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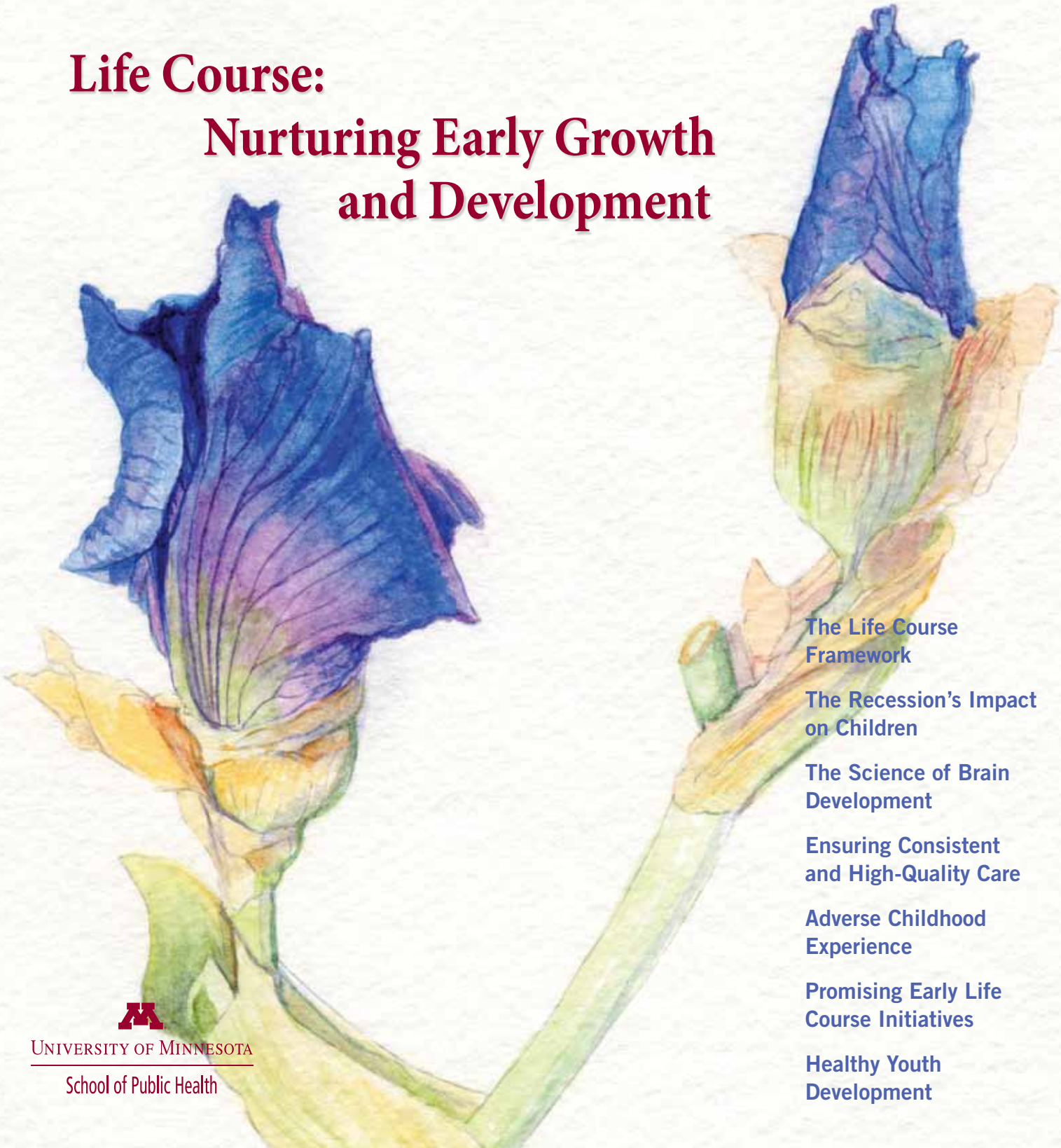
Life Course: Nurturing Early Growth and Development



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University of Minnesota
School of Public Health

Life Course: Nurturing Early Growth and Development

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LETTER FROM THE EDITORS

In 2010, as the Maternal and Child Health Bureau (MCHB) celebrated its 75th anniversary, Drs. Amy Fine and Milton Kotelchuck wrote a seminal white paper entitled "Rethinking MCH-The Life Course Model as an Organizing Framework." In the article's conclusion, they state, "Life course theory provides a Federal and national leadership opportunity to broadly improve the health and well being of mothers, children and families." As editors of this volume of Healthy Generations*, the Center for Leadership Education in Maternal and Child Public Health could not agree more. The life course framework has emerged as a powerful lens to re-examine our research, guide our surveillance efforts, and evaluate our community interventions.*

This issue begins with an overview of the life course perspective, serving as the foundation for subsequent articles and materials that explore the framework in greater detail. The contributing authors come from a variety of professional backgrounds and disciplines reflecting its overarching philosophy. We include an exploration of the science of brain development and the impact of early experiences by Dr. Megan Gunnar and follow with a discussion of adverse childhood experiences research. Dr. Glenace Edwall provides an overview of the importance of evidence-based practices in early childhood mental health. In addition, we highlight a number of promising new projects that incorporate the life course principles into their interventions, including the Wakanheza Project and the Seeds of Empathy. The issue concludes with a listing of valuable web resources to provide you the opportunity to delve into the life course framework in greater depth. We are grateful to our guest authors and to the team members who produced this volume: Jill Anderson, Sonja Ansen-Anifrani, Susan Carr, and Michaela McDonald.

—Charles N. Oberg, MD, MPH, and Wendy L. Hellerstedt, MPH, PhD

The **Center for Leadership Education in Maternal and Child Public Health** is committed to improving the health of infants, children, women and families. Center faculty and staff offer a Master's degree in Public Health (including an online degree program), continuing professional education and consultation and technical assistance to community-based organizations and agencies. Center faculty are involved in intervention and etiologic research in child health, adolescent health, family health, health disparities, reproductive health, and women's health. See our website at **www.epi.umn.edu/mch** and our Facebook page at **http://www.facebook.com/pages/Maternal-and-Child-Health-University-of-Minnesota/103274476412772?ref=hl.**

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The Life Course Framework:

Overview and Key Concepts

by Wendy L. Hellerstedt, MPH, PhD

The life course framework helps to explain how individual, interpersonal, social, and cultural factors influence the health of individuals and populations. This framework requires a deep examination of risk and protective exposures relative to health outcomes: their timing, their persistence, and their context.

> *"All the population, everybody of every age were all at one time children. And they bring to their maturity and old age the strength and scars of an entire lifetime."*
>
> **– Pauline Stitt, Maternal and Child Health Bureau, 1960**

Life Course Is Not New

This framework is not new to public health or medical practitioners and researchers. For researchers, the life course framework is consistent with the aims of clinical trial and cohort study designs. Both examine exposures in healthy people and then follow them forward in time to examine if exposures at baseline may be causally related to a health condition at a later time. To understand the etiology of health conditions, such studies often have ongoing, multiple assessments of salient exposures over time to assess if exposures persist or if they change. A good example is how the life course framework from cohort studies helped us understand the now well-known association between cigarette smoking and risk for lung cancer many years after first exposure: they found that the persistence of cigarette smoking behavior over time (i.e., the duration of the behavior) and the amount of cigarettes smoked were both related to risk for lung cancer.[1] Cohort studies have also identified critical periods of life where exposures may be especially helpful or harmful. For example, individuals who start smoking cigarettes as adolescents have a higher risk of lung cancer than those who start smoking as adults. While early exposure to cigarettes is related to lifetime dose and duration of smoking, early smokers are more likely to have DNA damage in the lungs that is related to cancer risk. Cigarette smoking may be especially toxic to individuals with still-developing lungs; thus adolescence may be a critical period for cigarette smoking exposure.[2]

Life Course Is Not Specific to Public Health

The life course framework is not restricted to the field of public health. Many disciplines examine the onset of exposures and their cumulative effects on a wide variety of outcomes over time: historians, political scientists, marketing specialists, sociologists, anthropologists, economists, demographers, psychologists, biologists, etc. Recently public health professionals—and especially maternal and child health professionals—have called for more attention to a life course framework to address population health disparities, generational risks, and individual health outcomes.[3] This framework is consistent with the commonly used social-ecological model in investigations of health risks and health promotion.[4,5] This model states that individual traits, behaviors, and health outcomes are the results of many interacting factors at the individual, interpersonal, community, and societal levels both at a single point in time **and** over time. For example, the World Health Organization provides a social-ecological model of risk for violent behavior in adolescence that addresses complex etiologies, such as the interaction between toxic exposures *in utero* that affect brain development and poor parenting of the offspring during childhood.[6] To prevent the expression of violent behaviors during adolescence, such a model may suggest developmentally appropriate interventions with the child, interventions with the parents to improve parenting practices, and/or pre-conception or prenatal

interventions to prevent exposure to toxins that could damage the brain of a developing fetus.

Risk and Protective Factors Throughout the Life Course

Factors that are considered in a life course framework for program, policy, or etiologic research reflect those in a social-ecological model. Individuals and populations function with a mix of protective and risk factors, all of which interact over time to produce good or poor health. Among the *protective factors* that contribute to healthy development are:

- individual (e.g., intelligence, strength);
- interpersonal (e.g., strong and positive personal relationships);
- community-level (e.g., safe and resource-rich residential areas, access to health services); and
- societal (e.g., health-promoting policies, economic security).

