

Development and Implementation of a Demonstration Model of a State Cardiovascular Health Examination Survey

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Introduction

2-year surveillance demonstration project beginning
June 30, 2005

CDC-funded states – Arkansas, Kansas, and
Washington

Objectives:

- develop and implement a state cardiovascular health
(CVH) exam survey

- inform and provide guidance to states in the
development of high blood pressure and cholesterol
control strategies



Supplement to Program Announcement 02045

Limited competition open to those funded under 02045.
Availability of about \$400,000 to fund 1 or more awards.
Develop a sampling plan to collect data from a sample of the state population with over-sampling as needed to ensure an adequate sample on at least 1 **priority population** (required power calculations).
Ensure findings used by state heart disease and stroke programs to develop quality improvement efforts related to high blood pressure and cholesterol control integrated with ongoing 1° and 2° prevention programs.
Provide a plan to evaluate the effectiveness of the survey.



Methods

Sampling Design:

Arkansas: 3-stage cluster sample (US Census)

Kansas: multi-stage disproportionate stratified random digit dial sample (telephone exchanges)

Washington: 3-stage neighborhood cluster survey

Many National Health and Nutrition Examination Survey (NHANES) protocols are used to collect data related to Healthy People 2010 (HP 2010) focus areas

States collaborate with Centers for Disease Control (CDC) and National Heart, Lung, and Blood Institute (NHLBI) Lipid Standardization Lab

for lipid and lipoprotein determinations

ensure that the labs used are CDC-Certified



Relevant HP 2010 Objectives

12-9 - lower proportion of adults with high blood pressure

12-10 - higher proportion of adults with high blood pressure whose blood pressure is under control

12-11 - higher proportion of adults with high blood pressure who are taking action (losing weight, higher physical activity, or lower sodium intake) to control blood pressure

12-13 - lower mean total blood cholesterol levels among adults

12-14 - lower proportion of adults with high total blood cholesterol levels

12-16 - higher proportion of persons with cardiovascular disease who have their low density lipoprotein (LDL) cholesterol level treated to a goal of ≤ 100 mg/dL

Core Data

Lipid and lipoprotein cholesterol blood levels

Blood pressure levels

Anthropometric data

Other relevant risk factors and behaviors

History of heart disease, stroke, and diabetes

Medications prescribed and actions taken to control high blood pressure and high cholesterol

Demographic and socio-economic status information

Data Issues

Each state has its own unique sampling plan and data collection strategy

Data from the 3 states will not be combined

Data will not be transmitted to CDC

Survey will provide much-needed data on levels of uncontrolled high blood pressure and high cholesterol in the state population

Data should be used to market state-level burden of untreated and uncontrolled hypertension and high cholesterol to decision-makers



Project Objectives

Develop model to enhance scientific capacity of a state program

Collect data on levels of blood pressure and blood cholesterol and other relevant information

Compare data between priority populations and general public

Provide guidance to states in developing, implementing, and evaluating CVH promotion and risk factor control strategies to eliminate disparities

Arkansas

State population = 2.7 million (16% Black)

Statewide sample N=1500

Priority population – Blacks

Data collection contract - Examination Management Services, Inc

Data collection - life insurance exam nurses

Laboratory contract - Examination Management Services, Inc and State Public Health Lab



Arkansas

Collaboration with other state programs – Oral Health, Tobacco, Diabetes, Hepatitis C, and Public Health Lab

In kind collaborations – Roche Labs (kits for Hepatitis C testing) and Abbott Renal Labs (renal function testing)

Other collaborators – Blue & You Foundation (Blue Cross-Blue Shield of Arkansas) and Arkansas Minority Health Commission



Additional Variables - Arkansas

High sensitivity C-reactive

Homocysteine

Cotinine

Hepatitis C

Sleep patterns

Food frequency

questionnaire and

Behavioral Risk Factor

Surveillance System

(BRFSS)

Oral health

Parathyroid hormone

Cystatin-C

Serum creatinine

Albumin to creatinine
ratio

Fasting serum insulin

Hemoglobin A1c

Kansas

State population = 2.7 million (8% Hispanic, 6% Black)

Statewide sample N=1700

Priority populations – Blacks and Hispanics

Project coordination contract – University of Kansas
Medical Center

Data collection – public health nurses in local county
health departments

Questionnaire – English and Spanish versions



Kansas

Laboratory contract – Lab One

Collaboration with other state programs –
Office of Health Promotion, Diabetes, Tobacco,
and Local Health Departments



