Validating the MCH Leadership Competencies: Results of a Modified Delphi Procedure

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Background

The Maternal-Child Health Bureau (MCHB) has been considering how to train and recruit leaders for many years. In 1987-1988, it convened a Leadership Training Conference of MCHB-funded training grants. More recently, since the fall of 2007, Version 2.0 of the MCH Leadership Competencies[1] has been available on the MCH Training website.[2] That document notes: "To be a leader in Maternal and Child Health (MCH) requires specific knowledge, skills, personal characteristics, and values. The leadership competencies described in this document and drawn from both theory and practice are designed to support and promote MCH leadership. The document is targeted to MCH interdisciplinary training programs and practicing MCH professionals."

The document also presents the history of development of the MCH Leadership Competencies, summarizing the steps in the process as follows:

> •April 2004. At a conference entitled Future of MCH Leadership Training, held in Seattle, Washington at the University of Washington, representatives from many of the MCH Training programs came together to draft MCH Leadership competencies, the critical knowledge and skill areas that they felt were necessary to develop MCH leaders.
> • Fall 2004. The draft competencies developed in Seattle were further refined later that year at the MCHB All Grantee Meeting in Washington, DC.
> • Early 2005. The MCH Competencies Working Group was formed, composed of individuals representing MCH training programs, Association of Maternal and Child Health Programs, and CityMatCH. This group refined the competencies and developed a revised draft.
> • Fall 2005–spring 2006. The revised draft was shared at grantee meetings throughout this period and all MCH training programs were asked to provide comments about the MCH Leadership Competencies.
> • Winter 2007. Comments from the field were reviewed by the Workgroup. This document reflects the suggested changes from the field and subsequent meetings with the Workgroup. These competencies are the result of an iterative and inclusive work-in-progress that was based on the literature on leadership (from the business, military, and social science contexts), and the wisdom and experience of current MCH participants and leaders.[2]

The result of this work was 94 competencies, clustered in 12 domains. The ultimate goal is that the competencies should provide a framework that guides assessment and curriculum design for MCH interdisciplinary training programs and should serve as a tool for practicing MCH professionals. As a next step toward that goal, input from MCH leaders was solicited to validate the content of the competencies.

The Use of Expert Consensus to Validate Competencies: The Delphi Technique

More than thirty years ago, in his description of techniques useful in validating competencies, Johnson noted that "identifying competencies is normally an easier and less research-oriented activity than validating competencies."[3] (p. 2). Since that time, numerous researchers have reported on the results of using a variety of techniques built on the notion of expert consensus to validate competencies and produce guidelines [4-8]

The Delphi technique is a method of expert consensus that relies on the opinions of experts to determine how important particular items are to a construct or domain of interest.

> Essentially the technique consists of questioning a panel of experts on specific questions or issues. Information concerning the issue is posted individually to each expert, who then responds to the researcher. This procedure is … confidential. The individual responses of the panel are scrutinized and collated by the researcher, who next compiles a comprehensive list for re-submission to the panel. At this stage, the experts are asked to reconsider the list and respond again, indicating their agreement or disagreement with items. The replies are collated once more and the process repeated until consensus is reached.[9] (p. 181)

While the Delphi technique has classically used four rounds,[10] newer recommendations suggest two or three.[11, 12]

Advantages of the Delphi technique

This technique provides a number of benefits and advantages. One of the most important is that it is less liable to the social desirability or response bias[13] that may occur as a result of in-person discussions, meetings, or brain-storming sessions, where members of the group may be unduly influenced or intimidated by others.[9] In a Delphi procedure, members of the expert panel may or may not be aware of who else is on the panel. After the first round of the procedure, participants view the aggregate response of the other members to each item but are not able to identify any individual responses other than their own. This confidential work in isolation may free the participants to respond as they see fit. It also contributes to ownership of the process and results.[8]

Another benefit of the Delphi technique is that it lends itself well to providing evidence of various types of validity. Face validity, referring to the directness or plausibility of a measure[14] is established when the skills or competencies are identified as those most important and relevant to the panel of experts.[9] Content validity is the extent to which a set of operations (in this instance, the MCH leadership competencies) represents or measures the construct of interest, leadership in MCH professionals. Content validity is bolstered by having the members of the expert panel define the construct of interest,[15] (leadership in MCH professionals) by reaching consensus on the important items or components to be included.[16, 17]

Finally, a Delphi technique is an efficient way of gathering information regarding the importance of items under consideration for a guideline or list of competencies because participants do not have to be physically present at the same time.[4, 18]

Limitations of the Delphi technique

Any technique also has limitations. For the Delphi technique, these include the fact that there is no agreement on the size of the expert panel needed[9] to produce valid results. An early review of published articles using the technique[19] noted panel sizes ranging from 10 to more than 1600. While common sense would indicate that more is better when aggregating the judgment of individuals, this has not necessarily been found to be true.[7] A variety of theoretical studies have found little benefit to increasing the number of panel members above ten.[20, 21]

Another limitation is that few studies describe the criteria utilized to select the expert panel.[9] That said, little is known about either the representativeness of expert panels or the impact of individuals on the results.[7] A few studies have looked at the differences between different groups of experts' ratings.[22, 23] Not surprisingly, findings show that similar groups tend to have more similar ratings than do disparate groups.

While the Delphi technique avoids response bias resulting from group pressure, as noted above, it is liable to response bias from non-participation and attrition. Non-participation is loss of participants at the outset due to lack of response from some portion of those experts invited to participate. While non-participation may introduce bias,[7] a study that examined the characteristics of physicians who did and did not agree to participate in a health care consensus development process found no major differences between respondents and non-respondents.[24] Attrition is loss of participants from round to round during the conduct of the study. It has the potential to impact the results of a study by "altering the range of opinion from round to round"[7] (p. 184).

Finally, the lack of consensus about the meaning of consensus itself can be seen as a limitation to the Delphi technique. Merriam-Webster defines consensus as "general agreement, the judgment arrived at by most of those concerned, and group solidarity in sentiment and belief."[25] In terms of consensus development techniques, such as the Delphi technique, consensus is generally considered to be percent agreed upon as important or very important. Quantifying consensus appears to be an inexact science, with a plethora of published designs and recommendations, including 51%,[26] 55%,[27] 70%,[28] 80%,[5, 12] and 100%.[9] Crisp has suggested that stability of results is a more reliable measure than percentage consensus.[29] Further complicating the situation is the fact that the level agreed upon for consensus is often set post hoc, further adding to the arbitrariness of the concept.[9]

Validation Process: Modified Delphi Technique to Validate the MCH Leadership Competencies

As previously noted, an extensive multi-perspective process was used to generate the existing 94 competencies, grouped into 12 domains (MCH knowledge base, self-reflection, ethics and professionalism, critical thinking, communication, negotiation and conflict resolution, cultural competency, family-centered care, developing others through teaching and mentoring, interdisciplinary team building, working with communities and systems, and policy and advocacy). A modified Delphi procedure using identified MCH leaders as experts was conducted to validate the competency skills. The procedure was modified in that it was not used to generate the 94 competencies. It is not uncommon to begin the procedure with a list of items that has already been developed.[18]

Materials and methods

The 94 items (competencies) that had previously been identified as basic and advanced skills were placed in a survey format (Phase 1 Survey, shown in the Appendix). The survey was designed to be administered online via a secure website. It consisted of background information, instructions, and the items to be rated by each member of the expert panel, grouped by domain. Each domain was titled and defined. Instructions asked participants to rate each competency on the basis of, "How important do you think these skills are for leaders working in the field of MCH?". The scale was a five-point Likert-type scale with response options of

1: not at all
2: slightly
3. moderately
4. very
5. extremely

Eleven individuals were selected to pilot the online Delphi procedure and asked to comment on the process. Revisions to the survey and instructions were made in accordance with their comments.

The validation procedure was submitted to the Dartmouth Committee for the Protection of Human Subjects and judged to be 'exempt'.

Participants

The project planning group, consisting of Laura Kavanagh, George Jesien, Crystal Pariseau, and Mark Law, compiled a draft list of criteria to use in identifying candidates for the expert panel. Participants selected would need to meet at least two of the following criteria:

1. Heads up an MCH or Health state- (or local) organization such as State Title V, State Office for Children with Special Health Care Needs or Public Health
2. Holds leadership position (i.e. Dean, Department Chair, or Academic Chair) for school of public health, medical school, departments of pediatrics or family medicine
3. Serves as a respected Principle Investigator for SPRANS or MCH related research grants that has received funding for at least two funding cycles
4. Has an extensive publication history on a broad range of MCH, public health or children with special health care needs topics. With at least 20 in combination of peer reviewed articles, books or chapters.

5. Has served in leadership positions of federal agencies such as MCHB, HRSA, CDC, NIH, etc for at least 10 (?) years.
6. Has served as lead director or PI for an institute, policy, research, technical assistance, or systems development grants – at least two major grants with national or regional scope.
7. Directs large direct service entities that provide a wide range of health and allied health services to underserved/minority populations for an extended period of time – at least 7(?) years.
8. Has led consumer and advocacy organizations who provide input, provide support services or advocate for policy change for specific populations
9. Has served as either elected or appointed head of professional association, policy or advisory group or organization.

Additional characteristics that could be considered, but not required, were:

a) Has presented at regional and national conferences related to MCH and public health
b) Has participated on federal panels, workgroups and advisory councils dealing with MCH and public health policy
c) Has provided extensive technical assistance, policy development input and representation of different constituencies to federal agencies, congress or policy organizations
d) Has extensive background through direct service, education or lived experience in the needs of MCH and other underserved/minority populations f
e) Has written or spoken extensively regarding the needs of MCH or other underserved/minority populations
f) Is considered by other leaders to be an MCH or public health leader

Using these criteria, the planning group generated a list of candidates, then considered representation from the four areas that match the MCH performance measures (clinical, academic, public health/public policy, and advocacy), using their sense of which area was primary for each candidate.

A final list of 109 individuals was identified. Laura Kavanagh invited each of these individuals via e-mail to participate in the process. Forty-seven individuals (43%) responded, indicating that they would participate. Of these, 38 (81%) completed Phase 1 of the process and 35 (74% of those agreeing to participate and 92% of those actually participating) completed Phase 2. Numerous gentle e-mail reminders were sent to those who had agreed to participate

Analysis and Results

Consensus

Following the procedure used in a task and process deemed similar,[4] Phase 1 data were analyzed to ascertain consensus. Item scores were recoded and collapsed to indicate participants' ratings of importance as 'very important' (initial rating of 4 or 5), moderately important' (initial rating of 3), or 'not important' (initial rating of 1 or 2). For this project, at least 75% agreement on an item was considered to indicate consensus. Findings from Phase 1 were discussed with the planning group prior to the start of Phase 2.

Phase 2 repeated the process, with an important difference. The survey form provided to each individual contained information about her or his rating of each item in Phase 1, as well as the mean and standard deviation of all participants' ratings for that item. Participants were instructed to review each

competency, then either rerate it or confirm the original rating. Stability has been defined as a shift of less than 20% from one round to another.[4] This means that if the mean score on an item in a subsequent round changes by less than 20% from the previous round, stability has been achieved. Twenty percent of a change on a 1-5 scale would be a change of one point. Table 1 indicates the results by domain.

