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.
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 \( \leq 100 \text{ mg/dL} \)
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

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<th>High sensitivity C-reactive</th>
<th>Parathyroid hormone</th>
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<td>Cystatin-C</td>
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<td>Cotinine</td>
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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

3 Funded States
Arkansas, Kansas, and Washington
State Cardiovascular Health Examination Survey
Scientific Capacity of the Future

State Cardiovascular Health Examination Survey
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 on 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.