Risk factors include:

- individual attributes (e.g., genetic predisposition for poor health conditions, impoverishment);
- interpersonal (e.g., exposure to family violence, isolation);
- community-level (e.g., stigmatization, inadequate shelter); and
- societal (e.g., inadequate resources for employment, education, and health care).

Key Life Course Concepts

Because life course approaches are multidisciplinary, practitioners and researchers use a variety of terms. For example, as summarized by Fine & Kotelchuck,[3] understanding population and individual health with a life course framework involves understanding timeline, timing, environment, and equity:

- ***Timeline:*** Past and present experiences and exposures influence future health.
- ***Timing:*** "Exposures may be particularly important during ***critical or sensitive periods.***"[3] In terms of human social, behavioral, and biological development, three periods of exposure have been identified as especially important: *in utero*, 0–3 years of age, and adolescence. It is possible, as research continues, that other early critical periods will be studied and identified. These are periods in which adverse—or health-promoting—events or exposures may be especially salient because of the plasticity or flexibility of the developing human. However, these are also the periods of life that have been especially studied in public health. It is clear that human psychological, mental, spiritual, and physical health is affected at all stages of life, but perhaps not as critically as during these periods.
- ***Environment:*** "The broader community environment–biologic, physical, and social–strongly affects the capacity to be healthy."[3]
- ***Equity:*** Given the salience of the environment, differences in the health of individuals and in populations reflect more than genetics and personal choice.

Other important life course concepts are:

Transitions: Changes in roles and statuses that represent a distinct departure from prior roles and statuses. All individuals experience a series of transitions throughout life: e.g., becoming a student, going through puberty, graduating from school, getting a job, becoming involved in a romantic relationship, becoming a parent, becoming a caretaker to an ill loved one, acquiring a chronic or debilitating condition. People vary in the number of life transitions they experience, their duration, their relevance to health, and the level of interaction between transitions and other individual, interpersonal, community, and social factors on overall health and well-being. Individual or population-level transitions may affect the transitions of others in small units (like families or communities) or in large units (like governments) and vice versa. For example, the death of a parent could change the role of the eldest child if she is expected to assume a more mature and responsible position in the absence of that parent (e.g., her role could shift from dependent daughter to socially independent young adult). A macro-level transition could be a switch from no community policies about cigarette smoking to restrictive policies. Such a transition could affect population-level cigarette smoking levels if the policies present a significant barrier to the behavior.

Trajectories (or Pathways): Transitions are discrete: when they occur, a role or status changes (often disappears) and a new one begins. While single transitions (e.g., becoming a parent) can be life-changing, there is a "…continuum of exposures, experiences and interactions" that occur throughout life.[3] A ***trajectory*** is a long-term pattern of change or stability, usually involving multiple transitions. It is a series of large and small events or transitions that may have a large or small ***cumulative*** impact on health. For example, a single experience of drug use for an individual could lead to a trajectory of related transitions or events, such as moving from occasional to chronic use transitions in social

Risk factors can be reduced and protective factors can be enhanced through public health programs and policies.

relationships (with employers, family, peers, etc), recovery, relapse, re-establishment or new establishment of social relationships. Because individuals live in families, communities, and other settings (e.g., educational, occupational), their transitions often interact with, or affect, transitions or trajectories of others (a term to describe the interdependence of individuals is sometimes called "linked lives").[7] For example, the transition of someone from first-time to chronic drug use could stimulate the role transitions of others in the family, community, or workplace. Or the transition of an individual from good to poor health could stimulate the transitions of a spouse that eventually lead to a trajectory of caretaking.

Trajectories, or pathways, can also be influenced by large social or historical events (e.g., war, recession) and often involve transitions among social institutions (e.g., from primary to secondary school, employment, retirement home). Public health interventions in social institutions, in fact, have the potential to affect trajectories. For example, primary schools that effectively teach and socialize children to communicate with, and respect, others could prepare affected students for success in secondary school, which further affects student potential for success in post-secondary training or employment sites. When we think about social or historical events, we also think about:

Cohort effects: Events affect individuals differently across generations (e.g., Social Security insufficiency may ultimately affect younger working people as they age more than it will affect individuals who are currently elderly).

Period effects: Events may change trajectories, but that change is relatively uniform across birth cohorts (i.e., young and old exposed people are affected in relatively the same way).

Life Events: Significant occurrences involving a relatively abrupt change that may produce serious and long-lasting effects. This term refers to the event itself and not to the transitions that will occur because of it. For example, the death of a parent is a ***life event*** for a young child that may involve one or more transitions, like transitioning from a dependent to a more independent role in the family, leaving the family of origin to live with other caretakers, etc. Thus, life events precipitate transitions.

Turning Points: Life events or a transition that produce a lasting shift in the life course trajectory. The death of a parent (a life event) could be a turning point if a minor child leaves home and schooling as a consequence. This life event and related role transitions could have a permanent effect on the individual's ability to be educated and to be employed.

Latency Period: The period between first exposure and health outcome.

Sensitive or Critical Periods: Exposures may have a differential effect depending on the age and development status of the individual exposed. It is possible that a single event or condition could "program" or create an immutable effect on individual or population health. For example, lack of sufficient folate *in utero* could result in neural tube defects in offspring because the fetus is at a critical period of development. Lack of sufficient folate in an elderly person would not have such an effect, as the period for folate-related neural tube defects had passed decades earlier.

Cumulative Impact: Cumulative experiences can also affect the health of individuals and populations. For example, a single stressful event may have minimal impact on an individual who is experiencing an otherwise positive life trajectory, while the cumulative effects of several co-occurring stressors could present significant challenges for health and wellness. For example, an individual who loses her job but has an otherwise healthy life trajectory may still be able to maintain an appropriate exercise regimen. However, if the same individual also experiences the end of her marriage, the death of a parent, and/or the loss of her home, the cumulative effect could compromise her motivation or ability to maintain healthy behaviors.

Conclusion

The life course framework does not *simplify* our understanding of health, development, and well-being. However, it may clarify it. If factors interact with one another, and change over time in quality and strength, then we can be assured that current health and subsequent well-being can be influenced throughout life and at all stages—even for those whose trajectories seem limited. Risk factors can be reduced and protective factors can be enhanced through public health programs and policies. The life course framework also tells us that individuals—and populations—are not just the sum of our experiences and exposures, although both matter. The health of individuals and of populations is also not exclusively determined by biology or genes, although they also both matter. If our life scripts are not indelibly written by our genes, but also informed by our environments, exposures, and experiences, then our potential for optimizing individual and population health lies in our ability to understand disease etiologies and find mechanisms for effective programmatic and policy interventions.

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LONGITUDINAL STUDIES OF INFANTS AND CHILDREN

Longitudinal (prospective) studies are the strongest studies for examining the associations of early exposures on later health outcomes. There have been many such studies—the following provides resources for a select few:

Avon Longitudinal Study of Parents and Children (also referred to as The Children of the 90s Study) **(http://www.bristol.ac.uk/alspac/)** conducted in the United Kingdom. Enrolled about 14,000 pregnant women between 1991–1992 and still follows their children to assess early exposures and health and developmental outcomes. The study is currently recruiting the fathers of the study offspring.

Centre for Longitudinal Studies **(http://www.cls.ioe.ac.uk/)** is an excellent resource about several large longitudinal health studies conducted in the United Kingdom (e.g., the ongoing 1958 Child Development Study, the Millennium Cohort Study of 19,000 children born in 2000–2001).

Chicago Longitudinal Study **(http://www.cehd.umn.edu/icd/research/cls/)** began in 1986 to investigate the effects of government-funded kindergarten programs for 1,539 children in the Chicago Public Schools; 989 of those now-adult children are still being followed to assess the impact of those programs on adult social well-being.

Collaborative Perinatal Project was conducted from 1959–1974, but analyses from its extensive database are still being published. This successful study was intended to study factors influencing pregnancy and birth outcomes, as well as child health and development. The original cohort consisted of 55,000 women enrolled during pregnancy, recruited across 12 sites in the U.S. The cohort was followed during gestation and after birth through age 7. Dr. Mark Klebanoff wrote a commentary on the project in 2009 that describes its contributions and its challenges **(http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2646177/).**

Early Childhood Longitudinal Study **(http://nces.ed.gov/ecls/)** is following three cohorts of children to examine school readiness, child development, and early school experiences: (1) children born in 2001 who were followed from birth through kindergarten; (2) the kindergarten class of 1998–1999 who were followed through 8th grade; and (3) the kindergarten class of 2010–2011 who will be followed through 5th grade.

Growing Up in Australia **(http://www.growingupinaustralia.gov.au/)** is following 10,000 children and families in Australia. The study began in 2004 with two cohorts—families with 4–5 year-old children and families with 0–1 year-old infants. It is examining the associations between the social, economic, and cultural environments to child adjustment and well-being. Similar "Growing Up" studies are conducted in New Zealand **(http://www.growingup.co.nz/)** and Ireland **(http://www.growingup.ie/index.php?id=9).**

Minnesota Longitudinal Study of Parents and Children began in 1975 with 267 pregnant women in their third trimester **(https://www.cehd.umn.edu/icd/research/parent-child/).** The mothers and their offspring have been engaged ever since and the investigators are now recruiting the offspring of the now-adult original offspring. The study focuses on social relationship experiences and individual development to understand factors that guide good or poor outcomes.

National Longitudinal Survey of Children and Youth **(http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=4450&Item_Id=25609&lang=en).** This Canadian study began in 1994 and is following individuals from birth to adulthood. Its aim is to collect information about factors that influence a child's social, emotional, and behavioral development and to monitor the impact of these factors on the child's development over time. The study completed an eighth wave of data collection in 2008–2009.

