

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

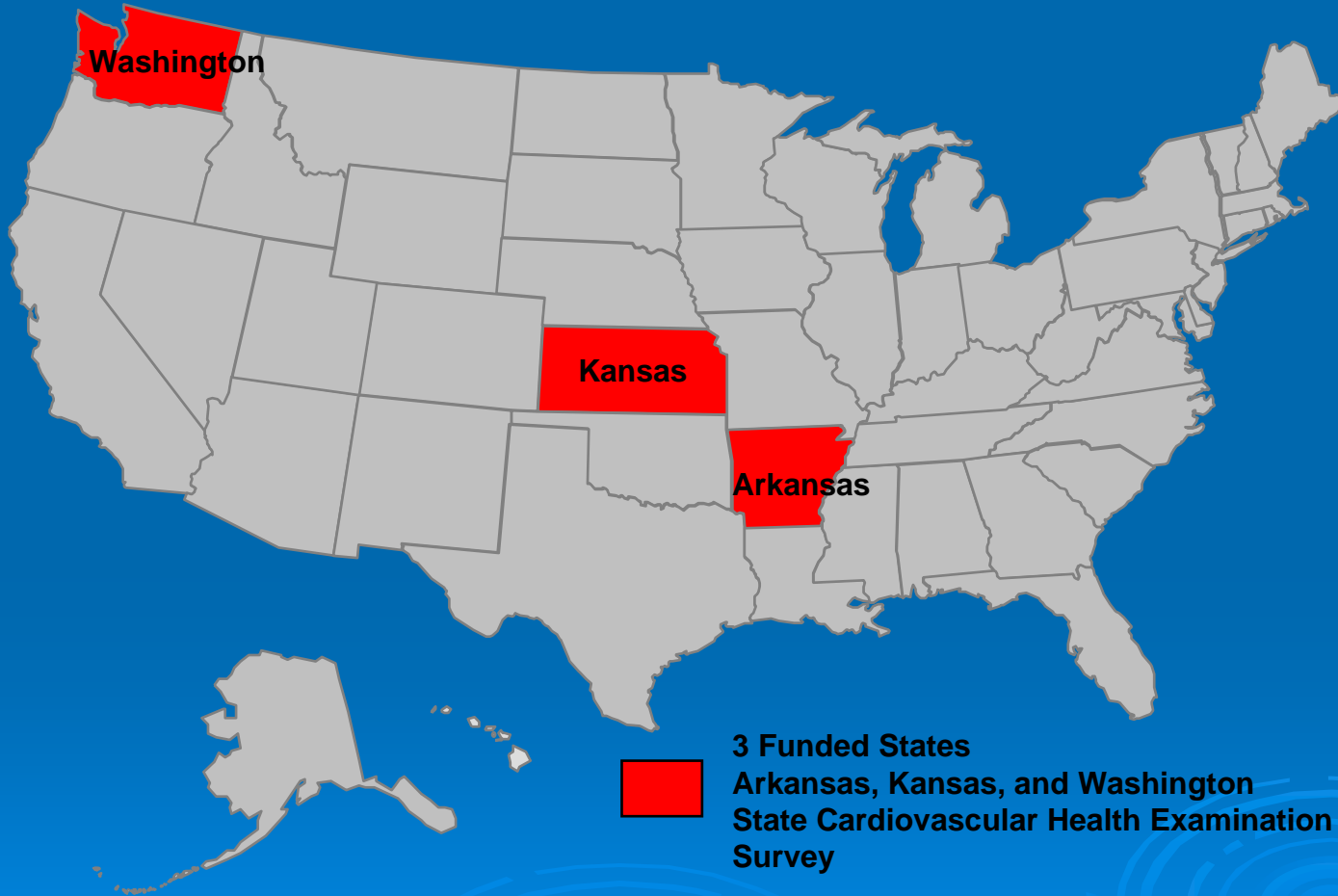
State-Perceived Value of Survey

- 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)