Table 1: Number of items (by domain) viewed as very important

Domain	N items	Phase 1 N (very) important items (indicated by achieving consensus of at least 75%)	Phase 1 percentage achieving consensus of at least 75%	Phase I mean rating	Phase 2 N (very) important items (indicated by achieving consensus of at least 75%)	Phase 2 percentage achieving consensus of at least 75%	Phase 2 mean rating
Knowledge	4	4	100	4.375	4	100	4.436
Self –reflection	6	3	50	3.947	2	33	3.971
Ethics & Professionalism	7	6	86	4.342	6	86	4.404
Critical thinking	9	5	56	4.075	8	89	4.184
Communication	12	11	92	4.189	11	92	4.295
Negotiation & Conflict resolution	3	3	100	4.378	2	67	4.480
Cultural competency	5	5	100	4.281	5	100	4.309
Family-centered care	8	4	50	4.054	4	50	4.014
Teaching & Mentoring	9	4	44	4.013	5	56	4.032
Team building	9	8	89	4.219	9	100	4.254
Communities & Systems	14	8	57	4.064	10	71	4.143
Policy & advocacy	8	8	100	4.247	8	100	4.298
Total	**94**	**69**	**73.4**		**74**	**78.2**	

These results show that percentage of consensus on very important items was 50% or higher in all domains except for teaching and mentoring for Phase 1 and for all domains in Phase 2. Additionally, the results show that the highest rated domain in both Phase 1 and Phase 2 was 'negotiation and conflict resolution' and that the lowest rated domain in both phases was 'self-reflection.'

While understanding expert panel consensus at the domain level is interesting, the purpose of the procedure was to understand consensus at the individual item or competency level. Table 2 displays the mean rating for each item in Phase 1 and Phase 2 and shows those items that attained and those that lacked a consensus level of at least 75% in both phases. Lack of consensus means that the expert panel did not agree that these items (marked with an asterisk) were very important 25% of the time or more. In most but not all instances, this lack of consensus was present for both Phase 1 and Phase 2. In the

instances where there was a lack of consensus in one phase but not the other, the measure was in the 24-26% range in both phases (just under the cut-off in one phase and just over the cut-off in the other), indicating that the determination of consensus or lack was a close call.

It may also be of interest to know which competencies are the highest-rated within each domain, especially if decreasing the number of competencies is a goal. Table 2 also displays this information, with the means of the three highest-rated competencies in each domain highlighted in green for Phase 1 and Phase 2. (Items highlighted in blue indicate a tie.) It is of interest to note that the ratings were very stable over the two phases of the project. In only one domain, team building, was there any difference in the top three-rated competencies between Phase 1 and Phase 2.

Table 2: Means and lack of consensus for Phase 1 and Phase 2

Domain	Competency	Phase 1 mean & lack of consensus (*)			Phase 2 mean & lack of consensus (*)
Knowledge	1. The ability to use data to identify issues related to the health status of a particular MCH population group.	4.533			4.571
Knowledge	2. The ability to describe health disparities within MCH populations and offer strategies to address them.	4.474			4.486
Knowledge	3. The ability to demonstrate the use of a systems approach to explain the interactions among individuals, groups, organizations, and communities.	4.342			4.400
Knowledge	4. The ability to assess the effectiveness of an existing program for specific MCH population groups.	4.132			4.286
Self-reflection	1. The ability to articulate personal values and beliefs.	3.816	*	*	3.914
Self-reflection	2. The ability to describe predominant communication styles.	3.474	*	*	3.486
Self-reflection	3. The ability to recognize that personal attitudes, beliefs, and experiences (successes and failures) influence one's leadership style.	4.395			4.371
Self-reflection	4. The ability to identify sources of personal reward and rejuvenation to sustain productivity and commitment.	3.842	*	*	3.943
Self-reflection	5. The ability to use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.	4.079		*	4.000
Self-reflection	6. The ability to identify a framework for productive feedback from peers and mentors.	4.079			4.114
Ethics & Professionalism	1. The ability to identify and address ethical issues in patient care, human subjects research, and public health theory and practice.	4.526			4.514
Ethics & Professionalism	2. The ability to describe the ethical implications of health disparities within MCH populations.	4.316			4.429
Ethics & Professionalism	3. The ability to interact with others and solve problems in an ethical manner.	4.553			4.657

Ethics & Professionalism	4. The ability to identify ethical dilemmas and issues that affect MCH population groups and initiate and act as catalyst for the discussion of these dilemmas and issues.	4.237			4.314
Ethics & Professionalism	5. The ability to consider the culture and values of communities in the development of polices, programs, and practices that may affect them.	4.658			4.714
Ethics & Professionalism	6. The ability to describe the ethical implications of health disparities within MCH populations and propose strategies to address them.	4.316			4.314
Ethics & Professionalism	7. The ability to document evidence of continuous learning and improvement.	3.789	*	*	3.886
Critical thinking	1. The ability to use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.	4.351			4.343
Critical thinking	2. The ability to use a standard approach to the critical review of research articles, addressing such issues as study design, sample size, confidence intervals, and use of appropriate statistical tests.	3.838	*		3.857
Critical thinking	3. The ability to formulate a focused and important practice, research, or policy question.	4.108			4.229
Critical thinking	4. The ability to apply important evidence-based practice guidelines and policies in their field.	4.351			4.543
Critical thinking	5. The ability to identify practices and policies that are not evidence-based but are of sufficient promise that they can be used in situations where actions are needed.	4.000			4.229
Critical thinking	6. The ability to formulate hypotheses or research questions, retrieve information and pertinent data and evidence, complete a comparative analysis, and draw appropriate conclusions to solve a problem.	3.730	*	*	3.829
Critical thinking	7. The ability to compile pertinent data to develop an evidence-based practice or policy.	3.757	*		3.886
Critical thinking	8. The ability to translate research findings to meet the needs of different audiences.	4.324			4.486
Critical thinking	9. The ability to discuss various strategies, including supportive evidence, for the implementation of a policy.	4.216			4.257
Communication	1. The ability to share thoughts, ideas, and feelings effectively in discussions, meetings, and presentations with diverse individuals and groups.	4.514			4.600
Communication	2. The ability to write clearly and effectively to express information about issues and services that affect MCH population groups.	4.351			4.486
Communication	3. The ability to understand nonverbal communication cues in self and others.	3.973			4.143
Communication	4. The ability to synthesize and translate MCH knowledge into understandable information	4.432			4.543
Communication	5. The ability to listen attentively and actively.	4.459			4.571

Communication	6. The ability to tailor information for the intended audience(s) (consumers, policymakers, clinical, public, etc.) by using appropriate communication modalities (verbal, written, nonverbal).	4.297			4.486
Communication	7. The ability to provide constructive feedback to colleagues, presenters, and students.	4.216			4.229
Communication	8. The ability to develop and share MCH \stories\" that are compelling and resonate with intended audiences."	3.784	*	*	3.829
Communication	9. The ability to communicate clearly through effective presentations and written scholarship about MCH populations, issues, and/or services and to articulate a shared vision for improved health status of MCH populations.	4.216			4.400
Communication	10. The ability to employ a repertoire of communication skills that includes disseminating information in a crisis, explaining health risks, and relaying difficult news.	3.973			4.057
Communication	11. The ability to refine active listening skills to understand and evaluating the information shared by others.	4.081			4.143
Communication	12. The ability to craft a convincing MCH story designed to motivate constituents and policymakers to take action.	3.973			4.057
Negotiation & conflict resolution	1. The ability to apply strategies and techniques of effective negotiation and evaluate the impact of personal communication and negotiation style on outcomes.	4.189			4.265
Negotiation & conflict resolution	2. The ability to develop and maintain positive relationships with colleagues, administrative staff, mentees, and stakeholders.	4.595			4.706
Negotiation & conflict resolution	3. To demonstrate the ability to manage conflict in a constructive manner.	4.351			4.471
Cultural competency	1. The ability to conduct personal and organizational self-assessments regarding cultural competence.	4.027		*	4.029
Cultural competency	2. The ability to assess strengths of individuals and communities and respond appropriately to their needs based on sensitivity to and respect for their diverse cultural and ethnic backgrounds and socioeconomic status.	4.541			4.543
Cultural competency	3. The ability to suggest modifications of health services to meet the specific needs of a group or family, community, and/or population.	4.108			4.171
Cultural competency	4. The ability to employ strategies to assure culturally-sensitive public health and health service delivery systems.	4.270			4.286
Cultural competency	5. The ability to integrate cultural competency into programs, research, scholarship, and policies.	4.459			4.514
Family-centered care	8. The ability to incorporate medical home models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	3.595	*	*	3.571

Family-centered care	1. The ability to solicit and use family input in a meaningful way in the design or delivery of clinical services, program planning, and evaluation.	4.459			4.371
Family-centered care	2. The ability to enumerate benefits of a medical home model for children, families, providers, health care systems, and health plans.	3.649	*	*	3.629
Family-centered care	3. The ability to operationalize the \family-centered care\" philosophical constructs (e.g., families and professionals share decision-making; professionals use a strengths-based approach when working with families) and use these constructs to critique and strengthen practices, programs, or policies that affect MCH population groups."	4.432			4.400
Family-centered care	4. The ability to ensure that family perspectives play a pivotal role in MCH research, clinical practice, programs, or policy (e.g., in community needs assessments, processes to establish priorities for new initiatives or research agendas, or the development of clinical guidelines.	4.405			4.400
Family-centered care	5. The ability to assist primary care providers, organizations, and/or health plans to develop, implement, and/or evaluate models of family-centered care.	4.108			4.114
Family-centered care	6. The ability to research the impact of family-centered practice models on individual or population health.	3.676	*	*	3.629
Family-centered care	7. The ability to incorporate family-centered models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	4.108	*	*	4.000
Teaching & mentoring	1. The ability to recognize and create learning opportunities for others.	4.135			4.114
Teaching & mentoring	2. The ability to enumerate goals and objectives of a teaching exercise.	3.838	*	*	3.943
Teaching & mentoring	3. The ability to appropriately match teaching strategies to identified learning objectives.	3.865	*	*	3.914
Teaching & mentoring	4. The ability to measure teaching effectiveness.	3.811	*	*	3.829
Teaching & mentoring	5. The ability to participate in a mutually beneficial mentoring relationship.	4.216			4.143
Teaching & mentoring	6. The ability to teach audiences of different sizes, backgrounds, and settings.	3.919	*		4.057
Teaching & mentoring	7. The ability to incorporate feedback from learners to evaluate teaching effectiveness.	4.027	*		4.057
Teaching & mentoring	8. The ability to give and receive constructive feedback and behaviors and performance.	4.216			4.286
Teaching & mentoring	9. The ability to identify and facilitate career options and opportunities for mentees.	3.919		*	3.943