Prague Study has one of the most unusual samples of any birth to adult cohort study. It followed the development and mental well-being of 220 children born in 1961–1963 in Prague to women who were twice denied abortion for the same unwanted pregnancy. The children were individually pair-matched at about age nine with 220 children born from accepted pregnancies (i.e., no abortion had been requested). The study assessed both sets of offspring until age 35 and consistently found greater psychosocial adjustment problems in those born of unwanted pregnancies compared to those born of wanted pregnancies. A paper by investigators David & Matejcek provides some background **(http://iussp2005.princeton.edu/papers/50093).**

Project Viva **(http://www.dacp.org/viva/index.html)** enrolled 2128 pregnant women who gave birth 1999–2002, with aims to assess the associations between prenatal diet and offspring and child health.

TITLE V STATE DIRECTORS

How Do They Incorporate the Life Course Framework in Their Work?

We asked Title V directors, Linda Hale (Wisconsin) and Glendean Sisk (Illinois), to share their perspectives about how the life course framework influences their priorities as state MCH leaders.

Linda Hale, RN BSN EMT, Chief, Family Health Section, Bureau of Community Health Promotion, Division of Public Health, Wisconsin Department of Health Services

Ms. Hale and her colleagues are actively engaged in promoting a life course framework, as evidenced by their work training local and state public health practitioners in the life course framework. They also have had national influence through their recent article in the Maternal and Child Health Journal (February 2013) entitled, "Turning the Ship: Making the Shift to a Life-Course Framework" (http://www.ncbi.nlm.nih.gov/pubmed/23381870).

"We were first introduced to the life course theory in 2003 by Dr. Michael Lu," Hale said. "The current MCH 5-year needs assessment has been a ship-turning process for us. The Wisconsin MCH Program has—along with our many partners at both the local and state levels—integrated the life course model into our work by increasing partner and public awareness of the framework; conducting focus groups and social marketing campaigns in communities most affected by health disparities; delivering pre-conception and women's health initiatives; integrating with traditionally non-MCH programs, and shifting Title V resources from the provision of individual services to assurance of effective early childhood systems."

Hale said, "The Wisconsin MCH Program provided training to local health departments on the life course framework and developed resources for local health departments to train their partners." It used a variety of resources, including the CityMatch Life Course Game (http://www.citymatch.org:8080/lifecoursetoolbox/gameboard.php); its own website with links to key articles, presentations, and toolkits (http://www.dhs.wisconsin.gov/health/mch/EarlyChildhoodSystems/core-competency/1b.htm); a train-the-trainer presentation with a script; and a sample agenda for community presentations. "We incorporated life course into our Early Childhood Systems MCH Competencies that we require all of our health departments to complete…to enable them to make a paradigm shift to integrate the life course framework into their work."

Glendean Sisk, RN, BSN, CRADC, MPH, Chief, Bureau of Maternal & Infant Health, Illinois Department of Human Services

Ms. Sisk stated that she believes life course theory will be "…driving our services throughout MCH populations in the coming years." She said that, as knowledge increases about things like the effects of adverse childhood experiences (ACEs) and as the need to reduce poor birth outcomes like prematurity continues, "I believe there will be a concerted effort to focus on the root causes of unwanted outcomes [resulting in] activities to bring non-typical provider groups together. Also, as the Affordable Care Act continues to unfold, we will see more and more attention to the prevention of chronic conditions, which we know can be linked to life experiences, practices, and events, just as typical 'MCH' conditions frequently are." Ms. Sisk was asked about the kind of resources states need to apply a broad life course perspective. "The biggest resource issue states are facing is lack of personnel and finances to drive change," she said. "The national economy—and state economies—has left most of us very short-staffed and unable to do much more than maintain services at current levels. Massive and effective change requires planning, people, and usually money. All of which are in short supply in the majority of states. The MCH community needs the same intensity of assistance from the federal government as has been offered during the past several years to agencies like the Federally Qualified Health Centers, in order to bring about needed changes at the community level that will ultimately positively impact the overall health of our nation."

LIFE COURSE RESOURCES

A Life Course Approach: Resource Guide
http://mchb.hrsa.gov/lifecourseapproach.html

Developed by the Maternal and Child Health Bureau, this web portal contains a variety of resources about a life course approach, including a concept paper, a webinar, fact sheets, policy briefs, peer-reviewed journal articles, and links to materials developed by other organizations.

EnRICH (Research Innovations & Challenges) Webinar Series
http://mchb.hrsa.gov/research/media-webinar.asp

EnRICH webinars are conducted by the MCH Training and Research Resource Center, funded by the Maternal and Child Health Bureau's Office of Epidemiology and Research. The archived series contains at least two webinars of great interest to life course researchers: early life origins of pediatric and adult diseases and longitudinal analyses: an overview of mixed models and generalized estimating equations.

Integrating the Life Course Perspective into a Local Maternal and Child Health Program
http://www2.aap.org/commpeds/htpcp/Training/Life_Course_Handout-2.pdf

Authors describe how Contra Costa Health Services, a local health department, launched the life course perspective into practice. They also describe challenges and specific life course initiatives undertaken by the health department.

Life Course Metrics Project
http://www.amchp.org/programsandtopics/data-assessment/projects/Pages/LifeCourseMetrics.aspx

In 2012, the Association of Maternal and Child Health Programs launched a project to identify a set of indicators that will enable states to assess their progress in using a life course approach to promote maternal and child health. Seven state teams have identified 100 indicators that are significant and can be accessed and monitored by state Title V leaders. The indicators reflect a variety of categories including adverse child experiences, mental health, nutrition, environmental health, economic experiences, health care access and quality, reproductive life, and social capital. The final set of indicators is expected in spring of 2013.

Life Course Epidemiology
http://jech.bmj.com/content/57/10/778.full

In 2003, Kuh and colleagues published a paper that described the basic elements of epidemiologic research about the life course, including definitions of birth cohort effects, accumulation of risk, plasticity, resiliency, mediators, moderators, chains of risk, and sensitive periods. In 2002, members of this research team published a paper entitled, "A life course approach to chronic disease epidemiology: Conceptual models,

empirical challenges and interdisciplinary perspectives," available at http://ije.oxfordjournals.org/content/31/2/285.full.

MCH Life Course Toolbox
http://www.citymatch.org:8080/lifecoursetoolbox/index.php

The MCH Life Course Toolbox is a joint effort of CityMatCH and Contra Costa Health Services. The website has information about incorporating a life course perspective in MCH programs, including articles about theory, research, and data measures; how to incorporate life course elements into MCH practice, education and training resources; and policy considerations. The website also includes a discussion board to connect interested MCH professionals.

MCH Life Course Research Network (LCRN)
http://www.lcrn.net/

The Life Course Research Network at the University of California-Los Angeles, is funded by the Maternal and Child Health Bureau. Its intent is to provide multidisciplinary researchers, practitioners, and policymakers an opportunity to interact, share information, and engage in collaborative projects that advance life course health development research, practice, and policymaking. The site contains reports about the latest research in life course theory, methods, issues, and health topics; articles about the translation of life course research to policy and programs; an events calendar; and interviews with leaders in life course theory and research.

Racism and Health Inequities: A Life Course Perspective
http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2012.300666

"From crib to coffin, race is invented, recorded, and reported. The classification of people's race on their birth certificates, college applications, medical charts, and death certificates highlights the central role of racial stratification in U.S. society." So begins a provocative 2012 article by Gee and colleagues in the *American Journal of Public Health*. The authors demonstrate how race-specific inequities in life expectancy and other health outcomes may be viewed from a life course framework.

Wisconsin Department of Health Services, MCH Early Childhood Systems, Life Course Competency
http://www.dhs.wisconsin.gov/health/mch/EarlyChildhoodSystems/core-competency/1b.htm

This site has a great set of readings, webcasts, and resources specific to building professional competency in understanding an MCH life course model.

Subscribe to Our Children, Youth, and Family Health Listserv

Our Children, Youth, and Family Health Listserv shares resources and enhances networks among multidisciplinary professionals who work to improve the health and well-being of children, adolescents, families, and communities. To sign up send a message to: listserv@lists.umn.edu. Leave the subject line blank. In the body of the text write: Sub cyfhealth YOUR FIRST AND LAST NAME (example: sub cyfhealth Mary Jones). You will receive an email asking you to confirm your request.

Facebook Page for Maternal and Child Health at the University of Minnesota

http://www.facebook.com/pages/Maternal-and-Child-Health-University-of-Minnesota/103274476412772?ref=hl.

We post news about public health research, programs, policies, and events related to women's health, reproductive health, infant and child health, adolescent health, and the health of vulnerable populations. Our site may be of most interest to public health practitioners, policymakers, researchers, students, and graduates of our MCH program, but our intention is have a vital and interesting site for anyone who is interested in MCH public health and in networking with like-minded people.

The Great Recession's Impact on Children

by Charles N. Oberg, MD, MPH

Imagine back to the new day dawning on January 1, 2000, as we entered the new millennium. There was a hope here in the U.S. as well as around the world that a new era was sweeping across the globe with celebrations documented in spectacular photographs, videos, and music. In the U.S., an infant born on that January morning had a life expectancy of 76.8 years, the highest ever anticipated for the nation. However, since those first days of the new millennium the U.S. has experienced two recessions. The first recession began in 2001 and was of 10 months duration. The second commenced in December of 2007 and continued for a year and a half until the summer of 2009. It has come to be referred to as the Great Recession, the worst economic downturn since the Great Depression of the 1930s. The latest economic downturn has been followed by a weak and jobless recovery that has now persisted into the second decade of this century. How have these two periods of economic downturn that bookmarked the start of the 21st century affected the well being of low-income families with children?

