The California Health Interview Survey: A Qualitative Study on the Access, Use, Application and Impact of CHIS Data

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Acknowledgements

Executive Summary

Findings from the CHIS Impact Study highlight unique characteristics of the California Health Interview Survey (CHIS) that help CHIS serve policy needs in California and underscore the value of CHIS as a model for health data collection, reporting and dissemination.

CHIS provides important information on the health, health behaviors and access to health care services of Californians. Conducted and disseminated by the UCLA Center for Health Policy Research (the Center) since 2001, CHIS data and analytic results already are used extensively in California in policy development, service planning and research. To help make the survey an even more effective tool for research and evidence-based advocacy in subsequent rounds of data collection, UCLA initiated a study in collaboration with NIH to understand more systematically how research using CHIS has been able to make an impact in public health.

In order to understand the process through which users access CHIS data and evaluate the impact resulting from application of CHIS data, the CHIS Impact Study was designed to provide insight into the processes leading to successful application of population health surveillance data. The study was conducted in two stages using qualitative methodology. The two-stage design first, identified the multiple ways organizations access CHIS data and the variety of uses and applications that involved CHIS data (Stage 1) and then, identified a subset of examples for in-depth examination (Stage 2).

Results from the study revealed:

- A diverse audience of CHIS users including state and national policy makers, advocacy organizations, philanthropic health foundations, private hospitals and health care organizations, and state and county public health agencies;
- Most data users accessed CHIS data through the Center's *Ask*CHIS online query system. Center reports and briefs, public-use files, confidential data files and requests for special data analyses by the Center also served as important sources of data;
- Regardless of the type of organization, CHIS data were used in a number of ways including to promote education and awareness of an issue, support a policy position taken by the organization, identify a specific population and its characteristics and develop complex modeling to meet organizational goals and objectives;
- Successful application of CHIS data led to significant outcomes in several domains of interest including health policy development, health policy advocacy, grant making, grant seeking and service and program planning.

Organizations interviewed for the CHIS Impact Study reported that some key characteristics of CHIS data were instrumental in meeting their goals and objectives:

- CHIS data provide a *breadth of health information* as well as socioeconomic, demographic and contextual covariates which expands the applicability of CHIS to a wide range of health issues by stakeholders;

- CHIS data comparability is enhanced by *the availability of both state and local-level data*;
- CHIS data provide demographic specificity that allows the *delineation of a wide range of racial-ethnic and other sub-populations*;
- CHIS data *quality* is consistently outstanding, and provides credible evidence for identifying and defining problems, and for planning and assessment;
- CHIS data are *provided in multiple forms*: dissemination of data and results in multiple forms has proven crucial to meeting the needs of an extremely diverse audience;
- *CHIS staff interaction* with data users includes valuable technical support, training and direct feedback to assist users to utilize CHIS data more effectively.

We conclude that state health surveys like CHIS will provide the most value if data are comprehensive in scope; provide both local- and state-level data; have large samples that permit robust estimates at appropriate geographic levels and relevant demographic groups to inform health policy development, advocacy and service planning needs; and use methods that produce reliable, valid and representative data in which users can put their confidence. Finally, this impact study demonstrates how substantial investment in dissemination and communication of health survey data has fostered widespread use of CHIS data by all types of public and private organizations, and established an effective research tool for advocacy, program and policy impact purposes.

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Background

CHIS as a Surveillance and Planning Tool

In its short life, CHIS already has established its utility as one of the nation's leading health surveys. CHIS is one of the largest health surveys in the nation, the largest in any state and the only one that provides local population-based health survey data for the entire state. Policy makers, advocacy leaders, researchers and others have long used data from population-based surveys as evidence to inform their decisions related to specific organizational missions, programs and services and public policies. However, it appears that CHIS data are being used more widely and are having greater impact on health care delivery and policy than other surveys.

The California Health Interview Survey (CHIS), conducted by UCLA Center for Health Policy Research (the Center), provides important information on the health and access to health care services of Californians. The survey, conducted every two years since 2001, continues to expand the scope of issues on which health information is collected, increase the number of counties individually represented and improve public access to the data. The three survey cycles already completed provide an opportunity to systematically examine the uses of CHIS data and the role of CHIS data in developing health policies, programs and initiatives at the state and local levels.

CHIS Impact Study

There are other population-based health surveys intended to be used for policy-making and research; however few appear to have had the extensive impact that CHIS has had. Other population-based health-related surveys include the National Health Interview Survey (NHIS, conducted by the National Center for Health Statistics), the Behavioral Risk Factor Surveillance System (BRFSS, conducted by each state and coordinated by the Center for Disease Control and Prevention), and the Current Population Survey (CPS, conducted by the U.S. Census Bureau). The extent to which data actually are used has not been widely documented nor has the utility of these data to state and local health programs and policy-making been studied. This study focuses exclusively on the impact of CHIS and the attributes that have led to its widespread use by health departments, advocates and legislators in California for policy advocacy and development and for program and service planning.