Team building	1. The ability to identify and assemble team members appropriate to a given task (e.g., research question, program, curriculum, clinical care issue).	4.243			4.257
Team building	2. The ability to develop and articulate a \team\" shared vision, roles, and responsibilities."	4.351			4.371
Team building	3. The ability to facilitate group processes for team-based decisions (e.g., foster collaboration and cooperation).	4.270			4.429
Team building	4. The ability to value and honor diverse perspectives (e.g., discipline, ethnic, cultural, economic) of team members.	4.568			4.514
Team building	5. The ability to identify forces that influence team dynamics.	4.027			4.057
Team building	6. The ability to enhance team functioning, redirect team dynamics, and achieve a shared vision.	4.270			4.314
Team building	7. The ability to share leadership based on appropriate use of team member strengths in accomplishing activities and managing challenges for the team.	4.324			4.286
Team building	8. The ability to use knowledge of disciplinary competencies and roles to improve teaching, research, advocacy, and systems of care.	4.027			4.057
Team building	9. The ability to use shared outcomes to promote team synergy.	3.892	*		4.000
Communities & systems	1. The ability to participate in basic organizational planning processes such as developing a mission, vision, strategic goals, and activities.	4.189			4.286
Communities & systems	2. The ability to develop agendas and lead meetings effectively.	3.946	*		4.000
Communities & systems	3. The ability to develop a simple project budget and time frame.	3.838	*	*	3.886
Communities & systems	4. The ability to identify community stakeholders and their extent of engagement in the collaboration process.	4.297			4.343
Communities & systems	5. The ability to use data to assist in determining the needs of a population for the purposes of program design, policy formulation, research, or training.	4.405			4.400
Communities & systems	6. The ability to interpret situations systemically; i.e., identifying both the whole situation and the dynamic interplay among its parts.	4.108			4.200
Communities & systems	7. The ability to develop a business plan and/or grant, including an implementation plan.	3.892	*	*	3.914
Communities & systems	8. The ability to assess the environment to determine goals and objectives for a new or continuing program, list factors that facilitate or impede implementation, develop priorities, and establish a timeline for implementation.	4.162			4.229
Communities & systems	9. The ability to manage a project effectively and efficiently including planning, implementing, delegating and sharing responsibility, staffing, and evaluation.	4.054			4.257
Communities & systems	10. The ability to apply techniques of group process to identify and manage fundamental assumptions.	3.757	*	*	3.857

Communities & systems	11. The ability to translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.	3.892	*		4.029
Communities & systems	12. The ability to use negotiation and conflict resolution strategies with stakeholders when appropriate.	4.189			4.286
Communities & systems	13. The ability to formulate gentle, nonblaming questions to promote an understanding of all levels of a problem or issue.	3.838	*	*	3.914
Communities & systems	14. The ability to maintain a strong stakeholder group with broad based involvement in an environment of trust and use an open process.	4.324			4.400
Policy & advocacy	1. The ability to frame problems based on key data, including economic, political, and social trends that affect the MCH population.	4.486			4.441
Policy & advocacy	2. The ability to use data, levels of evidence, and evaluative criteria in proposing policy change.	4.459			4.500
Policy & advocacy	3. The ability to identify a wide range of stakeholders who influence changes in MCH policy.	4.189			4.324
Policy & advocacy	4. The ability to apply appropriate evaluative criteria to the analysis of alternative policies.	4.054			4.118
Policy & advocacy	5. The ability to analyze the potential impact of policies on diverse population groups.	4.270			4.324
Policy & advocacy	6. The ability to understand the roles and relationships of groups involved in the public policy development and implementation process, including the executive, legislative, and judicial branches of government at all levels and interest groups.	4.135			4.206
Policy & advocacy	7. The ability to formulate strategies to balance the interests of diverse stakeholders, consistent with desired policy change.	4.189			4.265
Policy & advocacy	8. The ability to present evidence and information to a legislative body, key decision makers, foundations, or the general public.	4.189			4.206

Another way to consider these data is to look at the competencies in rank order of importance to the participants, regardless of domain. Table 3 displays the competencies ranked by mean rating, from highest rated item (#1) to lowest (#94), for both Phase 1 and Phase 2. Logical cut points (.25) are indicated. Ratings in Phase 2 were slightly higher overall than those in Phase 1

Table 3: Competencies ranked by mean rating

Rank	Competency	Phase 1 mean	Phase 2 mean	Competency
1	Ethics & Professionalism # 5. The ability to consider the culture and values of communities in the development of polices, programs, and practices that may affect them.	4.658	4.714	Ethics & Professionalism: #5. The ability to consider the culture and values of communities in the development of polices, programs, and practices that may affect them.
2	Negotiation & Conflict Resolution #2. The ability to develop and maintain positive relationships with colleagues, administrative staff, mentees, and stakeholders.	4.595	4.706	Negotiation & Conflict Resolution 2. The ability to develop and maintain positive relationships with colleagues, administrative staff, mentees, and stakeholders.
3	Team building #4. The ability to value and honor diverse perspectives (e.g., discipline, ethnic, cultural, economic) of team members.	4.568	4.657	Ethics & Professionalism #3. The ability to interact with others and solve problems in an ethical manner.
4	Knowledge #1. The ability to use data to identify issues related to the health status of a particular MCH population group.	4.553	4.600	Communication #1. The ability to share thoughts, ideas, and feelings effectively in discussions, meetings, and presentations with diverse individuals and groups.
5	Ethics & Professionalism #3. The ability to interact with others and solve problems in an ethical manner.	4.553	4.571	Knowledge #1. The ability to use data to identify issues related to the health status of a particular MCH population group.
6	Cultural competency #2. The ability to assess strengths of individuals and communities and respond appropriately to their needs based on sensitivity to and respect for their diverse cultural and ethnic backgrounds and socioeconomic status.	4.541	4.571	Communication #5. The ability to listen attentively and actively.
7	Ethics & Professionalism #1. The ability to identify and address ethical issues in patient care, human subjects research, and public health theory and practice.	4.526	4.543	Critical thinking #4. The ability to apply important evidence-based practice guidelines and policies in their field.
8	Communication #1. The ability to share thoughts, ideas, and feelings effectively in discussions, meetings, and presentations with diverse individuals and groups.	4.514	4.543	Communication #4. The ability to synthesize and translate MCH knowledge into understandable information
9	Policy & advocacy #1. The ability to frame problems based on key data, including economic, political, and	4.486	4.543	Cultural competency #2. The ability to assess strengths of individuals and communities and

	social trends that affect the MCH population.			respond appropriately to their needs based on sensitivity to and respect for their diverse cultural and ethnic backgrounds and socioeconomic status.
10	Knowledge #2. The ability to describe health disparities within MCH populations and offer strategies to address them.	4.474	4.514	Ethics & Professionalism #1. The ability to identify and address ethical issues in patient care, human subjects research, and public health theory and practice.
11	Communication #5. The ability to listen attentively and actively.	4.459	4.514	Culture competency #5. The ability to integrate cultural competency into programs, research, scholarship, and policies.
12	Cultural competency #5. The ability to integrate cultural competency into programs, research, scholarship, and policies.	4.459	4.514	Team building #4. The ability to value and honor diverse perspectives (e.g., discipline, ethnic, cultural, economic) of team members.
13	Family-centered care #1. The ability to solicit and use family input in a meaningful way in the design or delivery of clinical services, program planning, and evaluation.	4.459	4.500	Policy & advocacy #2. The ability to use data, levels of evidence, and evaluative criteria in proposing policy change.
14	Policy & advocacy #2. The ability to use data, levels of evidence, and evaluative criteria in proposing policy change.	4.459	4.486	Knowledge #2. The ability to describe health disparities within MCH populations and offer strategies to address them.
15	Communication #4. The ability to synthesize and translate MCH knowledge into understandable information	4.432	4.486	Critical thinking #8. The ability to translate research findings to meet the needs of different audiences.
16	Family-centered care #3. The ability to operationalize the \family-centered care\" philosophical constructs (e.g., families and professionals share decision-making; professionals use a strengths-based approach when working with families) and use these constructs to critique and strengthen practices, programs, or policies that affect MCH population groups."	4.432	4.486	Communication #2. The ability to write clearly and effectively to express information about issues and services that affect MCH population groups.
17	Family-centered care #4. The ability to ensure that family perspectives play a pivotal role in MCH research, clinical practice, programs, or policy (e.g., in community needs assessments, processes to establish priorities for new initiatives or research agendas, or the development of clinical guidelines.	4.405	4.486	Communication #6. The ability to tailor information for the intended audience(s) (consumers, policymakers, clinical, public, etc.) by using appropriate communication modalities (verbal, written, nonverbal).
18	Communities & systems #5. The ability to use data to assist in determining the needs of a population for the purposes of program design, policy formulation, research, or training.	4.405	4.471	Negotiation & Conflict Resolution #3. To demonstrate the ability to manage conflict in a constructive manner.
19	Self-reflection #3. The ability to recognize that personal attitudes, beliefs, and experiences (successes	4.395	4.441	Policy & advocacy #1. The ability to frame problems based on key data, including economic, political, and

	and failures) influence one's leadership style.			social trends that affect the MCH population.
20	Critical thinking #1. The ability to use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.	4.351	4.429	Ethics & Professionalism #2. The ability to describe the ethical implications of health disparities within MCH populations.
21	Critical thinking #4. The ability to apply important evidence-based practice guidelines and policies in their field.	4.351	4.429	Team building #3. The ability to facilitate group processes for team-based decisions (e.g., foster collaboration and cooperation).
22	Communication #2. The ability to write clearly and effectively to express information about issues and services that affect MCH population groups.	4.351	4.400	Knowledge #3. The ability to demonstrate the use of a systems approach to explain the interactions among individuals, groups, organizations, and communities.
23	Negotiation & Conflict Resolution #3. To demonstrate the ability to manage conflict in a constructive manner.	4.351	4.400	Communication #9. The ability to communicate clearly through effective presentations and written scholarship about MCH populations, issues, and/or services and to articulate a shared vision for improved health status of MCH populations.
24	Team building #2. The ability to develop and articulate a \team\" shared vision, roles, and responsibilities."	4.351	4.400	Family-centered care #3. The ability to operationalize the \family-centered care\" philosophical constructs (e.g., families and professionals share decision-making; professionals use a strengths-based approach when working with families) and use these constructs to critique and strengthen practices, programs, or policies that affect MCH population groups."
25	Knowledge #3. The ability to demonstrate the use of a systems approach to explain the interactions among individuals, groups, organizations, and communities.	4.342	4.400	Family-centered care #4. The ability to ensure that family perspectives play a pivotal role in MCH research, clinical practice, programs, or policy (e.g., in community needs assessments, processes to establish priorities for new initiatives or research agendas, or the development of clinical guidelines.
26	Critical thinking #8. The ability to translate research findings to meet the needs of different audiences.	4.324	4.400	Communities & systems #5. The ability to use data to assist in determining the needs of a population for the purposes of program design, policy formulation, research, or training.
27	Team building #7. The ability to share leadership based on appropriate use of team member strengths in accomplishing activities and managing challenges for the team.	4.324	4.400	Communities & systems #14. The ability to maintain a strong stakeholder group with broad based involvement in an environment of trust and use an open process.
28	Communities & systems #14. The ability to maintain a strong stakeholder group with broad based involvement in an environment of trust and use an open process.	4.324	4.371	Self-reflection #3. The ability to recognize that personal attitudes, beliefs, and experiences (successes and failures) influence one's leadership style.

