

Monitoring Wisconsin's Health Status

The Survey of the Health of Wisconsin (SHOW) project even makes “house-calls”

By Phoebe Frenette

The University of Wisconsin's School of Medicine and Public Health launched the Survey of the Health of Wisconsin (SHOW) in 2008.

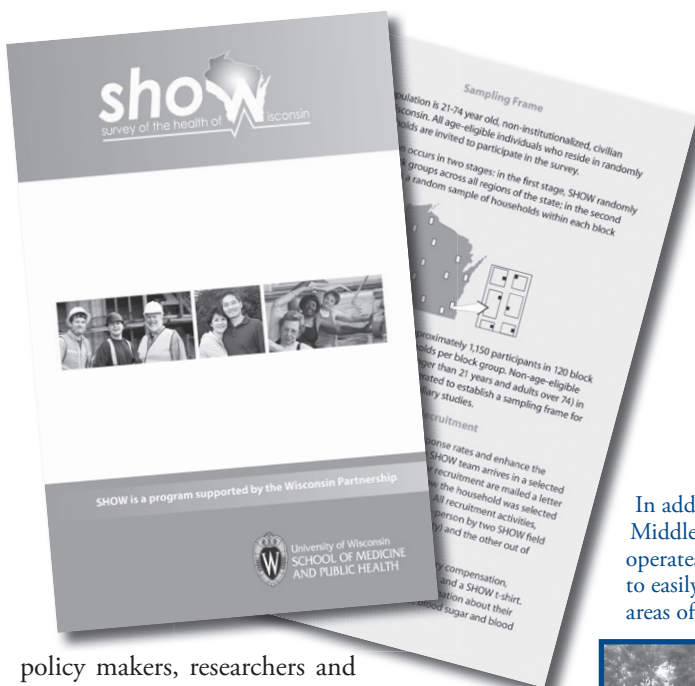
SHOW is an infrastructure for annual health surveys designed to examine the health of the population and communities within Wisconsin.

SHOW's annual surveys gather data on a variety of health conditions and risk factors. SHOW collects data by establishing an annual representative sample of Wisconsin residents. The data collected provides a comprehensive picture of Wisconsin residents' health status and health determinants over time. Each annual sample will be followed long-term.

Wisconsin is the first state to monitor the health of its residents with a survey of this magnitude and scope. SHOW is modeled after the Centers for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES), which has provided key information about the nation's health for over 40 years. Using NHANES as a guide, SHOW is specially designed for the Wisconsin population by including regionally important health measures, such as local environment assessments. SHOW's work supports the State of Wisconsin's Healthiest Wisconsin 2010 goals.

SHOW is funded by the Wisconsin Partnership and by the UW Institute for Clinical and Translational Research. SHOW is under the direction of Dr. F. Javier Nieto and his team at the University of Wisconsin's School of Medicine and Public Health. The SHOW team includes experts in population health research from the UW Department of Population Health Sciences, the Center for Urban Population Health in Milwaukee and consultants from multiple UW departments and around the nation.

SHOW will provide an accurate and timely picture of the health of Wisconsin residents across geographic and socio-demographic subgroups, supporting Healthiest Wisconsin 2010 goals. As a shared resource, data from SHOW will allow state



policy makers, researchers and other community stakeholders to:

- Monitor the prevalence of health outcomes, determinants and trends over time in order to facilitate public health assessment, priority setting, policy development and program evaluation
- Explore the relationships between health determinants—including environmental exposures, community characteristics, psychosocial factors, health behaviors and biological factors—and the health status of Wisconsin residents
- Identify specific health needs and disparities in order to help target resources where they are most needed
- Assess health care access and utilization in residents of Wisconsin communities, as well as the determinants and health consequences of these patterns of health-care access

SAMPLING FRAME

The target population is 21-74 years old, non-institutionalized, civilian residents of Wisconsin. All age-eligible individuals who reside in randomly selected households are invited to participate in the survey.

