



MAKING A PARADIGM SHIFT IN MATERNAL AND CHILD HEALTH

A REPORT ON THE
NATIONAL MCH
LIFE COURSE MEETING

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Meeting Sponsors

The Life Course Work Group would like to thank The California Endowment and Contra Costa Health Services for their generous support of the National MCH Life Course Meeting.



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The California Endowment's mission is to expand access to affordable, quality health care for underserved individuals and communities, and to promote fundamental improvements in the health status of all Californians.



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JUNE 9-10, 2008**

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BACKGROUND

In 2006, Michael Lu, Milton Kotelchuck, Cheri Pies, and Padmini Parthasarathy formed the Life Course Work Group to examine the application of the Life Course Perspective (LCP) to the field of Maternal and Child Health (MCH). This group initially explored what adaptations of the LCP were already occurring in practice, policy, and research, then convened a meeting of national MCH experts to explore how the MCH field would have to change in order to adopt, integrate, and utilize the theory of the LCP successfully in research, practice, policy, and education and training. With funding from The California Endowment and Contra Costa Health Services, the National MCH Life Course Meeting took place in Oakland, California, on June 9-10, 2008.

Meeting participants were asked to review five distinct MCH domains: theory, research, practice, policy, and education and training. Through substantive discussions and lively dialogue, meeting participants identified a number of key themes and innovative strategies for future directions. This brief meeting report is intended to share our conversation and make it of value to others in the field of maternal and child health as well as to foundations and policy makers.

A broad new paradigm is emerging in the field of MCH among some leading practitioners, academics, and MCH policy advocates that has the potential to change MCH practice, particularly with regard to addressing racial and ethnic disparities in child and family health. For the past several decades, MCH programs have focused on individual services during the nine-month prenatal period and subsequent pediatric care, paying less attention to the broad environmental determinants of health.

The LCP¹ offers a new way of looking at health, not as disconnected stages (infancy, latency, adolescence, child-bearing years, old age) unrelated to each other, but as an integrated continuum. This perspective suggests that a complex interplay of biological, behavioral, psychological, social, and environmental factors contribute to health outcomes across the course of a person's life. It builds on recent social science and public health literature that posits that each life stage influences the next² and that social, economic, and physical environments interacting across the life course have a profound impact on individual and community health.³



A paradigm shift is needed in MCH because our current system is simply not working. We spend more on maternal and child healthcare than any other nation, yet we rank near the bottom on most standard measures of MCH among the 30 developed nations that make up the Organization for Economic Cooperation and Development.⁴ In 2001, the U.S. ranked 22nd in maternal mortality and 25th in infant mortality. Although our population may be more ethnically heterogeneous than that of nations at the top of the rankings, even when looking only at white mothers and infants in the U.S., our performance remains dismal, ranking 19th of out 30 in maternal mortality and 22nd in infant mortality. Worldwide, the

U.S. ranking in infant mortality has been steadily worsening: from 12th in 1960 to 23rd in 1990 and 29th in 2004.⁵ Furthermore, our nation's low-birth-weight and prematurity rates are rising and disparities among subpopulations have not been reduced.

Behind the numbers are large and persistent gaps in the health status of mothers and infants of different racial-ethnic and socioeconomic groups. Black women have a maternal mortality rate nearly four times that of white women⁶ and a low-birth-weight rate twice that of white women; black infants are more than twice as likely as white infants to die within the first year of life.⁷ Something has to change.

In a recent article in the *New England Journal of Medicine*, Dr. Steven A. Schroeder offered a two-part answer to the apparent paradox between our large healthcare expenditures and advanced technologies and the health status of our people. First, the pathways to better health do not generally depend on better health care so much as on improvements in personal behavior; and second, even in those instances in which health care is important, too many Americans do not receive it, receive it too late, or receive poor-quality care.⁸ In addition, we recognize that personal behavior is strongly influenced by the social, economic, and physical environmental factors that are major determinants of health.