29	Ethics & Professionalism #2. The ability to describe the ethical implications of health disparities within MCH populations.	4.316	4.371	Family-centered care #1. The ability to solicit and use family input in a meaningful way in the design or delivery of clinical services, program planning, and evaluation.
30	Ethics & Professionalism #6. The ability to describe the ethical implications of health disparities within MCH populations and propose strategies to address them.	4.316	4.371	Team building #2. The ability to develop and articulate a \team\" shared vision, roles, and responsibilities."
31	Communication #6. The ability to tailor information for the intended audience(s) (consumers, policymakers, clinical, public, etc.) by using appropriate communication modalities (verbal, written, nonverbal).	4.297	4.343	Critical thinking #1. The ability to use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.
32	Communities & systems #4. The ability to identify community stakeholders and their extent of engagement in the collaboration process.	4.297	4.343	Communities & systems #4. The ability to identify community stakeholders and their extent of engagement in the collaboration process.
33	Cultural competency #4. The ability to employ strategies to assure culturally-sensitive public health and health service delivery systems.	4.270	4.324	Policy & advocacy #3. The ability to identify a wide range of stakeholders who influence changes in MCH policy.
34	Team building #3. The ability to facilitate group processes for team-based decisions (e.g., foster collaboration and cooperation).	4.270	4.324	Policy & advocacy #5. The ability to analyze the potential impact of policies on diverse population groups.
35	6. The ability to enhance team functioning, redirect team dynamics, and achieve a shared vision.	4.270	4.314	Ethics & Professionalism #4. The ability to identify ethical dilemmas and issues that affect MCH population groups and initiate and act as catalyst for the discussion of these dilemmas and issues.
36	Policy & advocacy #5. The ability to analyze the potential impact of policies on diverse population groups.	4.270	4.314	Ethics & Professionalism #6. The ability to describe the ethical implications of health disparities within MCH populations and propose strategies to address them.
37	Team building #1. The ability to identify and assemble team members appropriate to a given task (e.g., research question, program, curriculum, clinical care issue).	4.243	4.314	Team building #6. The ability to enhance team functioning, redirect team dynamics, and achieve a shared vision.
38	Ethics & Professionalism #4. The ability to identify ethical dilemmas and issues that affect MCH population groups and initiate and act as catalyst for the discussion of these dilemmas and issues.	4.237	4.286	Knowledge #4. The ability to assess the effectiveness of an existing program for specific MCH population groups.
39	Critical thinking #9. The ability to discuss various strategies, including supportive evidence, for the implementation of a policy.	4.216	4.286	Cultural competency #4. The ability to employ strategies to assure culturally-sensitive public health and health service delivery systems.
40	Communication #7. The ability to provide	4.216	4.286	Teaching & mentoring #8. The ability to give and

	constructive feedback to colleagues, presenters, and students.			receive constructive feedback and behaviors and performance.
41	Communication #9. The ability to communicate clearly through effective presentations and written scholarship about MCH populations, issues, and/or services and to articulate a shared vision for improved health status of MCH populations.	4.216	4.286	Team building #7. The ability to share leadership based on appropriate use of team member strengths in accomplishing activities and managing challenges for the team.
42	Teaching & mentoring #5. The ability to participate in a mutually beneficial mentoring relationship.	4.216	4.286	Communities & systems #1. The ability to participate in basic organizational planning processes such as developing a mission, vision, strategic goals, and activities.
43	8. The ability to give and receive constructive feedback and behaviors and performance.	4.216	4.286	Communities & systems #12. The ability to use negotiation and conflict resolution strategies with stakeholders when appropriate.
44	Negotiation & conflict resolution #1. The ability to apply strategies and techniques of effective negotiation and evaluate the impact of personal communication and negotiation style on outcomes.	4.189	4.265	Negotiation & conflict resolution #1. The ability to apply strategies and techniques of effective negotiation and evaluate the impact of personal communication and negotiation style on outcomes.
45	Communities & systems #1. The ability to participate in basic organizational planning processes such as developing a mission, vision, strategic goals, and activities.	4.189	4.265	Policy & advocacy #7. The ability to formulate strategies to balance the interests of diverse stakeholders, consistent with desired policy change.
46	Communities & systems #12. The ability to use negotiation and conflict resolution strategies with stakeholders when appropriate.	4.189	4.257	Critical thinking #9. The ability to discuss various strategies, including supportive evidence, for the implementation of a policy.
47	Policy & advocacy #3. The ability to identify a wide range of stakeholders who influence changes in MCH policy.	4.189	4.257	Team building #1. The ability to identify and assemble team members appropriate to a given task (e.g., research question, program, curriculum, clinical care issue).
48	Policy & advocacy #7. The ability to formulate strategies to balance the interests of diverse stakeholders, consistent with desired policy change.	4.189	4.257	Communities & systems #9. The ability to manage a project effectively and efficiently including planning, implementing, delegating and sharing responsibility, staffing, and evaluation.
49	Policy & advocacy #8. The ability to present evidence and information to a legislative body, key decision makers, foundations, or the general public.	4.189	4.229	Critical thinking #3. The ability to formulate a focused and important practice, research, or policy question.
50	Communities & systems #8. The ability to assess the environment to determine goals and objectives for a new or continuing program, list factors that facilitate or impede implementation, develop priorities, and establish a timeline for implementation.	4.162	4.229	Critical thinking #5. The ability to identify practices and policies that are not evidence-based but are of sufficient promise that they can be used in situations where actions are needed.
51	Teaching & mentoring #1. The ability to recognize	4.135	4.229	Communication #7. The ability to provide

	and create learning opportunities for others.		constructive feedback to colleagues, presenters, and students.
52	Policy & advocacy #6. The ability to understand the roles and relationships of groups involved in the public policy development and implementation process, including the executive, legislative, and judicial branches of government at all levels and interest groups.	4.135	4.229 Communities & systems #8. The ability to assess the environment to determine goals and objectives for a new or continuing program, list factors that facilitate or impede implementation, develop priorities, and establish a timeline for implementation.
53	Knowledge #4. The ability to assess the effectiveness of an existing program for specific MCH population groups.	4.132	4.206 Policy & advocacy #6. The ability to understand the roles and relationships of groups involved in the public policy development and implementation process, including the executive, legislative, and judicial branches of government at all levels and interest groups.
54	Critical thinking #3. The ability to formulate a focused and important practice, research, or policy question.	4.108	4.206 Policy & advocacy #8. The ability to present evidence and information to a legislative body, key decision makers, foundations, or the general public.
55	Cultural competency #3. The ability to suggest modifications of health services to meet the specific needs of a group or family, community, and/or population.	4.108	4.200 Communities & systems #6. The ability to interpret situations systemically; i.e., identifying both the whole situation and the dynamic interplay among its parts.
56	Family-centered care #5. The ability to assist primary care providers, organizations, and/or health plans to develop, implement, and/or evaluate models of family-centered care.	4.108	4.171 Cultural competency #3. The ability to suggest modifications of health services to meet the specific needs of a group or family, community, and/or population.
57	Family-centered care #7. The ability to incorporate family-centered models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	4.108	4.143 Communication #3. The ability to understand nonverbal communication cues in self and others.
58	Communities & systems #6. The ability to interpret situations systemically; i.e., identifying both the whole situation and the dynamic interplay among its parts.	4.108	4.143 Communication #11. The ability to refine active listening skills to understand and evaluating the information shared by others.
59	Communication #11. The ability to refine active listening skills to understand and evaluating the information shared by others.	4.081	4.143 Teaching & mentoring #5. The ability to participate in a mutually beneficial mentoring relationship.
60	Self-reflection #5. The ability to use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.	4.079	4.118 Policy & advocacy #4. The ability to apply appropriate evaluative criteria to the analysis of alternative policies.
61	Self-reflection #6. The ability to identify a framework	4.079	4.114 Self-reflection #6. The ability to identify a framework

	for productive feedback from peers and mentors.			for productive feedback from peers and mentors.
62	9. The ability to manage a project effectively and efficiently including planning, implementing, delegating and sharing responsibility, staffing, and evaluation.	4.054	4.114	Family-centered care #5. The ability to assist primary care providers, organizations, and/or health plans to develop, implement, and/or evaluate models of family-centered care.
63	Policy & advocacy #4. The ability to apply appropriate evaluative criteria to the analysis of alternative policies.	4.054	4.114	Teaching & mentoring #1. The ability to recognize and create learning opportunities for others.
64	Cultural competency #1. The ability to conduct personal and organizational self-assessments regarding cultural competence.	4.027	4.057	Communication #10. The ability to employ a repertoire of communication skills that includes disseminating information in a crisis, explaining health risks, and relaying difficult news.
65	Teaching & mentoring #7. The ability to incorporate feedback from learners to evaluate teaching effectiveness.	4.027	4.057	Communication #12. The ability to craft a convincing MCH story designed to motivate constituents and policymakers to take action.
66	Team building #5. The ability to identify forces that influence team dynamics.	4.027	4.057	Teaching & mentoring #6. The ability to teach audiences of different sizes, backgrounds, and settings.
67	Team building #8. The ability to use knowledge of disciplinary competencies and roles to improve teaching, research, advocacy, and systems of care.	4.027	4.057	Teaching & mentoring #7. The ability to incorporate feedback from learners to evaluate teaching effectiveness.
68	Critical thinking #5. The ability to identify practices and policies that are not evidence-based but are of sufficient promise that they can be used in situations where actions are needed.	4.000	4.057	Team building #5. The ability to identify forces that influence team dynamics.
69	Communication #3. The ability to understand nonverbal communication cues in self and others.	3.973	4.057	Team building #8. The ability to use knowledge of disciplinary competencies and roles to improve teaching, research, advocacy, and systems of care.
70	Communication #10. The ability to employ a repertoire of communication skills that includes disseminating information in a crisis, explaining health risks, and relaying difficult news.	3.973	4.029	Cultural competency #1. The ability to conduct personal and organizational self-assessments regarding cultural competence.
71	Communication #12. The ability to craft a convincing MCH story designed to motivate constituents and policymakers to take action.	3.973	4.029	Communities & systems #11. The ability to translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.
72	Communities & systems #2. The ability to develop agendas and lead meetings effectively.	3.946	4.000	Self-reflection #5. The ability to use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.
73	Teaching & mentoring #6. The ability to teach audiences of different sizes, backgrounds, and	3.919	4.000	Family-centered care #7. The ability to incorporate family-centered models of health care delivery into

	settings.			health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.
74	Teaching & mentoring #9. The ability to identify and facilitate career options and opportunities for mentees.	3.919	4.000	Team building #9. The ability to use shared outcomes to promote team synergy.
75	Team building #9. The ability to use shared outcomes to promote team synergy.	3.892	4.000	Communities & systems #2. The ability to develop agendas and lead meetings effectively.
76	Communities & systems #7. The ability to develop a business plan and/or grant, including an implementation plan.	3.892	3.943	Self-reflection #4. The ability to identify sources of personal reward and rejuvenation to sustain productivity and commitment.
77	11. The ability to translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.	3.892	3.943	Teaching & mentoring #2. The ability to enumerate goals and objectives of a teaching exercise.
78	Teaching & mentoring #3. The ability to appropriately match teaching strategies to identified learning objectives.	3.865	3.943	Teaching & mentoring #9. The ability to identify and facilitate career options and opportunities for mentees.
79	Self-reflection #4. The ability to identify sources of personal reward and rejuvenation to sustain productivity and commitment.	3.842	3.914	Self-reflection #1. The ability to articulate personal values and beliefs.
80	Critical thinking #2. The ability to use a standard approach to the critical review of research articles, addressing such issues as study design, sample size, confidence intervals, and use of appropriate statistical tests.	3.838	3.914	Teaching & mentoring #3. The ability to appropriately match teaching strategies to identified learning objectives.
81	Teaching & mentoring #2. The ability to enumerate goals and objectives of a teaching exercise.	3.838	3.914	Communities & systems #7. The ability to develop a business plan and/or grant, including an implementation plan.
82	Communities & systems #3. The ability to develop a simple project budget and time frame.	3.838	3.914	Communities & systems #13. The ability to formulate gentle, nonblaming questions to promote an understanding of all levels of a problem or issue.
83	Communities & systems #13. The ability to formulate gentle, nonblaming questions to promote an understanding of all levels of a problem or issue.	3.838	3.886	Ethics & Professionalism #7. The ability to document evidence of continuous learning and improvement.
84	Self-reflection #1. The ability to articulate personal values and beliefs.	3.816	3.886	Critical thinking #7. The ability to compile pertinent data to develop an evidence-based practice or policy.
85	Teaching & mentoring #4. The ability to measure teaching effectiveness.	3.811	3.886	Communities & systems #3. The ability to develop a simple project budget and time frame.
86	Ethics & Professionalism #7. The ability to document evidence of continuous learning and improvement.	3.789	3.857	Critical thinking #2. The ability to use a standard approach to the critical review of research articles, addressing such issues as study design, sample size,

