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**Permalink**

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**Journal**

Maternal and Child Health Journal, 18(2)

**ISSN**

1092-7875

**Authors**

Shlafer, Rebecca
Hergenroeder, Albert C
Jean Emans, S
et al.

**Publication Date**

2014-02-01

**DOI**

10.1007/s10995-013-1243-8

Peer reviewed

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# HHS Public Access

Author manuscript

*Matern Child Health J.* Author manuscript; available in PMC 2017 July 31.

Published in final edited form as:

*Matern Child Health J.* 2014 February ; 18(2): 462–466. doi:10.1007/s10995-013-1243-8.

# Adolescence as a Critical Stage in the MCH Life Course Model: Commentary for the Leadership Education in Adolescent Health (LEAH) Interdisciplinary Training Program Projects

**Rebecca Shlafer**,
Division of Adolescent Health and Medicine, Department of Pediatrics, University of Minnesota, 717 Delaware St. SE, Minneapolis, MN 55414, USA

**Albert C. Hergenroeder**,
Baylor College of Medicine, Houston, TX, USA

**S. Jean Emans**,
Boston Children's Hospital, Harvard Medical School, Boston, MA, USA

**Vaughn I. Rickert**,
Indiana University, Bloomington, IN, USA

**Hoover Adger Jr.**,
Johns Hopkins University, Baltimore, MD, USA

**Bonnie Spear**,
University of Alabama at Birmingham, Birmingham, AL, USA

**Charles E. Irwin Jr.**,
University of Californian, San Francisco, CA, USA

**Richard E. Kreipe**,
University of Rochester, Rochester, NY, USA

**Leslie R. Walker**, and
University of Washington, Seattle, WA, USA

**Michael D. Resnick**
Division of Adolescent Health and Medicine, Department of Pediatrics, University of Minnesota, 717 Delaware St. SE, Minneapolis, MN 55414, USA

## Abstract

The Life Course Perspective (LCP), or Model, is now a guiding framework in Maternal and Child Health (MCH) activities, including training, supported by the Health Resources and Services Administration's Maternal and Child Health Bureau. As generally applied, the LCP tends to focus on pre- through post-natal stages, infancy and early childhood, with less attention paid to adolescents as either the "maternal" or "child" elements of MCH discourse. Adolescence is a distinct developmental period with unique opportunities for the development of health,

Correspondence to: Rebecca Shlafer.

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competence and capacity and not merely a transitional phase between childhood and adulthood. Adequately addressing adolescents' emergent and ongoing health needs requires well-trained and specialized professionals who recognize the unique role of this developmental period in the LCP.

**Keywords**

Life course; Adolescent health; Adolescent development; Maternal and child health training programs

## Background

In 2010, as part of the 75th Anniversary celebration of the Maternal and Child Health Bureau (MCHB), a concept paper Rethinking MCH: The Life Course Model as an Organizing Framework was commissioned by the Health Resources and Services Administration [1]. In this monograph, four core Maternal and Child Health life course concepts were identified: timeline (experiences and exposures that affect later health outcomes); timing ("critical periods" in an individual's life); environment (the effect of community environment and context on health); and equity (disparities reflecting more than genetics or choices). Across these core concepts, five key factors frame the discussion of the life course model: (1) health pathways or trajectories that occur over the lifespan, (2) early experiences that can program an individual's health and development, (3) critical or sensitive developmental periods during which events and exposures can have significant impact, (4) cumulative impact of negative experiences (weathering or allostatic load) that can influence health and development both directly and indirectly, and (5) modifiable risk and protective factors related to the individual, family, neighborhood, community and social policy. The monograph emphasized that "throughout life and at all stages, even for those whose trajectories seem limited, risk factors can be reduced and protective factors enhanced, to improve current and subsequent health and well-being" [1].

This quote epitomizes that the Life Course Perspective (LCP) is now a core, organizing theme within MCHB, receiving considerable attention, particularly within the Bureau's training programs [2]. In the last few years, for example, MCHB's Division of Research, Training and Education (DRTE) has developed web content, hosted webinars and convened meetings specific to LCP [3–5]. Further, the LCP has been given particular attention in MCHB training funding announcements [6] and has been integrated as a prominent organizing theme into the DRTE's 5 year strategic training plan [7]. While the Centers for Disease Control and Prevention have also adopted the LCP as an overarching framework to guide funding, MCHB appears to have assumed the pre-eminent Federal role in use of the life course model to inform programs, policy and practice.

Without question, the LCP has particular salience for MCHB's array of training programs, including those focused on adolescent health. Yet, the developmental phases of infancy and early childhood have always received greater emphasis, with far less attention paid to adolescence in both practice and policy. Effectively meeting the health care needs of adolescents demands a deep understanding of the impact of normal development and change from infancy onward in terms of how we organize and undertake our adolescent health work.

