Core Metrics Pilot Project: A Case Study

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Background: Setting for the Case Study

The National Academies of Sciences, Engineering, and Medicine, formerly known as the Institute of Medicine, (IOM), released a report on Vital Signs in April 2015 and presented a parsimonious set of Core Metrics that could be implemented and adopted by health care organizations and local communities. The concepts for the report were generated during an IOM workshop sponsored by the Blue Shield of California Foundation. The measures and recommendations were the subsequent work of an IOM committee. The report identifies national metrics in 4 domains: healthy people (also referred to as population health), quality of health care, cost of health care, and engagement. The report provides national estimates for each domain’s indicators. However, these metrics were not estimated at the state or local level, nor was the feasibility of doing so assessed.

What distinguishes the Core Metrics from other sets of measures, such as Healthy People and the County Health Rankings, is the imprimatur of the IOM and the broad group of experts who wrote the report. One of the major challenges of the report, however, is that while general measures were recommended, they were not specified sufficiently to be used in a consistent fashion. For example, while high school graduation was a recommended measure, it was not clear how it would be measured. It could be operationalized as the proportion of ninth graders graduating in 4 years or people aged 25 years who have completed high school equivalency, or any of several other measures. In addition, communities may be interested in additional topics not in the core measure set, for example, housing or access to healthy food.

The value of measures is not in creating them but in using them to drive changes that lead to health improvement and health equity. The Core Metrics focus heavily on clinical issues and are, therefore, most important for clinical care systems. However, the public health community also finds clinical data useful in planning processes that lead to health improvement and health equity. The Core Metrics focus on using them to drive changes that lead to health improvement and health equity.

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Case Study

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TABLE 1
Demographics of Pilot Project Communitiesa

|                      | Fresno County | Monterey County |
|----------------------|---------------|-----------------|
| Population, number   | 930,450       | 430,000         |
| Percentage Latino    | 52%           | 55%             |
| Percentage foreign born | 21%           | 30%             |
| Median age, y         | 31            | 33              |
| Percentage below federal poverty level | 22%           | 17%             |

aFrom US Census Bureau.2,3

Recruitment

To identify and recruit 2 communities for our pilot project, we used the following criteria: (1) having an existing multistakeholder collaborative with representation from both the public health and health care sectors; (2) current ability to collect and use metrics, including their engagement in related population health activities; (3) representation of different types of communities, for example, urban or rural; (4) geographic and ethnic diversity; (5) current engagement of Public Health Institute’s (PHI) staff within the community; (6) how well the goals of our pilot project match the interests and needs of the community; and (7) how well identification of a core set of population health metrics could advance their community’s priorities.

California’s San Joaquin Valley counties (Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare) were particularly attractive because PHI’s Cultiva La Salud is based in the San Joaquin Valley and focuses on advancing health equity using policy and environmental change approaches. Having a specific healthy equity focus was attractive because of the opportunity to not only look at a geographic area but also to further explore a specific population subgroup. We spoke with the director of Cultiva La Salud who works closely with county governments as well as community organizations and safety net providers. Her program is deeply embedded and trusted within the Latino community and has a long track record of successful projects. The focus on the Latino population presented both a data challenge and a great opportunity. Cultiva La Salud's director was eager to use data-driven decision making and welcomed a set of locally specific and credible indicators. Although the program is based in California’s San Joaquin Valley, a region of 8 counties, for demonstration purposes, we recognized that a single county would be both more feasible and have a greater likelihood of influencing decision making.

In partnership with Cultiva La Salud, we selected Fresno County as the best site for this work.

In Monterey County, we approached the Central California Alliance for Health and found there was interest in collaboration. We had subsequent discussions with the planning, evaluation, and policy manager of the Monterey County Health Department and director of Community Impact of United Way Monterey County. Impact Monterey County, a collaborative organized by United Way Monterey County, had been working as a broad coalition on a community assessment and was transitioning to a network working on metrics, strategies, and objectives, as well as the creation of a dashboard. They had had initial meetings and identified an initial set of metrics. We did a crosswalk of the indicators they had identified with the Core Metrics and found several areas where the Core Metrics added valuable information to their indicator selection process. Moreover, they felt that our convening process to not only identify measures but also drive action would be particularly useful. After further discussion, it seemed like our timelines would mesh and there was potential for good synergies.