				confidence intervals, and use of appropriate statistical tests.
87	Communication #8. The ability to develop and share MCH \stories\" that are compelling and resonate with intended audiences."	3.784	3.857	Communities & systems #10. The ability to apply techniques of group process to identify and manage fundamental assumptions.
88	Critical thinking #7. The ability to compile pertinent data to develop an evidence-based practice or policy.	3.757	3.829	Critical thinking #6. The ability to formulate hypotheses or research questions, retrieve information and pertinent data and evidence, complete a comparative analysis, and draw appropriate conclusions to solve a problem.
89	Communities & systems #10. The ability to apply techniques of group process to identify and manage fundamental assumptions.	3.757	3.829	Communication #8. The ability to develop and share MCH \stories\" that are compelling and resonate with intended audiences."
90	Critical thinking #6. The ability to formulate hypotheses or research questions, retrieve information and pertinent data and evidence, complete a comparative analysis, and draw appropriate conclusions to solve a problem.	3.730	3.829	Teaching & mentoring #4. The ability to measure teaching effectiveness.
91	Family-centered care #6. The ability to research the impact of family-centered practice models on individual or population health.	3.676	3.629	Family-centered care #2. The ability to enumerate benefits of a medical home model for children, families, providers, health care systems, and health plans.
92	Family-centered care #2. The ability to enumerate benefits of a medical home model for children, families, providers, health care systems, and health plans.	3.649	3.629	Family-centered care #6. The ability to research the impact of family-centered practice models on individual or population health.
93	Family-centered care #8. The ability to incorporate medical home models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	3.595	3.571	Family-centered care #8. The ability to incorporate medical home models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.
94	Self-reflection #2. The ability to describe predominant communication styles.	3.474	3.486	Self-reflection #2. The ability to describe predominant communication styles.

Analysis of Comments

As part of the survey process, members of the expert panel were invited to comment after completing their rating of the competencies. Most took the opportunity to do so. On reading the comments, the researchers looked for general patterns and themes.

The most frequent comment concerned the number and lack of distinctiveness of many of the competencies. Participants commented that many of competencies seemed redundant. They felt that this was problematic in several ways. Most obviously, it contributes to a large number of competencies. Participants commented that the current number of competencies is larger than can be used practically. Examples include statements such as:

- "WOW, there are WAY to many objectives."
- "My biggest worry is the number objectives for each of the competencies. Some are duplicative and some can't be measured. If possible, I would try to reduce to a max of 4-6 objectives per competency."
- "Narrow them down to a few – easier to measure and implement."
- "Way too many! Hard to discriminate at what level appropriate."

Following on this theme, a number of participants noted that skills needed will vary with the context and level of leadership, and that it would be a rare individual who could possess all of these competencies. (Note: The procedure was designed to test those competencies listed as both basic and advanced.)
Comments included:

- "Need to match skills to level of leadership. All important but not at all levels. Little sense the way constructed because all needed at the highest levels."
- " Rare that any individual could possess all."
- "Not all basic – some higher level."
- "Leaders may not need all – will/should delegate some. (i.e.: conduct data analysis). Leader needs to know how to interpret, use for policy development, etc."

A related theme was that some competencies seem abstract or vague, and difficult to discriminate, such that they have limited relevance to practice. In particular, participants noted that a number of the competencies are double-barreled or composite statements. These are those that list two (or more) ideas or concepts separated by the words 'and' or 'or'. Such statements are problematic when used for rating or evaluation. Because the question is ambiguous (is it asking about <u>either</u> of the two concepts or <u>both</u> of them?), the response will be ambiguous because the respondent's intention is not certain.[30, 31]

Finally, several comments noted that, in their present form, the competencies were not as useful as they could be for a variety of MCH interdisciplinary training programs.

- "My immediate reaction to these competencies is that there are too many, and it asks too much of the training programs and that no leveling is indicated. It all sounds fabulous however, and the trainee should be given sainthood on \"completion of the program\"….just remember there are 1 semester, 2 semester and 3 year trainees….MUST keep that in mind when developing program competencies…"

- "Can't teach it all."

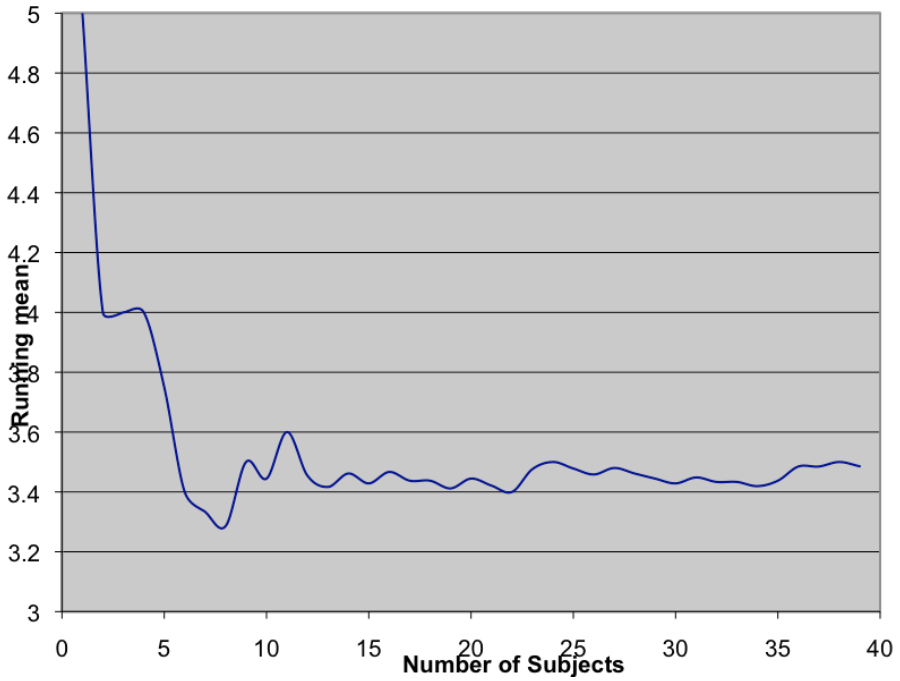
Other Considerations

The modified Delphi procedure described above was conducted to contribute to the ongoing process of validating the MCH Leadership Competencies. While it answered a number of questions, it raised others.

Adequacy of the sample

The first and most obvious question is the relatively small number of participants in the expert consensus panel. As previously noted, from a list of 109 individuals invited to participate, 47 (43%) responded. Of these, 38 (81%) completed Phase 1 of the process and 35 (74% of those agreeing to participate and 92% of those actually participating) completed Phase 2. This number of participants may be viewed as either adequate or inadequate for the purpose of the study, depending on the perspective used to view participation. A most important perspective is that of trustworthiness of the statistics. Are relatively small samples (38 and 35 participants, respectively) adequate to provide a stable mean? As noted, a variety of theoretical studies have found little benefit to increasing the number of panel members above ten.[20, 21] Using an algorithm created to answer the question 'how many are needed,'[32] Figure 1[1] shows the rate at which the mean stabilized on one competency item.

Figure 1: Example of Rate of Stabilization of the Mean



This example is reassuring in that it shows little variation in the mean when considering the ratings of more than 10 participants. Thus, from a trustworthiness point of view, the sample size was adequate.

[1] Thanks to Karen Troy, PhD, University of Illinois at Chicago

A different perspective is that of representativeness of the population of interest. The faculty, staff, students, and most especially, graduates of the MCH interdisciplinary programs, acting with and on behalf of families, represent a very large constituency. What number of participants would represent an adequate sample of this constituency? There are a number of ways to consider the issue. One is whether representation from the four areas that match the MCH performance measures (clinical, academic, public health/public policy, and advocacy) is a goal. Selection of participants for this study was based, in part, on this consideration. After rating the competencies, participants were asked to indicate their primary area of leadership (clinical, academic, public health/public policy, and advocacy). Results showed that only 58% of the participants' self-assessments matched those of the planning group. Thus, there appears to be a disconnect between the way MCH leaders and the planning group view the leaders' primary sphere of influence. This is an interesting question in and of itself but also one that complicates the goal of representation of the population. Representation may be more of a public perception question than a research question. As such, it deserves consideration beyond the scope of this project.

Items lacking consensus

As noted earlier, the purpose of the procedure was to understand consensus at the individual item or competency level. Table 2 displayed the mean rating for each item in Phase 1 and Phase 2 and showed those items that attained and those that lacked a consensus level of at least 75% in both phases. In focusing on these items in greater detail, shown in Table 4, it should be noted that the mean rating on the items was, with rare exception, less than 4 (very important) on a 5-point scale. For the very lowest rated items, having means of less than 3.5, fewer than 40% of participants considered these competencies to be very important. The shading of some items in Table 4 is explained in the next section.

Table 4: Items on which there was lack of consensus

Self-reflection	1. The ability to articulate personal values and beliefs.	3.816	*	*	3.914
Self-reflection	2. The ability to describe predominant communication styles.	3.474	*	*	3.486
Self-reflection	4. The ability to identify sources of personal reward and rejuvenation to sustain productivity and commitment.	3.842	*	*	3.943
Self-reflection	5. The ability to use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.	4.079		*	4.000
Ethics & Professionalism	7. The ability to document evidence of continuous learning and improvement.	3.789	*	*	3.886
Critical thinking	2. The ability to use a standard approach to the critical review of research articles, addressing such issues as study design, sample size, confidence intervals, and use of appropriate statistical tests.	3.838	*		3.857

Critical thinking	6. The ability to formulate hypotheses or research questions, retrieve information and pertinent data and evidence, complete a comparative analysis, and draw appropriate conclusions to solve a problem.	3.730	*	*	3.829
Critical thinking	7. The ability to compile pertinent data to develop an evidence-based practice or policy.	3.757	*		3.886
Communication	8. The ability to develop and share MCH \stories\" that are compelling and resonate with intended audiences."	3.784	*	*	3.829
Cultural competency	1. The ability to conduct personal and organizational self-assessments regarding cultural competence.	4.027		*	4.029
Family-centered care	8. The ability to incorporate medical home models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	3.595	*	*	3.571
Family-centered care	2. The ability to enumerate benefits of a medical home model for children, families, providers, health care systems, and health plans.	3.649	*	*	3.629
Family-centered care	6. The ability to research the impact of family-centered practice models on individual or population health.	3.676	*	*	3.629
Family-centered care	7. The ability to incorporate family-centered models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.	4.108	*	*	4.000
Teaching & mentoring	2. The ability to enumerate goals and objectives of a teaching exercise.	3.838	*	*	3.943
Teaching & mentoring	3. The ability to appropriately match teaching strategies to identified learning objectives.	3.865	*	*	3.914
Teaching & mentoring	4. The ability to measure teaching effectiveness.	3.811	*	*	3.829
Teaching & mentoring	6. The ability to teach audiences of different sizes, backgrounds, and settings.	3.919	*		4.057
Teaching & mentoring	7. The ability to incorporate feedback from learners to evaluate teaching effectiveness.	4.027	*		4.057

Teaching & mentoring	9. The ability to identify and facilitate career options and opportunities for mentees.	3.919		*	3.943
Team building	9. The ability to use shared outcomes to promote team synergy.	3.892	*		4.000
Communities & systems	2. The ability to develop agendas and lead meetings effectively.	3.946	*		4.000
Communities & systems	3. The ability to develop a simple project budget and time frame.	3.838	*	*	3.886
Communities & systems	7. The ability to develop a business plan and/or grant, including an implementation plan.	3.892	*	*	3.914
Communities & systems	10. The ability to apply techniques of group process to identify and manage fundamental assumptions.	3.757	*	*	3.857
Communities & systems	11. The ability to translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.	3.892	*		4.029
Communities & systems	13. The ability to formulate gentle, nonblaming questions to promote an understanding of all levels of a problem or issue.	3.838	*	*	3.914

Decreasing the Number of Competencies

As previously noted, participants found the number and lack of distinctiveness of many of the competencies to be problematic, commenting in particular that the current number of competencies is larger than can be used practically. Thus, a decision was made in consultation with MCH leadership to decrease the number of competencies, focusing first on those lacking consensus as targets for elimination.

