

**Accreditation Preparation &
Quality Improvement
Demonstration Sites Project**

Final Report

**Prepared for NACCHO by the
Harris County Public Health and
Environmental Services, TX**

November 2008

Brief Summary Statement

Harris County Public Health and Environmental Services (HCPHES) is located in Houston, Texas and serves unincorporated areas of Harris County, as well as over 30 municipalities within the county. The total combined population for a majority of services is 1.75 million; however for some services such as vector control and refugee health screening, the jurisdiction of HCPHES includes all 3.89 million residents of the county, including the City of Houston. Upon conducting an accreditation preparation self-assessment using NACCHO's LHD Self-Assessment Tool, HCPHES identified community health assessment/community health data as an area for improvement, and applied a quality improvement (QI) process using the Plan-Do-Study-Act (PDSA) method to improve upon current approaches for gathering and reporting community health data. As a result, community health profile templates were developed and evaluated – evaluation findings indicate that further improvements are necessary before community health profiles are fully implemented.

Background

Harris County Public Health and Environmental Services (HCPHES) is a county public health department with over 500 employees located in Houston, Texas. HCPHES' jurisdiction is a mix of urban, rural and suburban areas, which includes unincorporated areas of Harris County, as well as over 30 municipalities within the county. The total combined population for a majority of services is 1.75 million; however for some services such as vector control and refugee health screening, the jurisdiction of HCPHES includes all 3.89 million residents of the county, including the City of Houston.

Since the establishment of the *HCPHES Strategic Plan 2005-2010* in October 2005, HCPHES has devoted much effort to ensuring its implementation so that the health department may improve its effectiveness as an organization when addressing local public health issues. For example, implementation of a department-wide Evaluation Framework began in 2006, which now provides a structure for systematic evaluation of outcome measures to determine effectiveness of programs and services across the organization. The catalyst for this effort is Strategic Issue #2 of the *Strategic Plan*, which directs HCPHES to "Implement systems to measure, evaluate and ensure that HCPHES outcome objectives are met or exceeded and that quality services are delivered in a manner that reflects core values."

As the Evaluation Framework was being implemented early in the process, HCPHES monitored the status of the proposed voluntary national public health accreditation program during the exploratory stage and knew that if such a program was established, future efforts to prepare for accreditation could advance the achievement of *Strategic Plan* goals. In a similar fashion, successful implementation of the *Strategic Plan* would propel HCPHES further along the path of becoming prepared for accreditation. HCPHES sought participation in NACCHO's Accreditation Preparation and QI Demonstration Sites Project so that it could more closely examine departmental capacity and processes that will impact both outcome measures developed during the Evaluation Framework's implementation and organizational effectiveness overall. Furthermore, HCPHES was seeking an opportunity to enhance staffs' familiarity with QI methods and tools.

Self-Assessment

The self-assessment process was a department-wide effort steered by HCPHES' Outcomes Evaluation Committee (OEC). The OEC was established in 2006, and its members represent each organizational unit of the health department. The project coordinator of HCPHES' accreditation preparation and QI project, which is the OEC chair and Senior Public Health Analyst of the Office of Policy and Planning, managed the process. Each person on the OEC reviewed NACCHO's LHD Self-Assessment Tool and identified standards and indicators that were applicable to their respective unit. OEC members then began the scoring process for applicable standards and indicators *with respect to their unit's capacity* in meeting indicator criteria. The scoring process often required feedback from staff who did not serve on the OEC, particularly in large divisions (e.g. Disease Control & Clinical Prevention and Environmental Public Health divisions). The scoring process took approximately 2-3 weeks, depending on the unit. Scores were forwarded to the OEC chair, who then aggregated results and determined preliminary final scores by calculating average, weighted average or mode scores where appropriate. Final scores were determined upon review of the HCPHES Executive Director. The total self-assessment process for the department as a whole, including reporting results back to NACCHO, took approximately 3.5 weeks. The self-assessment for individual units of the health department took several hours, and on occasion, more than one meeting.