This effort will require a new social will and a renewed commitment to change so as to realize that caring for our richest natural resource—children—is an investment in the truest sense of the word and that the trend of the last decade must be reversed.

Children have been disproportionately represented among the poor during this time of economic downturn. At the start of the millennium the overall poverty rate in the U.S. was at 11.3% as compared to the higher rate of 16.2% for children less than 18 years of age. By 2009, the overall U.S. poverty rate had increased to 14.3%. However, for children it had risen to 20.7%, representing a 33.4% rate of increase over the first decade of the twenty first century.[1] In addition, in 2008, 8% of children (5.9 million) lived in families facing extreme poverty with incomes less than half of the poverty threshold.[2] Racial and/or ethnic disparities are also reflected in the poverty statistics. Thirty-five percent of black children and 31% of children of Hispanic descent lived below the poverty threshold compared to only 11% of white, non-Hispanic children. In fact, the Foundation for Child Development estimated that the poverty rate for all children reached 21% for 2010, the highest it has been in over 20 years.[3]

Families living in poverty have, at times, difficulty providing basic needs such as adequate nutrition and stable housing. A family's ability to provide for its children's nutritional needs is linked to the family's food security—that is, to its access at all times to enough food for active, healthy lives for all family members. The U.S. monitors food security as part of the annual current population survey. Food insecurity is defined as uncertain or limited availability of adequate supplies of nutritional and safe food. In 2008, of the 49.1 million people in the U.S. who lived in food insecure households, 16.7 million were children. This means that 21% of the households with children were food insecure. This was a significant increase from the 15.8% in 2007.[4] This is the highest percentage of children

living in food-insecure homes recorded since monitoring began in 1995. The presence of family food insecurity may result in the disruption of eating patterns and/or the quality of the diets for their children. In a subset of food-insecure households—those classified as having very low food security—a parent or guardian reported that at some time during the year one or more children were hungry, skipped a meal, or did not eat for a whole day because the household could not afford enough food.[5] In 2008, 1.5% of children (1.1 million) lived in households with very low food security. This was an increase from 0.9% in 2007 reflecting the early impact of the Great Recession.[6] The occurrence of food insecurity is not limited to families in poverty alone, but is also experienced by low-income families just above the poverty threshold. For those children living in households with incomes below the poverty threshold, 52% were in food-insecure households. In addition, among children living in households with incomes at 100–199% of the poverty threshold, 34% were in food-insecure households.[7]

Homelessness represents the quintessential state of impoverishment. During the past decade, there has been a significant increase in the rate of homelessness for families with children. In 2009, the National Center on Family Homelessness released a report entitled "America's Youngest Outcasts" estimating that there were annually 1.5 million homeless children and youth during the past decade.[8] This increase in homeless children has been driven by the two recessions, a jobless recovery with persistently high unemployment, and a housing market that is still in crisis. The U.S. Conference of Mayors released their annual survey on homelessness in American cities. In the 2010 report, the surveyed cities were asked to identify the main causes of homelessness among their households with children. Respondents reported 72% was due to a lack of affordable housing, 56% cited poverty, 26% identified low-paying jobs and 24% believed the homelessness was secondary to domestic violence.[9] Of even greater concern is the discovery that ten cities reported having homeless 'tent cities' or other large homeless encampments, although it should be stated that these encampments are a small percentage of the homeless population in each location.[10]

Efforts must be made to decrease the vulnerabilities associated with the disproportionate representation of children during times of economic adversity. The renowned Nobel laureate and economist, Dr. James Heckman, has written extensively on the need for investment in children to promote human capital so as to maximize a child's chance of reaching his or her full potential as well as providing a return on investment for the larger society.[11] Following this Great Recession, what is needed today is a two-phased "Children's Recovery and Stimulus Plan." The first phase is a recovery effort to strengthen the frayed social safety net to provide the basic necessities of food security and housing stability. The intent will be to mitigate the negative impact of impoverishment on our children. The second phase is a stimulus component to invest in education, training, and safe communities to provide a path out of poverty with economic security and prosperity for the future. This effort will require a new social will and a renewed commitment to change so as to realize that caring for our richest natural resource—children—is an investment in the truest sense of the word and that the trend of the last decade must be reversed.

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Early Experience and the

Science of Brain Development

by Megan R. Gunnar, PhD, and the National Scientific Council on the Developing Child

Cognitive, emotional, and social capacities are inextricably intertwined throughout the life course. The brain is a highly integrated organ, and its multiple functions operate in a richly coordinated fashion. Emotional well-being and social competence provide a strong foundation for emerging cognitive abilities, and, together, they are the bricks and mortar that are prerequisites for success in school and later in the workplace and community.

Science tells us that what happens in early childhood can enhance or impair the health and productivity of society. Research on the biology of stress in early childhood shows how major adversity, such as extreme poverty, abuse, or neglect, can weaken developing brain architecture and alter the body's immune system in ways that risk the individual's adult physical and mental health. Science also shows that providing stable, responsive, nurturing relationships in the earliest years of life can prevent or even reverse the damaging effects of toxic stress, with lifelong benefits for learning, behavior, and health. This conclusion is based on the following series of core principles derived from decades of scientific research.

Providing stable, responsive, nurturing relationships in the earliest years of life can prevent or even reverse the damaging effects of toxic stress, with lifelong benefits for learning, behavior, and health.

Brains Are Built Over Time from the Bottom Up

The construction of the brain's architecture begins before birth and continues to be refined into early adulthood. Brain systems that perceive sensation (e.g., hearing, touch) and simple actions develop first, followed by systems that are involved in emotions, more complex actions, and early language. Later-developing systems support increasingly complex thinking, reasoning, planning, and self-control. As each brain system develops, it is built on top of earlier-developing systems and can be only as good as the architecture on which it is built. Early experiences affect whether a child's brain architecture will provide a sturdy or fragile foundation for all of the learning and development that will follow.

Interactive Influences of Genes and Experience Shape the Developing Brain

It is not just one's genetic makeup, but how those genes get used, that determines brain development. Once the child is born,

experiences influence how genes are turned on and off and thus how they are used. One important example of this process is the "serve and return" nature of children's relationships with adults. Young children naturally reach out for interaction through babbling, facial expressions, and gestures (SERVE). Adults respond with the same kind of vocalizing and gesturing back at them (RETURN). In the absence of such responses—or if the responses are unreliable or inappropriate—the child's brain architecture does not form as expected, which can lead to disparities in learning and behavior.

The Brain's Capacity for Change Decreases with Age

The brain is most flexible, or "plastic," early in life. As the maturing brain becomes more specialized to assume more complex functions, it is less capable of reorganizing and adapting to new or unexpected challenges. For example, by the first year, the parts of the brain that differentiate sound are becoming specialized to the language the baby has been exposed to. At the same time, the brain is already starting to lose the ability to recognize different sounds found in other languages. Although the "windows" for language learning and other skills remain open, these brain circuits become increasingly difficult to alter over time. Early plasticity means it is easier and more effective to influence a baby's developing brain architecture than to rewire parts of its circuitry in the adult years.

Chronic Stress Can Be Toxic to Developing Brains

Learning how to cope with threat and challenge is an important part of healthy development. When we are threatened, our brains activate a variety of physiological responses, which together are called "stress biology." When a young child is protected by supportive relationships with adults, s/he learns to cope with everyday challenges and the child's stress response systems quickly return to baseline. Scientists call this ***positive stress.***

Tolerable stress occurs when more serious difficulties, such as the loss of a loved one, a natural disaster, or a frightening injury, are buffered by caring adults who help the child adapt, which mitigates potentially damaging biological stress reactions. When strong, frequent, or prolonged adverse experiences, such as extreme poverty or repeated abuse, are experienced without adult support and intervention, stress becomes toxic as the biology of stress begins to damage developing brain circuits.

RESOURCES ABOUT CHILD BRAIN DEVELOPMENT AND MENTAL HEALTH

The Harvard Center on the Developing Child

http://developingchild.harvard.edu/

The Center website has dozens of videos, interactive educational materials, and reports about the science of early childhood, early childhood interventions, innovations in child well-being practice and policy, global child development, and the association of early childhood experiences to lifelong health. The Center also maintains an active news file about events, resources, programs, and policies related to early childhood.

The National Technical Assistance Center for Children's Mental Health, Georgetown University

http://gucchdtacenter.georgetown.edu/

The Center provides information, technical assistance, and training about promoting positive outcomes for children with mental health needs and their families. Among the topics covered on the Center's website are child welfare, cultural and linguistic competence, financing, healthy transitioning, leadership and workforce development, rural behavioral health, and state and local systems of care. In Spring 2013, the website provided a new monograph entitled, *A Public Health Approach to Children's Mental Health: A Conceptual Framework*, written for a broad public health audience. In addition to describing a public health conceptual framework for addressing children's mental health, the monograph describes many approaches to promote positive child mental health, prevent child mental health problems, treat child mental health, and maintain optimal child health while addressing mental health problems.