In addition to survey centers in Middleton and Milwaukee, SHOW operates two Mobile Survey Centers to easily reach participants from all areas of Wisconsin.



Sampling selection occurs in two stages: in the first stage, SHOW randomly selects census block groups across all regions of the state; in the second stage, SHOW selects a random sample of households within each block group.

SHOW aims to annually enroll approximately 1,000 participants in 72 block groups, by selecting 18 households per block group. Non-age-eligible household residents (children younger than 21 years and adults over 74) in selected households are also enumerated to establish a sampling frame for potential recruitment into future ancillary studies.

PARTICIPANT RECRUITMENT

SHOW recruits in-person to maximize response rates and enhance the representativeness of the sample. Before a SHOW team arrives in a selected census block group,

households selected for recruitment are mailed a letter describing the project. The letter explains how the household was selected for inclusion and the benefits of participation. All recruitment activities, interviews and examinations are conducted in-person by four SHOW field teams, based out of Middleton (Dane County), Milwaukee, Marshfield and Green Bay.

Incentives for participation include a small monetary compensation, reimbursement for mileage and necessary childcare and a SHOW t-shirt. Participants will also receive a brief report with information about their height, weight, blood pressure, cholesterol level, blood sugar and blood counts.

SCOPE OF DATA COLLECTION

SHOW uses a variety of assessment methods including interviews, self-administered questionnaires, private computer-assisted

questionnaires, physical measurements and laboratory tests. Participants will provide a broad array of information on sociodemographics, health history and related behaviors, as well as health care access and utilization.

In addition to the major areas of data collection listed above, SHOW:

- Geocodes households for linkage with environmental data
- Collects local data on community social and physical characteristics
- Recontacts participants periodically for an update on their health histories

PHYSICAL MEASUREMENTS AND BIOLOGICAL SAMPLES

Physical measurements include:

- Blood pressure and heart rate
- Anthropometry—height, weight, waist and hip circumference
- Bioelectrical impedance analysis for

body composition

- Respiratory function using a portable peak flow meter

Biological samples collected include:

- Blood samples—approximately 48 mL will be collected by venipuncture for basic testing, long-term storage and DNA extraction for future studies
- Urine samples—a spot urine sample will be collected for future analyses

Blood and urine samples reserved for storage are shipped to a central biorepository where they are aliquoted and kept in freezers at -80°C.

QUESTIONNAIRES

Survey questionnaires include a mix of newly developed instruments and instruments adopted from NHANES and other national surveys. Survey participants will provide answers to interview questions, yielding data about themselves as individuals, their families and their households. Components of the interviews include:

- Household screener, tracking enumeration of household residents, their age, gender, relationships to each other and contact information
- Demographics (education, marital status, race, ethnicity)
- Housing characteristics
- Occupation and military experience
- Medical health history: includes most major diseases, conditions and health events
- Weight history
- Women's reproductive history and health
- Prescription and over-the-counter medications inventory
- Vision, hearing and dental history
- Screening tests and vaccinations
- Health insurance, health care utilization, access and satisfaction
- Health literacy: using the Short Form Test of Functional Health Literacy in Adults (s-TOHFLA) instrument
- Quality of life and current health status using the SF-12 and Euro-QoL-EQ-5D
- Depression and Post Traumatic Stress Disorder (PTSD) using the Patient Health Questionnaire (PHQ 8)
- Stress and anxiety: using several instruments, including the

What SHOW will tell us

SHOW sits at the forefront of population health research efforts in that it gathers a breadth of measures not typically included in other surveys. The survey collects physical measurements and biological samples—including DNA.

SHOW records data about participants' communities and geo-codes households, making it possible for researchers to link health information with environmental factors that might influence health. Among many other measures, the survey collects information about participants' sleep, nutrition and exercise habits, quality of life, mental health status and access to health insurance and healthcare.