The same could be said about maternal and child health. For example, increasing access to prenatal care and promoting technological advances in neonatal care have been the cornerstones of our nation's strategy for improving perinatal health for the past two decades.⁹ Although both of these strategies have made undeniable contributions to reductions in infant mortality, there

is a growing recognition that many of the most important determinants of perinatal outcomes predate pregnancy and present outside of the clinical domain. These factors suggest a need to expand our current approach.¹⁰

In order to improve maternal and child health in America, we must not only close the gaps in access, quality, and prevention in our maternal and child healthcare system, we must also carve out a role for MCH in other sectors to ensure that all mothers and children can be healthy. We must not only optimize the health arena, we must also attend to the educational, economic, family, community, and physical environment arenas as well.



The National MCH Life Course Meeting was convened to continue the discussion around promoting a new direction for the field and to begin other conversations that would lead to increased efforts focused on social determinants of health and reinventing MCH.

MEETING OBJECTIVES

Twenty-five national MCH experts were invited to participate in a two-day dialogue on the application of the Life Course Perspective (LCP) to the field of maternal and child health (MCH) (see Appendix C for a listing of participants). The purpose of the

meeting was to explore this new paradigm and discuss how to transform this theory into practice, policy, research, and education and training. Through semi-structured discussions focused on specific topic areas, we hoped to develop a plan for bringing this dialogue to a broader audience in the field of MCH. This was an ambitious undertaking and the first time this group of individuals had gathered. The meeting had the following objectives:

1. Engage in meaningful reflection and substantive dialogue focusing on the integration of the LCP into five domains of MCH: theory, practice, research, policy, and education and training.
2. Discuss specific strategies necessary for implementing a paradigm shift in the philosophical foundation of MCH nationally.
3. Develop a preliminary plan of action for each of the five domains, addressing new opportunities and potential barriers.
4. Clarify what we can do collectively to move forward with this work.
5. Identify several ideas for furthering one's own work with regard to the LCP.

KEY THEMES

The meeting generated lively and engaging dialogue, where participants discussed many interesting ideas. Several key themes came up repeatedly over the course of the two days. Although no definitive road map was laid out, the key themes that emerged suggest a series of steps that can be taken to integrate the Life Course Perspective into MCH.

Develop an Overarching Vision Statement

The Life Course Perspective offers a new vision for MCH. It provides the beginning of an overarching understanding of what MCH should be doing in the next five or ten years. Elements of a broad, new vision statement for the field would include changes in health care practices, policy, research, and advocacy at the federal, state, and local levels, as well as the strategies that will reconfigure services to integrate this perspective into MCH practices.

Ideally, this vision statement would recognize that a broad-based view of the entire life trajectory is necessary to improve health outcomes and have as a goal creating equity in health care. It would include a focus on social determinants and environmental factors affecting health; building strategic alliances that include consumer involvement; advancing new practices, policy, and research; and creating an explicit advocacy agenda.

The statement would reorient our vision from a disease orientation to one of vibrant communities that focus on optimization of health. It would recognize the necessity of investing in upstream determinants of health, shifting spending to early life, when symptoms are low, and seeing health care as investment rather than consumption.



Map the Landscape of What Is Currently Being Done and Share It

Many MCH practitioners, academics, and policy makers are beginning to shift their thinking and/or approach to policy and practice toward the Life Course Perspective or one that focuses on social determinants of health. As a result, innovation is taking place in many practice settings throughout the U.S. In an effort to expand on this learning and application, we need to determine what programs are in place at state and local levels as well as at educational institutions that are incorporating the LCP. As more programs include this paradigm shift, we must encourage others to share their innovations, discuss barriers and opportunities, and identify what type of evaluation is being done and what performance measures are being developed.

