

GUIDEBOOK
for
Community-Based Campaigns
to
Increase Appropriate Use of Low-Dose Aspirin
to Prevent Heart Attacks and Strokes

Developed for the Oklahoma State Department of Health

Chronic Disease Division

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By

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Based upon a successful pilot project carried out in Stephens County, Oklahoma, completed in 2009

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Background

Cardiovascular events, primarily heart attacks and strokes, are the most frequent causes of death in Oklahoma. Among the states, Oklahoma has the 11th highest rate of heart attacks and the third highest rate of strokes. Nearly 10,000 Oklahomans die each year from heart attacks or strokes, and while the rates of cardiovascular deaths in most states have decreased over the last ten years, in Oklahoma these rates have remained about the same. [See Appendix A]

Risk factors for heart attacks and strokes include age (older), gender (male), lack of aerobic exercise, a history of cardiovascular disease, smoking, high blood pressure (above 130/80), high LDL and low HDL cholesterol levels, and diabetes. As the age of the population increases, and as the numbers of people who fail to get enough exercise and who have diabetes also increase, the rates of heart attacks and strokes are likely to rise rather than fall unless we act.

The most effective ways to prevent heart attacks and strokes include smoking cessation, moderate aerobic exercise, blood pressure and cholesterol control, and low-dose aspirin (81 mg per day). Low-dose aspirin (81 mg per day) works by reducing the tendency of the blood to clot within the blood vessels providing oxygen and nutrition to the heart and brain. Higher doses of aspirin are also effective, but the risk of unwanted bleeding (e.g. from the stomach or colon or into the brain) is higher without any increase in benefit over low-dose aspirin.

Individuals with a history of a heart attack, stroke, blood vessel stents or bypass grafting for coronary artery disease should take low-dose aspirin or clopidogrel (Plavix) or both to prevent reoccurrences. In 2009 the United States Preventive Services Task Force updated its recommendations regarding low-dose aspirin for individuals who have not had such events but have risk factors. The current recommendation is that physicians discuss low-dose aspirin use with men 45 to 79 years of age and women 55 to 79 years of age when the potential benefit outweighs the risk of bleeding. This would apply primarily to individuals with one or more risk factors for heart attacks and strokes. In Oklahoma, fewer than 50% of people within the relevant age categories report having been counseled about low-dose aspirin use. The rate is much lower among non-white and Hispanic individuals.

Purpose of this Manual

In an effort to improve the health of Oklahomans, the Oklahoma State Department of Health would like to increase appropriate use of low-dose aspirin by individuals at highest risk for heart attacks and stroke. A pilot study was conducted in Stephens County (Duncan, Marlow, etc.) in 2008-2009 to determine whether a community-wide effort to increase awareness among health care practitioners and the general public would increase rates of low-dose aspirin use. The pilot was successful, increasing physician counseling rates by 36%, patient-initiated discussions about low-dose aspirin by 66%, and purchases of aspirin by 19% over a six-month period.

This manual has been developed as a way to help other counties duplicate the successful approaches used in Stephens County.



Step 1: Obtain buy-in and commitment from key community stakeholders

A. Learn the facts: Review Appendices A, B, and C

Key points:

1. Heart attacks and strokes are major causes of death in Oklahoma.
2. Low dose aspirin (81mg per day) can reduce the risk of heart attacks in at-risk men and strokes in at-risk women by as much as 25%.
3. Approximately 50% of at risk Oklahomans are not currently taking low dose aspirin.
4. A communitywide campaign in Stephens County, Oklahoma resulted in a 20% increase in aspirin sales, a 66% increase in patient requests for additional information about aspirin from their primary care clinicians, and a 15% increase in the rate of patient counseling about aspirin by pharmacists and primary care clinicians.

B. Identify key community stakeholders

Potentially important stakeholders:

1. Members of Turning Point organizations
2. Public health officials
3. Physicians, physician assistants (PAs), nurse practitioners (NPs), and office nurses
4. Pharmacists
5. Hospital quality improvement nurses, patient educators, and discharge planners

C. Hold a stakeholder meeting to decide whether to launch a low-dose aspirin campaign using the PowerPoint slides as an introduction (Appendix D)



D. Identify a project leader and a small working group to direct the effort

Suggested working group members:

1. A primary care clinician (MD, DO, PA, or NP)
2. A non-clinician, community representative familiar with community organizations and resources
3. Someone who understands how to work with the media (newspaper, radio, television)
4. A student from a local college or university who would like to use this as a service project to meet course or degree requirements
5. A retired physician, PA, or NP
6. The spouse of a local physician or member of a medical auxiliary

Suggested project leader tasks:

1. Keep this manual and be completely familiar with its contents
2. Field phone calls and e-mails about the project and be the contact for the Oklahoma State Department of Health
3. Call meetings and develop meeting agendas; assign someone to keep minutes
4. Call for volunteers and make task assignments

E. Secure the support of the local medical community

Suggestions:

1. Present the concept at a county medical society or local hospital staff meeting (use PowerPoint slides in Appendix D)
2. Send a notice to all local physicians with a number they can call with concerns and suggestions (See example in Appendix E)

Notes:

1. Because of the way that aspirin works, it increases the risk of bleeding, particularly from the stomach and intestines but also in the brain (e.g. hemorrhagic strokes and subdural hematomas). The U. S. Preventive Services Task Force took this risk into account when making its recommendations. However, individuals with a higher than average risk of bleeding may not be good candidates for aspirin therapy. All public messages about aspirin should recommend that individuals discuss aspirin use with their primary care clinician.
2. Some people with allergies including asthma are particularly sensitive to aspirin, which can make their allergy problems worse. Again, the key is to encourage people considering aspirin therapy to discuss it with their primary care clinician.
3. Several recent studies have suggested that low dose aspirin may not reduce the rates of heart attacks and strokes in people who have never had a heart attack or stroke. The U. S. Preventive Services Task Force reviewed these studies and then reaffirmed their recommendations. There were several significant flaws in those studies that could have affected the results. The best available evidence still supports the use of low-dose aspirin in high risk individuals.

F. Communicate directly with the Chronic Disease Division, Heart Disease and Stroke Prevention Program at the Oklahoma State Department of Health (405-271-9444, ext 57112; fax 405-271-5181)

1. To let them know that you plan to launch a low-dose aspirin campaign in your community.
2. For general guidance and support
3. To obtain printed materials when you need them



Step 2: Create a List of Community Partners

Note: This task can be started during the stakeholder group meeting and then completed by the working group

A. Make lists of the places in your community where people over the age of 50 are most likely to be receptive to education about low-dose aspirin

Suggestions:

1. Physicians offices
2. Emergency rooms
3. Hospitals, especially during the discharge planning process
4. Pharmacies
5. Churches
6. Senior centers
7. Health department
8. Clubs and civic groups
9. Fitness centers

B. Create a table, spreadsheet, or database containing places, individual points of contact, and contact information for all relevant sites (from above).

Include:

1. Name, address, and phone number of each place, name
2. Name, e-mail address, and phone number of identified points of contact
3. Best days and times to contact
4. Best way(s) to contact (personal visit, phone, e-mail, fax, postal mail, etc.)

Step 3: Develop a Plan

A. Review the strategies used in Stephens County and the materials developed by the Department of Health (Appendices C, F, G, and H)

Summary of Stephens County strategies:

1. Posters in public places, physicians' offices, free clinics, pharmacies, health department, churches, and hospitals
2. Bookmarks in pharmacies, hospital discharge planners' offices, and physicians' offices
3. Billboards (cost is about \$500 for the first month, then \$300 per month per billboard)
4. Educational material for clinicians and pharmacists
5. Public service announcements on local radio stations
6. Articles or public service messages in local newspapers and periodicals
7. Obtain a large quantity of low-dose aspirin samples (purchase or obtain from manufacturer such as Bayer). Obtain bottles and labels saying "Aspirin 81mg . Take 1 daily to prevent heart attack and stroke." Distribute to physicians' offices to give to patients.

B. Discuss best ways to help the community sites educate and/or counsel high risk individuals about low-dose aspirin.



Suggestions:

1. Discuss strategies in the working group and with the contacts at each identified dissemination site
2. Try to match currently available materials to the needs of each site
3. Contact the State Department of Health for assistance with development of additional educational materials if needed (405-271-9444, ext 57112).

Step 4: Develop Evaluation Strategies

- A. Process Evaluation: Who did what, when, where, with whom, how often, and how did it go? Note: The purpose of process evaluation is to determine and document the parts of the project that went well and those that didn't so that subsequent communitywide initiatives can be more efficient and effective.**

Suggestions:

1. Keep a log book (paper or electronic) in which you document the dates and attendance at all project-related meetings.
2. Keep "field notes" that document contacts made, decisions reached, problems encountered, and solutions found. Try to document the things that you would want to remember when carrying out a similar project in the future.