The department-wide approach steered by the OEC was chosen for several reasons. First, HCPHES is a relatively large health department (over 600 employees), so it was important that scores reflect feedback from all units of the health department, so that evidence of strengths or weaknesses in indicator criteria would not be overlooked if the self-assessment was done by one or two staff. Secondly, a department-wide approach allowed some scores to be based on measures of central tendency (mean, weighted mean or mode) when indicators were cross-cutting and did not fall within the purview of any one particular unit. Third, the OEC is a standing committee charged with implementing department-wide evaluation of major programs and services, and supporting QI efforts at the organizational and programmatic levels. As such, there was already a structure established for the self-assessment process, and the OEC's role in steering this activity aligned well with roles previously established when the OEC was created. And finally, each organizational unit was able to score capacity in meeting criteria for applicable indicators with respect to their unit, so areas for improvement were identified at the programmatic level even though the final scores for each indicator represented the overall health department.

Highlights from Self-Assessment Results

Standard/ Indicator #	Standard and Significance
I-C.2	<p>Standard: <i>Conduct or contribute expertise to periodic community health assessment</i> Indicator: <i>LHD organizes community health data for assessment purposes</i></p> <ul style="list-style-type: none"> This was an area of weakness for HCPHES, as identified through strategic planning processes and the self-assessment. HCPHES chose to address this indicator through a QI process because improvement on this indicator will be necessary to improve standard I-C and other standards & indicators.
IX-C.2	<p>Standard: <i>Evaluate effectiveness and quality of LHD programs and activities and use information to improve LHD performance and community health outcomes</i> Indicator: <i>LHD monitors program performance measures and analyzes data to document progress towards goals and grant/funding requirements.</i></p> <ul style="list-style-type: none"> Full implementation of HCPHES' Evaluation Framework (i.e. department-wide evaluation) is scheduled for Winter/Early Spring 2009. Thus additional evidence will become available in 2009 to demonstrate improvement in meeting this indicator.
V-C.2	<p>Standard: <i>Engage in LHD strategic planning to develop vision, mission and guiding principles that reflect the community's public health needs, and to prioritize services and programs</i> Indicator: <i>LHD staff has expertise to lead & facilitate the strategic planning process</i></p> <ul style="list-style-type: none"> Since the establishment of the HCPHES Strategic Plan 2005-2010 in 2005, staff from the Office of Policy and Planning, led more than 10 ad-hoc workgroups in 2006-2007 that developed strategy recommendations for addressing the Plan's priority public health issues and operationalizing the strategic plan.

Goals and Objectives

The **overall goal** or aim of the QI project is to improve how HCPHES reports community health data to public health stakeholders through systematic development of community health profiles to be used primarily to conduct or contribute expertise to periodic community health assessments and facilitate community planning and health improvement efforts.

Project objectives are as follows:

- HCPHES will establish a community health data (CHD) team consisting of HCPHES staff that will implement project objectives using a QI process based on the PDSA method.
- The CHD team will determine public health domains and indicators that should comprise a community health (CH) profile.
- The CHD team will develop draft CH profile templates for two jurisdictional areas – the entire HCPHES jurisdiction (Harris County outside the City of Houston), and a sub-county region within the jurisdiction.
- The CHD team will pilot test the process of data collection and reporting of primary data at the jurisdiction-wide and sub-county levels.
- The CHD team will administer a questionnaire to evaluate whether or not the CH profile templates are an improved method of reporting CH data for the purposes of conducting or contributing to a community health assessment and facilitating community planning/improvement efforts compared to the current method – the HCPHES Annual Report.
- The CHD team will study evaluation results from the questionnaire, identify problematic issues related to collection and reporting primary data at the jurisdiction-wide and sub-county levels and propose recommendations to Executive staff to support continuous QI efforts.