The CHIS Impact Study offers one of the first systematic efforts to investigate how surveillance data influence health policy-making. To bridge the knowledge gap between data dissemination and outcome, the CHIS Impact Study was designed to provide insight into the processes leading to successful application of population health surveillance data in the health policy process. More specifically, the CHIS Impact Study was designed to provide insight into the influence of CHIS data application in several key domains of interest, including health policy development, health policy advocacy, grant making, grant seeking and service and program planning.

The CHIS Impact Study was conducted in two stages. Stage 1, in which 29 organizations were interviewed, was designed to examine the range of activities for which CHIS data are used, document the various ways that the data are accessed, and describe the impact resulting from application of the data. Stage 2, in which seven of the 29 examples identified in Stage 1 were studied in greater depth, was designed to provide a more detailed understanding of how data were successfully applied to achieve desired outcomes in health policy and program development.

Sample and Methods

Findings are based on interviews and supporting documentation as needed. Organizations that had used CHIS data to advance specific policies, programs or initiatives were considered for inclusion in the study in Stage 1. Examples from organizations that demonstrated some significant impact from the use of CHIS data were considered for inclusion in Stage 2. Qualitative methods were used to interview key informants from selected organizations using semi-structured questionnaires. The study proceeded in two stages.

Stage 1

The sampling frame for Stage 1 interviews was created from multiple sources of known CHIS data users because there is no single source of such information. Organizational users were identified from the *Ask*CHIS and CHIS public-use data file websites, published reports that cited CHIS data and staff of the UCLA Center for Health Policy Research who had information about the use of CHIS data in policy or research by outside organizations. A snowball sampling procedure was used to expand the Stage 1 sample to include other organizations. This was done by asking core organizational representatives to provide the name and contact information of other individuals who had used CHIS data. The sampling frame was designed to examine the different types of CHIS users and was not designed to be representative of all CHIS data users.

Sixty-nine organizations were included in the sampling frame for Stage 1. Organizations were categorized into a matrix based on several characteristics including organization size (less than 10, 10-25, 25-50, 50+ full-time employees), scope of work (local or state/national), and organizational type (public, private commercial, private non-commercial and research). One or two organizations from each occupied cell of the matrix were selected for inclusion in the study sample for Stage 1.

Representatives from 29 organizations were interviewed for Stage 1. Overall, 39 organizations were contacted for participation. Twenty-nine organizations participated, resulting in a participation rate of 74% (see Table 1). Organizational representatives were contacted via email or telephone requesting participation in a semi-structured telephone interview. Interviews followed a standard protocol and ranged in duration

from 10 minutes to 30 minutes. Interviews were reviewed and analyzed to produce short narratives of CHIS data use.

Stage 2

The 29 organizations in Stage 1 served as the sampling frame for Stage 2 of the study. Seven were selected as cases studies for Stage 2. These cases were selected because they served as examples of significant impact related to the use of CHIS data for in-depth study in at least one of the domains of interest (health policy development, health policy advocacy, grant making, grant seeking and service and program planning). The final examples for in-depth study in Stage 2 were selected in conjunction with Center project staff and project officers at the Office of Disease Prevention in the National Institutes of Health and the Applied Research Program in the Division of Cancer Control and Population Sciences at the National Cancer Institute. Examples were selected to represent the variety of CHIS data application, the health issue of focus, and likelihood of contacting additional key informants.

For most case studies, a follow-up interview was conducted with the same person who was interviewed in Stage 1. In cases where additional information was needed that could not be supplied by the primary respondent, additional interviews were conducted with other key informants. All interviews were conducted over the phone, ranging in duration from 4 to 15 minutes. Documents also provided critical background information on several of the case studies.

Data from Stage 2 were analyzed to construct a detailed case identifying the issue of focus, how CHIS data were obtained and analyzed, the role of CHIS data in the issue of focus and the end result of each case. Case studies and detailed narratives are available in the full report as Appendices A and B.

The section that follows provides answers to the following CHIS Impact Study research questions: (1) What types of organizations use CHIS data? (2) How were CHIS data accessed? (3) How were CHIS data used? and (4) What outcomes did the organization hope for from their use of CHIS data, and were the outcomes achieved?

Results

Results from the study are summarized in Table 2 and discussed below. They revealed a diverse audience of CHIS data users, many domains and types of application of the data, and the critical importance of key features of CHIS, including its sample design and size, the comprehensiveness of topics covered in the survey, data quality, and dissemination of the data and results in multiple ways and formats.