Interviews and Surveys With Stakeholders in Each Community

We identified stakeholders in each community under the guidance of a community leader who was a champion for the Core Metrics work (director of Cultiva La Salud; and the Planning, Evaluation, and Policy Manager of the Monterey County Health Department). To gather stakeholder input, we conducted online surveys. Stakeholders were diverse and included representatives from safety net systems including Federally Qualified Health Centers, not-for-profit hospitals working on their community health needs assessments, county health departments working on their community health assessments, not-for-profit organizations, and stakeholders in other sectors, such as education and housing. Themes discussed included identifying the social determinants of health and health care as the most pressing community health needs and using a shared measure set to move toward collective impact (Table 2).

Convening #1, August 2016—Meeting With Community Stakeholders to Plan Story Content

The first convening with community stakeholders was designed to spur collective action among participants and its objectives were designed to do this (Table 3). The community champions set the tone for the convening, explained to the participants why they were invited, and explained their vision for the work and
TABLE 2

Results From Surveys With Stakeholders

|                         | Fresno | Monterey |
|-------------------------|--------|----------|
| Number of stakeholder surveys | 16     | 15       |
| The most pressing community health needs (most common responses, in order of frequency mentioned) | Health care (access to care, access to prescription drugs, culturally competent care, importance of bilingual health care professionals, recruitment of individuals into the health care workforce) Social determinants of health (housing, poverty, education, civic engagement, transportation) Health-related behaviors (access to opportunities for physical activity, active transportation, green space) Environmental exposures (pesticides, air pollution) | Social determinants of health (eg, housing, poverty, citizenship, transportation, safety) Health care (access to physical and mental health care, access to affordable care, access to culturally competent care) Health-related behaviors (nutrition, alcohol, drugs) |
| How could my community use a shared measure set for improving community health? | To move toward collective impact To bring together the work of physicians, advocates, and private citizens For health, active lifestyle, environmentalists, and environmental justice advocates to work together To inform decision makers Decide where to direct limited resources Conduct advocacy Obtain grant funding | To move toward collective impact, particularly in shared areas of work such as general health, well-being, and early childhood To align the work of local nonprofit organizations to address the biggest health needs and gaps in care To work together in the areas of health, safety, economic stability, and education To design programs, set goals, and secure funding |

TABLE 3

Convening Objectives

Convening #1
1. Understand Core Metrics: what they are and how they can help us make our community healthier,
2. Collectively explore how the preliminary set of Core Metrics can be used to set a course of action,
3. Identify any critical gaps the community sees in the measures themselves
4. Familiarize the community stakeholders with LiveStories and how that tool may serve them in driving action.

Objectives: Convening #2
1. Leave the community stakeholders with access to the complete Core Metrics measure set for their county and access to LiveStories so they could update and adapt the interactive data visualization when needed for their continued use into the future as an advocacy and tracking tool.
2. Present the Core Metrics set in the LiveStories Platform and explore how they could use it
3. Discuss and understand how the project process has (or has not) been useful for the community stakeholders’ current and future work.
4. Explore next steps around the selected “additional measure” LiveStories site and identify champions to move the work forward (active transportation in Fresno and safety in Monterey).
5. Identify how this process has been useful and could be improved for replication in other communities.

hopes for the day. We used World Café format where rotating small groups of 4 explored questions presented to them. It is a methodology that ensures broad engagement of participants and helps surface themes, patterns, and new ideas. It also helps surface collective wisdom in support of moving toward collective action. The World Café allowed each group of participants to prioritize their topics of interest and any additional topics to add to the Core Metrics best current measures. During the World Café, we asked the groups to discuss the following questions:

- How might the Core Metrics + LiveStories help us make our community healthier?
- Are there any critical gaps in the measures themselves?
- We want to get to a single issue we are going to be working on. If you were to drive a course of action with these tools, where would you focus your attention?
- What story do you want to tell?