- B. Outcomes Evaluation: Did the overall intervention have its intended effects? Note: Measurement of outcomes could lead to continuation, discontinuation, or modification of the interventions.**

Suggestions:

1. If there is a large pharmacy within your community that is willing to provide information on low-dose aspirin sales, ask them to report to you the number of low-dose aspirin tablets sold during the 6 months prior to the project, the 6 months during the project, and the 6 months following the project. In order to control for seasonal differences in the use of over-the-counter pain/fever medications, ask them to all provide information on numbers of over-the-counter ibuprofen and/or naproxyn and/or Tylenol and/or regular dose aspirin sold during those same time intervals.

2. If there is a hospital in your community willing to provide information, ask them to also report numbers of hospital discharges per month with the primary diagnosis of heart attack (ICD9 codes: 410, 410.1, 410.2, 410.3, 410.4, 410.5, 410.6, 410.7, 410.8, 410.9, 411.1, 411.8, 411.89), stroke (ICD9 codes: 433, 433.0, 433.1, 433.2, 433.3, 433.8, 433.9, 434, 434.0, 434.1, 434.9, 435, 453.0, 435.1, 435.2, 435.3, 435.8) , and gastrointestinal hemorrhage (ICD9 codes: 578, 578.0, 578.1, 578.9) during the 6 months prior to the project, the 6 months during the project, and the 6 months following the project.
Note: Remember that many heart attack and even stroke victims are transferred from emergency rooms to larger hospitals, so you will also want to obtain information about emergency transfers.
3. Ask someone at the State Department of Health to review and advise you about the outcomes evaluation plan to make sure that the data will ultimately be meaningful and analyzable.



Step 5: Carry out the Plan

Suggestions:

This is where a student or volunteer can be extremely helpful. It will require multiple phone calls and face-to-face meetings with the site contacts initially and at least once more in a month or two to follow-up on any problems, concerns, or questions.



Step 6: Evaluate the Results

Suggestions:

1. Stay in contact with the individuals in the pharmacy(ies) and hospital periodically throughout the project, reminding about the data that you will need.
2. Ask someone at the State Department of Health to help you analyze the data. They may also have ideas about how to let others know about your results.



Appendix A: Journal of the Oklahoma State Medical Association Article

See enclosed article reprinted with permission from editor of JOSMA.

Increasing Aspirin Use Among Persons at Risk for Cardiovascular Events In Oklahoma

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ABSTRACT

Background: Cardiovascular disease (CVD), including coronary heart disease (CHD) and stroke, is the leading cause of death in the United States and in Oklahoma; Oklahoma ranks 48th worst in CVD deaths. This paper will present Oklahoma-specific data and review current recommendations regarding aspirin use for the prevention of CVD events.

Methods: Average annual age-adjusted death rates were calculated. Oklahoma Behavioral Risk Factor Surveillance System (BRFSS) data were used to determine past history of CHD, risk factors for CHD and stroke, and aspirin use among persons 45 years and older. A literature review of recommendations regarding aspirin use was conducted.

Results: Between 2005-2008, 14.8% of Oklahomans 45 years of age and older reported a history of coronary heart disease and 6.4% a history of stroke. Approximately 50% of Oklahomans 45 years and older reported a history of hypertension and hypercholesterolemia; 21.5% were current smokers and 16.0% had diabetes. Nearly 10,000 Oklahomans die annually from CHD or stroke. The United States Preventive Services Task Force recommends 81mg per day of aspirin for men 45 to 79 and women 55 to 79 years of age unless they are at risk for bleeding complications. Daily aspirin use in Oklahoma was 44-57% among those with risk factors but no history of CHD or stroke. Fewer than 50% of Oklahomans 45-79 years reported being counseled by a health professional to take aspirin. Among those persons without a history of CVD who were counseled by a healthcare professional regarding aspirin, 79% were taking daily aspirin compared to 18% among persons not counseled. Aspirin sales increased significantly in Stephens County following a multifaceted community-based aspirin campaign.

Conclusion: Low-dose aspirin is being underutilized as a strategy for reducing the excessive numbers of cardiovascular events and deaths in Oklahoma. Health professionals play an important role in educating patients about appropriate use of low-dose aspirin. Community-based interventions can also be effective.

Key Words: Cardiovascular disease, coronary heart disease, aspirin, primary prevention, stroke

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BACKGROUND

Cardiovascular disease (CVD), including heart disease and stroke, is the leading cause of death in the United States (US) and in Oklahoma, accounting for 34% (N=823,746) of all deaths in the US and 35% (N=12,520) of deaths in Oklahoma in 2006.¹ There are over 71 million American adults with CVD with estimated costs (direct and indirect) of \$403.1 billion.² According to the United Health Foundation 2009 report, Oklahoma ranked 48th worst in the US for CVD deaths.³ According to the National Center for Health Statistics, the probability at birth of dying from CVD is 47% and 7% for stroke.⁴ Coronary heart disease (CHD) and stroke account for nearly three-fourths of CVD deaths. In 2001, the proportion of premature deaths before 65 years due to CHD was greatest among American Indians/Alaska Natives (36%) and African Americans (32%) and lowest for whites (15%); premature deaths were higher for Hispanics (24%) than non-Hispanics (17%) and for males (24%) than females (10%).⁵

Major risk factors for CHD include age, gender, hypertension, high total cholesterol and low high-density lipoprotein (HDL) cholesterol, diabetes, smoking, and sedentary lifestyle.^{6,7} Risk factors for ischemic stroke include age, gender, hypertension, diabetes, smoking, atrial fibrillation, left ventricular hypertrophy, history of CVD, and sedentary lifestyle.⁷ The United States Preventive Services Task Force (USPSTF) has ranked several recommended clinical preventive services based upon clinically preventable burden and cost effectiveness of the service. Physician discussions with patients at risk for CHD about aspirin chemoprophylaxis achieved the highest score of 10.⁸ A recent report of the USPSTF updated recommendations for aspirin use in the primary prevention of CVD and focused on gender-specific recommendations.^{7,9}

The purpose of this paper is to describe CHD and stroke mortality, the prevalence of CHD or stroke, risk factors, aspirin use and provider counseling regarding aspirin among persons 45 years and older in Oklahoma. We will summarize the results of a community-based intervention in Oklahoma to increase aspirin use in appropriate patients. Finally, the paper will review the current recommendations of national advisory groups regarding aspirin use for preventing CHD and stroke events.

METHODS

US death rates per 100,000 population over 45 years were accessed from the Centers for Disease Control and Prevention Compressed Mortality File 2000-2006 using the CDC WONDER On-line Database.¹ Oklahoma Vital Statistics data were used to calculate Oklahoma average annual age-specific or age-adjusted death rates per 100,000 population over 45 years. CHD death rates were defined according to the International

Classification of Diseases, Tenth Revision (ICD-10) codes I11 and I20-125 and stroke deaths were defined according to the ICD-10 codes I60-I69.

Prevalence of risk factors, history of CHD or stroke, provider counseling regarding aspirin, and aspirin use were estimated for persons 45 and older from the 2005-2008 Oklahoma Behavioral Risk Factor Surveillance System (BRFSS).¹⁰ The BRFSS is an ongoing, state-based, random-digit dialing telephone survey using home phones of the non-institutionalized adult population ages 18 years and older. The weighted survey data make the estimates generalizable to the population of non-institutionalized Oklahoma adults. Because not every module is asked each year, data is reported for only those years where the specific question was available. PROC SURVEYFREQ in SAS version 9.2 was used to calculate percentages and 95% confidence intervals. A review of the literature regarding data and recommendations regarding aspirin use in the primary prevention of cardiovascular disease was conducted.

Stephens County Initiative

During a six-month timeframe in 2008-2009, a multifaceted educational intervention to raise public and clinician awareness about low-dose aspirin chemoprophylaxis in Stephens County was initiated. Educational materials were designed and widely disseminated throughout the community, including physician offices and pharmacies, and all physicians and pharmacists were urged to counsel patients meeting treatment criteria about a regimen of low-dose aspirin. Public service announcements and billboard signs were also used. Aspirin sales were tabulated by a local store for the six months prior to the intervention and the six months during the intervention.