Hennepin County Youth Mental Health Dashboard

Full report at: **http://www.wilder.org/Wilder-Research/Publications/Studies/Hennepin%20County%20Youth%20Mental%20Health%20and%20Wellness%20Dashboard/Hennepin%20County%20Youth%20Mental%20Health%20and%20Wellness%20Dashboard,%20Full%20Report.pdf**

The Hennepin County Children's Mental Health Collaborative commissioned the dashboard. It is self-described as "…a set of county-level indicators that describe the mental health needs of youth in Hennepin County, as well as individual, family, school, and community factors that are known to contribute to youth mental health and wellness. The dashboard is intended to provide local stakeholders with information that can guide efforts to promote positive mental health among all Hennepin County youth." It was inspired, in part, by Georgetown University's recent monograph (described previously). The key concepts informing the work of the collaborative included: (1) mental health is more than the absence of mental illness; (2) mental health can be improved through population-level interventions; and (3) a number of risk and protective factors influence youth development of mental health problems and the severity of such problems, including "upstream" (social and economic) factors. Dashboard data show the following: (1) while many youth are supported by their family, school, and larger environment, many youth are also exposed to environments that threaten mental health; (2) not all youth are getting the mental health services they need; (3) 19% experience the chronic stress of poverty; and (4) there were race and economic disparities across several indicators (e.g., mental health screening, student and parent report of mental wellness).

Significant Early Adversity Can Lead to Lifelong Problems

Toxic stress in early life and common precipitants of toxic stress—such as poverty, abuse or neglect, parental substance abuse or mental illness, and exposure to violence—can have a cumulative toll on an individual's physical and mental health. The more adverse experiences occurring in childhood, the greater the likelihood of developmental delays and other problems. Adults who had a greater number of adverse experiences in early childhood are also more likely to have health problems, including alcoholism, depression, and heart disease.

Early Intervention Can Prevent the Consequences of Early Toxic Stress

Research shows that later interventions are likely to be less successful—and in some cases are ineffective. For example, studies have shown that when children who experience extreme neglect were placed in the care of responsive and supportive parents before age 2, their IQs increase more substantially and their brain activity and emotional relationships were more likely to become normal than if they were placed after the age of 2. While there is no "magic age" for intervention, it is clear that, in most cases, intervening as early as possible is significantly more effective than waiting.

Stable, Caring Relationships Are Essential for Healthy Development

Children develop in an environment of relationships that begins in the home and includes extended family members, early care and education providers, and members of the community. Studies show that children who develop in a context of secure, trusting relationships are better adjusted when they get to school, do better in school, stay in school longer, become more productive and healthier members of the workforce as adults and are better equipped to support the healthy development of the next generation. Numerous scientific studies support the conclusion that providing supportive, responsive relationships as early in life as possible enhances future prosperity and can sometimes prevent or reverse the damaging effects of toxic stress.

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This article is based on the collective work of the National Scientific Council on the Developing Child. Working papers with scientific citations for the research studies referred to can be found at their website: http://developingchild.harvard.edu/initiatives/council/

THE CENTER FOR ADVANCED STUDIES IN CHILD WELFARE: A RESOURCE FOR STUDENTS, PRACTITIONERS, AND FOSTER PARENTS

The Center for Advanced Studies in Child Welfare (CASCW)—in the School of Social Work at the University of Minnesota—works with county, tribal, state, and community social services to improve the lives of children and families involved with public child welfare. Its website (http://z.umn.edu/cascw/) offers several resources for students, foster parents, and practitioners in the field of child welfare, including:

- Child welfare policy resources, including policy briefs, a child welfare policy blog, state and federal bill tracking, and a listing of online policy resources;
- Its annual publication, CW360° provides communities, child welfare professionals, and other human service professionals comprehensive information on the latest research, policies, and practices in a key area affecting child well-being today. The latest volume, released in Winter 2013, is about "Trauma-Informed Child Welfare Practice." The 43-page volume includes short articles about research on complex trauma, evidence-based and promising practices that use a trauma-informed perspective, and innovative examples of integrating a trauma-informed perspective into practice and policy;
- Almost 100 reports and journal publications produced by CASCW-supported affiliates; and
- Online one- to two-hour training modules for foster parents or practitioners on a variety of topics, including child welfare practice, child welfare policy, domestic violence, child maltreatment, working with immigrants and refugees, child development and education, working with individuals with disabilities, and adolescents. The modules may be taken for continuing education hours.

In addition to many educational and informational resources, the website also has a Child Welfare Video Wall that poses five questions: (1) What does child well-being mean to you?; (2) How can we improve child welfare services for children and/or parents with disabilities?; (3) What is the impact of Title IV-E training funds on your career?; (4) If you could change one thing in child welfare to make things better for children and families, what would it be?; and (5) What has been the biggest practice shift in child welfare in the last 20 years? Viewers can review the responses left by practitioners, students, parents, and others or leave their own video response.

Evidence-Based Practices in Early Childhood Mental Health:

Ensuring Consistent and High-Quality Care

by Glenace E. Edwall, PsyD, PhD, LP, MPP

At least one in five youth in the United States meets the diagnostic criteria for a mental health problem, according to data from the 2001-2004 National Co-morbidity Survey-Adolescent Supplement, a nationally representative face-to-face survey of 10,123 youth, aged 13–18 years.[1] These findings raise concerns about the appropriate treatment of youth with early mental health problems and the long-term consequences of early onset.

Evidence-based practices make it ethically indefensible NOT to offer children and families the best care available...The right care has become the right thing to do.

Early mental health problems may have more profound life course effects than early physical problems, as demonstrated in an analysis of adults from the 2007 wave of the Panel Study of Income Dynamics (PSID). Using recalled data about childhood mental and physical health, Delaney & Smith[2] compared health and social outcomes among siblings aged 21–60 years old with and without reported childhood mental and physical health problems. They found that childhood mental health problems had a greater impact than childhood physical health problems on adult reports of being in excellent or very good health. They reported a similar effect for educational and occupational outcomes:

- Adult siblings with childhood mental health problems had about a half-year less education than siblings without such conditions, while reports of physical health problems in childhood had no effect on educational attainment;
- Adult siblings with childhood mental health problems worked seven fewer weeks a year compared to siblings without such problems; and
- Income was significantly lower for adult siblings who reported childhood mental health problems compared to those who did not.

For every outcome examined, the authors reported a higher adult burden in those who reported mental, compared with physical, problems during childhood.[2]

Evidence-Based Practices in Early Childhood Mental Health

The prevalence of early mental health problems—and the likelihood that common mental disorders in adults first emerge in childhood and adolescence—demonstrate the need for early treatment and preventive interventions. In the early childhood mental health literature, there is a rich evidence base of valid assessment tools and robust intervention strategies that can be tailored to individuals, contexts, and conditions. Strategies to ***treat*** specific conditions often include individual therapy

for children and their significant others, while other strategies (like the Wakanheza Project and anti-bullying efforts described in this volume) are conducted in the social environments of children to prevent the onset of mental health problems.

In 2008, a task force for the American Psychological Association articulated three primary elements of (APA) evidence-based practices (EBPs):[3]

- Assessment that guides diagnosis, intervention planning, and outcome evaluation;
- Intervention that includes, but is not limited to, those treatment programs for which randomized controlled trials have shown empirical support for the target populations and ecologies; and
- Ongoing monitoring, including client or participant feedback, conducted in a scientifically minded manner and informed by clinical expertise (e.g., judgment, decision-making, interpersonal expertise).

Common Questions about Evidence-Based Practices

How is the evidence to identify an EBP evaluated? There are several systems to assess the quality of research data. Early EBPs, such as those espoused by epidemiologist Archie Cochrane, emphasized evidence that heavily prioritized data from double-blind, randomized trials. More recent assessment approaches assess studies with a variety of designs because (1) few studies are conducted with the rigor of randomized controlled trials; and (2) evidence from other study designs provide valuable information about intervention effects. For example, the National Registry of Evidence-based Practices and Programs[4] provides a searchable website of more than 280 interventions for mental health promotion and treatment, and substance use prevention and treatment. Interventions are assessed through expert evaluation of evidence from a variety of study designs. Each intervention approach receives a numeric rating related to the quality of the research (i.e., reliability and validity of measures, intervention fidelity, missing data and attrition, control of potential confounding variables, and appropriateness of analysis) and its readiness for dissemination (i.e., availability of implementation materials, training and support resources, and quality assurance procedures).[5] The database that Minnesota uses, based on original work in Hawaii and refined in collaboration with Dr. Bruce Chorpita, to train early childhood mental health providers also assigns a rating based on the quality of research underlying a specific practice, as well as documents the demographic and diagnostic application of the practice (if such information is available in the practice's research reports).[6]

Do EBPs privilege some cultural or traditional values over others? Not intentionally, but EBPs are unapologetically rooted in the tradition of scientific evidence derived from experimental research. As the field has evolved, there has been increasing attention to contextual factors related to evidence, including the importance of individualized care, strengths- and family-based care, and cultural competency.

Do EBPs for early childhood mental health reinforce a medical model? Not always. EBPs in mental health have been historically rooted in health care, particularly in evidence-based medicine. Compared with EBPs for adult mental health, EBPs for children generally have a more developmental and preventive focus.

Can EBPs work across different settings, like clinics, home visits, and preschools? Yes. The range of settings in which the effectiveness of EBPs has been demonstrated is constrained by the published literature, but researchers and practitioners are interested in cross-setting generalizability, which can sometimes be extrapolated or tested in the next iteration of a specific practice.

How are EBPs and outcome assessment related? They are interrelated. The use of EBPs is dependent upon, but not a replacement for, clear measurement of outcomes. EBPs are generally defined by efficacy—the ability to produce a desired effect in a controlled context. Effectiveness—the degree to which the intervention produces the desired effect in real-world, uncontrolled settings—demands rigorous measurement. Implementation of EBPs always means case-specific applications, with full awareness of the importance of child and family contexts; this in turn requires monitoring child-specific outcomes to determine the impact of the intervention in these specific circumstances.