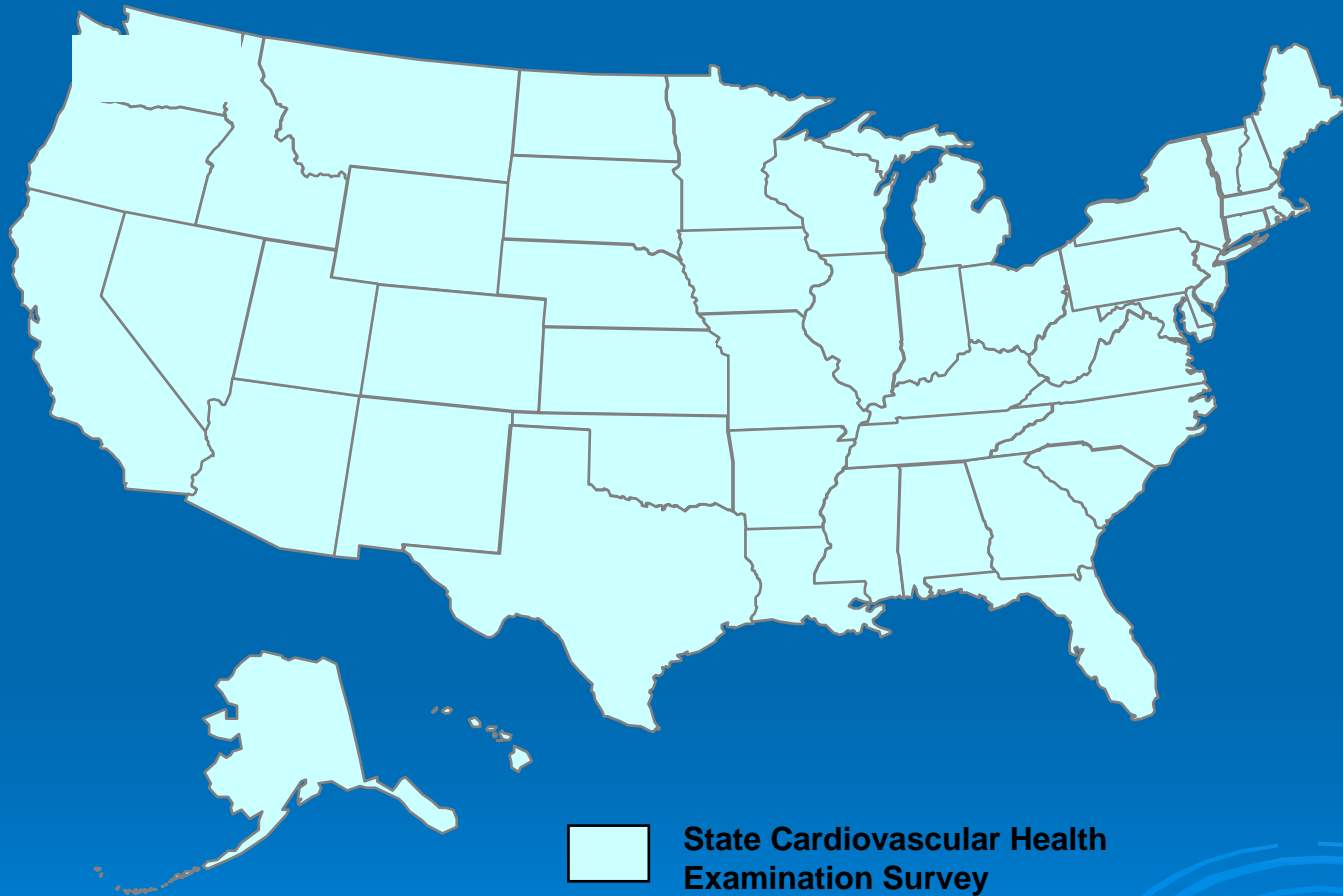
Conclusion

- 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.