Recognize that the Life Course Perspective Offers Multiple Points for Intervention

Because the LCP encourages viewing the individual as integrated within their environment and recognizes that multiple protective and risk factors exist along a continuum, adopting this LCP approach will require building strategic partnerships early in both public health and medicine so as to identify the multiple points for intervention at different important points during people's lives and in different contexts: in school, community, clinical and work settings; before, during, and after pregnancy; at the time of childbirth; during childhood, and so on.

Utilize Health Equity as a Guiding Principle

As a theoretical construct, the LCP does not stand alone. It has as its foundation

ideas of social determinants of health as well as what an equitable society could look like, concepts that are as core to this approach as is intervening both medically and socially at different points along the life span. Using health equity as a guiding principle means merging two approaches that have been proposed for integrating a Life Course Perspective – the health development model proposed by Halfon and the health equity approach of Goldhagen, which looks more broadly at human rights (see Appendices A and B).



Improving the health of children also means considering issues related to human rights both nationally and internationally. When human rights are compromised, people's ability to reach optimal health outcomes is also compromised. Such an underlying philosophical perspective exchanges the current deficit model of health inequity for an asset model of health equity.

Set an Agenda to Support Priorities for changes in MCH Policy

Policy is a critical element to supporting all the activities necessary to incorporate the LCP approach. Changes in policy are needed both to reinforce new practices as well as to address larger determinants of maternal and child health. The following key policy ideas deserve consideration:

- Identify strategies to share responsibility with different sectors at horizontal, vertical and individual levels.
- Encourage Title V and Title X funding sources to recognize the importance of integrating the LCP into the scopes of work that they require of their grantees.
- Through a longitudinal lens, examine economic policies and determinants that influence people's health across the life course.
- Promote laboratories for social change at the State level because of their ability to institute policies that can gain traction and federal attention.
- Model what we want to promote at an organizational level.
- Increase the consumer voice and consumer involvement in our own work.
- Invest health care dollars in population health as well as individual health. Consider the models of health trusts in other countries that apply a long-term time frame when allocating funds.
- Recognize the importance of the health-wealth connection and incorporate educational components into health programs that encourage clients to develop strategies to improve their financial stability and security so as to improve their health outcomes.

Develop a Toolbox for Practitioners, Academics, and Policymakers

As more MCH practitioners, academics, and policy makers move toward adopting the LCP, a toolbox will be needed that will enable sharing of innovations, practical tools, course syllabi, and approaches to implementing changes at local and state levels.



An interactive e-learning community and toolbox should capture practices, provide models, clarify policy directions, and provide links to resources such as publications, curricula, examples of outcomes and measures, logic models that have been developed and other organizations, individuals, and/or groups doing this work.

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APPENDIX A

Life Course Perspective: The Health Development Model

Michael Lu, MD, MPH

In 2003, Lu and Halfon¹ proposed an alternative approach to examining racial-ethnic disparities in birth outcomes using the life course perspective. The Life Course Perspective (LCP) conceptualizes birth outcomes as the end product of not only the nine months of pregnancy, but also the entire life course of the mother leading up to the pregnancy. Disparities in birth outcomes, therefore, are the consequences of not only differential exposures during pregnancy, but also differential developmental trajectories across the life span.



The LCP synthesizes two longitudinal models: an early programming model and a cumulative pathway model.^{2,3} The early programming model posits that exposures in early life could influence future reproductive potential. For example, it has been shown in both animal and human studies that perinatal stress is associated with high stress reactivity that persists well into adulthood.^{4,5,6} This, in turn, may be related to feedback resistance as a result of altered expression of glucocorticoid receptors in the developing brain.⁷ In humans, this programming may continue during infancy and early childhood.^{8,9} Exposure to stress hormones during sensitive periods of immune maturation in early life may also alter immune

function, leading to increased susceptibility to infectious or inflammatory diseases later on in life.¹⁰ Hypothetically, maternal stress during pregnancy could prime the neuroendocrine and immune systems of her developing fetus with stress hormones, leading to higher stress reactivity and immune-inflammatory dysregulation that could increase her female offspring's vulnerability for preterm labor and LBW later on in life. Thus the increased risk for African American women to preterm birth and LBW may be traced to greater exposures to stress not only during pregnancy, but in early life and possibly even in utero.