How do EBPs relate to family preferences? Those who apply EBPs should recognize that family treatment preferences have been empirically demonstrated to have a clear role in the engagement phase of mental health treatment. As more research establishes a wider range of alternatives for the treatment of common children's mental health problems, more choices of effective treatment modalities will be available to families.

Are EBPs used to restrict access to services? No. Despite limited evidence, this has been a common fear about EBPs, especially related to adult mental health services. Common practice in states is to use EBPs to guide uniform service provision, continuous quality improvement activities, and training. This has been the case for the Children's Mental Health Division at the Minnesota Department of Human Services.[7] An important ethical consideration in

implementing EBPs is that programs ensure access to the highest quality of care for all children.

The Importance of Evidence-Based Practices

Evidence-based practice is common in many disciplines and is stressed by many professional health organizations, including the American Psychological Association, as a means to deliver high-quality, effective treatment and intervention services. The identification of EBPs reflects a commitment to systematic evaluation of sound research and a rejection of practices that are based on flimsy or questionable evidence. The reasons to implement EBPs in early childhood mental health are:

- EBPs provide the best opportunity to maximize the effectiveness of interventions, as they provide a clear focus on improvement of clinical symptoms and increases in functionality;
- Adoption of EBPs creates the possibility of continuity and consistency of care across providers;
- EBPs create a common language for understanding interventions, as practitioners understand the meaning and intent of the assessment criteria;
- EBPs create the basis for training in core elements of interventions, thus increasing the effectiveness of all interventions for children;
- EBPs link effectiveness and quality to better outcomes, potentially with lower resource use;
- EBPs provide the best chance for a child to rapidly return to a typical developmental trajectory. This is particularly crucial for young children as it lessens their risks of more complex problems or acquired co-morbid conditions;
- Pragmatically, EBP implementation is increasingly a requirement of federal and private grant-making; and
- The publication explosion in EBPs is making it ethically indefensible to not offer children and families the best care available. Just as it once seemed logical to not screen for problems in the absence of treatment resources, it is now no longer arguable that any service is as good as any other. The right care has become the right thing to do.

Conclusion

Broad-based culturally responsive EBPs have the potential to enhance mental health care for young children. The APA Task Force describes their recommendations across three broad areas:[3]

1. Research and dissemination to address gaps in knowledge, especially concerning underserved children or children for whom little is know about the effectiveness of EBPs;
2. Apply a public health approach to education and training in order to increase the use of EBPs by clinicians and to increase public awareness of EBPs; and
3. Improve the translation of EBPs into practice and policy to ensure consistent and universal high-quality delivery of care.

These recommendations offer a framework for public health efforts to advance an evidence-informed practice agenda to enhance the mental health service delivery system for young children. The importance of such efforts is reflected in the high prevalence of early mental health problems and likelihood that such problems will have an impact on health and social well-being throughout the life course if they are not appropriately addressed.

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Adverse Childhood Experience

Public Health Surveillance Measures

by Wendy L. Hellerstedt, MPH, PhD

Fetal life, infancy, childhood, and adolescence are periods of great brain plasticity, continuous physical growth, and rapid development. As described by Dr. Megan Gunnar in this issue, early experiences—both positive and negative—create biological "memories" that shape brain development. It has been established that adverse experiences, especially, activate the stress system. In a review of the research on early-life stress and adult metabolic function, Pervanidou and Chrousos[1] concluded that childhood experiences of acute or chronic emotional, psychological, or physical stress can have long-term—even irreversible—"effects on emotion; behavior; growth; metabolism; and reproductive, immune, and cardiovascular function."[1]

The Adverse Childhood Experiences (ACE) Study

The Centers for Disease Control and Prevention (CDC) and Kaiser-Permanente collaborated to conduct the ACE Study in two waves, between 1995–1997. In the first survey wave, 13,494 members of a health insurance organization (Kaiser-Permanente in San Diego) were surveyed and 70% agreed to participate. In the second wave, 13,330 were contacted and 65% agreed to participate. Thus 65% of those contacted (n=17,337) agreed to participate in a one-time physical examination and a self-administered survey to assess current health behaviors and recalled adverse childhood experiences and family dysfunction.[2] Investigators never examined or surveyed the survey respondents after the first data collection.

The following are characteristics of the predominantly well-educated, middle-class, insured survey respondents:

- 54% were female;
- 75% were white;
- 46% were 60 years old or older (the mean age was 56 years); and
- 36% had some college education and an additional 39% were college graduates (only 7% had not graduated from high school).

How Were Adverse Childhood Experiences Measured in the ACE Study?

Study participants were asked to recall if they experienced any of the following 10 categories of adverse events before the age of 18 years:[3]

- **Abuse**
  - Emotional
  - Physical
  - Sexual
- **Neglect**
  - Emotional
  - Physical

- **Household dysfunction**
  - Witnessing domestic violence
  - Alcohol or other substance abuse in the home
  - Mentally ill or suicidal household members
  - Parental marital discord (as evidenced by separation or divorce)
  - Incarceration of a household member

Response options were generally YES or NO, although a few questions had options to report frequency (e.g., sometimes, never). No data were collected about *when* in the first 18 years of life the experience occurred. The investigators have generally not assessed chronicity or severity of reported events. Instead, they have reported findings based on an "ACE Score," derived by assigning one point to each event to create a total score, ranging from 0–10.

Results of the ACE Study

ACEs are common. As reported by Anda,[3] even in a well-educated, middle-class, insured population, only one-third of women and men reported experiencing NO adverse events before the age of 18. Twenty-five percent of the respondents reported one event, 16% two events, 10% three events, 6% four events, and 11% five or more events.

The ACE Score shows a graded relationship to a number of adverse health conditions throughout the adult life course. The ACE Study investigators have produced more than 50 reports and papers based on the data about recalled adverse experiences and their review of the medical and death records that they could find for the original respondents. These papers suggest that there is an association between the number of adverse childhood events an individual recalls experiencing and adult health conditions, including alcohol abuse,[4] autoimmune diseases,[5] depression,[6] and premature death.[7] In many instances, the published reports show that a significant percentage of records could not be found for the original survey respondents, thus biasing the findings. Also, some of the published reports, such as the study by Chapman et al.,[6] used data from only one of the two survey waves, thus not including the entire sample.

ACE Surveillance through the Statewide Behavioral Risk Factor Surveillance System

In 2008, the CDC, in collaboration with the original ACE Study investigators, developed a set of ACE questions for states to use in the Behavioral Risk Factor Surveillance System (BFRSS). The BRFSS is a phone survey used by states to assess and monitor behavioral risk factors in state residents.[8] In 2011, Minnesota became the 18th state to add ACE questions to its BRFSS survey. Minnesota's BRFSS results are consistent with the findings from the original ACE Study and data from other states (see Table 1). Recent data from Minnesota[9] and Wisconsin[10] are also consistent with data from the original study: ACEs cluster and they are associated with adult health and functioning. After reviewing the data from the 2011 Minnesota BRFSS ACE questions, Minnesota Health Commissioner Dr. Ed Ehlinger stated, "The significance of this study is that it shows that these experiences, which can significantly affect the health and well-being of adults decades later, are much more common in Minnesota than one might expect. Our task now is to learn from this information and use these insights to better identify and support children and families at risk."[11]

Conclusion

The original ACE Study should be viewed with respect to potential limitations to interpretation, which include response, recall, attrition, and publication biases. The ACE approach is limited in that it includes no questions to assess resilience or

TABLE 1. PERCENT OF ADULTS REPORTING ACES BY CATEGORY AND STATE

Abuse and Neglect	MN[1]	WI[2]	AR[3]	LA[3]	NM[3]	TN[3]	WA[3]
Physical	16	17	14	11	20	13	18
Sexual	10	11	11	10	13	13	14
Emotional/Verbal	28	29	24	21	28	19	35
Household Dysfunction							
Mental Illness	17	16	17	17	19	17	24
Substance Abuse[4]	--	27	26	27	30	28	33
Alcohol	24	--	--	--	--	--	--
Drugs	10	--	--	--	--	--	--
Parent Divorce/Separation	21	21	23	27	24	29	26
Domestic Violence	14	16	15	15	19	17	7
Incarceration	7	6	6	7	7	9	7

[1]2011 data from Minnesota Department of Health[9]

[2]2010 data from Wisconsin Children's Trust Fund[10]

[3]2009 data from CDC/MMWR report[12]

[4]The number of ACEs in MN may be over-represented when total ACEs are compared to other states because MN reports ACEs for alcohol use and drug use in the home separately. Other states combine these two ACEs and reported one ACE for substance abuse.

positive environmental exposures during childhood. Without such data, one cannot identify health-promoting—and possibly intervenable—exposures during childhood that allow individuals with high ACE Scores to have healthy adulthoods. The ACE questions, themselves, should be viewed with respect to their limitations:

- Recalled experiences. The original study asked adults, who were (on average) 56 years old, to recall events that occurred any time between birth and age 18. While the ACEs are not subtle events, it is plausible that adults may not remember or know about their exposures (e.g., a mentally ill or substance-abusing adult in the household) or they may misclassify their exposure (e.g., they may identify a strict parent as a mentally ill parent). Some reports of ACEs may be influenced by later events (e.g., an adult with mental health problems may assume s/he had exposure to a mentally ill caregiver as an explanation for her/his condition).
- Lack of specificity in questions. The questions concern experiencing an experience at **any time** between birth and 18 years of age. Thus, one cannot distinguish reports from an adult whose parents divorced when he was less than 1 year old from that of an adult who reports a parental divorce at age 17. The questions, as coded and presented, offer no opportunity to gauge severity of an experience. An adult who reports household substance abuse may be reporting abuse that occurred for a short period of time or throughout his/her childhood.
- Equal weighting of each experience to create the ACE Score. It could be argued that not all of the ACEs are equally negative, yet each is equally weighed to create the ACE Score. For example, parental divorce or separation: It is plausible that, for some families, parental separation was peaceful and ultimately better for the family. This particular question is also only applicable to individuals whose parents were together when s/he was growing up. Current coding on BRFSS suggests that a person whose parents were not married would be coded as not experiencing parental divorce/separation. Thus all individuals who lived with one or fewer parents throughout childhood are possibly more likely than others to have lower ACE scores, because they were not "exposed" to parental marriage (and, thus, separation or divorce).