Additional Variables - Kansas

Cotinine

High sensitivity C-reactive protein

Sleep patterns

Hemoglobin A1c



Washington

State population = 6.2 million

Statewide sample N=1100

Priority population – Low Income (<\$35,000)

Data collection – contract nurses and interviewers

Laboratory contract – State Public Health Lab,
University of Washington Lab, North West Lipid
Metabolism and Diabetes Research Lab, and
Frontier Geosciences Lab



Washington

Collaboration with other state programs –
Environmental Health, Public Health Lab,
Diabetes, Oral Health, and Nutrition and Physical
Activity



Additional Variables - Washington

Mercury

hair

fish questions on food frequency
questionnaire

Food frequency questionnaire

Oral health



CDC Workshop (Sept 2005)

Provided overview of project objectives and expected activities
State survey Principal Investigators and coordinators presented preliminary plans and study designs

Technical assistance and consultation provided by CDC prevention experts:

National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) – Division for Heart Disease and Stroke Prevention

NCCDPHP – BRFSS

NCCDPHP – Office of Smoking and Health

NCCDPHP – Division of Oral Health

National Center for Environmental Health (NCEH) – Lipid Standardization Lab

National Center for Health Statistics (NCHS) – NHANES



Progress to Date

Each state developed their survey methodology

Each state obtained Institutional Review Board approval

Each state hired a project coordinator

Monthly project conference calls with principal investigator, state coordinator, and CDC project officers for all 3 participating states

Individual monthly calls conducted with each state by CDC technical advisor



Lessons Learned

Fund a state exam survey and other state programs will jump on board and provide additional funds at the state level to collect data of interest to them (chronic disease, environmental tracking)

States may not be able to obligate all first-year funds due to state regulations requiring payment after services are completed (data collection)

States need access to NCHS operational guidelines (or protocols) for standardized data collection to eliminate the need to develop such guidelines

States need access to NCHS information about the time needed between training interviewers and actual data collection



Expectations for Year 2 (2006-2007)

Continue and finish data collection

Analysis of data

Written summary of findings

Dissemination of findings to decision-makers

Evaluation of the effectiveness of the survey

Completion of project reports



State-Perceived Value of Survey

Gain better insight regarding risk factor burden and disparities in control of risk factors (Arkansas, Kansas)

Empower local health departments to respond to the state health department for various health-related initiatives (Kansas)

Guide state in developing interventions (Arkansas, Washington)

Disseminate state findings through internet, press conferences, publications, and presentations to partners and health professionals (Washington)