The cumulative pathways model proposes that chronic accommodation to stress results in wear and tear, what Bruce McEwen refers to as “allostatic load,”¹¹ on the body's adaptive systems, leading to declining health and function over time. For example, studies^{12,13} have found that animals and humans subjected to chronic and repeated stress exhibit elevated basal cortisol levels and exaggerated hypothalamic-pituitary-adrenal (HPA) response to natural or experimental stressors. This HPA hyperactivity may reflect the inability of a worn-out system for self-regulation. Similarly, chronically elevated levels of cortisol may also lead to not only relative immune suppression, but also immune-inflammatory dysregulation. HPA hyperactivity and immune-inflammatory dysregulation are two of several possible mechanisms by which chronic and repeated stress over the life-course may lead to increased vulnerability to preterm labor caused by stress or infection in pregnancy. The cumulative pathways model suggests that the increased risk of African American wom-

en for preterm birth and LBW may be traced not only to increased exposures to stress during pregnancy, but possibly to increased “weathering” due to stress over their life course that results in greater allostatic load.

Implicit in the LCP is the ecological model, which recognizes multiple levels of influence on perinatal health behaviors and outcomes. Bronfenbrenner identified micro-, meso-, exo- and macro- systems of influence.¹⁴ Stokols divided these levels of influence into intrapersonal factors, interpersonal processes; institutional or organizational factors; community factors; and public policy.¹⁵ In the Health Field Model, Evans and Stoddart described multiple determinants in multiple domains, including the physical and social environments, which can exert influence on health and disease outcomes.¹⁶ Collectively, these models recognize that an individual’s health is influenced by not only physiological functioning and genetic predisposition, but by a complex interplay of these biological determinants with social and familial relationships, environmental influences, and broader social and economic contexts over the life course. They further suggest that intervention efforts to improve perinatal outcomes should address not only “downstream” individual-level phenomena (e.g. physiologic pathways to disease, individual and lifestyle factors) and “mainstream” factors (e.g. population-based interventions), but also “upstream,” societal-level phenomena (e.g. public policies).¹⁷

Taken together, the life-course perspective and the ecological model suggest a need for an expanded approach to improve maternal and child health in America, one that emphasizes not only risk reduction during pregnancy, but also health promotion and optimization across the life course. The approach needs to be *both* clinical and population-based,

addressing individual factors as well as social determinants of MCH.

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APPENDIX B

Reframing MCH as an Equity-Based Public Health Practice

Jeffrey Goldhagen, MD

The relevance and importance of human rights to domestic and global health cannot be overstated. In the United States, changes in the demography of populations along with socioeconomic and political movements and globalization are establishing a new ecology of health. For example, childhood obesity can no longer be viewed simply as the outcome of genetics, calories and exercise. We now recognize a wealth of critical determinants related to the epidemic including the role of women in the workplace; violence and neighborhood safety; school funding; urban development; business and media deregulation; national and global agricultural and trade policies; U.S. and international energy strategies including those driving ethanol production; and climate change. As a result of this new health ecology, millennial morbidities such as trauma, AIDS, obesity, diabetes, asthma, depression, and suicide that relate to social and environmental determinants of health have replaced the historical morbidities, such as infectious diseases and nutritional deficiencies, as the most critical contemporary health issues. Yet, despite the annual expenditure of trillions of dollars for health care and public health, great health disparities remain within and between U.S. communities and populations.