Quality Improvement Process

AIM Statement: Upon completion of a community health profile template in September 2008:

- 75% or more targeted HCPHES staff will report that community health profiles are an improved method for reporting of community health data to internal stakeholders.
- 75% or more targeted HCPHES staff will report that community health profiles are an improved method for reporting of community health data to external stakeholders.
- 75% or more targeted HCPHES staff will report that community health profiles are an improved method for conducting or contributing to periodic health assessments.
- 75% or more targeted HCPHES staff will report that community health profiles are an improved source of data to rely upon for planning public health strategies to improve the health of Harris County residents within our jurisdiction.

PLAN: Community health data was identified as an area for improvement through the following two processes:

1. Strategic planning processes – Ad-hoc work groups convened in 2006-2007 to develop strategy recommendations for each priority public health issue (e.g. clean air, chronic diseases, leading causes of death and disability, etc.) outlined in HCPHES' *Strategic Plan*. In each work group, specific gaps in community health data were identified. For example, recommendations from a work group created in 2007 for how to better address leading causes of death and disability in Harris County related to gaps community health data included:
 - *HCPHES will make efforts to routinely obtain jurisdiction-level BRFSS and YRBSS data from TDSHS to monitor behavioral risk factors at various life stages and for various subgroups.*
 - *HCPHES will explore mechanisms for routine monitoring of environmental and social factors and health status at the community-level, drawing upon tools and strategies from geographic-information systems (GIS) technology, environmental epidemiology, and social epidemiology.*
2. NACCHO LHD self-assessment – In spring 2008, HCPHES conducted an accreditation preparation self-assessment using NACCHO's LHD Self-Assessment Tool, and found that scores for standards and indicators related to community health assessment were among the lowest. While many indicators in this area were scored 0-2 (no capacity to moderate capacity), HCPHES scored a "2" (moderate capacity) for Indicator 3 of Standard I-C, which reads "LHD organizes community health data (e.g. mortality, disease prevalence, risk factors, and other data) for assessment purposes."

HCPHES chose to utilize a QI process to improve upon current approaches for gathering and reporting community health data. Currently, HCPHES gathers and reports community health data annually for the "Health of Harris County" section of HCPHES' Annual Report. In many cases, jurisdiction-level data is not included; data often reflect the greater Houston metropolitan area, which includes cities and other areas outside the HCPHES jurisdiction. Furthermore, community health data at the sub-county level either is not included, or if included, does not allow for comparisons across various communities. There are also few GIS maps that spatially display community health data and health-related resources; as such, much remains unknown about health status and health risk or protective factors within the HCPHES jurisdiction. These issues combined make it difficult to use the Annual Report as a data source for targeted, community-level planning and health improvement efforts. In addition, since the primary purpose of the annual report is not to serve as such a guide, it is believed that an alternative method for reporting community health data for this purpose is needed.

To begin the QI project, a community health data (CHD) team of staff from each organizational unit of the department was assembled to carry out project objectives. CHD team members included planners; staff with expertise in information technology and geographical information systems; and other staff with programmatic-level content expertise in environmental public health, veterinary public health, clinical preventive services, mosquito control, surveillance & epidemiology and public information/communications. Team members were appointed by Executive leadership and reflected a mix of OEC and non-OEC staff. The Office of Policy and Planning's (OPP) Public Health Analyst served as Project Leader of the CHD team. The CHD team was supported by consultant Dr. Les Beitsch of Public Health Foundation who provided expertise in the subject matter and QI tools.

Upon the Project leader's review of the literature on various alternative formats for reporting community health indicator data, CH profiles were identified as the key solution for improving the

reporting of community health data. Subsequently, the following overarching improvement theory was developed:

“Systematic development of CH profiles is an improved method for conducting or contributing expertise to periodic community health assessments and facilitating community planning and health improvement efforts compared to annual reporting of community health data in the HCPHES Annual Report.”