Conclusion

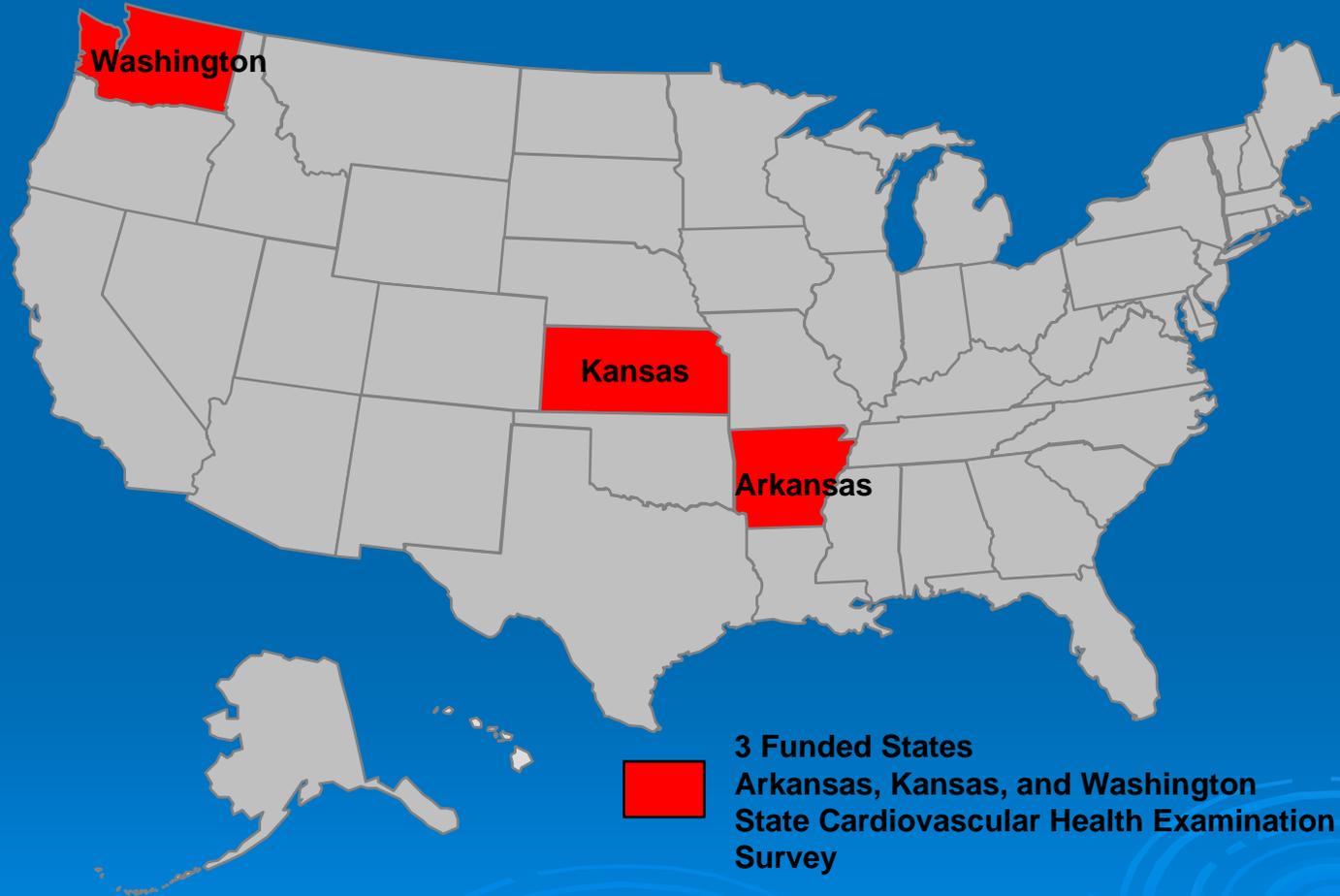
State level data are not currently collected that allow states to monitor progress toward addressing HP 2010 objectives

Project will demonstrate that states can collect this data and use it to convince state decision-makers to allocate state resources for intervention strategies for high blood pressure control and the control of high cholesterol

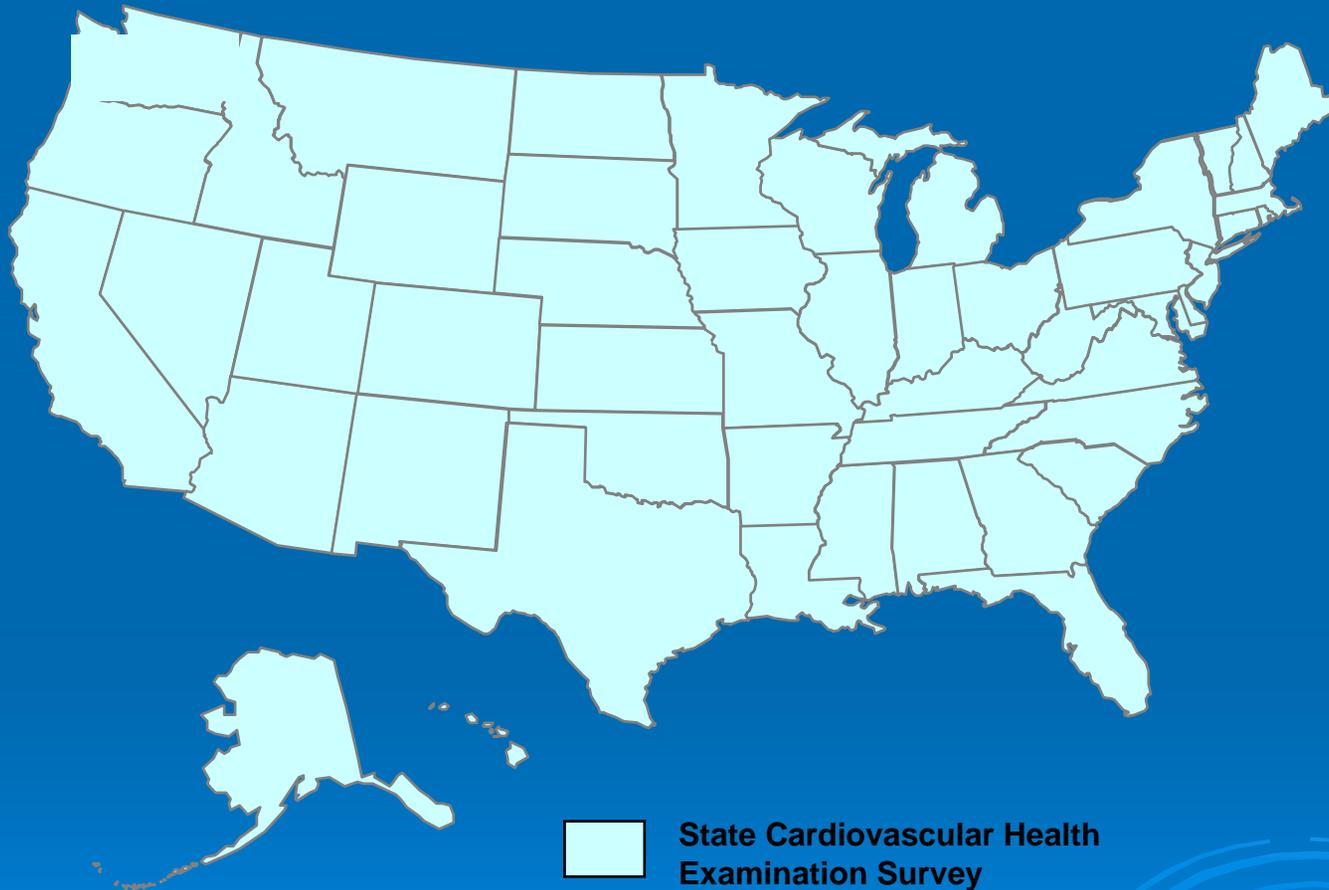
Without state-level data on high blood pressure and high cholesterol, state decision-makers have been less inclined to do this