RESULTS

Mortality

From 2002-2006, there were 38,571 CHD deaths among persons 45 years and older in Oklahoma; the Oklahoma CHD rate (582.5 per 100,000) was 28% higher than the US rate (454.1). Persons 80 years and older had the highest rate (Table 1). The age-adjusted CHD death rate was 62% higher for males than females. The CHD death rates among Oklahoma males and females were 28% higher than the US rates (males: 578.6/100,000, females: 358.1/100,000); the Oklahoma stroke death rate was 17% higher than the US rate for males (140.4/100,000) and 23% higher for females (US rate: 136.7/100,000). The CHD death rate among African American males and females was 13% and 25% higher than white males and females, respectively. CHD death rates among Hispanic males and females were approximately 50% lower than those of their Non-Hispanic counterparts. CHD death rates varied only slightly by geographic (urban vs. rural) location (Table 1).

From 2002-2006, there were 11,111 stroke deaths among persons 45 years and older in Oklahoma. The Oklahoma stroke death rate (168.0 per 100,000) was 20% higher than the US rate (139.7). The overall stroke death rates were similar between males and females (Table 1) but the death rates for African American males and females were 68% and 25% higher than their white male and female counterparts. Stroke death rates

Table 1. Age-adjusted Death Rates per 100,000 for Coronary Heart Disease and Stroke Among Persons 45 Years and Older, Oklahoma Vital Statistics, 2002-2006

	Coronary Heart Disease		Stroke	
	Males	Females	Males	Females
Total	743.6	458.7	163.8	168.3
Age Group*				
45-64	241.5	97.9	31.4	26.7
65-79	939.8	502.5	199.1	183.8
80+	3295.9	2736.9	873.1	1062.0
Race				
White	745.6	458.4	160.5	167.8
Black	840.8	573.8	269.9	210.0
American Indian	657.4	360.8	111.9	128.5
Asian	318.5	242.6	159.6	116.7
Ethnicity				
Hispanic	352.9	234.2	116.9	109.6
Non-Hispanic	746.3	459.3	163.5	168.0
Rural/Urban				
Rural	757.8	470.9	160.9	164.4
Urban+	718.7	437.2	168.9	174.4

*Age-specific rates

+Urban includes Cleveland, Oklahoma, and Tulsa Counties

were 29% and 35% lower for Hispanic males and females, respectively, than non-Hispanics.

The 2002-2006 combined age-adjusted state death rate for CHD and stroke combined among persons 45 years and older was 754.6/100,000. The highest rates occurred in the southeastern part of the state (Figure 1).

CHD and Stroke Risk Factors

Approximately 50% of Oklahomans 45 and older reported a history of hypertension and hypercholesterolemia (Table 2). Males had higher rates of most risk factors. Approximately 16% of persons 45 years and older reported having diabetes, and rates among males were significantly higher for those 65 years and older and among females 65-79 years. The prevalence of current smoking was 21.5% and decreased with increasing age group among both males and females. The prevalence of history of CHD among persons 45 and older was 14.8% and the prevalence of history of stroke was 6.4%. History of CHD and stroke increased with increasing age among males and females (Table 2).

Health Professional Counseling of Aspirin Use

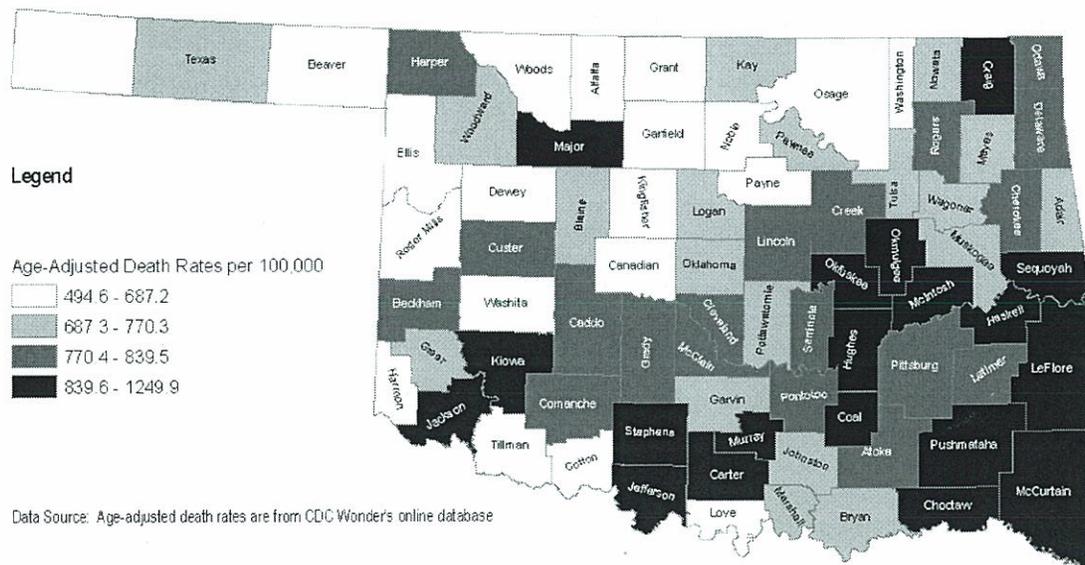
Overall, 45% of males and 38% of females 45 and older were advised by a health care professional to take an aspirin daily or every other day to prevent a heart attack or stroke; rates increased significantly after 65 years in both genders and persons 80 and older had the highest rates (Table 2). Among males without a previous history of CHD or stroke, the prevalence dropped to 29.7% for the 45-64 year age group, 49.3% in the 65-79 year age group, and 55.7% in the 80 and older age group (data not shown). Among females without a previous history of CHD or stroke, the prevalence dropped to 23.1% in the 45-64 year age group, 45.4% among those 65-79 years, and 51.6% in the 80 and older age group (data not shown). Among persons 45-79 without previous history of CHD or stroke, American Indians (43.9%) were more likely to have been advised to take aspirin daily or every other day to prevent a heart attack or stroke than multiracial persons (36.4%), whites (30.8%), African Americans (30.4%), or Hispanics (25.6%) (data not shown).

Table 2. Prevalence and 95% percent confidence intervals for aspirin counseling and use and selected risk factors for coronary heart disease and stroke by gender and age group, Oklahoma BRFSS 2005-2008

Selected Risk Factors and Aspirin Counseling and Use	Male 45-64 Years	Male 65-79 Years	Male 80+ Years	Female 45-64 Years	Female 65-79 Years	Female 80+ Years
Current smoker	28.1% (26.5-29.6)	14.6% (13.0-16.3)	4.6% (2.7-6.6)	26.4% (25.2-27.6)	11.9% (10.9-13.0)	4.9% (3.7-6.1)
Diabetes	15.3% (14.0-16.5)	24.4% (22.4-26.3)	20.3% (16.9-23.7)	12.1% (11.2-13.0)	18.6% (17.3-19.9)	15.0% (13.0-17.0)
High blood pressure*	42.2% (39.8-44.5)	60.8% (57.7-63.9)	49.0% (43.0-55.0)	38.4% (36.5-40.2)	61.4% (59.1-63.7)	67.2% (63.5-70.9)
High cholesterol*	48.4% (45.7-60.0)	59.4% (56.1-62.6)	38.0% (31.8-44.1)	45.8% (43.8-47.8)	58.9% (56.5-61.3)	51.3% (47.1-55.5)
History of Coronary Heart Disease	12.4% (11.3-13.5)	28.5% (26.5-30.6)	37.6% (33.6-41.7)	8.2% (7.5-9.0)	15.9% (14.7-17.2)	21.5% (19.2-23.8)
History of Stroke	4.1% (3.4-4.8)	11.2% (9.8-12.6)	13.0% (10.3-15.8)	4.0% (3.5-4.5)	9.0% (8.1-10.0)	12.7% (10.9-14.5)
Health Professional Advised Need for Aspirin+	36.5% (34.0-39.0)	60.9% (57.7-64.2)	68.2% (62.4-74.0)	27.9% (26.2-29.6)	52.2% (49.9-54.5)	57.0% (53.1-61.0)
Daily Aspirin Use*	42.0% (39.6-44.4)	62.6% (59.5-65.8)	56.4% (50.1-62.7)	30.4% (28.6-32.2)	49.7% (47.3-52.1)	54.2% (50.2-58.2)

*Based on 2005 and 2007 data
+Based on 2007 and 2008 data

Figure 1. Coronary Heart Disease and Stroke Age-Adjusted Death Rates Among Persons 45 and Older by County of Residence, 2002-2006



Aspirin Use among Persons Without a Previous History of CHD or Stroke

Overall, 41% of males and 32% of females 45 to 79 years of age without a previous history of CHD or stroke reported taking an aspirin daily or every other day. Among persons with either high blood pressure, high cholesterol, or diabetes, 44%-57% reported regular aspirin use, including 50-60% among males and 39-53% among females (Table 3); among persons with a history of all three risk factors (high blood pressure, high cholesterol and diabetes), nearly two-thirds reported taking an aspirin daily or every other day, with males reporting a higher, but not significant, prevalence than females. Nearly one in four persons 45 to 79 without a history of CHD or stroke and without high blood pressure, high cholesterol or diabetes reported taking an aspirin daily or every other day (Table 3), with males having a significantly higher prevalence than females. Seventy-nine percent of persons without a history of CVD who were counseled by a healthcare professional regarding aspirin use took daily aspirin compared to 18% among persons not counseled (data not shown).