Other improvement theories relate to design features of the CH profile. Thus, the CH profile is an improvement over the HCPHES Annual Report if such profiles:

- display jurisdiction-wide and sub-county level data on health status, behavioral risk factors, environmental risk factors, socioeconomic characteristics and health-related resources.
- highlight differences in the above factors by geographic location, race/ethnicity, age group or other key data strata /groups.
- divide the jurisdiction in regions that allow meaningful comparisons across sub-county areas.
- display data in a manner that is appropriate for diverse HCPHES staff, institutional stakeholders and the lay public (e.g. community residents).

Members of the CHD team determined that a questionnaire would be administered to determine if or how well CH profile templates meet the criteria stated above, and whether or not such profiles are an improvement compared to the benchmark (HCPHES Annual Report) for community health assessment and planning purposes. Survey results would document if the change in the method of reporting community health data via the CH profile is an improvement.

DO: The Project Team Leader and facilitated all CHD team meetings. Each member of the CHD team was responsible for contributing his or her subject matter expertise to support the development of an improved community health data product – the CH profile. The CHD team developed an Affinity Diagram to identify major health-related domains (e.g. chronic diseases, the built environment, etc.) and respective health indicators that should comprise the CH profile templates. The Project Team Leader drafted two CH profile templates – one for the total HCPHES jurisdiction, and one for a sub-county area within the jurisdiction, the city of Deer Park – to later conduct a test to determine if such templates are an improvement over the content of community health data in the HCPHES Annual Report for community health assessment and planning purposes. To more feasibly test the CH profile, mock data were used for health indicators relying on secondary sources; when it was feasible, actual data from team members' representative units within the department were used to populate the templates with primary data. The test also functioned as an assessment of feasibility for the collection of primary data for a subset of health indicators at a more granular level for future development of sub-county CH profiles.

To test the overarching improvement theory, the CHD team first identified staff within the health department who were considered appropriate targets for completing the evaluation questionnaire. Forty-seven HCPHES staff were identified as the target population, and represented the following: the Executive team, staff of the CHD team, staff who participated in recent strategic planning efforts and staff who are likely users of community health indicator data. The OPP Senior Public Health Analyst developed the evaluation questionnaire, executed the survey administration process, conducted data analysis and reported preliminary evaluation results to the CHD team.

CHECK: While data were collected to determine if the CH Profiles were an improved community health data product compared to data presented in the HCPHES Annual Report, other data were collected on:

- the content of the CH profiles (e.g. how well the CH profiles described health status, behavioral risk factors, environmental risk factors, SES factors, etc.);
- CH profile design and layout;
- appropriate ways to divide the HCPHES jurisdiction to develop sub-county CH profiles;
- the importance of various geographical comparisons of indicators (U.S, state, peer counties, etc); and
- current use of community health data.

This additional information was collected so that future improvements could be made to the CH profiles. Forty-three out of forty-seven HCPHES staff, or 91%, returned a completed questionnaire.

Results relating to the AIM statement are as follows:

Using the “Health of Harris County” section of the 2007 HCPHES Annual Report as a benchmark...

Survey Item	Yes	No	Not Sure
Is the CH Profile an improved method of reporting data to internal stakeholders?	49% (n=20)	32% (n=13)	19% (n=8)
Is the CH Profile an improved method of reporting data to external stakeholders?	54% (n=22)	22% (n=9)	24% (n=10)
Is the CH Profile an improved method for conducting or contributing to periodic health assessments?	70% (n=28)	10% (n=4)	20% (n=8)
Is the CH Profile an improved source for planning public health strategies?	55% (n=22)	15% (n=6)	30% (n=12)

Among the results of the four survey items above, evidence of improvement is most demonstrated where respondents indicated that the CHP profile is an improved method for conducting or contributing to periodic health assessments. However, HCPHES did not meet its targets established in the aim statement, so the results are lower than expected. Responses to other survey items, as well as follow-up discussion with CH Data team members suggests the following issues are possible explanations for not meeting the established aim: questionnaire design (i.e. measurement error); layout and design of the CH profile templates; and the belief that CH profiles are an alternative source of community health data, compared to the HCPHES Annual Report, which respondents suggested may be a better source of data than a CH profile depending on the audience.