The Convening #1 for Fresno County was held in Fresno, California, on August 23, 2016. Twenty-two stakeholders attended this convening. An overarching theme that emerged during Convening #1 in Fresno County was that the Core Metrics were an opportunity to offer the Latino community a greater voice
and inclusion in conversations around health, including social determinants of health. In addition, 4 main findings emerged during Convening #1’s World Café (see Figure, Supplemental Digital Content 1, available at http://links.lww.com/JPHMP/A401, graphic facilitation from Convening #1 in Fresno—findings from the World Café):

1. The Core Metrics should show where disparities/inequities exist.
2. Many people need to know about Core Metrics, including residents, elders, and decision makers/officials.
3. The Core Metrics will likely demonstrate what the community has already been saying.
4. Gaps exist in the Core Metrics primary measure set, and these gaps are primarily related to social determinants of health.

Then, various issues were raised for consideration in future Core Metrics data compilation and storytelling components of the project. Convening #1 concluded in Fresno with a vote on which issue should be added as a supplemental issue to the Core Metrics best current measure set. Active transportation received the most votes (n = 6), so the group decided that this issue would be chosen to add as a supplemental indicator for the Core Metrics best current measure set in the Fresno community.

The Convening #1 for Monterey County was held in Monterey, California, on August 22, 2016. Twelve stakeholders attended this convening. Details about this convening are included in Appendix 6, Supplemental Digital Content 2, available at http://links.lww.com/JPHMP/A421. Four main findings emerged during Convening #1’s The World Café:

1. Need more information about the Core Metrics and how they are defined/operationalized.
2. The Core Metrics can help us work together across organizations by providing a shared purpose.
3. Gaps exist in the Healthy People primary measure set because the set did not include all indicators that were important to the community.
4. Core Metrics provide structure against which to evaluate other indicator sets that the county is currently using.

The gaps identified during Monterey’s Convening #1 were mostly in the Healthy People/population health domain. Participants also discussed how the Core Metrics could provide structure for Impact Monterey if appropriate steps were taken to compare the measures in each set. At the end of Monterey’s Convening #1, participants discussed ways to move forward with the Core Metrics work and how it could complement the work that was already occurring in the County, particularly with Impact Monterey. The group reached consensus that the Core Metrics team would add safety-related measures as a supplemental issue to the Core Metrics best current measure set for Monterey County.

Data Compilation

Based on the information gathered at the first convenings, the Core Metrics indicators were compiled for each county. After examining the measure sets currently in use in each pilot site, existing data sources were examined and used as much as possible. We focused our attention on the best current measures and incorporated only the related priority measures if they were of particular interest to the individual communities. In addition, we worked with each community to select one additional high-priority topic to include in the Core Metrics for that community.

The following approach was used to gather and report data:

- Use publicly accessible data from reports (eg, health care–acquired infections) or dashboard Web sites (eg, California Health Interview Survey [AskCHIS], County Health Rankings, Dartmouth Atlas).
- Present data that are statistically stable.
- Compare to state and national data when possible.
- Drill down by geography, race/ethnicity, age, and gender when data are available and statistically stable.
- Present statistics to community stakeholders before finalizing them to be certain that they accurately represent the community.

Data were available for 14 of the 15 Core Metrics indicators at the county level and 5 of the 15 at the subcounty level (Table 4). Of the 14 Core Metrics available, 12 were identical to those included in the national IOM report and 2 were included as proxies when the national measures did not exist at the local level (ie, health literacy, social support). All of the measures in the Healthy People and Care Quality domains were available at the county level. Three of the 6 measures in the Healthy People domain were available at the subcounty level. Two of the 5 measures in the Care Quality domain were available at the subcounty level. One of the 2 measures in the Care Cost domain was available at the county level. The other (high spending relative to income) was not available. None of the 2 recommended primary measures in the Engaged People domain were available at the county or state level, so other measures were substituted for
TABLE 4
Best Current Measure Core Metrics Sources at the National, State, County, and Subcounty Levels in Pilot Communities in Public Use Reports