For this purpose, lack of consensus was considered more stringently, and was defined as a mean rating of less than 4.0 (very important) for an item in both Phases 1 and 2. Items fulfilling these criteria are highlighted in red in Table 4. If an item had a mean rating of less than 4.0 in one phase and a mean rating of 4.0 or greater in the other phase, indicated by highlighting in yellow in Table 4, it was retained. Applying these criteria, 19 items were eliminated, reducing the number of competencies to 75.

While this process was successful in decreasing the number of competencies, it did not address the concern of a number of participants who pointed out that they believed there were overlaps between the knowledge and skills items located in the 12 leadership competencies. Information about the underlying structure of the competencies, such as could be gained from factor analysis, would clarify understanding. However, this would require extending the validation process through engaging a larger sample to answer many of the questions remaining. Through such a process, the structure of the competencies would be determined, making it feasible to decrease the number of items empirically.

While such a process is recommended for future consideration, MCH leadership elected to identify conceptually-overlapping items and to consider them for elimination at the present time. Items found to be redundant were retained in the competency deemed most appropriate. This process resulted in a further net decrease of three items:

- Two items were removed from the Communication competency:
  - Synthesize and translate MCH knowledge into understandable information
  - Provide constructive feedback to colleagues, presenters, and students.
- In this same competency, an item was separated out and listed independently:
  - Articulate a shared vision for improved health status of MCH populations.
- One item was removed from the Negotiation and Conflict Resolution competency:
  - Develop and maintain positive relationships with colleagues, administrative staff, mentees, and stakeholders.
- One item was removed from the Working with Communities and Systems competency:
  - Use data to assist in determining the needs of a population for the purposes of program design, policy formulation, research, or training.

Thus, the Version 3 set of MCH Leadership Competencies (Appendix B) consists of 72 items clustered in 12 competency domains.

Summary and Next Steps

This project rests on the notion that for MCH interdisciplinary programs to be successful in producing leaders, it is crucial that they have a shared understanding of leadership in this context: What contributes to leadership and how it develops, how leadership and its development can be measured, and how to provide effective, evaluative feedback that tracks the development of leadership. As noted at the outset, the ultimate goal is that the competencies should provide a framework that guides assessment and curriculum design for MCH interdisciplinary training programs and should serve as a tool for practicing MCH professionals. Also as previously noted, creation, validation, and adoption of the MCH Leadership Competencies are key to this shared understanding. This initial validation of the competencies is sufficient to gain broad consensus.

While specific next steps in the process will depend on MCH priorities, a number of possibilities exist.

Continue the Validation Process

As previously noted, redundancy of items remains an issue. Information about the underlying structure of the competencies, such as could be gained from factor analysis, would clarify understanding and permit decisions to be made about which competencies to retain on the basis of an empirical process that can stand up to outside scrutiny.

Through the same process, understanding which competencies and domains are most useful and relevant to particular groups within the MCH milieu (clinical, academic, public health/public policy, advocacy) would allow for the creation of sub-groups of competencies that would provide specific, targeted, practical information for interdisciplinary training programs. More in-depth work would be required to gain a valid understanding of how different types of MCH individuals and groups think about and use the competencies. We suspect that different domains (clinical, academic, public health/public policy, advocacy) value the competencies differently. If this is the case, individuals and organizations within these domains will utilize them differently, focusing on training, use, and assessment of those competencies that resonate most strongly for them. Given the apparent disconnect between participants' sense of their primary sphere of influence and that of the planning group, understanding these differences would require extending the process of identifying participants' primary domain. This could be accomplished by engaging a broader sample, asking more in-depth questions about participants' sphere of influence, and stratifying by domain. The information gained would be important for assuring that the competencies are valid and useful for all those involved in MCH interdisciplinary training and practice.

Begin to Focus on Measurement

As noted, the ultimate goal is that the competencies should provide a framework that guides assessment and curriculum design for MCH interdisciplinary training programs. Assessment, carefully done, has the potential to provide useful evaluative information at all levels of impact.

At the global level (aggregated interdisciplinary training program evaluation), the question could bluntly be asked of MCHB, "Are the time, effort, and dollars spent on interdisciplinary training producing the desired results: the creation of leaders?" A more nuanced question, such as that asked by dimensional analysis[33] or realistic evaluation,[34] would probe the program characteristics and contexts

that are associated with success, or, "what is it about this program that works for whom in what circumstances?"[35] (p.S1:22).

At the program level, programs could seek confirmation that their graduates gained skills and abilities emphasized by the program. Given that different programs likely have different areas of focus, emphasizing one or more of the performance measures (clinical, academic, public health/public policy, and advocacy), we would expect the programs to attract different kinds of trainees and produce graduates with differing profiles of leadership skills. Across programs, data could be aggregated to indicate the degree to which groups of programs with similar foci are successful in creating leaders.

At the individual level, trainees could track their leadership development over time. Focusing on their goals and building on their strengths, individuals could seek 360-degree feedback from supervisors, peers, and direct reports, comparing these findings with their own self-assessment. Research has shown that when social feedback is perceived as consistent and clear, such feedback shapes the learner's meta-perceptions (the individual's view of how others view her or him[36]).[37]

To gain any of these benefits, appropriate measurement tools must be sought, selected, or created where gaps exist. This must be done carefully and thoughtfully, paying attention to lessons learned from others, such as the Accreditation Council on Graduate Medical Education, who have defined competencies and sought best practices in competency assessment.[38, 39]

At the same time, it is imperative to have realistic and appropriate expectations regarding assessment. A recent systematic review of measurement of the ACGME general competencies[40] determined that the six competencies cannot be independently assessed by existing methodology. The authors found that virtually all tools reviewed, "yield a single dimension of overall measured competency or, sometimes, several measured dimensions that do not related to the competencies in a simple manner" (p. 306). They go on to state:

> It would be unfortunate, however, if these failures of quantification were to lead to cynicism about the general competencies or to the conclusion that such principles are of no practical value… Thus, the general competencies could have an invaluable role in guiding assessment strategy as long as it is clear that the six general competencies themselves exist in a realm outside of measurement. What remains missing from the Outcome Project, in our view, is an explicitly stated set of expectations that would link the ideals of the general competencies to the realities of measurement (p. 307).

Measurement tools that meet the criteria for psychometric soundness do exist. Whether they can measure the MCH Leadership Competencies as discrete entities is likely less important than whether they can provide useful information to the funding agency, training programs, and trainees. Tools that have high face validity can be extremely useful in providing individuals and programs with formative and summative feedback. The caveat is to understand what measurement can and cannot realistically accomplish.

Focus on Curriculum

Curriculum design

Guiding curriculum design is another facet of the ultimate goal of the MCH Leadership Competencies. As noted, we suspect that different domains (clinical, academic, public health/public policy, advocacy)

value the competencies differently. If this is the case, individuals and organizations within these domains will utilize them differently, focusing on training, use, and assessment of those competencies that resonate most strongly for them.

Gathering information on how individual programs are using the competencies could serve as a helpful step in conducting an aggregated interdisciplinary training program evaluation, as described above. To do this in more than a casual way will require MCH leaders to decide what program-level information needs to be aggregated to probe the program characteristics and contexts that are associated with success.

Curriculum support

Anecdotally, we know that MCH interdisciplinary programs are utilizing the Leadership Competencies in a variety of ways to support training. We suspect that many programs have experimented with innovative methods, materials, training activities, and other ways of using the competencies. We also suspect that these methodologies have been assessed in a variety of ways that span Kirkpatrick's four levels of evaluation that can be used to assess the impact of training programs: (I) assessment of participants' reactions, (II) assessment of learning, (III) assessment of behavior change, and (IV) assessment of results.[41] It may be that some programs have identified methodologies that might be termed "best practices." As noted by the Johns Hopkins Bloomberg School of Public Health, "There is no universally accepted definition of a 'best practice.' However, … a 'best practice' is a practice that upon rigorous evaluation, demonstrates success, has had an impact, and can be replicated."[42] While such demonstration is a long-term goal, it is quite likely that a number of programs have identified "good practices" - a "term used to describe useful practices…. or approaches that have not been evaluated as rigorously as 'best practices', but that still offer ideas about what works best in a given situation."[42]

Discovering and sharing curricular innovations around the MCH Leadership Competencies is another possibility for next steps. Gathering information in a workgroup process, materials and methods could be aggregated across two levels of specificity: one applicable to interdisciplinary training programs of all types and focus on leadership, and one specific to each of the various types of leadership-training programs.

Focus on Faculty and Professional Development

> By not mentoring, we are wasting talent.
> We educate and train, but don't nurture.[43]

As noted in the original charge, "the leadership competencies described in this document and drawn from both theory and practice are designed to support and promote MCH leadership. The document is targeted to MCH interdisciplinary training programs and practicing MCH professionals." While much of the focus heretofore has been on training, increasing the utility of the competencies for faculty and practicing professionals is another goal. Supporting professional development and lifelong learning around leadership is crucial to enhancing current practice, as well as to training the next generation of MCH leaders.

MCH leaders have noted the need for mentoring around leadership. This need exists equally for those engaged in academic endeavors and for those in community-based practice. Health care professional education typically does not prepare individuals for many of the roles they are, in actuality, expected to

assume.[44] Mentoring has been found to be a way to help professionals transition to new roles in many contexts.[45] It has the potential to benefit learners (whether they be trainees, faculty, or practicing health care professionals),[46-48] those serving as mentors,[49] and the institutions that sponsor such opportunities.[50, 51]

Creation of a mentoring program for faculty and professional development is another possibility for next steps in advancing the MCH Leadership Competencies. Since mentoring may take many forms,[52] thoughtful consideration of needs and resources should be given to the design and implementation of such a program.

Closing Thoughts

Ultimately, whichever path MCH chooses to pursue next circles back to measurement. As the business adage states, "you can't manage what you don't measure." In order to assess program characteristics and contexts that are associated with success, 'success' must be defined in ways that are likely both quantitative and qualitative.

MCH has made a significant commitment to and investment in the Leadership Competencies. The process of identifying the competencies has involved participants from all aspects of MCH interdisciplinary training. Significant buy-in and good will have resulted from this process. Building on this work to enable the competencies to fulfill the goal of guiding assessment and curriculum design will be important steps in maintaining the competencies as dynamic and valuable assets of MCH interdisciplinary training and professional practice.

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Appendix A

Survey: Phase 1[2]

To be a leader in Maternal and Child Health (MCH) requires specific knowledge, skills, personal characteristics, and values. The leadership competencies described in this document and drawn from both theory and practice are designed to support and promote MCH leadership. The document is targeted to MCH interdisciplinary training programs and practicing MCH professionals.