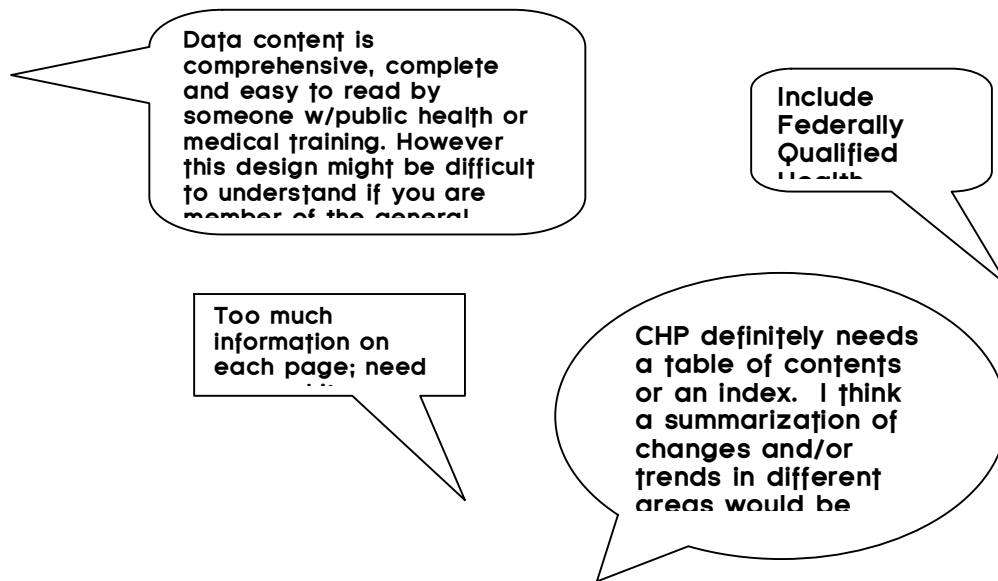
ACT: CH profiles will eventually be implemented, but not at this time. Several issues ranging from the interpretation of evaluation results to ensuring data integrity were identified through the QI process and must first be addressed. The CH data team conducted a Nominal Group Technique exercise to gain consensus on the issues that should be prioritized. The top 5 prioritized issues that should be addressed as next steps for improvement, starting with the highest scored priority are:

1. Ensure there is a level of standardization of data (e.g. coding of race/ethnicity, standard entry of addresses, etc.) across the department.
2. Ensure entry of primary data includes valid geographical identifiers (e.g. addresses, zip codes) so that data can accurately be geo-coded for the development sub-county level CH profiles.
3. Determine the sub-county level divisions for creating CH profiles that allow meaningful comparisons of CH indicators of areas within the HCPHES jurisdiction.
4. Ensure data integrity in terms of making sure data is “clean” and ready for display in a CH profile (consider adopting metadata standards and records).
5. Obtain feedback from members of an external audience to determine whether or not the CH profile design and/or content are appropriate and useful to individuals outside the health department.

As progress is made in addressing the prioritized issues and incorporating recommendations put forth via the evaluation survey process, another test of the CH profile as a product as well as a process of gathering and reporting community health data is in order.