"The significance of this study is that it shows that these experiences, which can significantly affect the health and well-being of adults decades later, are much more common in Minnesota than one might expect. Our task now is to learn from this information and use these insights to better identify and support children and families at risk."

– Dr. Ed Ehlinger, Minnesota Health Commissioner

Despite these caveats, the ACE questions allow surveillance systems to document, broadly, the prevalence of early childhood adverse experiences in their populations and the potential associations between these experiences and adult health and well-being. Perhaps one of the most important ACE Study and BRFSS surveillance findings is that about two-thirds of adults recall at least one adverse childhood experience, irrespective of education or other indicators of social class. A challenge for future investigators is how to intervene on such early adverse experiences, as some (e.g., parental mental illness or substance abuse, parental divorce) may not be easily, or completely, responsive to public health programs or policies.

For More Information

- The National Survey of Children's Health 2011 reports the number adverse childhood experiences reported for children aged 0–5, 6–11, and 12–17 years by state of residence. Sixty-three percent of 0–5 year-olds, 50% of 6–11 year-olds, and 44% of 12–17 year-olds reported no adverse experiences from an abbreviated list of ACE questions. Available at http://childhealthdata.org/browse/allstates?q=2614&g=448&a=4577&utm_source=Just+Released-New+Data+from+the+2011%2F12+National+Survey+of+Children%27s+Health&utm_campaign=New+Data+from+2011%2F12+NSCH&utm_medium=email
- In addition to the reports from Minnesota and Wisconsin (in References), Washington State has a thorough report, Adverse Childhood Experiences &

Population Health in Washington: Face of a Chronic Public Health Disaster. On pages 43–44, the actual BRFSS ACE module (questions and coding) are described. Available from: http://www.fpc.wa.gov/publications/ACEs%20in%20Washington.2009%20BRFSS.Final%20Report%207%207%202010.pdf

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TOP 10 REASONS TO EARN AN MPH DEGREE IN MATERNAL AND CHILD HEALTH AT THE UNIVERSITY OF MINNESOTA

Opportunities in the Field of MCH

1. **MCH MPH graduates often work with—or on behalf of—socially and economically vulnerable populations** that include women, children, youth, and family members (broadly defined to include fathers, grandparents, etc.).
2. **MCH is one of the oldest—and one of the most varied—areas in national health promotion and assurance in the U.S.** In the U.S. there is a national agency dedicated to MCH work, the Maternal and Child Health Bureau, which oversees public health programs that address a wide range of topics, including reproductive and prenatal health care access, newborn screening, family home visiting, care of children with special health care needs, and autism research. All of these initiatives require MCH professionals at national and local levels (see http://www.hrsa.gov/about/organization/bureaus/mchb/).
3. **MCH MPH graduates develop public health programs and policies** that focus on health promotion, health care equity, disease prevention, and primary care services. Their work is conducted in non-profit organizations, government agencies, universities, school districts, advocacy organizations, health clinics, and research/academic institutions.
4. **Every state—and many cities and counties—have departments specifically dedicated to MCH public health** advocacy, assessment, and program development. In Minnesota, see http://www.health.state.mn.us/divs/fh/mch/ for a description of the many focal areas in the State's MCH Section.
5. **MCH MPH-level epidemiologists** participate in research teams to conduct needs assessments, evaluate programs, and identify and promote social and environmental conditions that contribute to the health of women, children, youth, and families. MCH professionals with epidemiologic skills are especially in demand in city, county, and state health departments. Because MCH epidemiology training is so important, the Centers for Disease Control and Prevention sponsors MCH epidemiology training and internships (see http://www.cdc.gov/reproductivehealth/mchepi/index.htm).
6. **MCH professionals are in heavy demand internationally**. Most of the eight United Nations' Millennium Development Goals focus on MCH areas, including eradicating poverty, reducing child mortality, empowering women/promoting gender equity, improving maternal health, and reducing the risk of HIV/AIDS and other diseases that affect vulnerable populations (see http://www.who.int/topics/millennium_development_goals/en/).
7. **MCH professionals have organizations that help them network and that provide them with opportunities for continuing education**: the Association of Teachers of Maternal and Child Health (ATMCH; www.atmch.org) and the Association of Maternal and Child Health Programs (AMCHP; www.amchp.org).

Quality of the University of Minnesota MCH MPH Program

8. **The University of Minnesota has one of the most respected MCH programs in the world.** We have had more than 1000 graduates, many of whom have become leaders in MCH research, program development, and policymaking.
9. **The University of Minnesota's MCH program has about 40 regular or adjunct faculty members**, representing a variety of disciplines (e.g., pediatrics, nursing epidemiology, sociology, public health, psychology, anthropology) and community and academic work settings.
10. **To prepare our students for leadership positions, they are assigned to MCH mentors** and they undertake field experiences with MCH leaders to enhance their research, program development, and policy making skills.

Promising Early Life Course Initiatives:

Innovative Projects to Strengthen Children, Families, and Communities

by Wendy L. Hellerstedt, MPH, PhD, and Charles N. Oberg, MD, MPH

Public health practitioners promote and strengthen the resilience of individuals, families, and communities. And while practitioners are committed to evidence-based programs and policies, they are also committed to innovation, sustainability, and cultural relevance. Such a commitment has led to the development of several creative intervention and education programs that address issues that affect the life course of young children and their families and are deserving of further evaluation. The following are a few such programs:

Programs Aimed at the Social Environment

The Wakanheza Project **(http://www.co.ramsey.mn.us/ph/cp/wakanheza.htm)**, developed in 2002 by Saint Paul-Ramsey County Public Health, is a project to enable adults to create more welcoming environments for children and youth through the practice of peaceful and positive interactions in their communities, schools, and businesses. Its aim is to teach adults to respond to youth in public settings in a way that will prevent the occurrence or escalation of stressful situations. Individuals are taught to consider six principles to help them respond to misbehaving young people and/or the caregivers who are unsuccessfully struggling to control them:

- Recognize and suspend **judgment;**
- Be open to all **cultures** and strive to understand differences;
- Be aware that violence or misbehavior often comes from feelings of **powerlessness**;
- Show **empathy and respect**;
- Recognize that **social environments** influence behavior (e.g., businesses are encouraged to create spaces that are not stressful to young people); and
- Be willing to practice all of these steps immediately upon perceiving the potential for a stressful situation to occur or escalate: **be in the moment**.

The Raising of America Project **(http://www.raisingofamerica.org/project)**, was developed by the organization that developed the documentary *Unnatural Causes: Is Inequity Making Us Sick?* The project will be launched Spring 2013 and will emphasize that:

- A strong early childhood start will optimize individual life course outcomes (learning, mental and physical health) and lead to stronger communities;
- Healthy, safe, secure, and responsive social environments are critical to early childhood health and development; and
- Nurturing child ecology by supporting pro-family public policies and strengthening communities has the most potential to transform the life course of children, especially those who are most socially vulnerable.

The professional and public information campaign will involve: (1) an hour-long **documentary** about early experiences and the life course, to be aired by PBS; (2) 24 two- to-six-minute **video learning units**

about best practices in early childhood, promising policies, and research; and (3) an **online learning center.**

Programs Aimed at the Family Environment

***The Family Transformation Model* (http://www.co.ramsey.mn.us/ph/cp/the_family_transformation_model.htm)**, as practiced by Saint Paul-Ramsey County Public Health is a family violence initiative for practitioners and individuals with two key premises: (1) family violence arises from a variety of factors (e.g., racism, family history, sexism, poverty); and (2) it is critical to recognize the elements of "core health" in each person to help individuals, families, and communities that are affected by family violence and to prevent recidivism. The model focuses on three methods to de-escalate challenging situations:

- **Individual-level engagement:** helping loved ones during times of stress and crisis to reduce the likelihood of escalation to violence;
- **Therapeutic support:** individual, family and community therapy and support to help individuals and families find their innate core health; and
- **Systems enhancement:** stimulating family violence intervention systems to focus on rehabilitation, growth, and change.

Programs Aimed at the Individual

***Seeds of Empathy* (http://www.seedsofempathy.org/),** is a Canadian-based program for early childhood educators to foster social and emotional competence and early literacy skills and attitudes in 3–5 year olds by developing:

- **Emotional literacy** by using children's literature to encourage children to recognize and express feelings; and
- **Empathy** through having children observe and discuss interactions between a neighborhood infant and parent who attend their class with a program-trained *Family Guide.*

Among the program aims are to reduce aggression and to increase pro-social behavior by teaching young children to verbally express and acknowledge their feelings. *Seeds of Empathy* provides workshops for early childhood educators about a variety of topics including play-based problem solving, using music and art in early childhood education, and empathetic listening and responding to children.