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Considering the long arc of the life course from birth to death, we regard adolescence as a uniquely potent window of opportunity for effective prevention and health promotion that holds promise for enormous societal benefit in light of these two incontrovertible facts: (1) this generation of young people is the largest in history, with 10–24 year olds comprising over a quarter of the world's population, and (2) this demographic bulge co-occurs with successful reductions in acute illness, infant and early childhood mortality that have shifted attention to issues that become prominent during adolescence: injury, substance use, mental disorders, sexual health, obesity and chronic physical illness. Each of these requires very different health care and policy responses than the approaches to adolescent health we have used in the past [8–10].

## The Life Course Perspective and Adolescent Health

The LCP offers a rich framework and a common language for maternal and child health priorities. The framework reinforces that optimal health for adolescents (and young adults) requires attention to more than traditional medical services, or a public health perspective that addresses health care disparities. The framework adds to the physical, cognitive, and emotional transformations of this developmental period its own important emphasis on social and environmental contexts [11]. The need for attention to these contextual changes is underscored by the US Census projection that by the year 2020, the majority of the youth population within the United States will be a diverse mix of ethnicities currently categorized as minorities [12]. This amplifies the urgency of more fully incorporating into our strategies for prevention, health promotion, and service provision what it means to be an adolescent of non-white/ non-northern or central European descent in this country, an immigrant, a refugee, a member of a family and community whose formative experiences may have occurred in settings outside of this country.

Linking prenatal, infancy, and early childhood phases to developmental changes in adolescence and young adulthood reflects a holistic approach to health outcomes over the lifespan that has always been the hallmark of MCHB. While we widely understand that adolescence is a developmental stage defined by a series of transitions between childhood and adulthood, our emphasis on the unparalleled opportunities of this period emanate from this constant: beyond infancy, at no other time in the lifespan is there such a vast change in individual physical, social, emotional, and cognitive development [13]. During this period of wide-ranging transformation, adolescents experience and co-create fundamental developmental processes including identity exploration and formation, development of autonomous thinking and behavior, creating intimate relationships with friends and romantic partners, navigating the physical changes of their bodies and corresponding sexual desires, and establishing patterns of thinking, valuing, and behavior that have enormous ramifications for future health and well being. Moreover, despite earlier thinking, we now know that gray matter continues to thicken throughout childhood and that these processes do not peak in the prefrontal cortex until around the time of puberty. Thus, the brain region associated with the most complex thinking including judgment, organization, planning, and strategizing, is still "under construction" at the onset of adolescence [14]. This exuberant growth during the pre-puberty years, followed by a competitive elimination (or pruning) of unused synapses, makes the adolescent brain (and its capacities for judging risk and making

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decisions) different from that of an adult. These natural biological, cognitive, and social transitions give the adolescent brain enormous potential and have important implications for prevention and intervention efforts targeting high-risk behavior in an ecological framework. Herein stands a unique and under-utilized opportunity to influence health trajectories in ways that are both *immediate* as well as *predictive* of health, capacity and functional effectiveness throughout the life course [15, 16].

Just as the emphasis on the concept of timing in the LCP points to the "importance of the earliest experiences and exposures (early programming)," there are also "critical or sensitive periods throughout life, in shaping the health of individuals and populations" (1 p. 8 ). This assertion reflects more than a philosophical frame of reference. As emphasized in UNICEF's report: *The State of the World's Children 2011—Adolescence: An Age of Opportunity*, "….lasting change in the lives of children and young people…can only be achieved and sustained by complementing investment in the first decade of life with greater attention and resources applied to the second" [17]. From a health economics perspective, now increasingly reflected in adolescent health literature, special emphasis on the critical stages and events of adolescence is essential to preserving investments made early in the life course, investments that can propel us toward achieving national and transnational health goals for our young people now and as adults in the future [18].

Key transnational institutions are already recognizing this. In April 2012, the UN Commission on Population and Development focused on 'Adolescents and Youth' as its core theme. Breaking with its traditional focus on younger children, UNICEF concurrently released its "*Report Card on Adolescents*," with unprecedented attention to the health needs of young people beyond childhood [19]. In addition, in the same week, the Lancet's call to action from its international Adolescent Health Working Group posed this stark reminder:

> "Put simply, failure to invest in the second decade of life, despite the availability of proven and promising prevention and health promotion strategies, will jeopardize earlier investments in maternal and child health, substantially erode the quality and length of human life, and escalate human suffering, inequity, and social instability [20].