I. Types of organizations that use CHIS data

The study included a highly diverse group of CHIS users, including state and national policy makers and advocacy organizations (both public and private non-profits), state and county public health agencies, philanthropic health foundations, private hospitals and health care organizations, and private organizations that conduct research for policy development or service planning. Because many organizations work across multiple, and sometimes quite different, goals, the organizations are categorized here by the health domain, or domains, in which each intended to use the CHIS data: health policy development, health policy advocacy, grant making, grant seeking or service and program planning.

A. Health Policy Development: A number of agencies and organizations that use CHIS data are directly involved in state or national health policy making or include policy makers. Among the organizations that participated in this study, those directly involved in policy making include: the *California Office of the Governor*, the *Health Committee of the California State Senate*, and the *Legislative Analyst Office (LAO) of the California Legislature*. One organization is an association of policy makers at the local, state and national levels: the *National Association of Latino Elected and Appointed Officials (NALEO)*, a private, non-commercial organization. *Solano County Health and Social Services*, a county public health agency working on policy development, also participated in the study.

B. Health Policy Advocacy: Five policy advocacy organizations participated in the study, including three that work at the state level: *California Food Policy Advocates(CFPA), California Pan-Ethnic Health Network (CPEHN, and Latino Issues Forum (LIF)*. Two other policy advocacy organizations work at more local levels: *Asian Pacific American Legal Center for Southern California (APALC)* and *Regional Asthma Management and Prevention Initiative (RAMP)*. Two research organizations in the study—the *California Budget Project (CBP)*, a public, non-profit research organization, and *The Lewin Group*, a private consulting firm— used CHIS data in support of health policy advocacy.

C. Grant Making: The study included one private health foundation, *The California Endowment,* which provides grants to community-based and statewide organizations throughout California.

D. Grant Seeking: One organization was included, *Saddleback Memorial Medical Center*, a private hospital, that used CHIS to seek funds to open a community clinic.

E. Service and Program Planning: Many of the organizations included in the study used CHIS data to plan services and programs. These include two units of the *California Department of Public Health:* the *California Diabetes Program (CDP)* and the *Sexually Transmitted Disease Control Branch*, particularly its *Surveillance and Epidemiology Section*. Two county public health agencies also were included: the *Alameda County Public Health Department,* specifically, its *Assessment, Planning, and Education*

Program (CAPE); and the *Health Promotion Division of the Orange County Health Care Agency.* Several local organizations that used CHIS data for planning also participated: *L.A. Care Health Plan*, a non-profit, "community accountable" managed care organization; *Inland Empire United Way (IEUW);* and the *Los Angeles Regional Food Bank (LARFB).* Other organizations that used CHIS data for planning services include: two commercial managed health care companies, *Kaiser Permanente* and *Molina Healthcare;* a non-profit organization, *Community Health Councils (CHC);* a non-profit research firm, *Applied Survey Research (ASR);* and two private research and consulting organizations, *Diringer and Associates* and the *Pacific Health Consulting Group (PHC).*

II. Accessing CHIS data

Making CHIS data and results available in multiple forms has proved crucial to meeting the needs of an extremely diverse audience. Participating organizations accessed CHIS data through all of these multiple forms: *Ask*CHIS, the Center's user-friendly online data query system; reports and policy briefs published by the Center; public-use data files; confidential data files; requests to the Center to conduct special data analyses; and workshops conducted by the Center's Health DATA program or by the Public Health Institute.

A. *Ask*CHIS: Among the 29 organizations interviewed in Stage 1, the predominant mode of access to CHIS data was through *Ask*CHIS, the online data query system developed by the Center. Organizations reported that they found it always available, easily accessible, free and user-friendly. This mode of access was particularly useful for organizations that needed immediate and specific information through data queries. In addition to being extremely user-friendly, *Ask*CHIS enables the user to subset populations, create demographic profiles, extract reliable county-level data and analyze trend data across multiple survey years on hundreds of survey variables.

B. Center Reports and Policy Briefs: Organizations also accessed CHIS data from research reports, policy research briefs and other publications of the UCLA Center for Health Policy Research. In some cases, organizations funded studies conducted by the Center and then used the data in their work.

C. Public-Use Files: The Center also provides public-use data files, which include nearly all health-related and sociodemographic variables in the survey, but these files do not include specific county of residence, so they are useful for statewide analyses. Anyone with the capacity to perform their own data analyses can download these files without charge from the CHIS website. The data files are available in a number of statistical software formats (i.e. SAS, Stata and SPSS), together with full documentation.

D. Confidential Data Files: Some researchers and organizations need sensitive data from confidential files. The Center provides a Data Access Center where access to confidential data files and county health files are in a secure, data analysis environment to protect the confidentiality of respondents. Confidential files are also provided to specific

CHIS funding agencies. These files contain sensitive variables excluded from public-use files.