| Healthy people                  | National Source | California Source | Pilot Project County Source | Pilot Project Subcounty Source |
|--------------------------------|----------------|-------------------|----------------------------|-------------------------------|
| Self-reported health           | CDC NHIS       | CHIS              | CHIS                       | CHISNE (zip code)             |
| Body mass index                | CDC NHANES     | CHIS              | CHIS                       | CHISNE (zip code)             |
| Life expectancy                | CDC VSS        | IHME              | IHME                       | Measure of America (zip code) |
| High school graduation rate    | DOEd NCES      | CDE               | CDE                       | CDE (school)                  |
| Addiction death rate           | SG and VSS     | CHR from CDC VSS  | CHR from CDC VSS           | Not available                 |
| Teen pregnancy                 | CDC VSS        | CHR from CDC VSS  | CHR from CDC VSS           | Not available                 |
| Care quality                   |                |                   |                            |                               |
| Childhood immunization rates   | CDC NIS        | CDPH              | CDPH                       | CDPH (school)                 |
| Unmet care need                | CDC NHIS       | CAHPS             | CAHPS                      | CAHPS (medical group)         |
| Hospital-acquired infection rate| CDC HAI and AHRQ HCUP | CDPH | CDPH | CDPH (hospital) |
| Preventable hospitalization rate| AHRQ HCUP     | Dartmouth Atlas   | Dartmouth Atlas            | Not available                 |
| Patient-clinician communication| CAHPS          | CAHPS             | CAHPS                      | CAHPS (medical group)         |
| Care cost                      |                |                   |                            |                               |
| High spending relative to income| CF            | Not available     | Not available              | Not available                 |
| Per capita expenditures on health care| CMS          | CA DHCS           | CA DHCS                    | Not available                 |
| Engaged people                 |                |                   |                            |                               |
| Health literacy                | DOEd NCES      | US Census         | US Census                  | Not available                 |
| Social support                 | CDC BRFSS      | CHIS              | CHIS                       | Not available                 |

Abbreviations: AHRQ, Agency for Healthcare Research and Quality; BRFSS Behavioral Risk Factor Surveillance System; CA DHCS, California Department of Health Care Services; CAHPS, Consumer Assessment of Healthcare Providers and Systems; CDC HAI, Centers for Disease Control and Prevention Healthcare Associated Infection Prevalence Report; CDC VSS, Centers for Disease Control and Prevention Vital Statistics System; CDE, California Department of Education; CDPH, California Department of Public Health; CF, The Commonwealth Fund; CHIS, California Health Interview Survey; CHISNE, California Health Interview Survey—Neighborhood Edition; CHR, County Health Rankings; CMS, Centers for Medicare & Medicaid Services; DOEd NCES, Department of Education National Center for Education Statistics; HCUP, Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project; IHME, Institute for Health, Metrics, and Evaluation; NHANES, National Health and Nutrition Examination Survey; NHIS, National Health Interview Survey; NIS, National Immunization Survey; SG, surgeon general.

these (English language literacy, voter participation). Many of the community stakeholders were very interested in data on social support and health literacy but they were not available.

Building Core Metrics Web Sites

Between Convening #1 and Convening #2, the PHI team built custom Web sites featuring the Core Metrics indicators using LiveStories, a Web-based data storytelling platform that combines images, charts, maps, videos, and rich text to tell a story. We built 4 online “Vital Signs report card” interactive Web sites, 2 each (1 in English and 1 in Spanish) for Fresno and Monterey (see Figures, Supplemental Digital Content 2, available at http://links.lww.com/JPHMP/A402, and Supplemental Digital Content 3, available at http://links.lww.com/JPHMP/A403, screenshots of custom-built Web sites).