Nonetheless, advocates for disproportionate investment in the first 5 years of life (including some life course scholars) may need persuasion that with the centrality of adolescence to many current and emerging global health agendas, it is time to more effectively address individual and social determinants of health in the second decade of life [21], thereby interrupting the processes by which disadvantage becomes adverse destiny in terms of limitation, morbidity, and premature mortality [16]. The evidence for this derives from extensive clinical, surveillance and scholarly information across an array of disciplines. Persuasively described by Sawyer and colleagues in the Lancet's recent overview of global adolescent health concerns, examples abound regarding mental health, physical health, and health-jeopardizing behaviors: 75 % of adult mental disorder has its onset before age 24, 50 % before age 14; anxiety and impulse control disorders have a median age range of onset during early adolescence (11–15 years). At least 70 % of adult premature mortality is due in main to behaviors initiated during adolescence; some 90 % of adult smokers are likely to have initiated smoking prior to 20 years of age, and relatedly, many risk factors for non-

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communicable diseases typically begin in adolescence including tobacco use, overweight and obesity, high blood pressure and low physical activity [8]. Complemented by the ever-growing scholarly and programmatic evidence as to the successes of prevention science [22], adolescence warrants considerable, not secondary emphasis *vis a vis* the genesis, persistence and implications of health-promoting and health-compromising behaviors across the life course [23, 24]. Rising to this challenge requires a scholarly and practice workforce that is highly trained and specifically prepared to address this population's health care needs.

## MCHB's Continued Investment in the Health and Well-Being of Young People

Among all US governmental agencies, MCHB is at the forefront of supporting specialized training in adolescent health that markedly improves the 'goodness of fit' between the health needs of young people, and the capacity of our systems of care to effectively respond to those needs. This includes a dedication to producing a diverse work-force well prepared to meet the needs of our rapidly changing youth population and respond to the health inequities we currently face, as well as the preparation of interdisciplinary scholars and practitioners, whose research and practice capacities range from prevention and application of healthy youth development strategies at the individual and population levels, to interdisciplinary provision of care that addresses the range of adolescent mental and physical health needs. The LCP has significant implications for the preparation of this workforce. As described in the Institute of Medicine's landmark report on adolescent health [25], among an array of training initiatives, the Leadership Education in Adolescent Health (LEAH) interdisciplinary training program is a critical component of MCHB's investment in the key periods of the life course, focused on optimizing adolescent development and successful transition to adulthood.

The LEAH training program has a long history of preparing leaders who educate the primary workforce, collaborate in interprofessional teams, and promote needed changes in policies, interventions, schools, communities and the environment. LEAH faculty and trainees contribute to MCH scholarship and research as scientists and clinician-scholars working with and on behalf of adolescents [26, 27], translate research to policy, and work with policy makers and public health professionals to advance evidence-based strategies for adolescent-focused prevention and health promotion. While much of the LEAH network's scholarship and practice focuses on particularly challenging areas of adolescent health (e.g., sexual reproductive health, substance use, and violence prevention), the LEAHs have a strong track record of collaboration with other MCHB interdisciplinary [e.g., Leadership Education in Neurodevelopmental and Other Related Disabilities (LEND), Pediatric Pulmonary Centers (PPC)] and discipline-specific (e.g., Nursing, Nutrition, Social Work) training programs, as well as non-MCHB (e.g., Bureau of Health Professions, Prevention Research Centers) training programs in addressing a wide variety of health-related issues across the life course. Such collaborations recognize the importance of a healthy foundation in infancy and childhood for adolescent health, as well as the implications of adolescent health for adult well-being. LEAH's commitment to preparing both a scholarly and practice work-force that is conversant in the LCP, is consistent with the urgent adolescent health

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priorities of the Institute of Medicine [25] and reflects MCHB's most recent statement of its core values that emphasize incorporation of a LCP into all of its training initiatives [28].

The MCHB and the LEAH network have long been in the forefront of championing the understanding that a developmental frame is essential to promoting individual and population-level health. Infusing this perspective with a new emphasis on the life course, a new generation of interdisciplinary leaders will promote both new models for the delivery of health services and a scholarly understanding of the life course model to improve the health of the population across the lifespan. In so doing, both the national LEAH network and MCHB will advance the understanding that adolescents and adults are inextricably and forever interconnected [16].

## Acknowledgments

The authors acknowledge the support of HRSA/ MCHB for the Leadership Education in Adolescent Health (LEAH) Interdisciplinary Training Program, the seven projects currently funded (Boston Children's Hospital; Indiana University; Johns Hopkins University; University of Alabama at Birmingham; University of California, San Francisco; University of Minnesota; University of Washington) and the two projects funded in the last cycle (Baylor College of Medicine; University of Rochester).

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