Leaders hope that, in time, SHOW will answer many important questions about the health of Wisconsin residents.

Below are just a few examples of how the project will shed light on Wisconsin's pressing health issues:

- Based on physical and laboratory examinations, SHOW will offer an accurate evaluation of Wisconsin residents' blood pressure, and cholesterol and glucose levels. The data will indicate what proportion of people have healthy readings or a medical condition, how many are getting treated for such conditions and if health problems are adequately controlled.
- By measuring height, weight and waist circumference, as well as interviewing participants about diet and physical activity and directly observing the local community environment, SHOW's data will offer insight into factors that are associated with higher risks of obesity.
- With its confidential, computer-assisted and paper-based surveys, SHOW will gather a more comprehensive picture of sensitive health topics that people may feel uncomfortable sharing with others, such as alcohol use and sexual behavior.
- By studying community environments and geo-coding households, SHOW will measure factors that impact health, such as nearby landuse, access to recreation, possible exposures to environmental toxins and the community nutrition environment.
- SHOW will provide an accurate measure of how many Wisconsinites suffer from depression and other chronic physical and mental conditions.

Depression and Anxiety Stress Scale (DASS)

- Cognitive status using the Mini-Cognitive test and verbal fluency instruments
- Life events inventory
- Discrimination
- Food security
- Caregiving
- Sleep habits and sleep disorders
- Smoking habits
- Alcohol intake
- Dietary habits using Block's Fat—Sugar—Fruit—Vegetable—Glycemic Load Screener (FSFVGL)
- Physical activity and fitness
- Sexual behavior and contraceptive use
- Prevention and safety habits
- Assessment of the “fitness friendliness” and other characteristics of SHOW subjects' communities

FOLLOW-UP

SHOW participants are contacted periodically by telephone to assess the occurrences of a variety of health outcomes (e.g. new diagnoses of cardiovascular disease or cancer

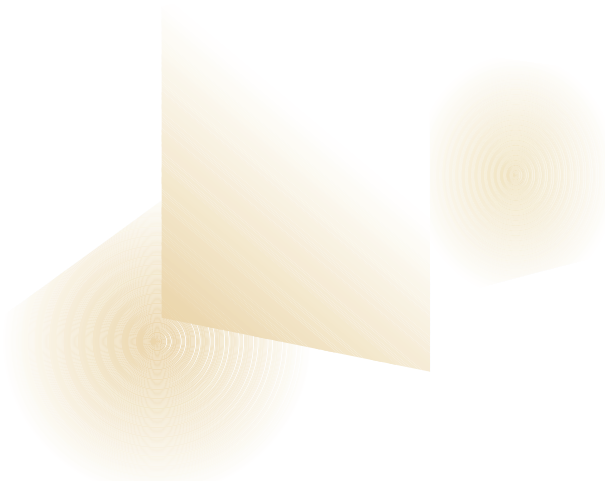
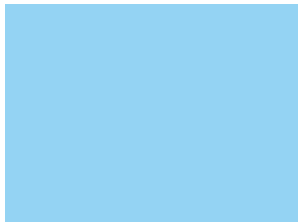
or hospitalization). Additional health outcome information will be assessed by linking participants' data with national death records and other administrative data sources (e.g. Medicare and hospital discharge data).

RESEARCH PARTNERSHIPS

SHOW data will be made available to qualified researchers. Once processed and completely de-identified, the data will be made available as a public use database.

In addition, qualified researchers and organizations interested in developing population health projects specific to Wisconsin communities will be able to propose ancillary studies that build on the SHOW core survey components and sample. SHOW's policies for ancillary studies and future additions to its protocols can be found at www.show.wisc.edu.

If your Wisconsin community or institution is conducting a research study that might benefit from access to SHOW's resources, please contact us to be updated about application procedures and timelines. Please visit www.show.wisc.edu or call us toll-free at (888) 433-SHOW to be added to our mailing list.



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