These Web sites displayed the Core Metrics indicators at the county and subcounty levels compared with state and national data. The charts and graphs were supplemented with photographs and text to tell the full story of the indicators in each community. Each Web site was designed to be a sustainable reporting tool that each community could update and use to assess progress. Additional Web sites were built to share additional indicators selected by consensus during Convening #1 (active transportation in Fresno, safety in Monterey). The additional indicators were chosen because they were important for current work in each community-based site. In addition to data, the report included photographs provided by our partners in each community and text written by our partners to describe their current efforts, tell their story in their
own words, and indicate the future direction of their work.

After the second convening, the PHI team made additional changes to the LiveStories sites so that they were meaningful and useful to the community. Mostly, this meant revising text regarding recommendations for future action to make sure that it accurately reflected what community-based groups were committed to acting on. Then, all the content of the LiveStories sites was transferred to a representative from each of the community-based pilot sites.

Convening #2, December 2016—Meeting With Community Stakeholders to Present Draft Stories

A second, final convening was held to review the Core Metrics displayed in interactive, storytelling data visualization Web sites in LiveStories, present the results, and discuss possible actions moving forward. The objectives for the second convening are listed in Table 3. Again, we used a World Café format to harness the collective wisdom of the group. The questions explored were as follows:

1. How might we use these tools (Core Metrics and LiveStories) for advocacy/driving change?
2. How might we work together with this tool to move actions forward? How can we maintain it in the future?
3. Commitments/Next steps

During Convening #2, preliminary versions of the LiveStories sites\(^5,6\) were presented to the participants. Participants had a chance to share their impressions of the sites and suggestions for improvement. Then, the facilitators led the participants in a World Café and group discussion of how to use the Core Metrics work.

The Convening #2 for Fresno County was held in Fresno, California, on December 7, 2016, and 11 stakeholders attended. Three main themes emerged during the World Café:

1. Involve the community.
2. Use the Core Metrics and LiveStories sites to secure funding to improve public health and the social determinants of health.
3. People and efforts should be organized to drive action using the Core Metrics and LiveStories.

At the end of the convening, the participants committed to use the Core Metrics LiveStories sites to accomplish the following:

1. Gather and share more data by asking government officials to share their data and by collecting additional needed data using teams of volunteers.
2. Build capacity and leadership.
3. Create economic opportunities.

The Convening #2 for Monterey County was held in Monterey, California, on December 8, 2016, and 15 stakeholders attended (see Figure, Supplemental Digital Content 4, available at http://links.lww.com/JPHMP/A404, graphic facilitation from Convening #2 in Monterey—Using Custom-Built Web Sites to Drive Action).

Three main themes emerged during the World Café:

1. Growing together as we work together.
2. Participating in mutually reinforcing activities.
3. The Core Metrics and LiveStories Web sites make it easier for us to invite the media into our work.

In addition, convening participants voted on the Core Metrics that were most important for their community. During the convening, opportunities were identified that could drive the Core Metrics work (so-called “champion initiatives”) in the focus areas of Impact Monterey County: economic self-sufficiency, education, health, and safety.

Lessons Learned

The community engagement process we used increased familiarity with the Core Metrics while fostering collaboration and common understanding among the members of the Core Metrics implementation team (stakeholders, facilitators, data analysts, and project leadership). Community engagement is critical to determine how to share data that can inform current work occurring in communities. Participants and the pilot project communities found the community engagement process very beneficial, and it stimulated conversations that needed to happen, as reported in postconvening surveys. The communities defined for themselves actionable metrics, and we helped them put in place a process to set goals and track progress that engaged them for long-term success. When our work began, there were extensive activities already directed toward improving social determinants of health in each of the pilot project communities. They fit well with the Core Metrics because the Core Metrics measure set includes social determinants of health. The community groups we worked with were also active in working toward health equity. We found that the communities believed that the Core Metrics could drive further data analysis to support equity issues. For example, the engagement process in our pilot
project augmented, but did not supplant, existing indicators projects in the communities where we worked. In addition, our work informed community groups of the criteria used to define and select the Core Metrics, which enhanced credibility to these groups that later considered adopting it for their indicator selection processes. It was during the community engagement process that our implementation team learned that both community stakeholder groups believed that it was critical to build all interactive data visualization sites in English as well as Spanish. The community engagement process also included challenges; such as, it was difficult to gather people and have the community champion lead this effort because they have so many other commitments. The community engagement process was highly resource intensive and required many more hours of staff time than originally planned.