Table 3. Prevalence and 95% confidence intervals for daily or every other day aspirin use among persons 45 to 79 years of age without a previous history of coronary heart disease or stroke by selected risk factor status, Oklahoma BRFSS 2005 and 2007

	Total	Males	Females
High blood pressure	47.1% (45.1-49.2)	53.8% (50.3-57.3)	41.7% (39.3-44.2)
High cholesterol	44.1% (42.0-46.2)	50.2% (46.6-53.7)	39.3% (36.9-41.7)
Diabetes	56.7% (52.8-60.7)	60.2% (53.9-66.6)	53.3% (48.5-58.2)
All three risk factors	63.3% (57.5-69.0)	68.4% (58.9-77.9)	58.7% (51.9-65.5)
No HBP, high cholesterol, or diabetes	24.5% (22.3-26.7)	28.3% (24.5-32.1)	21.4% (18.9-23.9)

Stephens County Initiative

The Stephens County intervention resulted in a 36% increase in physician self-reported counseling regarding aspirin use (from 35.5% to 48.2%) and a 66% increase in the number of patients who initiated a discussion with their physician regarding aspirin use by clinician estimate (unpublished data). There was a 19% increase in aspirin sales.

Benefits and Risk of Chemoprophylaxis

A 2006 meta-analysis of pooled data from six primary prevention trials showed that aspirin therapy in men significantly reduced the risk for myocardial infarction (MI) by 32% (odds ratio [OR] 0.68; 95% CI 0.54-0.86).¹¹ There was no significant effect on total cardiovascular mortality or stroke, however. Among women, aspirin was significantly associated with a 24% reduction in ischemic stroke (OR 0.76; 95% CI 0.63-0.93) but no significant effect on the risk of MI or death from CVD was seen.¹¹ The risk of hemorrhagic stroke was not significantly higher for women in the aspirin group but was significantly higher for men (OR 1.69; 95% CI 1.04-2.73). The risk of serious gastrointestinal bleeding (requiring transfusion)

was increased for both men and women.¹¹

Several recent meta-analyses have raised questions about the use of aspirin for primary prevention. For example, a meta-analysis from the Antithrombotics Trialists' Collaboration recommends caution surrounding aspirin due to the balance of benefit and hemorrhagic risk.¹² However, as noted in the paper, only 9% of the participants in the six primary prevention trials reviewed had a predicted CHD incidence rate above 1% per year. Also, by analyzing data on men and women together, the researchers may have obscured the differential impact of aspirin on heart attack rates in men and stroke rates in women. After reviewing these studies, the USPSTF has reconfirmed its position.

Primary and secondary prevention trials have demonstrated benefits with a variety of regimens, including 75 mg per day, 100 mg per day, and 325 mg every other day.^{13,14} Doses of 75-81 mg per day appear as effective as higher doses with fewer side effects. Enteric-coated or buffered preparations do not appear to reduce adverse gastrointestinal effects of aspirin and may have a reduced efficacy, especially in heavier individuals.¹⁵ The

use of aspirin and Clopidogrel has been shown to be less effective in primary prevention and likely causes more harm than aspirin alone.^{13,16} Additionally, data suggest regular use of nonsteroidal anti-inflammatory drugs inhibit the clinical benefits of aspirin.^{17,18}

Potential contraindications to aspirin use may include: history of gastrointestinal bleeding or peptic ulceration, dyspepsia, history of aspirin intolerance or allergy, chronic alcohol use or severe liver abnormalities,

bleeding disorders (e.g., hemophilia), oral anticoagulation therapy, and uncontrolled hypertension. Finally, physicians may want to evaluate a patient's regular use of concentrated extracts of herbs that are known to have antiplatelet activity such as Ginkgo biloba.^{19,20,21} Caution might be advised to patients taking other herbs that reduce one or more coagulation factors, such as large amounts of fish oil,^{22,23} flaxseed oil,²⁴ ginger,²⁵ garlic,²⁵ feverfew,^{25,26} or red clover;²⁷ Discussions that high amounts of vitamin K interfere with anticoagulant drugs may also be indicated.²⁸

Recommendations of National Advisory Groups

The United States Preventive Services Task Force (USPSTF) recommends that clinicians discuss aspirin chemoprevention with males 45-79 years and females 55-79 years when the potential benefit of a reduction in myocardial infarctions and ischemic strokes, respectively, outweighs the potential harm for an increase in gastrointestinal hemorrhage (Table 4).⁷ The USPSTF recommends that physicians not encourage use of aspirin in men under 45 years and women under 55 years and suggests evidence is insufficient for a recommendation

for persons over 80 years. It is also strongly recommended that there be shared decision-making between providers and patients when the 10-year risk levels are close to the levels listed in **Table 4**. The 2007 American Heart Association (AHA) guidelines for women recommend chemoprophylactic aspirin for women < 65 years with a 10-year ischemic stroke risk > 20% or all women ≥ 65 years when the benefit for ischemic stroke and MI prevention outweighs the adverse effects of therapy;²⁹ the American Heart Association/American Stroke Association Stroke Council recommends aspirin for persons with a 10-year CVD risk of 6-10% and agrees with the 2007 AHA guidelines for stroke prevention in women.³⁰ Finally, the AHA and American Diabetes Association recommend aspirin for persons over 40 years with diabetes and additional risk factors (smoking, hypertension, dyslipidemia, etc).³¹ Discussions with patients should address both the potential benefits and harms of aspirin therapy.

Table 4. 10-year CHD* and stroke risk levels at which the number of cardiovascular disease events prevented is closely balanced to the number of serious bleeding events.

Shared decision-making is strongly encouraged with persons whose risk is close to (either above or below) these estimates of 10-year risk levels. As the potential cardiovascular disease reduction benefit increases above harms, the recommendation to take aspirin should become stronger.

Men		Women	
Age	10-Year CHD Risk, %	Age	10-Year Stroke Risk, %
45-59 y	≥4	55-59 y	≥3
60-69 y	≥9	60-69 y	≥8
70-79 y	≥12	70-79 y	≥11

*CHD: coronary heart disease.

Source: US Preventive Services Task Force. Aspirin for the prevention of cardiovascular disease: US Preventive Services Task Force recommendation statement. *Ann Intern Med* 2009;150(6):396-402.

DISCUSSION

After the age of 40 years, men have a lifetime risk of 49% for a CHD event while for women this risk is 32%.² At age 55 years, the 10-year risk for an initial ischemic stroke is 2.4% for men and 1.8% for women.³² Oklahoma ranks 40th and 48th in self-reported history of heart disease and stroke, respectively.³³ Finally, nearly 10,000 Oklahomans die each year from CHD or stroke and Oklahoma ranks 48th worst for cardiovascular disease deaths. A conversation with a healthcare provider about aspirin has been shown to be the factor most strongly associated with aspirin use among adults.³⁴ Fewer than half of Oklahomans 45-79 were counseled by a healthcare professional regarding aspirin use. Daily aspirin use rates were relatively low (59%-68%) for persons considered at "high risk" based on a history of all three risk factors (high blood pressure, high cholesterol and diabetes). Our data suggested healthcare professional

counseling had a significant impact on a person's daily use of aspirin with 79% of persons counseled taking aspirin compared to only 18% among those not counseled.

There are many potential strategies to reduce the burden of CHD and stroke, including reducing rates of hypertension, cholesterol, diabetes, tobacco use, and obesity, and enhancing diet and exercise among the population.^{35,36,37,38,39} Aspirin use has been shown to be effective in reducing the number of nonfatal myocardial infarctions in men^{7,40} and ischemic stroke in women^{11,41} and received the highest recommendation from the USPSTF for clinically preventable burden of disease and cost effectiveness.⁸

Calculating CHD and Stroke Risk

Decisions about aspirin therapy should take into account overall risk for coronary heart disease. Risk assessment should include age and gender of the individual and the presence and severity of the following risk factors: diabetes, elevated total cholesterol levels, low levels of high-density lipoprotein (HDL) cholesterol, hypertension and smoking. CHD risk calculators, which incorporate specific information on multiple risk factors, provide more accurate estimations of cardiovascular risk than categorizations based simply on counting the numbers of risk factors. For example, a male 45 years old with either a blood pressure of 140/80mm/Hg, total cholesterol ≥240 mg/dl, smoking or diabetes has a 7% risk of CHD in 10 years; the risk is 10% with two risk factors, 16% with three, and 25% with all four. In the absence of risk factors for bleeding, all of these 10-year risks would suggest the benefit of aspirin would outweigh the risk of bleeding. One example of an online CHD risk calculator can be found at <http://www.mcw.edu/calculators/CoronaryHeartDiseaseRisk.htm>. A stroke risk calculator can be found at <http://www.westernstroke.org/PersonalStrokeRisk1.xls>. According to this calculator, a female 65 years old who smokes and has a systolic blood pressure of 160 without taking any antihypertensive medication would have a 10-year stroke risk of over 8% (in the range where aspirin is recommended).