E. Requests for Center data analysis: Some organizations made requests to the Center to conduct in-depth analyses. The Center fulfills these requests on a case-by-case basis. These organizations rely on the in-house statistical expertise and programming skills of the Center staff.

F. Workshops: The Center also provides organizations and individuals with training that enables them to learn about CHIS, how to access CHIS data and how to apply the data in their work. Community-oriented workshops are conducted by the Center's Health DATA (Data Advocacy Technical Assistance) program, a public service program that trains community-based agencies how to use data in policy development and funding development. Researcher-oriented workshops are conducted by the Center and by its CHIS partner, the Public Health Institute. Health DATA trainings have assisted some of the organizations in this study to access CHIS data.

Organizations' need to access CHIS data in a variety of ways would seem to justify the investment in the multiple forms in which CHIS data are made available. The type of vehicle needed depends on the technical expertise existing in each organization, the type of activities that are carried out and the application of CHIS data to reach the goals and objectives of each organization. In some instances, organizations accessed CHIS data in multiple ways to meet their needs. CHIS data users can, and do, interact with staff by email and telephone to clarify how to use the data files, how to interpret results or to offer feedback about CHIS and its data products.

III. Use of CHIS data

Interviews showed that any single organization may use CHIS data in any number of ways, regardless of the type of organization. Analysis resulted in four distinct categories of CHIS data use:

A. Education/awareness: Organizations use CHIS to educate their target audiences and raise awareness of particular health topics. Data are used in policy analysis, community forums and short briefs. Target audiences include community residents, policy makers and partner organizations. Using CHIS data for education and awareness is typically done to initiate dialogue on a health topic among one or more members of a target audience.

B. Position justification or persuasion: CHIS data are also used to address health topics that the organization or individual has a particular position on; the data are used to provide background and justification for that position. Grant writing, advocacy, development of policy recommendations and community organizing are activities which utilize CHIS data to persuade one or more organizational targets to act on a particular health issue.

<u>C. Population identification and analysis:</u> CHIS data are used to identify population subgroups in the planning of health programs and the development of new products in service delivery. In program planning, CHIS data are typically used to measure health needs and to characterize subgroups that bear disproportionate health needs and are under-resourced within a defined geographic area. Service delivery organizations, especially those with commercial interests, use CHIS data to identify portions of the population that may need or want their services and to characterize unreached populations to develop new products such as insurance plans or preventive services. Population analysis is also used by advocacy organizations to select issues that have the greatest impact on their constituents.

<u>D. Complex modeling:</u> As California's primary state- and county-specific population-based survey in California, CHIS is critical in the development of complex models used to project potential impact of changes in health policy. Models are used as a source of critical information for decision making on large-scale policy proposals for the state.

IV. Application and Outcome of CHIS data use

For Stage 1, a representative from each of the 29 organizations in the study was asked to select an example of how CHIS was used to advance their organizational goals. For Stage 2, one or more representatives for each of the 7 case studies were interviewed in detail about an example to ascertain how CHIS data were applied for an intended goal or purpose leading to an impact in health policy, program planning and delivery. The intended goal or purpose of CHIS data application for each example can be divided into six domains in the health arena: health policy development, health policy advocacy, grant making, grant seeking and service and program planning. We selected a few examples from the 29 organizations to highlight the outcome for each category. An expansion of these examples and other examples can be seen in Appendix A of the seven case studies or Appendix B of the 29 narratives.

<u>A. Health Policy Development</u>: Organizational representatives interviewed reported that CHIS data were critical components in health policy development efforts. Three of the five organizations interviewed under this category are highlighted here to demonstrate the successful application of CHIS data to the health care reform process in California.

i.   In developing his proposal for health care reform, *California Governor Schwarzenegger's office* requested the Center to conduct analyses of CHIS 2005 data. Though these data were not yet publicly available, early access and analyses of these data were critical for the development of the Governor's proposal in order to estimate the number of people who would be affected by his proposal and develop a fiscal analysis of various policy options.

ii. The *Health Committee of the California State Senate* also used CHIS data through *Ask*CHIS to analyze the cost and coverage implications of various proposals for expanding health coverage.

iii.   The *Legislative Analyst Office (LAO) of the California Legislature* utilized CHIS data through public-use files to prepare an analysis of the fiscal implications for the state of the Governor's plan. The findings of their analysis were included in a report, "The 2007-08 Budget: Perspectives and Issues," presenting the major provisions of the Governor's health care reform plan as well as uncertainties and potential fiscal risks for consideration by state legislators. CHIS data have been used by virtually all stakeholders that have been involved in California's health care reform process, and it has been considered a reliable and essential data source in that process.