Regarding data compilation, we found that it is possible to compile the Core Metrics data at the local level and compare them to state and national measures. However, one of the major challenges with implementing the measures in the Vital Signs report was the lack of specificity of the recommendations. Recommended measures are more “topics” than actual measures. The data presented in the Vital Signs report are national, which are of only marginal use to local communities. Thus, it was important to identify the information that can be used at the local level, and, to the extent possible, use measures that have the same specifications in all communities. However, one challenge was that sometimes, national measures (such as health literacy) were not available at the local level, so we used proxies (English language literacy, voter turnout).

Epilogue

Our pilot project suggests that the Core Metrics may be a useful indicator set for local jurisdictions to adopt and track. Our project is distinguished from other health indicator projects because of its focus on community engagement and sharing the indicators via custom-built Web sites focused on combining data with storytelling. Our work with 2 California communities found that the Core Metrics can add value to existing data projects, and building the custom Web sites facilitated easy sharing of the Core Metrics with partners, government officials, and policy makers. Each site reported that the Core Metrics added value to its existing work. As a result of the Core Metrics pilot project in Fresno, the Core Metrics were shared via custom-built Web sites with policy makers and city council members to increase awareness and drive action related to active transportation. In Monterey, additional measures were added to increase the breadth and diversity of the set of indicators being tracked by the Impact Monterey County initiative. In addition, participation in the Core Metrics pilot project diversified the types of stakeholders participating in the Impact Monterey County network and increased involvement in the network by members from health collaboratives.

Many indicator sets exist; no matter which indicator set the community chooses to adopt (eg, County Health Rankings, 500 Cities, America’s Health Rankings, Core Metrics), a shared indicator set can help communities compile and present data to drive action. Virtually, every community in the United States has at least 1 indicator project underway. Our project’s findings demonstrate that the Core Metrics can fit in with existing efforts (such as with the community health needs assessment in Fresno County or Impact Monterey County), and the Core Metrics can be adapted so that they are meaningful for communities and provide indicators that are important for their work. The question we are left with is as follows: Do the Core Metrics add value to existing data projects? We observed in this pilot project that they do. In Fresno, they provided data to a community-based group that did not have access to the health data they craved for use in their advocacy efforts. In Monterey, they lent credibility to processes, identified some missing partners and some gaps, underscored a focus on health equity, and provided a much needed opportunity for an alignment of effort between several indicator selection projects that were being conducted simultaneously.

There is statewide and national interest in expanding our work with the Core Metrics. Future opportunities may arise to develop custom Web sites that combine data with storytelling for each county in California and to pilot additional sites outside of California. These opportunities include work with the National Academies of Science, Engineering, and Medicine, and the Accountable Communities for Health. It is becoming increasingly recognized that sharing data in ways that many people, not only those with expertise in data interpretation, can understand and find meaning in is a critical way to advance public health. Sharing the Core Metrics in a way that is easy to understand via custom Web sites, and designing the indicator set to include input from the community so that the metrics are accepted, is important and critical for the community’s health priorities.

Questions for the Reader:

1. Identify the reasons that the 2 community champions were motivated to participate in the Core Metrics Pilot Project.
2. Each of the 2 community champions had a different goal for participating in the Core Metrics Pilot Project. Comment on the differences among their agendas and motivating factors.

3. During the Core Metrics Pilot Project, community engagement techniques were used to make sure that the project met the needs of the pilot communities. What were some of the barriers to using community engagement techniques during this project and how could those be overcome in future projects?

4. What was the benefit of asking for additional measures of importance to each community? Why do you think they chose the topics that they did?

5. How well did the communities appreciate the importance of nonclinical factors in the health and well-being of their communities? The importance of clinical factors?

6. If you were going to implement the Vital Signs in a community, what would you do differently? The same?

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