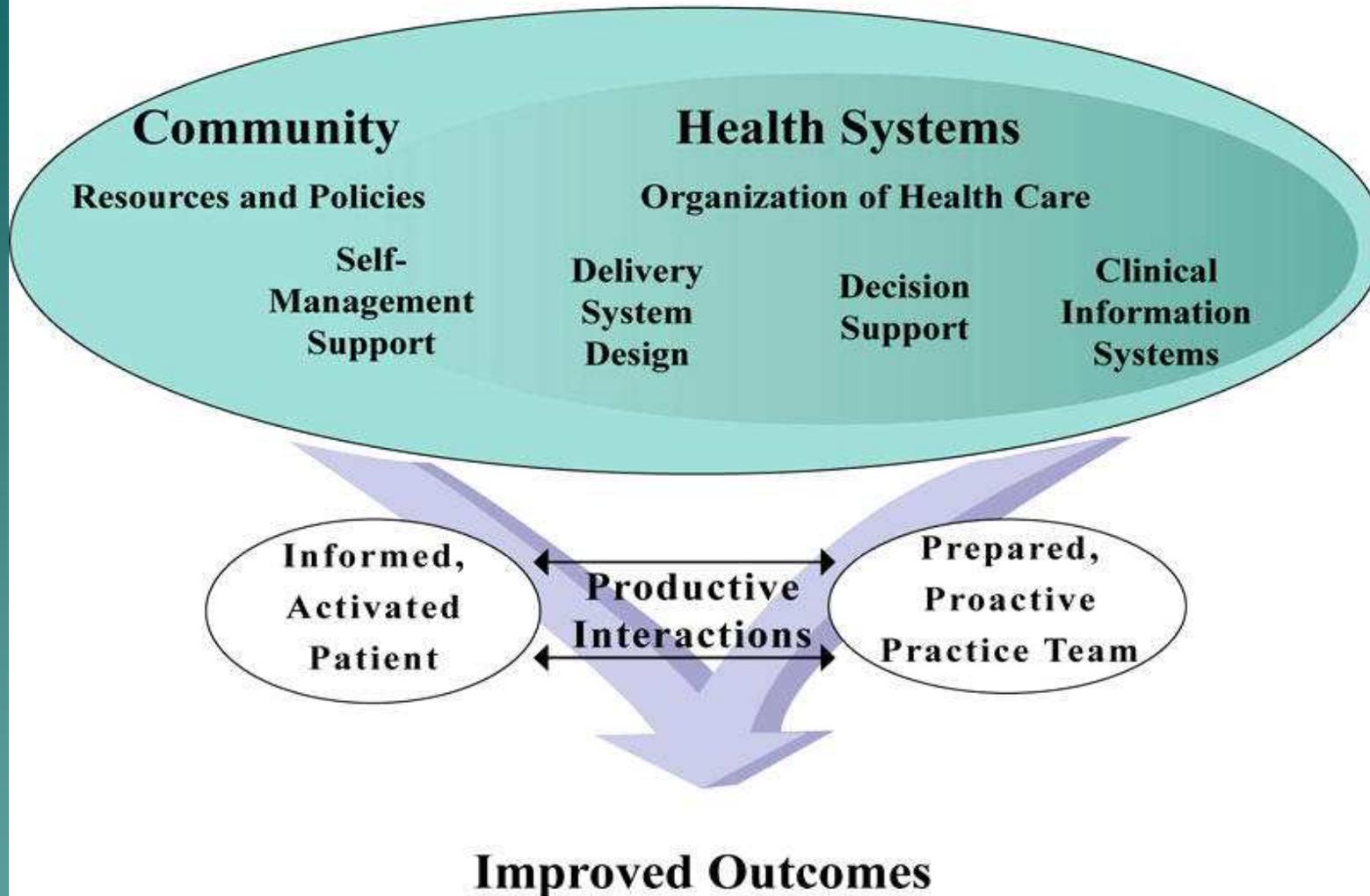
PROTECT Program

- ◆ Preventing Recurrence Of Thromboembolic Events through Coordinated Treatment
- ◆ Stroke PROTECT Program Goals: *Appropriate hospital initiation and maintenance of:*
 - ◆ Antithrombotic
 - ◆ ACE inhibitor/ARB
 - ◆ Statin
 - ◆ Thiazide diuretic
 - ◆ Exercise education
 - ◆ Diet Education
 - ◆ Smoking cessation
 - ◆ Awareness of Stroke warning Signs

Chronic Care Model

- ◆ The future of stroke prevention likely rests with early intervention via outpatient clinics in the community.
- ◆ The Chronic Care Model is a population based model that relies on knowing that patients have the disease, assuring that they receive evidence-based care ,and actively aiding them in participating in their own care.
- ◆ The goal of the Chronic Care Model is to improve health outcomes by optimizing the individual practice team interaction with patients, but it is clear that changes need to be made at all levels of the organization to support this work.

The Chronic Care Model



References

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