Limitations

There are several limitations in the present study. BRFS does not include persons living in institutions and it is estimated that approximately 1 in 5 American adults (21.1%) live in households with only wireless telephones.⁴² Though this limitation is accounted for by using statistical sample weights, this downside can never completely be eliminated. Another limitation of BRFS data is that it is self-reported and cannot

be verified. Additionally, studies have shown substantial misclassification of race on Oklahoma death certificates, resulting in underestimated death rates for many diseases,⁴³ including CVD among American Indians.⁴⁴ Therefore, death rates for American Indians should be interpreted with caution.

CONCLUSION

Oklahoma continues to have one of the highest heart disease death rates in the country. Physicians can have an impact in improving heart disease death rates in the state. Continued commitment to counseling patients regarding tobacco cessation, nutrition and exercise, and treatment to reduce blood pressure, cholesterol, tobacco use and blood sugar are essential. Aspirin therapy has shown promise for the prevention of nonfatal myocardial infarction in high-risk men and ischemic stroke in women and is an inexpensive intervention that is highly cost-effective. Oklahoma physicians should assess patients at highest risk, such as men 45 years and older and women 55 years and older, and discuss the potential benefits and harms of aspirin use.

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ASPIRIN IN THE PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE

Who Should be Assessed for Aspirin Use (See Table Below):

The US Preventive Services Task Force recommends:

- **Men 45-79:** especially those with a 10-year coronary heart disease risk where benefits exceed risks. Risk factors include hypertension, high total cholesterol or low high-density lipoprotein cholesterol, diabetes, or smoking.
- **Women 55-79:** especially those with 10-year stroke risk where benefits exceed risks. Risk factors include hypertension, diabetes, smoking, atrial fibrillation, left ventricular hypertrophy, or a history of cardiovascular disease.
- **Men and Women 80 years and older:** Evidence is insufficient to assess the balance benefits and harms.

Discussions with patients should address both the potential benefits and harms of aspirin therapy.

What Are the Benefits of Aspirin:

- Reduces the risk for MI in men by 32%. Reduces the risk of ischemic stroke in women by 24%.

What Are the Risks of Aspirin:

- Increases the risk of serious gastrointestinal bleeding in men and women.
- Increases the risk of hemorrhagic stroke in men.

Potential Contraindications to Aspirin:

- History of gastrointestinal bleeding or peptic ulceration, dyspepsia, history of aspirin intolerance or allergy, chronic alcohol use or severe liver abnormalities, bleeding disorders (e.g., hemophilia), oral anticoagulation therapy, and uncontrolled hypertension.

Issues with Combining Aspirin and Other Drugs:

- The use of aspirin and clopidogrel has been shown to be less effective in primary prevention and likely causes more harm than aspirin alone.
- Regular use of NSAIDs inhibit the clinical benefits of aspirin.
- Patients should also be counseled against combining aspirin intake and herbal products such as Ginkgo biloba, and large amounts of fish oil, flaxseed oil, garlic, or red clover.

What is the Dose of Aspirin Recommended:

- Low dose aspirin (81mg) daily is recommended.

CHD risk calculator: <http://www.mcw.edu/calculators/CoronaryHeartDiseaseRisk.htm>

Stroke risk calculator: <http://www.westernstroke.org/PersonalStrokeRisk1.xls>

Ten-year coronary heart disease and stroke risk levels at which the number of cardiovascular disease events prevented are approximately equal to the number of serious bleeding events.

Men		Women	
Age	10-Year CHD Risk, %	Age	10-Year Stroke Risk, %
45-59 y	≥4	55-59 y	≥3
60-69 y	≥9	60-69 y	≥8
70-79 y	≥12	70-79 y	≥11

Source: US Preventive Services Task Force (USPSTF). Aspirin for the prevention of cardiovascular disease: US Preventive Services Task Force recommendation statement. *Ann Intern Med* 2009;150(6):396-402.

Appendix B: United States Preventive Service Task Force Recommendations

Aspirin for the Prevention of Cardiovascular Disease

Release Date: March 2009

This topic page summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on aspirin for the prevention of cardiovascular disease.

Summary of Recommendations

- The USPSTF recommends the use of aspirin for men age 45 to 79 years when the potential benefit due to a reduction in myocardial infarctions outweighs the potential harm due to an increase in gastrointestinal hemorrhage.
Grade: A recommendation.
- The USPSTF recommends the use of aspirin for women age 55 to 79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage.
Grade: A recommendation.
- The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of aspirin for cardiovascular disease prevention in men and women 80 years or older.
Grade: I statement.
- The USPSTF recommends against the use of aspirin for stroke prevention in women younger than 55 years and for myocardial infarction prevention in men younger than 45 years.
Grade: D recommendation.

Grade A: The USPSTF recommends this service. There is high certainty that the net benefit is substantial

Grade I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of this service.

Grade D: The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.

How to Use This Recommendation

Shared decision making is strongly encouraged with individuals whose risk is close to (either above or below) the estimates of 10-year risk levels indicated below. As the potential CVD benefit increases above harms, the recommendation to take aspirin should become stronger.

To determine whether the potential benefit of heart attacks prevented (men) and strokes prevented (women) outweighs the potential harm of increased GI hemorrhage, both 10-year CVD risk and age must be considered.

Risk level at which CVD events prevented (benefit) exceeds GI harms

Men		Women	
10-year CHD risk		10-year stroke risk	
Age 45-59 years	≥4%	Age 55-59 years	≥3%
Age 60-69 years	≥9%	Age 60-69 years	≥8%
Age 70-79 years	≥12%	Age 70-79 years	≥11%

The table above applies to adults who are not taking NSAIDs and who do not have upper GI pain or a history of GI ulcers.

NSAID use and history of GI ulcers raise the risk of serious GI bleeding considerably and should be considered in determining the balance of benefits and harms. NSAID use combined with aspirin use approximately quadruples the risk of serious GI bleeding compared to the risk with aspirin use alone. The rate of serious bleeding in aspirin users is approximately 2-3 times higher in patients with a history of GI ulcers.

Risk Assessment

For men: Risk factors for CHD include age, diabetes, total cholesterol level, HDL level, blood pressure, and smoking.

CHD risk estimation tool: <http://hp2010.nhlbi.nih.net/atpiii/calculator.asp>

For women: Risk factors for ischemic stroke include age, high blood pressure, diabetes, smoking, history of CVD, atrial fibrillation, and left ventricular hypertrophy.

Stroke risk estimation tool:

http://www.westernstroke.org/index.php?header_name=stroke_tools.gif&main=stroke_tools.php

Appendix C: Stephens County Aspirin Campaign – Final Report

A Community-Based Intervention to Increase Appropriate Use of Low-Dose Aspirin by Individuals at High Risk for Heart Attack and Stroke Stephens County Pilot 2008-2009

Introduction

It has been shown that prophylactic aspirin therapy can reduce the risk of strokes and heart attacks by 25% in individuals at risk. The USPSTF recommends low-dose aspirin therapy for men ages 45-79 and women ages 55-79 when the reduction in risk of myocardial infarction outweighs the potential increase in risk of gastrointestinal bleeding. Currently Oklahoma ranks as the 4th unhealthiest state in the nation. A predominate factor in this ranking is cardiovascular disease, which accounts for 39% of all deaths in Oklahoma. Clearly in such a population there could be significant benefit from increasing the appropriate use of low-dose aspirin.

This pilot project was undertaken to determine, within a single Oklahoma county, whether an effective community-based campaign to increase appropriate use of low-dose aspirin could be carried out at a cost of approximately \$18,000 and whether the method could then be spread to other counties in the state.