B. Health Policy Advocacy: CHIS data proved to be essential components in several health policy advocacy efforts. Three of the seven advocacy organizations are highlighted here to demonstrate the successful application of CHIS data to advocacy for health policy change.

i.   *California Food Policy Advocates*, a statewide public policy and advocacy organization, collaborated with the Center to co-author a research brief on food insecurity that received considerable media attention. This research brief was the most comprehensive study of hunger in California at the time. An article in the *LA Times* covering the research brief prompted Assemblyman Darrell Steinberg to introduce AB 231 to increase participation in the federal food stamp program. AB 231 was adopted a year after the report was released. California Food Policy Advocates considered the CHIS data the centerpiece of their successful advocacy effort.

ii.   *The Lewin Group*, a national health care and human services consulting firm, used CHIS public-use files to develop analyses of the estimated costs and coverage impact of bills by Senator Marta Escutia and Assemblywoman Wilma Chan, AB 772 and SB 437. These bills were proposed to increase coverage of children under the Medi-Cal and Healthy Families programs. The Lewin report, in which CHIS data played a key part, was essential to inform debates on both Assembly and State floors, resulting in SB 437 being passed by both legislative bodies and signed into law by Governor Schwarzenegger.

iii.   The *California Pan-Ethnic Health Network (CPEHN),* a multi-ethnic advocacy group, decided to develop and publish a policy brief to support SB2, which would mandate employers to provide or pay for health insurance for their workers. The brief was designed to identify how many persons of color were employed by companies affected by the proposition and how many of these employees would become eligible for health insurance. CPEHN contacted the Center for assistance with an analysis on how many persons of color, by race/ethnicity, would be affected by the passage of the proposition. The Center was able to provide a complex modeling of data, specific to employer size and eligible number of employees under each category, to assist CPEHN in their efforts to advocate for SB2. Despite CPEHN's efforts, the proposition that had been put on the ballot to repeal SB2 resulted in its being overturned.

C. Grant Making and Grant Seeking: CHIS data provided critical background information and baseline evidence for both grantees and grantors. The cases below are highlighted to demonstrate the impact CHIS data can have for grantees to build their case in support of grant seeking and for grantors in the grant funding process.

i. *The California Endowment*, a private health foundation, uses CHIS data in developing specific initiatives and programs within each of the program areas and within The Endowment's grant making activity. Program officers and associates also consult *Ask*CHIS as a part of their assessments of grant proposals and to supplement proposals with information relevant to program need within a community or region of focus. The data are taken into consideration during internal grant review processes to establish the need, set the context for a program and justify the investment of foundation funds

ii. A nurse working at *Saddleback Memorial Medical Center,* a private hospital, used CHIS data to bolster her request for funding from the Saddleback Memorial Foundation to establish a clinic. Data on the uninsured in Orange County were accessed through *Ask*CHIS and used to demonstrate the need for a community clinic. The request for funding is now under review for funding by the Saddleback Memorial Foundation, the fundraising and philanthropy arm of the hospital.

D. Service or Program Planning: CHIS data were instrumental in various service and program planning initiatives. Seven of the 13 organizations in the study that used CHIS data for service or program planning are highlighted below.

i. *Alameda County Department of Public Health* provided funding to CHIS to conduct an oversample of Alameda County to include an oversample of the cities of Oakland and Hayward. One of the first community groups to have access to the 2003 CHIS data in Alameda County was the Hayward Obesity Workgroup (HOW). In its technical assistance function for the group, the department's *Community Assessment, Planning, and Education Program (CAPE)* used the department's CHIS special use files to provide CHIS data on diet, food choice, fast food intake, physical inactivity and access to places for physical activity. The analysis results were used to prioritize the programmatic and policy areas for HOW in its community assessment efforts. CHIS measures were also incorporated into a community assessment done at the neighborhood level to establish baseline information for future evaluation purposes.

ii. *Applied Survey Research (ASR),* a non-profit social research firm, incorporated CHIS data to conduct a quality of life assessment for the Community Assessment Project of Santa Cruz (CAP). Findings from CAP were used to develop programs such as Together for Youth/Unidos Para Los Jóvenes, a program to redirect youth experimentation with drugs and alcohol, and Go for Health!, a healthy eating and physical activity program for children and youth.

iii. The *California Diabetes Program (CDP),* a component of the California Department of Health Services (now called the California Department of Public Health) that is funded mainly by the Centers for Disease Control and Prevention, relied on CHIS data to measure receipt of three particular services that are part of the diabetes disease management standards: A1C tests, dilated eye and foot exams and pneumococcal vaccine. CDP used CHIS data on diabetes control in a systems dynamic model, developed by CDC for their national project, "Diabetes Primary Prevention Initiative." Through this project, application of CHIS data was instrumental in assisting a tri-county area to understand the local diabetes context and in helping CDP with strategic planning for diabetes prevention.