Globalization has now changed the balance of power and loci of decision-making for public policies related to the human condition, and issues of global human rights are integral to every effort to improve the wellbeing of communities everywhere. An equity-based approach to health in the United States based on human rights, social justice, investment in human capital, and equity-based eth-

ics is even more imperative now if public health is to remain viable and relevant. A health equity framework provides the direction and strategies for public health professionals to address healthcare, health advocacy, public policy, and the social and environmental determinants of health. In fact, all movements in the U.S. – whether relating to civil, voting, women’s, gay, or other rights – that have succeeded in transforming the culture of society in a positive direction have been based in human rights. This will be true of health and public health as well.

Similarly, public health’s response to the Life Course Perspective (LCP) must also be grounded in a commitment to rights, justice, and equity. The health development model explains the scientific basis for much of the social epidemiology that has accrued over the past century. It suggests a mechanism for the link between the social, political, economic, cultural, physical and environmental determinants and health outcomes and disparities. It begins to explain the physiological basis of the social epidemiology of intergenerational health effects and the impact of “place” on health outcomes.





No mere revision or modification of medical practice or of our health care system can succeed in responding to the determinants of health defined by the life course model. Rather, a response must be grounded in the translation of the principles of health equity into public health practice, and a new inventory of strategies and tools integrated into the practice of public health.

Many of these strategies and tools have been developed and implemented outside of the United States – health impact assessment, equity-based health indicators, Baby and Child Friendly Hospital tool kits, Child Friendly Cities, the role of the ombudsperson, equity-based budget analysis, evidence-based public policy generation, and social epidemiology – and our current practice of public health must be informed and transformed by the global practice of health equity. Although many of these tools exist, others will need to be developed or adapted as our knowledge and experience with social epidemiology, life course health development, and health equity matures.

However, it is not enough to understand the history and principles of health equity and its relevance to public health practice. It will be necessary also to master the political processes required to translate these principles into public policy that supports a new paradigm of public health practice. Transforma-

tional leaders have in the past succeeded in moving public health along this path. Now, new emerging transformational leaders will be required to reframe our profession as an equity-, rights-, and justice-based practice. The future of MCH practice will depend on an understanding of social epidemiology, the physiological basis of life course health development, the translation of the principles of health equity into public health practice, and transformational leadership.

APPENDIX C

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APPENDIX D
National MCH Life Course Meeting
Questions for Discussion

Education and Training

1. Knowledge Base
 - **What educational materials and curricula already exist and/or need to be developed in order to educate students and train staff in the field on the Life Course Perspective?**

2. Social Strategies
 - **How do we integrate the Life Course Perspective into the MCH Competencies (ATMCH) and MCH Leadership Competencies?**
 - How do we work with MCH education organizations to create curricular opportunities for the Life Course Perspective?
 - What MCH Life Course questions should be added to the public health licensing examination and how do we accomplish this?
 - **What steps need to be taken to train staff working in the field about the Life Course Perspective?**

3. Political Will
 - **How do we gain community and political support for Life Course education and training in academic and professional settings?**
 - How do we encourage students to request/demand training on the Life Course Perspective?
 - How do we persuade more faculty and traditional MCH professionals to buy into and adopt this new paradigm shift?
 - How do we improve faculty capacity to teach the Life Course Perspective?
 - How do we obtain financial resources for training?
 - How do we change the Maternal and Child Health Bureau's (MCHB's) Leadership Education Training Grant objectives to reflect the Life Course Perspective?
 - How do we increase employer demand for employees with Life Course training?

Policy

1. Knowledge Base
 - **How do we use the Life Course Perspective as a basis for policy?**
 - What would a progressive MCH policy agenda look like if we adopted a Life Course Perspective (i.e. living wage, paid family leave, etc.)?
 - What is the return on investment over the life course? (i.e. for every dollar spent on prenatal/preconception care, X dollars are saved on childhood obesity, early-onset Type II diabetes, autism, learning disabilities, asthma, etc.)