Methods

Study Design

After several months of planning, the community-based intervention was conducted from January 2009 through June 2009 in Stephens County Oklahoma (pop 43,182 - 2000 census). An \$18,000 grant was provided by the Oklahoma State Department of Health (OSDH) to the Department of Family and Preventive Medicine (DFPM) at the University of Oklahoma Health Sciences Center (OU-HSC) to fund the project. The Duncan Regional Hospital Foundation was the ultimate recipient of most of these funds, which they used for local activities. A local family physician, Kent King, M.D., directed the project at the community level, and one of his daughters, Katy King, a college student, did much of the groundwork. A collection of key community stakeholders were convened on at least two occasions to provide input and assure buy-in.

During the initial three months of the project, local stakeholders in consultation with a researcher from the DFPM, James Mold, M.D., identified all of the potential dissemination channels for the information on low-dose aspirin and best ways to reach them and discussed strategies for increasing the frequency and accuracy of advice provided by clinicians and pharmacists. They and an OSDH Aspirin Task Force helped the OSDH design educational materials to be used in the project. At the end of the planning period, a written dissemination/implementation plan was submitted to the OSDH for review, comment, and approval.

Very few changes were made in the plan, which was then implemented over a six-month period. Thirty-three area churches were provided with educational posters to be displayed in their foyers. They were also given a sample announcement to run in the weekly church bulletins citing the benefits of aspirin therapy and urging members to ask their doctor about it. Additional posters and bookmarks were distributed to Duncan Regional Hospital, and a hospital-wide electronic message board displayed the information from the educational poster. Two billboards were erected on major thoroughfares in and out of Duncan. Weekly newspaper ads ran in two local newspapers. In addition, a public broadcast slide-type television commercial ran several times a day.

All 11 pharmacies in the area participated in the project. They were provided with educational posters to be placed throughout the pharmacy, as well as informative bookmarks for distribution. These materials described the benefits of aspirin therapy for appropriate populations and urged patients to ask their doctor if they should consider a low-dose aspirin regimen. Eighteen physicians in 13 practices were provided with the educational posters to be placed in their waiting rooms and bookmarks for distribution. All Physicians and Pharmacists were urged to counsel patients meeting treatment criteria about a regimen of low-dose aspirin. To encourage them to document these encounters, they were offered the chance to win a \$25 gift certificate (for most encounters in which an aspirin recommendation was made).

Outcome Measures

A survey was administered to all 11 pharmacies and to 7 of the 18 physicians. The survey included an estimate of the percentage of patients counseled about low-dose aspirin prior to and during the study

period, as well as an estimate of the percentage of patients who had asked about low-dose aspirin in the six months prior to and during the study. Also obtained were opinions about the strengths and weaknesses of the campaign materials, the campaign as a whole, and suggestions for improvement of future projects. A survey was conducted of the community advertising agencies to estimate the exposure gained through each venue.

To determine the effectiveness of the aspirin campaign, data was collected from the Duncan Wal-Mart for the six months before and the six months during the initiative to serve as a representative sample of area-wide aspirin sales. Data was also collected from the Duncan Regional Hospital on discharge diagnoses of ischemic and hemorrhagic strokes, myocardial infarctions, and gastrointestinal hemorrhages during the one year prior to and the six months during the interventions.

Results

Impact of Dissemination Strategies

Survey Data

The Health professional surveys revealed that most doctors and pharmacists believed that the aspirin project was effective in raising community awareness and that the educational materials used for the program were useful. Most stated that the gift card incentive was ineffective in influencing the documentation of low-dose aspirin counseling (Figure 1). They reported a 35.7% increase in the percentage of patients counseled about aspirin therapy, as well as a 66.2% increase in the percentage of patients who asked about low-dose aspirin therapy (Table 1). Responses to the other survey items are shown in Table 2.

Table 1: Clinician estimates of numbers of patients counseled and number coming in with questions about low-dose aspirin.

Estimated Aspirin Counseling			
	Pre-Study	Study	% Change
% of Patients Counseled	35.50%	48.20%	35.70%
% of Patients who Initiated Counseling	15.40%	25.60%	66.20%

Figure 1: Clinician perceptions of effectiveness of the initiative.

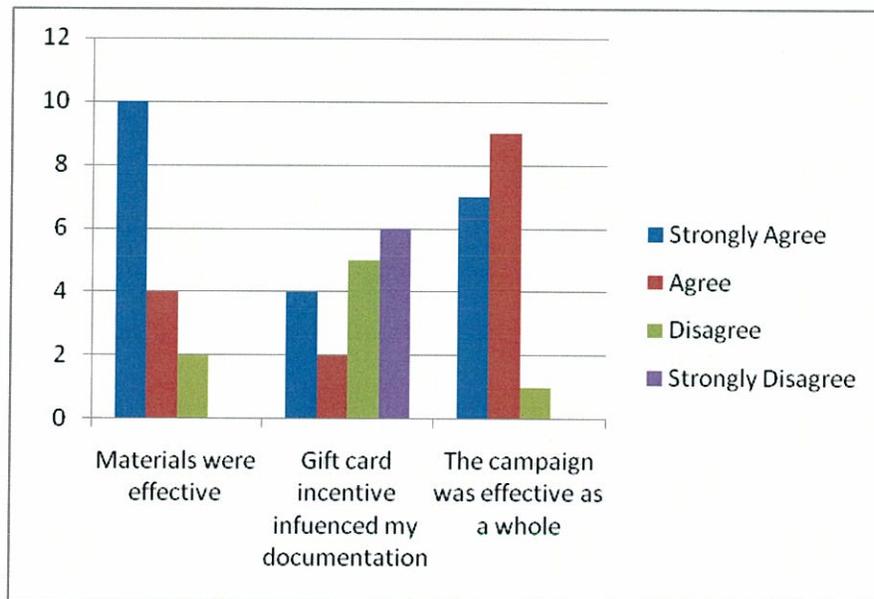


Table 2: Responses of clinicians and pharmacists (combined) to survey questions.

1. In what ways would you improve the materials (this could include adding or eliminating certain materials) for future projects?

“Be sure to include that talking to your doctor is necessary before beginning aspirin therapy. A ‘shelf talker’ at the end of aisles in the pharmacy would be helpful.”

“A brochure would be good, probably better than a bookmark. A question hotline or website that patients could access would be a huge help.”

“The information could be delivered as coupons attached to the medication at the pharmacy.”

“Provide some kind of display for the pamphlets; showcase them more.”

2. How could the documentation of patient counseling be improved for future studies?

“Provide more space for documentation on the forms.”

“The form should be simplified. A check box system would be best.”

“Give the patient a card to fill out. This could be mailed in or left in a box at the pharmacy.”

“Have the patient fill out a survey.”

“Patient fills out the survey while in the office.”

“A reminder for the Pharmacist.”

“Give patient a toll free number to call and report aspirin counseling.”

“Require less questions.”

“Provide an online questionnaire with boxes to check.”

3. Do you have any suggestions for the implementation of future projects?

“Work with Bayer to provide free baby aspirin samples. Make documentation less cumbersome.”

“Get samples from Bayer; provide to the patients upon counseling.”

“More general media advertisements”

“Face to face promotion at public events. Set up booths etc.”

“The pharmacy is a great avenue for education. A volunteer powered support phone line would be beneficial.”

“Target interventions to the at-risk profile; assisted living centers, senior citizens’ centers, etc.”

Pharmacist expressed concerns about patients informing physicians and educating patients on correct dosage.

Table 3: Estimated numbers of people reached by each advertising method used in the project.

Location	Media Type	Estimated Population Reached
Churches	Flyers and Posters	5460 per. Week
KFXI-FM 92.1, Marlow, OK	Radio Advertisement	Unknown
Arnold Outdoor, OKC, OK	Billboard Advertisement	4950 per. Day
Marlow Review, Marlow, OK	Newspaper Advertisement	3000 per. Week
Duncan Banner, Duncan, OK	Newspaper Advertisement	7000 per. Week
Cable One, Phoenix, AZ	Television Commercial	Unknown

Wal-Mart Data

When compared to the pre-study period (June –Dec 2008), the six months comprising the study showed a marked increase in both total 81mg aspirin sales and total 81mg aspirin pills sold. However, a similar increase was seen in sales of 325mg aspirin (Table 4). We are now trying to get denominator data so that we can run statistical tests and also data on sales of ibuprofen during the same time periods for comparison in case there was an increase in analgesic use generally.