iv. *Community Health Councils, Inc*. (CHC), a community-based health promotion, advocacy and policy organization, used *Ask*CHIS estimates of uninsured children who are eligible for Medi-Cal or Healthy Families in specific geographic areas of Los Angeles County for presentations to the L.A. Access to Health Coverage Coalition. The coalition is now in the process of working with community partners to implement outreach and enrollment strategies in South Los Angeles, an underserved area, for 2000 children, ages 16-18, identified as eligible for insurance coverage under the county-based Healthy Kids program.

v. *Diringer and Associates,* a research and consulting firm, used CHIS data for the San Luis Obispo Children's Health Initiative to address health care coverage for children in San Luis Obispo County. CHIS data were instrumental in identifying the number of uninsured children, including those eligible but not enrolled in existing health insurance programs. The data were used to develop an estimated cost of covering all children in the county. These efforts resulted in Healthy Kids, a county-based insurance program initiative to cover more children.

vi. *The Los Angeles Regional Food Bank* (LARFB), a charitable, non-profit organization*,* funded a Center report on hunger and food insecurity in Los Angeles County. In addition to raising awareness of hunger and food insecurity, the data allowed LARFB to direct its food resources throughout the county based on the most accurate description of need. By overlaying geographic patterns of resource distribution with those of food insecurity and hunger, LARFB was able to increase the efficiency of the program by directing food to the most high need areas, and to quantify the amount of additional food needed to eliminate hunger throughout the county.

vii. *Molina Healthcare*, a managed health care company that primarily serves Medicaid and Healthy Families recipients, used *Ask*CHIS to identify their target population and groups that had low levels of mammography screening. This information was used to inform Molina Healthcare's health education intervention efforts to increase receipt of mammography screening among Latinas in San Diego County.

Conclusions

Results from the CHIS Impact Study provide valuable insight into the process of encouraging application of population health surveillance data in the health policy and delivery environments. Results in Stage 1 document the variability in data access as well as the broad range of activities for which CHIS data were used by various organizations. Results from Stage 2 detail how CHIS data were used to impact health policy, program planning and delivery. Study findings reveal several key advantages that CHIS data have over other data sources. These advantages are the basis for the next section, *Lessons Learned,* and provide a guide for focusing future CHIS efforts and a model for other population-based health surveys in their data collection and dissemination efforts.

Lessons Learned

Based on analysis of the narratives and case studies, six **unique qualities** of CHIS were revealed to be major **advantages in the effectiveness and widespread use of CHIS data**. These include breadth of health information, the availability of both state- and local-level data, the ability to delineate among various sub-populations, the quality and reputation of the data, the ability to access data and data products in multiple formats and CHIS staff interaction with data users. Organizations interviewed for the CHIS Impact Study considered these characteristics as instrumental in the success of CHIS data to meet their objectives. Table 2 provides a summary of the role that each of these unique qualities played in each of the case studies selected.

Breadth of health information. CHIS data includes a wide range of covariates related to health. As a result, users have been able to examine a wide range of health outcomes and associations. CHIS collects information on topics that include specific health diseases and conditions, health behaviors, health access and utilization, health insurance status and coverage and participation in and eligibility for public programs. CHIS routinely collects information on socio-demographic factors, employment and income and other factors. The breadth of health information, combined with the geographic and demographic specificity and ease of use of CHIS data, are features that enable empirical evidence from CHIS to be so extensively used in policy proposals and community assessments of health care needs of specific California populations.

Local-level data. CHIS provides more local geographic detail than any other population-based statewide health survey. Local-level data throughout California can be enhanced beyond what CHIS itself provides because CHIS respondent information can be linked to other geographically localized information at the Census Tract, Medical Service Study Areas, voting districts, county and other geographic levels. CHIS provides information on 41 individual counties in California. It oversamples rural counties with small populations to get accurate estimates of rural populations locally and in the state. Thus, users can estimate specific health conditions and health care needs at the county level, compare indicators across counties, as well as compare estimates between the state and county. In addition, counties or other local organizations can fund oversamples of their

county in CHIS (by funding a larger sample than they would otherwise be allocated in a CHIS cycle) to improve the statistical precision of local-level estimates. Local-level estimates are invaluable to public health departments: CHIS has improved their ability to provide appropriate and adequate services for their residents. Evidence provided by CHIS has also helped advocates appropriately target their efforts to improve policy and programs.

Demographic specificity. CHIS data provide large representative samples of key racial and ethnic sub-groups in California. This demographic specificity allows researchers, policy makers and program planners to delineate a wide range of sub-populations. For example, CHIS oversamples several Asian sub-groups and offers the largest sample of Pacific Islanders available in any health survey we are aware of. In addition, CHIS is translated and administered in several Asian languages, including Korean, Chinese (Mandarin and Cantonese) and Vietnamese, as well as in Spanish and English. In-language administration ensures the inclusion of linguistically isolated racial and ethnic groups in California. The wide range of topics covered and the stability offered through the large sample sizes enables users to analyze specific demographic sub-populations and provide reliable estimates to measure and understand disparities in health and health care and to promote evidence-based policy.