Results

At the completion of the QI project, HCPHES gained both tangible and intangible rewards. So, while targets in the aim statement were not achieved, the overall project was still a success. By choosing to improve the method of reporting community health data via the CH profile, HCPHES mobilized action that was needed, yet unprecedented for the department. As a result, HCPHES now has an improved, in-depth understanding of the magnitude of what is involved in developing CHP profiles in terms of content, good design and layout, and the importance of data integrity when reporting on health indicators. As noted previously, HCPHES achieved a 91% response rate for the evaluation survey; through this process, many open-ended responses provide concrete guidance for how to improve content and design. Examples are as follows:



In addition, a small pilot of the data collection and reporting process of primary data revealed issues that should be resolved to ensure data quality. For example, HCPHES discovered there are challenges in verifying addresses for some of the primary data collected. This creates inefficiencies when geo-coding the data; therefore if not addressed, HCPHES' ability to develop CH profiles at the sub-county level is hindered.

One useful product that resulted from the pilot test was a data inventory created in an Access database, which describes the content of various primary data sources, including the lowest geographical unit available (e.g. county, address, etc). HCPHES will consider building upon this inventory to support reporting of data verification information.

Lessons Learned

In hindsight, many valuable lessons were learned during the accreditation preparation self-assessment and QI project processes, and are noted as follows:

- Having an existing structure in place (in our case the Evaluation Framework and the OEC) to support a department-wide self-assessment process is invaluable. Upon learning that HCPHES would serve as a demonstration site for this project, members of the OEC were prepared and ready to help execute the self-assessment process because potential roles were discussed prior to being awarded funding to participate in the project.
- Scores on capacity for each indicator on the NACCHO's LHD self-assessment tool could potentially be higher if health departments consider evidence other than the examples provided on the tool. If such evidence is identified and communicated to NACCHO, the final tool may be incorporate such evidence and give other LHDs additional ideas on how to meet indicator criteria.
- Having a current and active strategic plan with goals and objectives that align with standards and indicators in the self-assessment tool provides tremendous backing of QI projects chosen for improvement. Improvements have a dual effect – they further goals and objectives of the strategic plan, while furthering progress in becoming prepared for public health accreditation.
- Conducting the self-assessment and applying a QI process is a great opportunity to test assumptions that a LHD may have regarding its processes and practices. Assumptions can be challenged, which allows misperceptions to be brought to light, clarified and addressed in an objective manner as QI tools are incorporated into the QI process.
- Utilizing a QI tool that examines underlying root causes of a problem (e.g. fishbone diagram) *early* in the process helps break down a problem to finer levels of detail. A smaller, more manageable QI project can be readily identified *in the details* (e.g. fine fish bones). In our case, the applicability of such a tool was not apparent, so it was not used. As a result, the scope of the project was overwhelming at times; however, the larger effort did uncover many challenges that could otherwise still be unknown had the project been too narrowly defined.

Next Steps

Results, lessons learned and recommendations will be presented to Executive staff for their review and guidance in determining next steps related to the QI project specifically and, more generally, next steps for preparing for public health accreditation. For the QI project, potential next steps include further analysis of evaluation findings and additional PDSA cycles for any of the aforementioned priorities the CHD team identified through the Nominal Group Technique. One ultimate goal is to create a culture that embraces evaluation and QI, so next steps in becoming prepared for public health accreditation may also include:

- Instituting a QI train-the-trainer process at HCPHES to develop and sustain QI expertise across the organization.
- Increasing use of QI tools in general, but also specifically for department-wide planning and evaluation.
- Identifying and publically sharing success stories when improvements are achieved.
- Applying QI processes to other areas of weakness identified in strategic planning processes and/or the self-assessment process.

Conclusions

Participation in the accreditation and QI demonstration sites project allowed HCPHES the opportunity to use a tool to more closely examine its capacity and processes likely to impact objectives established in its Strategic Plan, as well as outcome measures developed through implementation of the Evaluation Framework. In addition, HCPHES has grown substantially in its knowledge and use of QI tools, and has a firmer grasp of the actions necessary to systematically produce quality CH profiles. Such benefits are invaluable and essential as HCPHES progresses further along the path of becoming prepared for public health accreditation.