Table 4: Sales of quantities of a apirin and total numbers of pills sold during the 6 months before and the 6 months during the intervention

81 MG			
Avg. Per Month	Pre	Study	% Change
Sales	459.4	539.3	17.40%
Pills	63,354	70,145	10.70%

325 MG			
Avg. Per Month	Pre	Study	% Change
Sales	139	172.3	23.70%
Pills	17,179	23,325	35.70%

Duncan Regional Hospital data

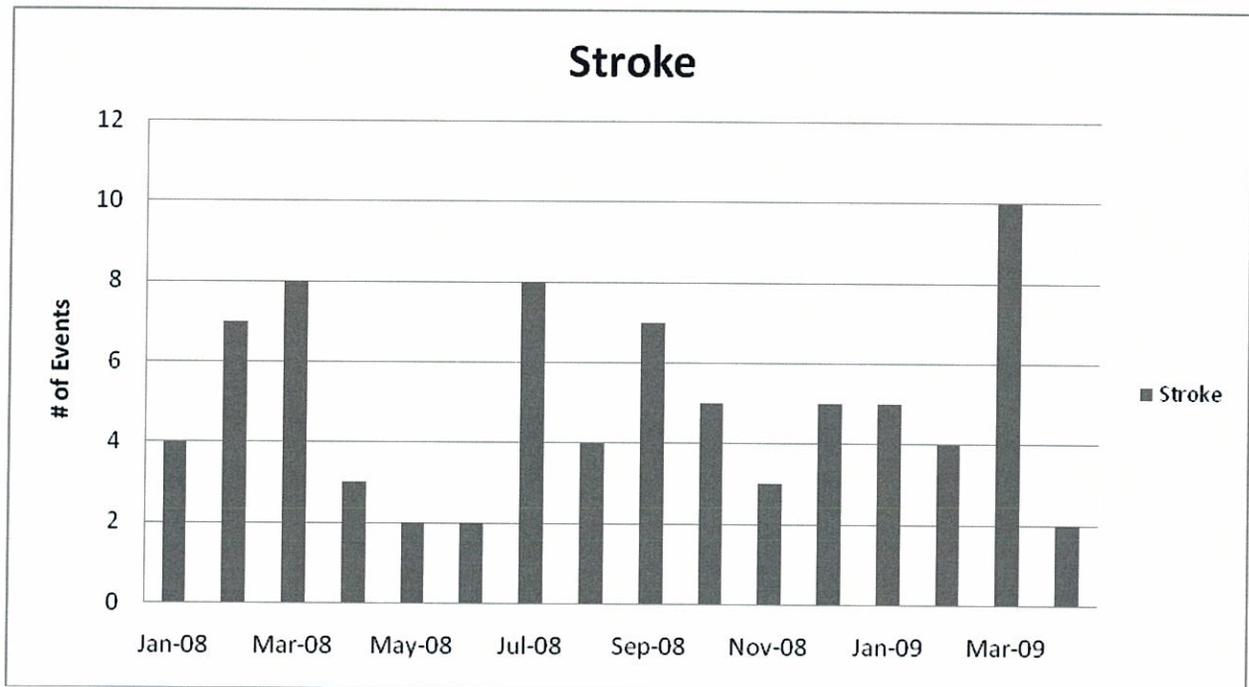
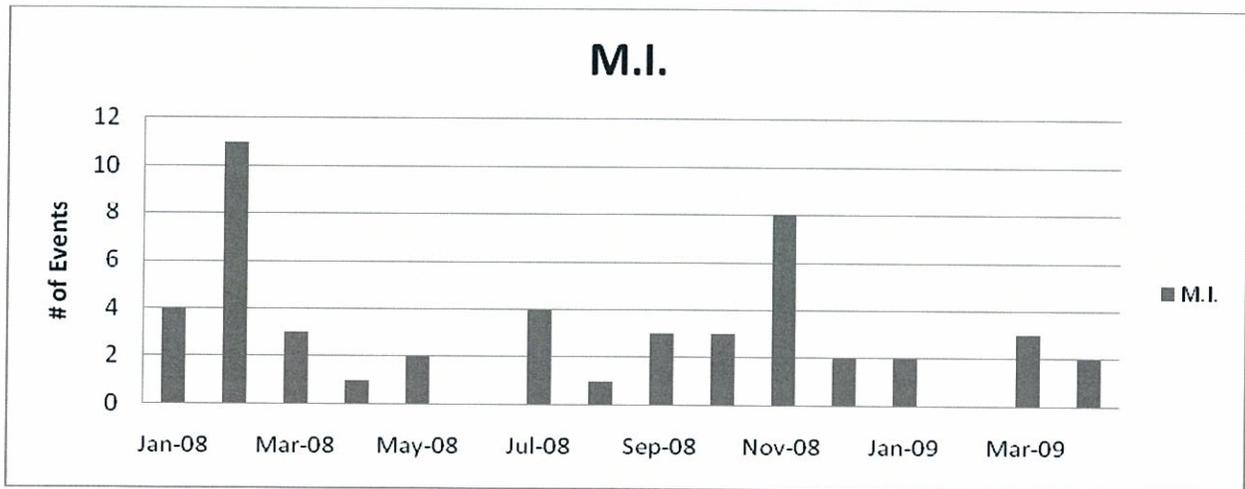
When compared to the monthly average of the pre-study period (Jan-Dec 2008), there was a 50% decrease in the number of discharges of patients who were admitted for myocardial infarction over the 4 months of available data during the study period (Jan-Apr 2009). There was a 61.5% increase in the incidence of G. I. bleeding over the same period. (Table 5). None of these differences reached statistical significance, though the p-value for heart attacks was 0.1. We have subsequently learned that many heart attack victims are transferred from Duncan Regional Hospital to other hospitals for invasive treatment, so these data are likely to be incomplete with respect to MI cases.

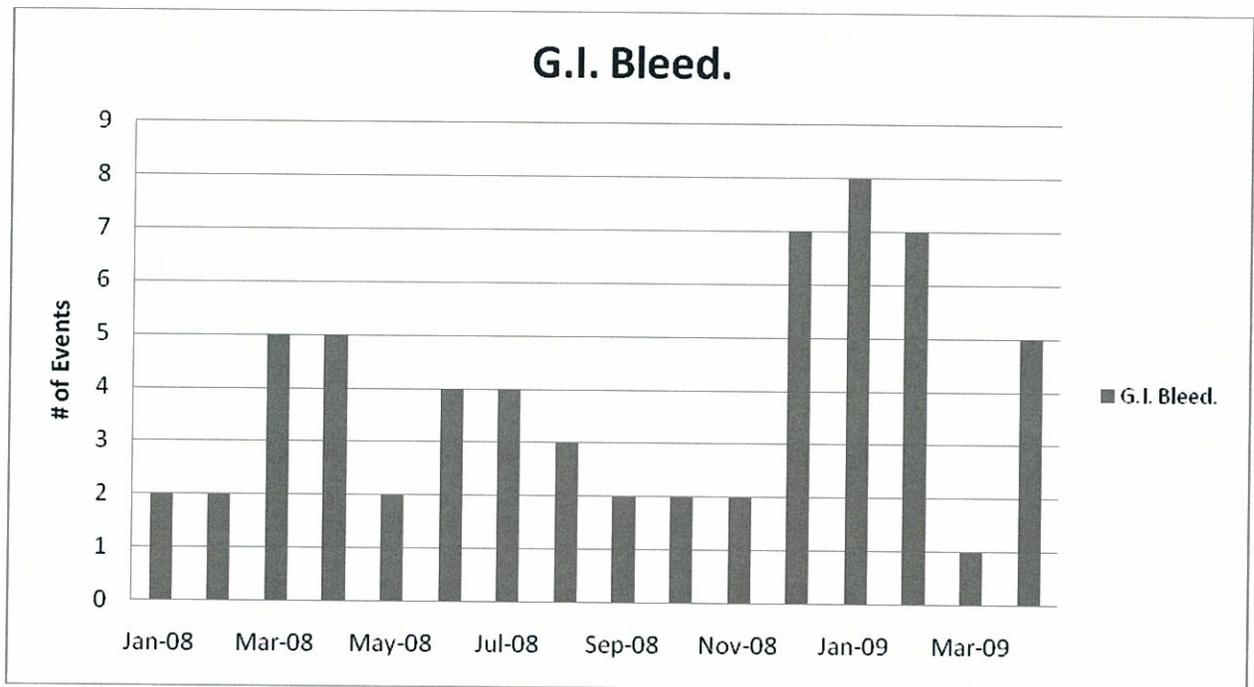
Table 5: Average numbers of hospital discharges per month with heart attack (MI), stroke, and gastrointestinal hemorrhage (GI bleed) during the 12 months prior to and the 6 months during the intervention.*

Event	Pre-Study Avg. Per Month	Study Avg. Per Month	% Change
M. I.	3.5	1.75	(-)50%
Stroke	4.8	5.25	(+)9.4%
G.I. Bleed	3.25	5.25	(+)61.5%
All Discharges	273	282	

* None of these differences reached statistical significance, though the p-value for heart attacks was 0.1.