Data quality. Its reputation for reliability has led to the extensive use of CHIS in a wide variety of activities, including defining problems, planning and targeting resource use, and assessment of programs and policies. The Center continually strives to increase the quality of CHIS data by addressing methodological issues as they arise. For example, CHIS has examined and/or addressed methods related to response rates, coverage bias and other common challenges in survey data collection. In addition, CHIS ensures its quality by complementing Center staff expertise with Technical Advisory Committees and working groups comprised of experts in several areas of public health, survey development, survey methodology, complex statistical modeling, imputation, weighting and dissemination. Federal OMB approval requirements have also required CHIS to meet high standards of representativeness in the California population. Finally, the Center staff provides technical assistance and data estimate services that help assure technically appropriate analyses and interpretation of the data.

Access to CHIS data in multiple formats. The Center provides CHIS data in six ways or formats to ensure that potential data users have options for accessing CHIS data that work for them. These multiple formats serve various levels of technical expertise, resources and content needs of data users. First, *Ask*CHIS is a web-based query system that gives users immediate, easy and user-friendly access to CHIS data at any time. *Ask*CHIS provides flexibility based on user ability and needs. Second, public-use data files can be downloaded free of charge and used with statistical software by researchers and planners with expertise in statistical programming. Third, confidential data files include data elements that are accessible at the Data Access Center or through data files provided to qualified funders. These data confidential files allow access to sensitive or identifiable data that may be needed for population targeting, geographic mapping or other such analyses, but that would not otherwise be available to users in order to protect

the confidentiality and privacy of respondents' information. Fourth, special data files allow county health department to address population-based needs at the local level with datasets customized for their county. Fifth, CHIS data may be accessed through Center policy research briefs and reports. These are disseminated to a large audience and provide interpretive results, including tables and graphics, which are written for target audiences of policy makers, advocates, the media and policy analysts. Finally, Center statisticians and programmers and investigators also provide CHIS estimates to key end users, although this service is available on a limited basis due to resource limitations. The flexibility provided by these various dissemination strategies increases access to CHIS data by a widely diverse set of potential users, and maximizes the technical accuracy of data estimates in the California health policy environment.

CHIS staff interaction with data users. The Center is a highly regarded academic research center, and the CHIS component offers technical assistance, data estimate services, training workshops and detailed technical documentation to ensure technically appropriate use of the data. CHIS data users also have the ability to interact with staff directly (email or telephone) to address questions, interpretation of results or provide feedback related to CHIS data and its products. In addition to the unique CHIS data qualities mentioned above, the timely and interactive nature of CHIS staff with users helps promote the use of the data to achieve intended goals and outcomes.

Summary

Results from the CHIS Impact Study show that having access to CHIS data in multiple formats is critical to widespread use of CHIS. Though the majority of users accessed CHIS data through the *Ask*CHIS query system because this web-based application is accessible, easy to use and flexible, many others obtained their CHIS data and findings through other avenues, depending on their technical capacity and data needs.

CHIS data were able to meet a wide range of organizational missions, goals and objectives of those selected for the study. Organizational outcomes from applying CHIS can be grouped into six impact domains. In order, the most prevalent impact domains were (1) service and program planning, followed by (2) health policy advocacy, (3) health policy development and (4) grant making and seeking.

Seven in-depth studies of high-impact outcomes of CHIS data revealed how CHIS data were successfully applied to meet specific goals and objectives. In some cases, CHIS data sometimes complemented other data sources, but in many cases, CHIS was the main or only data source used. Either way, CHIS data were crafted into evidence that made a very significant impact on the intended outcome. While other factors, including timing, politics and budget constraints, clearly influenced the outcomes, it is apparent that CHIS played a critically important role for a wide range of stakeholders. CHIS is increasingly becoming an essential data source for understanding population health in California and for advancing health policy proposals, public health initiatives and health and health care programs in the state.

National and State Lessons from CHIS

This study demonstrates the critical role that CHIS data has played in California by providing objective high quality data for programs, policies, advocates and decision-makers. Our findings also suggest the utility of health surveys that are capable of providing local evidence. CHIS designed a large sample for robust estimates at the state and local level. Other states and local public health agencies would also benefit from having such surveys. Similar to the experience in California with CHIS, statewide health surveys designed to provide local estimates would enhance evidence-based policy making and advocacy in other states. Just as CHIS helped California state and local agencies identify and quantify health needs, identify racial/ethnic and other social health disparities and allocate resources where they are most needed, other states would benefit from similar sample design, survey methods and techniques for data dissemination. National health surveys also would benefit from adopting some of these elements, particularly CHIS's extensive dissemination strategy.