History of Development of MCH Leadership Competencies

The development of the leadership competencies has been thorough, comprehensive, and inclusive. The following summarizes steps used in this process.

• 1987-1988. MCHB convenes a Leadership Training Conference of MCHB funded training grants. Leadership definitions and recruitment strategies

•April 2004. At a conference entitled Future of MCH Leadership Training, held in Seattle, Washington at the University of Washington, representatives from many of the MCH Training programs came together to draft MCH Leadership competencies, the critical knowledge and skill areas that they felt were necessary to develop MCH leaders.

• Fall 2004. The draft competencies developed in Seattle were further refined later that year at the MCHB All Grantee Meeting in Washington, DC.

• Early 2005. The MCH Competencies Working Group was formed, composed of individuals representing MCH training programs, Association of Maternal and Child Health Programs, and CityMatCH. This group refined the competencies and developed a revised draft.

• Fall 2005–spring 2006. The revised draft was shared at grantee meetings throughout this period and all MCH training programs were asked to provide comments about the MCH Leadership Competencies.

• Winter 2007. Comments from the field were reviewed by the Workgroup. This document reflects the suggested changes from the field and subsequent meetings with the Workgroup. These competencies are the result of an iterative and inclusive work-in-progress that was based on the literature on leadership (from the business, military, and social science contexts), and the wisdom and experience of current MCH participants and leaders.

Next Steps

Ultimately, the competencies should provide a framework that guides assessment and curriculum design for MCH interdisciplinary training programs and as a tool for practicing MCH professionals. As a next step toward that goal, we need input from MCH

[2] In the final draft of this document, the question regarding medical homes in the domain 'Family-centered care' was split into two questions.

leaders to validate the content of the competencies.

You have been identified as an MCH leader. As such, you are in a unique position to know how the skills and abilities inherent in the competencies map to the reality of MCH training, practice, and scholarship. We recognize that leaders work in many different arenas and that they will not all have the same skills or necessarily think that all skills are equally important. Your sense of the importance of each of the skills for leaders working in the field of MCH will provide valuable information that will help in the validation of the competencies.

1.Please think about the MCH leadership competency of MCH knowledge.

DEFINITION

MCH is a specialty area within the larger field of public health, distinguished by:
Promotion of the health and well-being of all women, children, adolescents, fathers, and families, especially in disadvantaged and vulnerable populations

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to use data to identify issues related to the health status of a particular MCH population group.
2. The ability to describe health disparities within MCH populations and offer strategies to address them.
3. The ability to demonstrate the use of a systems approach to explain the interactions among individuals, groups, organizations, and communities.
4. The ability to assess the effectiveness of an existing program for specific MCH population groups.

2. Please think about the MCH leadership competency of self-reflection.

DEFINITION
Self-reflection is the process of examining the impact of personal values, beliefs, styles of communication, and experiences.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to articulate personal values and beliefs.
2. The ability to describe predominant communication styles.
3. The ability to recognize that personal attitudes, beliefs, and experiences (successes and failures) influence one's leadership style.
4. The ability to identify sources of personal reward and rejuvenation to sustain productivity and commitment.
5. The ability to use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.
6. The ability to identify a framework for productive feedback from peers and mentors.

3. Please think about the MCH leadership competency of ethics and professionalism.

DEFINITION

Ethical behavior and professionalism include conduct congruent with generally accepted moral principles and values and with professional guidelines based on those principles and values.

This definition includes general leadership ethics, such as honesty and responsibility, as well as ethics specific to the MCH population, such as reducing health disparities and behaving in a culturally competent manner.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to identify and address ethical issues in patient care, human subjects research, and public health theory and practice.
2. The ability to describe the ethical implications of health disparities within MCH populations.
3. The ability to interact with others and solve problems in an ethical manner.
4. The ability to identify ethical dilemmas and issues that affect MCH population groups and initiate and act as catalyst for the discussion of these dilemmas and issues.
5. The ability to consider the culture and values of communities in the development of polices, programs, and practices that may affect them.
6. The ability to describe the ethical implications of health disparities within MCH populations and propose strategies to address them.
7. The ability to document evidence of continuous learning and improvement.

4. Now please think about the MCH leadership competency of critical thinking.

DEFINITION

Critical thinking is the ability to identify an issue, dilemma, or problem; frame it as a specific question; explore and evaluate information relevant to the question; and integrate the information into development of a resolution.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.
2. The ability to use a standard approach to the critical review of research articles, addressing such issues as study design, sample size, confidence intervals, and use of appropriate statistical tests.
3. The ability to formulate a focused and important practice, research, or policy question.
4. The ability to apply important evidence-based practice guidelines and policies in their field.
5. The ability to identify practices and policies that are not evidence-based but are of sufficient promise that they can be used in situations where actions are needed.
6. The ability to formulate hypotheses or research questions, retrieve information and pertinent data and evidence, complete a comparative analysis, and draw appropriate conclusions to solve a problem.
7. The ability to compile pertinent data to develop an evidence-based practice or policy.
8. The ability to translate research findings to meet the needs of different audiences.
9. The ability to discuss various strategies, including supportive evidence, for the implementation of a policy.

5. Now please think about the MCH leadership competency of communication.

DEFINITION

Communication is the verbal, nonverbal, and written sharing of information. The communication process consists of a sender who encodes and presents the message and the receiver(s) who receives and decodes the message. Communication involves both the message (what is being said) and the delivery method (how the message is presented). Skillful communication is the ability to convey information to and receive information from others effectively. It includes the essential components of attentive listening and clarity in writing or speaking. An understanding of the impact of culture and disability on communication between MCH professionals and the individuals, families, and populations that they serve is also important.[3]

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to share thoughts, ideas, and feelings effectively in discussions, meetings, and presentations with diverse individuals and groups.
2. The ability to write clearly and effectively to express information about issues and services that affect MCH population groups.
3. The ability to understand nonverbal communication cues in self and others.
4. The ability to synthesize and translate MCH knowledge into understandable information
5. The ability to listen attentively and actively.
6. The ability to tailor information for the intended audience(s) (consumers, policymakers, clinical, public, etc.) by using appropriate communication modalities (verbal, written, nonverbal).
7. The ability to provide constructive feedback to colleagues, presenters, and students.
8. The ability to develop and share MCH "stories" that are compelling and resonate with intended audiences.
9. The ability to communicate clearly through effective presentations and written scholarship about MCH populations, issues, and/or services and to articulate a shared vision for improved health status of MCH populations.
10. The ability to employ a repertoire of communication skills that includes disseminating information in a crisis, explaining health risks, and relaying difficult news.
11. The ability to refine active listening skills to understand and evaluating the information shared by others.

[3] The competency definitions were developed by the Workgroup except where noted.

12. The ability to craft a convincing MCH story designed to motivate constituents and policymakers to take action.

6. Now please think about the MCH leadership competency of negotiation and conflict resolution.

DEFINITIONS

Negotiation is a cooperative process whereby participants try to find a solution that meets the legitimate interests of involved parties; it is a discussion intended to produce an agreement. Conflict resolution is the process of (1) resolving or managing a dispute by sharing each side's needs and (2) adequately addressing their interests so that they are satisfied with the outcome. (Wikipedia).

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to apply strategies and techniques of effective negotiation and evaluate the impact of personal communication and negotiation style on outcomes.
2. The ability to develop and maintain positive relationships with colleagues, administrative staff, mentees, and stakeholders.
3. To demonstrate the ability to manage conflict in a constructive manner.

7. Now please think about the MCH leadership competency of cultural competency.

DEFINITION

Cultural competence is the knowledge, interpersonal skills, and behaviors that enable a system, organization, program, or individual to work effectively cross-culturally by understanding, appreciating, honoring, and respecting cultural differences and similarities within and between cultures.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to conduct personal and organizational self-assessments regarding cultural competence.
2. The ability to assess strengths of individuals and communities and respond appropriately to their needs based on sensitivity to and respect for their diverse cultural and ethnic backgrounds and socioeconomic status.
3. The ability to suggest modifications of health services to meet the specific needs of a group or family, community, and/or population.
4. The ability to employ strategies to assure culturally-sensitive public health and health service delivery systems.
5. The ability to integrate cultural competency into programs, research, scholarship, and policies.

8. Now please think about the MCH leadership competency of family-centered care.

DEFINITION

Family-centered care ensures the health and well-being of children and their families though a respectful family-professional partnership that includes shared decision making. It honors the strengths, cultures, traditions, and expertise that everyone brings to this relationship. (MCHB Family-Centered Curricula Workgroup)

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to solicit and use family input in a meaningful way in the design or delivery of clinical services, program planning, and evaluation.
2. The ability to enumerate benefits of a medical home model for children, families, providers, health care systems, and health plans.
3. The ability to operationalize the "family-centered care" philosophical constructs (e.g., families and professionals share decision-making; professionals use a strengths-based approach when working with families) and use these constructs to critique and strengthen practices, programs, or policies that affect MCH population groups.
4. The ability to ensure that family perspectives play a pivotal role in MCH research, clinical practice, programs, or policy (e.g., in community needs assessments, processes to establish priorities for new initiatives or research agendas, or the development of clinical guidelines.
5. The ability to assist primary care providers, organizations, and/or health plans to develop, implement, and/or evaluate models of family-centered care.
6. The ability to research the impact of family-centered practice models on individual or population health.
7. The ability to incorporate family-centered and medical home models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.

9. Now please think about the MCH leadership competency of developing others through teaching and mentoring.

DEFINITION

Communication, critical thinking, and professionalism competencies are critical to teaching and mentoring. Teaching involves designing the learning environment (includes developing learning objectives and curricula), providing resources to facilitate learning, modeling the process of effective learning in the subject matter, and evaluating whether learning occurred. In contrast, mentoring is influencing the career development and career satisfaction of a colleague by acting as an advocate, coach, teacher, guide, role model, benevolent authority, door opener, resource, cheerful critic, and career enthusiast.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to recognize and create learning opportunities for others.
2. The ability to enumerate goals and objectives of a teaching exercise.
3. The ability to appropriately match teaching strategies to identified learning objectives.
4. The ability to measure teaching effectiveness.
5. The ability to participate in a mutually beneficial mentoring relationship.
6. The ability to teach audiences of different sizes, backgrounds, and settings.
7. The ability to incorporate feedback from learners to evaluate teaching effectiveness.
8. The ability to give and receive constructive feedback and behaviors and performance.
9. The ability to identify and facilitate career options and opportunities for mentees..

10. Now please think about the MCH leadership competency of interdisciplinary team building.

DEFINITION

MCH systems are interdisciplinary in nature. Interdisciplinary practice provides a supportive environment in which the skills and expertise of team members from different disciplines, including families, are seen as essential and synergistic. The expertise of each team member is elicited and valued in making joint outcome-driven decisions to benefit individuals or groups and to solve community or systems problems.

The "team," which is the core of interdisciplinary practice, is characterized by mutual respect among disciplines and stakeholders, a sharing of leadership, investment in the team process, and acceptance of responsibility and accountability for outcomes.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to identify and assemble team members appropriate to a given task (e.g., research question, program, curriculum, clinical care issue).
2. The ability to develop and articulate a 'team' shared vision, roles, and responsibilities.
3. The ability to facilitate group processes for team-based decisions (e.g., foster collaboration and cooperation).
4. The ability to value and honor diverse perspectives (e.g., discipline, ethnic, cultural, economic) of team members.
5. The ability to identify forces that influence team dynamics.
6. The ability to enhance team functioning, redirect team dynamics, and achieve a shared vision.
7. The ability to share leadership based on appropriate use of team member strengths in accomplishing activities and managing challenges for the team.
8. The ability to use knowledge of disciplinary competencies and roles to improve teaching, research, advocacy, and systems of care.
9. The ability to use shared outcomes to promote team synergy.