Figure 2: Graphical representation of the actual numbers of patients with heart attack, stroke, and GI bleeds discharged from the hospital by month. The intervention period is represented by the final 6 bars.





Discussion

Based upon the Stephen’s County pilot, it is feasible to institute an effective communitywide health initiative. Though the sales data from Wal-Mart has not yet been determined to be statistically significant, it appears that the use of aspirin in the community increased since the implementation of the low-dose aspirin campaign. It therefore stands to reason that awareness of low-dose aspirin therapy in Stephens County has increased as a direct result of the community health initiative. The major requirements for the intervention are a local opinion leader and someone who can do the leg work required to distribute educational materials and authoritatively instruct the various groups in their use. Dr. Mold is prepared to help the OSDH identify clinicians who could serve as opinion leaders.

Based upon the WalMart data and clinician feedback, at least one minor change needs to be made in the educational materials. The educational materials did not include the terms “low-dose” or “baby” and it is possible that the message of aspirin therapy reached the population, but the correct dosage was lost in translation. If this is the case, this presents an issue that should be addressed in future low-dose aspirin campaigns across the state.

A Community-Based Intervention to Reduce Heart Attacks and Strokes by Increasing Appropriate Use of Low-Dose Aspirin

Cardiovascular Disease (CVD)

- ▶ CVD is the leading cause of death in OK accounting for 35% of all deaths.
 - Oklahoma ranks 50th in the U.S. for cardiovascular deaths.
- ▶ Modifiable risk factors for CVD include:
 - Lack of exercise
 - Smoking
 - Hypertension
 - High LDL cholesterol
 - Low HDL cholesterol
 - Diabetes

Heart Attacks and Strokes

- ▶ Heart attacks and strokes occur when critical blood vessels are blocked by clotted blood or other debris
- ▶ Most of these clots are associated with plaques on the lining of the blood vessels that rupture, break off and travel downstream, or slow the flow of blood allowing it to clot
- ▶ One way to reduce heart attacks and strokes is to inhibit clotting with low-dose aspirin

Why Low-Dose

- ▶ Low-dose aspirin in the U.S. is 81mg per day ("baby aspirin," now available for adults)
- ▶ Effects of aspirin on clotting occur at low doses
- ▶ Increasing the dose above 81mg per day does not further reduce clotting
- ▶ Doses higher than 160mg increase the risk of bleeding so regular adult aspirin (325mg) is too much

Low-Dose Aspirin Fact Sheet

- ▶ The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians discuss low-dose aspirin use with adults who are at increased risk for CVD
 - Those with known CVD
 - Men 45-59 with a 10-year heart attack risk \geq 4%
 - Men 60-69 with a 10-year heart attack risk \geq 9%
 - Men 70-79 with a 10-year heart attack risk \geq 12%
 - Women 55-59 with a 10-year stroke risk \geq 3%
 - Women 60-69 with a 10-year stroke risk \geq 8%
 - Women 70-79 with a 10-year stroke risk \geq 11%
- ▶ Heart attack and stroke risk can be estimated using calculators available on the internet
 - Generally one major risk factor is enough to qualify
 - <http://www.intmed.mcw.edu/clincalc/heartrisk.html>
 - <http://healthlink.mcw.edu/article/923521437.html>

Adverse Effects of Low-Dose Aspirin

- ▶ Bleeding
 - Low-dose aspirin increases the risk of bleeding
 - Most common serious bleeding sites include stomach, colon, and brain
 - Aspirin should therefore be used with caution when taking other medications or herbal products that reduce clotting or irritate the stomach (e.g. anticoagulants, anti-inflammatory medications, Ginkgo biloba, and large amounts of fish oil, flaxseed oil, garlic, ginger, green tea, or red clover)
- ▶ Allergies
 - Some people with allergies are particularly sensitive to aspirin
 - These people are more likely to have asthma and/or nasal polyps

Other Contraindications

- ▶ Individuals who should use caution when taking aspirin also include:
 - Those who have a tendency to bleed or have had a serious bleeding event
 - Those about to undergo major surgery
 - Those who drink more than 14 alcohol-containing drinks per week
 - Those with high blood pressure that hasn't been controlled.

Why a Community-Based Approach?

- ▶ Health care practitioners know about low-dose aspirin but often forget to mention it to patients who have never had a heart attack or stroke
 - It doesn't require a prescription
 - Risk assessment is time consuming and so not routinely done
- ▶ Many people at high risk for heart attacks and strokes don't know they are at risk and don't know enough about low-dose aspirin
- ▶ There are a variety of places in the community where people at risk of CVD events congregate and might be receptive to educational interventions
- ▶ A community-based intervention appeared to be successful in Stephens County (Duncan/Marlow),
OK

OK Health Improvement Project



Stephens County Health Improvement Project

The Stephens County Medical Society, Duncan Regional Hospital, Stephens County Health Department, The Simmon's Center, Halliburton and other's have joined together to form SCHIP. Our purpose is simple: ***To make Stephens County the healthiest county in Oklahoma.***

We hope you and all of our physicians will join in this effort.

Oklahoma's Health Statistics

Unfortunately, Oklahoma is one on the unhealthiest states in the U.S. Last year, we dropped to 47th, down another point from the previous year at 46th. And worse of all, we are last in the number of cardiovascular deaths, 50th. We have more deaths from heart attacks and strokes per capita than any other state. Stephens County ranks in the middle of other counties, worse in some and better in others. We want to change that and start today!

The Aspirin Campaign

Studies have shown that the quickest and most effective way to reduce cardiovascular deaths is by promoting the appropriate use of Aspirin. While high cholesterol, smoking, diabetes, family history and other risk factors should be treated, starting Aspirin in appropriate patients is easy, simple and usually safe. The Oklahoma State Department of Health has launched a statewide campaign to increase the appropriate use of Aspirin. Our SCHIP program was the first group to receive a grant to promote this campaign. We plan to do other projects over the coming year to improve the health of our citizens. We hope you will help us by promoting daily Aspirin use in at-risk patients.

Start Today!

Free materials, guidelines and incentives will be provided for you. Please encourage appropriate patients to start taking Aspirin today. If you have any questions, ideas, or suggestions you can be even more involved in improving the health of our community.

Contact: Dr. Kent King kingkent@yahoo.com

Appendix F: Materials Available from the Department of Health

Appendix G: Additional Materials Developed in Stephens County

<p>STEPHENS COUNTY HEALTH IMPROVEMENT PROJECT</p>	<p><i>Should I be taking Aspirin?</i></p>
<p>A PROJECT DEDICATED TO MAKING STEPHENS COUNTY THE HEALTHIEST IN OKLAHOMA.</p>	<p>ASPIRIN CAN SAVE YOUR LIFE.</p> <p>Are you over 50? Do you have Diabetes, High Blood Pressure or Smoke? Have you ever had a Heart Attack or Stroke? Find out if Aspirin is right for you. It could save your life!</p> <p>Ask your doctor or pharmacists today.</p>
<p>For help or answers to your questions on Aspirin or how you can start being healthier today, email us at: schip@live.com</p>	

Aspirin Facts for Health Professionals

Background:

1. Oklahoma ranks 49th (last) in the U.S. for the most cardiovascular deaths per capita.
2. Cardiovascular diseases (strokes and heart attacks) are the leading causes of death in Oklahoma.
3. Aspirin use ranks #1 as the single most effective way to decrease cardiovascular deaths.
4. SCHIP – The Stephens County Health Improvement Project is a volunteer organization formed to make our county the healthiest in Oklahoma.

Please help us spread the word to all of our citizens about who could benefit from taking Aspirin. Join this effort today!

Who should consider taking Aspirin?

1. Men over 40 with any risks for stroke or heart attack.
2. Women over 60 with any risks for stroke or heart attack.
3. Patients with Diabetes, Hypertension and High Cholesterol or who Smoke.
4. Patients who have already had a heart attack, stroke or TIA's.

Who should NOT take Aspirin without talking to their doctor?

1. Patients with Asthma, Ulcers, NSAID use, Hx of abnormal bleeding, allergy to Aspirin or uncontrolled HTN.
2. Patients on Coumadin, Plavix or Aggrenox. Note: Some doctors may recommend a combination of blood thinners in higher risk patients.
3. Patients over 80 years of age.

Other Facts:

1. Generally, lower doses (81mg) are just as effective as higher doses. One exception may be chronic atrial fibrillation .
2. Aspirin 81mg has a lower risk of GI bleeding (3 per 1000 per 5 yrs) and higher doses (325mg) have a higher risk (5 to 6 per 1000 per 5 years).
3. Enteric-coated products have not been proved to safer. As many as 35% of cardiovascular events could be prevented with Aspirin.

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