We draw two conclusions from our findings in this CHIS Impact Study. First, the model of state health surveys pioneered by CHIS will provide the most value if data are comprehensive in scope, provide both local- and state-level information, have large samples that permit robust estimates at geographic and social disaggregation levels that correspond to health and government planning needs and use methods that produce reliable, valid and representative data in which policy makers and other stakeholders will have confidence.

Second, CHIS demonstrates the importance of including substantial investment in dissemination and communication of health survey data. Surveys are increasingly expensive to conduct, but the return on the investment in this critical source of population-based health information is greatly enhanced if the data are widely disseminated in various formats to ensure accessibility for an extensive audience with diverse technical expertise, knowledge and skills. It is important for both national and state organizations that conduct health surveys to allocate sufficient resources for dissemination so that key stakeholders can readily access data and findings from the survey. These efforts in active dissemination of health survey data will lead to an overall broader impact on health policy and program planning. Finally, it is essential to proactively communicate the utility of this critical resource and how to access it.

Table 1: Matrix of Organizations, by type

Scope of work	Organization type	Size of organization (Number of Full-Time Employees)			
		<10	10-25	25-50	50+
Local	Public			• Community Assessment, Planning and Education Program, Alameda County • Solano County Health and Social Services	• Health Promotion Division, County of Orange
	Private, commercial				• Kaiser Permanente, Northern California • LA Care Health Plan • Saddleback Memorial Medical Center
	Private, Non-commercial	• Regional Asthma Management and Prevention	• Community Health Councils • Working Partnerships USA	• Asian Pacific American Legal Center • Inland Empire United Way • LA Regional Food Bank	
	Research	• Diringer and Associates • Pacific Health Consulting Group	• Applied Survey Research		
State/ National	Public	• California Diabetes Program • Health Committee, California Senate	• Surveillance and Epidemiology Section, STD Control Branch, California DHS • Center for Health Statistics, California DHS		• California Office of the Governor • Legislative Analyst Office
	Private, commercial				• Molina Health Care
	Private, non-commercial	• California Food Policy Advocates • California Pan-Ethnic Health Network	• Latino Issues Forum		• The California Endowment • National Association of Latino Elected Officials
	Research		• California Budget Project		• The Lewin Group

Table 2: Summary of CHIS advantages in case studies

Case	Organization	Impact Achieved	Role of CHIS data	CHIS Quality Theme
California State Health Care Reform	California Office of the Governor Health Committee, California Senate Legislative Analyst Office, California Legislature	Expand health care coverage to all Californians (expected)	Identify populations to be covered; provide population baselines for cost projections; education on need for health care reform	• Preferred data source in multiple proposals due to reliability and reputation • Multiple data points on health care coverage, employment and immigration status informed proposal • Requests for data analysis, public-use files and *Ask*CHIS informed proposal
Alameda County Department of Public Health Community Participatory Assessment	Community Assessment, Planning, and Education Program, Alameda County Department of Public Health	Provide data to Hayward Obesity Workgroup to plan obesity-related community assessment	Define scope of obesity as a community issue; provide measures for neighborhood assessment	• Oversampled Alameda County • Hayward city data • Multiple data points on obesity risk factors
California Assembly Bill 231 (2003)	California Food Policy Advocates	Adoption of AB 231	Define scope of food insecurity at state and local level to demonstrate need for AB 231 measures	• Food insecurity/Hunger Policy Brief • Specified vulnerable populations • Quality of data informed policy recommendations • Multiple CA county level-data
California Diabetes Program Primary Prevention Initiative Workshop	California Diabetes Program, California Department of Health	Educate members of Pajaro Valley Community Health Trust's Regional Diabetes Collaborative on the system dynamic modeling of obesity prevention and control	Provide county level surveillance data on diabetes prevalence and risk factors for system dynamic modeling	• Data for Santa Cruz, Monterey, and San Benito Counties • Specified at-risk populations • Quality of data informed strategic planning for diabetes prevention
California Pan-Ethnic Health Network Senate Bill 2 (2004) Policy Brief	California Pan-Ethnic Health Network	Develop and disseminate policy brief on the impact of employer-mandated health insurance coverage on communities of color	Demonstrate number of persons of color who would be newly covered by SB 2	• Specified minority groups and employer size • Provided complex modeling analysis of data
Molina Healthcare Mammography Screening Intervention	Molina HealthCare	Increase rate of mammography screening among Molina Healthcare clients in San Diego County	Provide justification for mammography screening intervention	• San Diego County data provided • Latinas specified for target population
San Luis Obispo Children's Health Initiative	Diringer and Associates	Expand children's health insurance coverage in San Luis Obispo County	Provide initial coverage and cost estimates for expanded health insurance	• Number of uninsured children specified by a multiple data points