11. Now please think about the MCH leadership competency of working with communities and systems.

DEFINITIONS

Systems thinking is the ability to appreciate complexity. This includes the ability to see the whole and the parts to understand the ways in which the parts interact and influence outcomes.

Collaboration is a mutually beneficial and well-defined relationship entered by two or more organizations to achieve goals and act as one to solve an agreed upon issue. Key to collaboration is the use of supportive and inclusive methods to ensure that those represented by the collaboration are included in the change process and share power. (Source: web.tc.Columbia.edu/families/TWC)

Constituency building depends on the core competencies of communication, self- reflection, critical thinking, and ethics and professionalism.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to participate in basic organizational planning processes such as developing a mission, vision, strategic goals, and activities.
2. The ability to develop agendas and lead meetings effectively.
3. The ability to develop a simple project budget and time frame.
4. The ability to identify community stakeholders and their extent of engagement in the collaboration process.
5. The ability to use data to assist in determining the needs of a population for the purposes of program design, policy formulation, research, or training.
6. The ability to interpret situations systemically; i.e., identifying both the whole situation and the dynamic interplay among its parts.
7. The ability to develop a business plan and/or grant, including an implementation plan.
8. The ability to assess the environment to determine goals and objectives for a new or continuing program, list factors that facilitate or impede implementation, develop priorities, and establish a timeline for implementation.
9. The ability to manage a project effectively and efficiently including planning, implementing, delegating and sharing responsibility, staffing, and evaluation.
10. The ability to apply techniques of group process to identify and manage fundamental assumptions.

11. The ability to translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.

12. The ability to use negotiation and conflict resolution strategies with stakeholders when appropriate.

13. The ability to formulate gentle, nonblaming questions to promote an understanding of all levels of a problem or issue.

14. The ability to maintain a strong stakeholder group with broad based involvement in an environment of trust and use an open process.

12. Now please think about the MCH leadership competency of policy and advocacy.

DEFINITIONS

A policy is a decision designed to address a given problem or interrelated set of problems that affect a large number of people. Advocacy consists of activities carried out on behalf of policies or constituencies; its purpose is to influence outcomes that affect peoples' lives.

Please use the scale below to answer the following questions.

not at all	slightly	moderately	very	extremely
A	B	C	D	E

How important do you think these skills are for leaders working in the field of MCH?

1. The ability to frame problems based on key data, including economic, political, and social trends that affect the MCH population.
2. The ability to use data, levels of evidence, and evaluative criteria in proposing policy change.
3. The ability to identify a wide range of stakeholders who influence changes in MCH policy.
4. The ability to apply appropriate evaluative criteria to the analysis of alternative policies.
5. The ability to analyze the potential impact of policies on diverse population groups.
6. The ability to understand the roles and relationships of groups involved in the public policy development and implementation process, including the executive, legislative, and judicial branches of government at all levels and interest groups.
7. The ability to formulate strategies to balance the interests of diverse stakeholders, consistent with desired policy change.
8. The ability to present evidence and information to a legislative body, key decision makers, foundations, or the general public.

Appendix B: Version 3: MCH Leadership Competencies

I. Self

MCH Leadership Competency 1: MCH Knowledge Base

Basic. Through participation in this program, a participant will:

1. Use data to identify issues related to the health status of a particular MCH population group.
2. Describe health disparities within MCH populations and offer strategies to address them.

Advanced. With more experience and building on the basic skills, MCH leaders will:

3. Demonstrate the use of a systems approach to explain the interactions among individuals, groups, organizations, and communities.
4. Assess the effectiveness of an existing program for specific MCH population groups.

MCH Leadership Competency 2: Self-reflection

Basic. Through participation in this program, a participant will:

1. Recognize that personal attitudes, beliefs, and experiences (successes and failures) influence one's leadership style.

Advanced. With more experience and building on the basic skills, MCH leaders will:

2. Use self-reflection techniques effectively to enhance program development, scholarship, and interpersonal relationships.
3. Identify a framework for productive feedback from peers and mentors.

MCH Leadership Competency 3: Ethics and Professionalism

Basic. Through participation in this program, a participant will:

1. Identify and address ethical issues in patient care, human subjects research, and public health theory and practice.
2. Describe the ethical implications of health disparities within MCH populations.
3. Interact with others and solve problems in an ethical manner.

Advanced. With more experience and building on the basic skills, MCH leaders will:

4. Identify ethical dilemmas and issues that affect MCH population groups and initiate and act as catalyst for the discussion of these dilemmas and issues.
5. Consider the culture and values of communities in the development of polices, programs, and practices that may affect them.
6. Describe the ethical implications of health disparities within MCH populations and propose strategies to address them.

MCH Leadership Competency 4: Critical Thinking

Basic: Through participation in this program, a participant will:

1. Use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.
2. Formulate a focused and important practice, research, or policy question.

Advanced. With more experience and building on the basic skills, MCH leaders will:

3. Apply important evidence-based practice guidelines and policies in their field.
4. Identify practices and policies that are not evidence-based but are of sufficient promise that they can be used in situations where actions are needed.
5. Translate research findings to meet the needs of different audiences.
6. Discuss various strategies, including supportive evidence, for the implementation of a policy.

II. Others

MCH Leadership Competency 5: Communication

Basic. Through participation in this program, a participant will:

1. Share thoughts, ideas, and feelings effectively in discussions, meetings, and presentations with diverse individuals and groups.
2. Write clearly and effectively to express information about issues and services that affect MCH population groups.
3. Understand nonverbal communication cues in self and others.
4. Listen attentively and actively.
5. Tailor information for the intended audience(s) (consumers, policymakers, clinical, public, etc.) by using appropriate communication modalities (verbal, written, nonverbal).

Advanced. With more experience and building on the basic skills, MCH leaders will:

6. Demonstrate the ability to communicate clearly through effective presentations and written scholarship about MCH populations, issues, and/or services.
7. Articulate a shared vision for improved health status of MCH populations.
8. Employ a repertoire of communication skills that includes disseminating information in a crisis, explaining health risks, and relaying difficult news.
9. Refine active listening skills to understand and evaluate the information shared by others.
10. Craft a convincing MCH story designed to motivate constituents and policymakers to take action.

MCH Leadership Competency 6: Negotiation and Conflict Resolution

Basic: Through participation in this program, a participant will:

1. Apply strategies and techniques of effective negotiation and evaluate the impact of personal communication and negotiation style on outcomes.

Advanced. With more experience and building on the basic skills, MCH leaders will:

2. Demonstrate the ability to manage conflict in a constructive manner.

MCH Leadership Competency 7: Cultural Competency

Basic: Through participation in this program, a participant will:

1. Conduct personal and organizational self-assessments regarding cultural competence.
2. Assess strengths of individuals and communities and respond appropriately to their needs based on sensitivity to and respect for their diverse cultural and ethnic backgrounds and socioeconomic status.
3. Suggest modifications of health services to meet the specific needs of a group or family, community, and/or population.

Advanced. With more experience and building on the basic skills, MCH leaders will:

4. Employ strategies to assure culturally-sensitive public health and health service delivery systems.
5. Integrate cultural competency into programs, research, scholarship, and policies.

MCH Leadership Competency 8: Family-centered Care

Basic: Through participation in this program, a participant will:

1. Solicit and use family input in a meaningful way in the design or delivery of clinical services, program planning, and evaluation.
2. Operationalize the "family-centered care" philosophical constructs (e.g., families and professionals share decision-making; professionals use a strengths-based approach when working with families) and use these constructs to critique and strengthen practices, programs, or policies that affect MCH population groups.

Advanced. With more experience and building on the basic skills, MCH leaders will:

3. Ensure that family perspectives play a pivotal role in MCH research, clinical practice, programs, or policy (e.g., in community needs assessments, processes to establish priorities for new initiatives or research agendas, or the development of clinical guidelines.
4. Assist primary care providers, organizations, and/or health plans to develop, implement, and/or evaluate models of family-centered care.
5. Incorporate family-centered models of health care delivery into health professions and continuing education curricula and assess the effect of this training on professional skills, health programs, or policies.

MCH Leadership Competency 9: Developing Others Through Teaching and Mentoring

Basic: Through participation in this program, a participant will:

1. Recognize and create learning opportunities for others.
2. Participate in a mutually beneficial mentoring relationship.

Advanced. With more experience and building on the basic skills, MCH leaders will:

3. Teach audiences of different sizes, backgrounds, and settings.
4. Incorporate feedback from learners to evaluate teaching effectiveness.
5. Give constructive feedback to learners on behavior and performance.

MCH Leadership Competency 10: Interdisciplinary Team Building

Basic: Through participation in this program, a participant will:

1. Identify and assemble team members appropriate to a given task (e.g., research question, program, curriculum, clinical care issue).
2. Develop and articulate shared goals, roles, and responsibilities.
3. Facilitate group processes for team-based decisions (e.g., foster collaboration and cooperation).
4. Value and honor diverse perspectives (e.g., discipline, ethnic, cultural, economic) of team members.

Advanced. With more experience and building on the basic skills, MCH leaders will:

5. Identify forces that influence team dynamics.
6. Enhance team functioning, redirect team dynamics, and achieve a shared vision.
7. Share leadership based on appropriate use of team member strengths in accomplishing activities and managing challenges for the team.
8. Use knowledge of disciplinary competencies and roles to improve teaching, research, advocacy, and systems of care.
9. Use shared outcomes to promote team synergy.

III. Wider Community

MCH Leadership Competency 11: Working with Communities and Systems

Basic: Through participation in this program, a participant will:

1. Participate in basic strategic planning processes such as developing a mission, vision, strategic goals, and activities.
2. Develop agendas and lead meetings effectively.
3. Identify community stakeholders and their extent of engagement in the collaboration process.
4. Interpret situations systemically; i.e., identifying both the whole situation and the dynamic interplay among its parts.

Advanced. With more experience and building on the basic skills, MCH leaders will:

5. Assess the environment to determine goals and objectives for a new or continuing program, list factors that facilitate or impede implementation, develop priorities, and establish a timeline for implementation.
6. Manage a project effectively and efficiently including planning, implementing, delegating and sharing responsibility, staffing, and evaluation.
7. Translate mission and vision statements for different audiences, understanding their different cultures, perspectives, and use of language.
8. Use negotiation and conflict resolution strategies with stakeholders when appropriate.
9. Maintain a strong stakeholder group with broad based involvement in an environment of trust and use an open process.

MCH Leadership Competency 12: Policy and Advocacy

Basic: Through participation in this program, a participant will:

1. Frame problems based on key data, including economic, political, and social trends that affect the MCH population.
2. Use data, levels of evidence, and evaluative criteria in proposing policy change.
3. Identify a wide range of stakeholders who influence changes in MCH policy.

Advanced. With more experience and building on the basic skills, MCH leaders will:

4. Apply appropriate evaluative criteria to the analysis of alternative policies.
5. Analyze the potential impact of policies on diverse population groups.
6. Understand the roles and relationships of groups involved in the public policy development and implementation process, including the executive, legislative, and judicial branches of government at all levels and interest groups.
7. Formulate strategies to balance the interests of diverse stakeholders, consistent with desired policy change.
8. Present evidence and information to a legislative body, key decision makers, foundations, or the general public.