- What elements of European and Asian countries' MCH policies can we utilize in the United States to further an MCH Life Course policy agenda?
2. Social Strategies
- **How do we promote and institutionalize policies that advance the Life Course Perspective?**
 - How do we create “Life Course policies” as opposed to “Stage of Life policies”?
 - How do we integrate health policy with economic policy, housing policy, education policy, etc?
 - What would Life Course health indicators for Healthy People 2020 look like?
 - What kinds of institutions are needed to advance the Life Course Perspective and how would we create them?
3. Political Will
- **How do we move forward with a Life Course Perspective in the current economic and social climate?**
 - What are the ten policy ideas that we should push for with the new Administration?
 - What are the barriers to aligning current policymaking to the Life Course Perspective?
 - Why are the current efforts to implement Life Course policies working and not working well and how do we overcome this?

Practice

1. Knowledge Base
- **What successful new Life Course-based practices are being implemented, both in the United States and abroad?**
 - How do we move forward to optimize the role of MCH in youth development, economic development, and other approaches?
 - What practices based on the Life Course Perspective (including preconception and interconception health activities) will produce a paradigm shift in our approach to reducing maternal and child health inequities?
 - What measures should we use to evaluate the success of projects from a Life Course Perspective?
2. Social Strategies
- **How do we translate the theoretical construct of the Life Course Model into actual practice?**
 - How do we take the elements of the Twelve Point Plan (Lu et al.) and turn them into practical, programmatic interventions?
 - How do we implement best practices from across the U.S. and abroad?
 - How do we translate the three Core Functions and Ten Essential Services of Public Health and the Ten Essential Public Health Services to Promote MCH in America from a Life Course Perspective?

3. Political Will

- **What infrastructure needs to be in place in order to implement changes in practice?**
 - What barriers need to be overcome to implement changes in practices?
 - Where are potential sources of funding for the implementation of practices that utilize the Life/Course Perspective and how do we cultivate these sources?

Research

1. Knowledge Base

- **What new issues does the field of MCH epidemiology need to address to advance the Life Course Perspective?**
 - How do we measure allostatic load and the weathering hypothesis?
 - How would we create longitudinal measures of stress, racism, community capacity, etc.?
 - What are the sources of resiliency across the life course?
 - How do we measure the impacts of Life Course programmatic interventions?

2. Social Strategies

- **What kinds of methodological approaches should be utilized to advance the Life Course Perspective?**
 - How do we link data to create longitudinal records?
 - How do we ensure confidentiality concerns in a life-course context?
 - How do we improve measures and methodologies to reflect the Life Course Perspective (i.e. longitudinal cohort analyses, outcomes research and cost-benefit analyses)?
 - How do we foster community-based participatory research?

3. Political Will

- **What types of infrastructure would facilitate the implementation of research from a Life Course Perspective?**
 - How do we obtain the buy-in of the current and future leaders of the MCH Epidemiology field?
 - How do we create a demand for life course-oriented research?
 - What are the barriers that must be addressed to better implement the life-course approach in MCH epidemiology?
 - How do we approach trans-disciplinary research within and outside of MCH with regard to the Life Course Perspective?
 - What are the longitudinal data/Life Course research training opportunities?

Theory

1. Knowledge Base

- **What are the unanswered questions about theory?**
 - What are the critical periods in the life course model? Are certain periods more important than others?

- How do we apply the allostatic load model to minority groups other than African-American women?
- How do we approach issues of gender in life course theory?

2. Social Strategies

- **What are the next steps in theory development?**
 - How can we set up a clearinghouse of Life Course information as well as promote the publication of monographs, articles, etc.?
 - What steps need to be taken to set up a “center without walls” and/or ongoing discussion groups to further opportunities for collaboration, interaction, and dialogue?
 - How do we link theory development and research?

3. Political Will

- **What are the barriers that need to be overcome in order to advance theory and how do we address them?**
 - How do we address barriers between various disciplines, both within and outside MCH?
 - What are potential sources of funding for theory development?
 - What partners need to be on board to advance Life Course theory?

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