Currently Funded CVH Exam States



Scientific Capacity of the Future



State CVH Exam Survey Link

www.cdc.gov/DHDSP/state_program/examination_survey.htm



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Objective: To explain the state health examination survey and its importance for states to develop hypertension and cholesterol control strategies.

Setting: Cross-sectional state health examination surveys of state-wide sample populations in Arkansas (AR), Kansas (KS), and Washington (WA).

Methods: CDC funded AR, KS, and WA in 2005 to develop and implement a demonstration model of a state cardiovascular (CVD) health examination survey to enhance the scientific capacity of state programs to collect data blood pressure (BP) and blood cholesterol (CHOL) levels and other relevant information; compare data between priority populations and the general public; and provide guidance to states in developing, implementing, and evaluating CVD health promotion and risk factor control strategies to eliminate disparities. Sample size varies in AR (N=1500), KS (N=2100), and WA (N=1000). Priority populations for each state differ (blacks-AR, low-income-WA (<\$35,000 household), and Hispanic and blacks-KA). State programs oversee the survey and ensure that NHANES and BRFSS protocols are used for data collection. AR coordinates the project but obtains examiners by contracting with a business that trains nurses to conduct life insurance examinations. KA contracts with a university (coordinator of project) and trained examiners. WA coordinates the project but contracts with field staff comprised of 3 four-person teams (2 nurses and 2 recruiters/interviewers). Laboratory determinations in each state are conducted by private laboratories participating in the CDC/NHLBI Lipid Standardization Program. States vary in data collected but surveys include measurements of lipid and lipoprotein CHOL; BP; anthropometrics; risk factors/behaviors; history of heart diseases, stroke, and diabetes; and medications prescribed and actions taken to control high BP and high CHOL.

Results: CDC (Year 1) convened a workshop of survey coordinators, NCHS, and Lipid Standardization Lab to discuss methodologic issues. We discuss issues and share solutions during monthly conference calls. Other chronic disease and environmental tracking programs provided funds for involvement after the mechanism was established. The 3 states have encountered problems and resolved issues about staffing, IRB, survey development, and contractors and are now moving forward with implementation. Results will be available in 2007.

Conclusion: No state-level data are available that allow states to monitor progress towards addressing the 2010 objectives for BP and CHOL or to convince state decision-makers about local burden. This project demonstrates that states can collect and use data to convince state decision-makers to allocate state resources to plan intervention strategies for high BP and CHOL control. This project provides a Best Practices to guide programs within states.