Interventions Prior to Birth. There is a strong national emphasis on **pre-conception care** for men and women who are planning families. For example, the Centers for Disease Control and Prevention (CDC) has launched a public program called *Show Your Love* to encourage women to engage in healthy behaviors before they become pregnant. While there is no doubt that family planning and health promotion will optimize pregnancy and birth outcomes, future work is still needed to develop effective policies and practices in pre-conception health care and education. The CDC (http://www.cdc.gov/preconception/index.html) and the Maternal and Child Health Bureau (http://mchlibrary.info/KnowledgePaths/kp_pregnancy.html) have excellent resources. The necessity of responsive and comprehensive **prenatal care** is also without question. One promising approach is the *Centering* model of care (https://www.centeringhealthcare.org/pages/centering-model/pregnancy-overview.php), which offers the essential elements of prenatal care (health assessment, education, and support) in a group setting. Often the model involves a practitioner who conducts standard prenatal care tasks with a group of 8–10 pregnant women who meet for ten sessions. While the model has strong theoretical underpinnings, a recent review of the research literature on this model, by Annette Manant and MCH graduate Joan Dodgson (J Midwifery & Women's Health 2011;56:94-102), concluded that evidence is not strong enough to establish the model's effectiveness.

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Healthy Youth Development

by Wendy L. Hellerstedt, MPH, PhD, and Charles N. Oberg, MD, MPH

According to Dr. Gisela Konopka, D.S.W., "Adolescence is usually described as 'pre' or 'in between'—a stage between childhood and adulthood. It is seen as turmoil because one moves from a protected state into a state of independence. I prefer to see adolescence as a significant stage in itself, an 'adolescenthood' with new experiences and new strengths, not merely an interim period and a problem."[1]

Scientists, practitioners, and educators agree that youth are ***resources to be developed***; they are not problems to be managed. This vision of youth health replaces the traditional deficit model of disease risk and prevention. In the deficit model, youth are viewed as broken or destined to be broken—they need to be "fixed" to prevent problems from occurring or worsening. In contrast, the youth development model views youth as having the capacity to acquire the attitudes, competencies, values, and social skills that will carry them forward into successful adulthood. Adolescence is seen as an important pivotal period between childhood and adulthood that will necessarily have ups and downs.

Youth development is both a natural and potentially intervenable transformation of children into competent, confident, connected and contributing people of character who are fully prepared and fully engaged in their communities.[2] ***Youth development—the process of aging and expanding capacity—will happen no matter what we do.*** Public health practitioners, however, have the opportunity to promote and guide *positive* or *healthy* youth development through interventions, programs, and policies.

> *Youth development—the process of aging and expanding capacity—will happen no matter what we do. Public health practitioners, however, have the opportunity to promote positive or healthy youth development through interventions, programs, and policies.*

Elements of a Healthy Youth Development Approach at an Individual Level

The essential elements of a healthy youth development approach in program development, policy-making, and research include:

- Consideration of the *whole* young person (i.e., multiple interactive factors, positive and negative, at the level of the individual, family, school, community, and larger society) rather than a single characteristic (e.g., a chronic health condition) or problem (e.g., drug use);
- Acknowledgment that development occurs in the context of the family, community and society and thus the quality of the many social, institutional, and economic environments will affect youth development; and
- Focus on the positive outcomes that we desire for young people, not the negative outcomes we hope to prevent. Youth development interventions will thus identify youth strengths and focus on furthering their development (e.g., employing already strong family ties to further the development of social competence).

Youth development programs and interventions often include:

- the promotion or introduction of a positive, sustained adult-youth relationship;
- skill-building activities for youth; and
- youth participation and leadership in program development and conduct.

The Search Institute in Minneapolis, MN developed 40 "Developmental Assets" grounded in research in youth development, resiliency, and prevention. Its framework for approaching youth development interventions is one of the most widely used in the United States. The assets represent the relationships, opportunities, and personal qualities that young people need to avoid risks and to thrive. The Search Institute found that these assets are powerful influences on adolescent behavior—both protecting young people from many different risky behaviors and promoting positive attitudes and actions.[3]

Community Characteristics and Healthy Youth Development

Youth development programs typically work through existing social organizations (e.g., 4-H, Boys and Girls Clubs, schools) and focus beyond individual-level behaviors to the larger environmental factors to which youth are exposed. The assumption that youth are sensitive to many cultures and environments (e.g., family, school, work) is consistent with ecological models of development.[4]

In 2002, the National Research Council and the Institute of Medicine produced a paper on community-level programs to promote youth development, acknowledging the critical effects of environmental quality on young people.[2] The report identified the following elements of health-promoting environments for youth:

- Physical and psychological safety and security;
- Structure and rules that are developmentally and age appropriate, with clear expectations for youth behavior;
- Opportunities to make decisions, to participate in governance and rule-making, and to take on leadership roles as youth mature and gain expertise;
- Opportunities for youth to experience emotionally and morally supportive adult relationships;
- Opportunities to learn how to form close, durable, human relationships with peers that support and reinforce healthy behaviors;
- Opportunities to feel a sense of belonging and being valued;
- Opportunities to develop positive social values and norms;
- Opportunities to develop a sense of personal efficacy and to develop confidence in one's abilities to master one's environment;
- Opportunities to make contributions to one's communities and to develop a sense of social self-worth; and
- Strong links between families, schools, and broader community resources.

These features typically work together in synergistic ways. Programs, interventions, and communities with more positive features are likely to provide better support for positive youth development than those with fewer features. Healthy communities and institutions must thus be intentional about creating environments that nurture young people and require their participation. Such environments provide youth with opportunities to not only be "problem-free" but to grow into healthy and engaged adulthood. By providing youth with a sense of belonging and value today, we have reason to plan for a future of productive and mature family members, workers, and community members.

For More Information

- RM Lerner wrote a white paper in 2005 entitled, "Promoting positive youth development: theoretical and empirical bases," that describes the theoretical underpinnings of youth development. Available from: http://ase.tufts.edu/iaryd/documents/pubPromotingPositive.pdf
- The University of Minnesota Extension Services provide a guide to developing or evaluating youth development programs, based on the eight key elements of healthy youth development described by Konopka and Pittman. Available from: http://www.extension.umn.edu/distribution/youthdevelopment/DA6715.html
- "Resilience"—the capacity to endure hardship—is related to a youth development framework. The University of Minnesota is an international leader in resilience theory and research and offers many opportunities to engage in resilience-related work or learn more, including the Resilient Communities Project (http://rcp.umn.edu/).
- The Konopka Institute at the University of Minnesota provides information on best practices, policies, and

interventions for youth. It has a clearinghouse with resources—and provides training—on a variety of adolescent health issues, including healthy youth development, best practices, policies, and interventions for youth. Available from: http://www.peds.umn.edu/adolescent-health-medicine/programs-centers/konopka/index.htm.

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WHAT IS MCH? WE ARE MCH!

Do you ever wonder how to explain the depth and breadth of MCH public health work? Our HRSA training grant colleagues at the University of South Florida/Tampa developed a series of Prezi presentations to address this issue. Each presentation begins by posing the question, "What is MCH?" It then describes MCH in terms of our work with individuals, families, and communities. The Prezi presentations end with brief "stories" that were submitted by our University of Minnesota Center for Leadership Education in MCH, and other HRSA-funded training grant colleagues across the nation, to describe our varied work. There are four Prezi presentations available at the following links. The main one is the longest version; the mini-Prezis can be quickly viewed and each has different stories from the main Prezi. Take a look—you might recognize a story from someone you know!

- "We are MCH" Main Prezi: **http://prezi.com/rz0qkn_wwzvp/we-are-mch/**
- "We are MCH" Mini #1: **http://prezi.com/c7e6u6hpyk2u/we-are-mch-mini-1/**
- "We are MCH" Mini #2: **http://prezi.com/wc9jvevjv3nz/we-are-mch-mini-2/**
- "We are MCH" Mini #3: **http://prezi.com/kyjdfgl9b17o/we-are-mch-mini-3/**

Interested in Making a Difference?

Consider a Master's in Public Health (MPH) Degree in Maternal and Child Health (MCH)

by Sonja Ausen-Anifrani

In May 2013, Jess Nelson will graduate from the Maternal and Child Health (MCH) Master of Public Health (MPH) program at the University of Minnesota with a concentration in global health and a certificate in disability policy and services. As she reflected on her years in the MPH program, one word repeatedly surfaced: **opportunity.** Nelson took advantage of the many opportunities available to her as a graduate student and she will begin her public health career with skills built through scholarship and experience.

"My college advisor first piqued my interest in public health during my undergraduate years at the College of St. Benedict/St. John's University in Collegeville, MN," says Nelson. A biology and peace studies major, Nelson originally planned on pursuing a medical degree, but her advisor's counsel—and her professional experiences—led her to public health. She knew that she wanted to serve individuals through her work as a Prevention Advocate at an HIV organization, Common Ground[1] in Santa Monica, California. She also knew that she wanted to explore large population-based issues after working as an intern at Shtrii Shakti, [2] a non-governmental, women-led organization in Kathmandu, Nepal, with a mission to empower underserved and victimized women, men, and youth. The University of Minnesota was an attractive option because of its reputable global health concentration, proximity to a wide array of diverse immigrant communities, high ranking among schools of public health, affordability, and expert faculty.

One of Nelson's most rewarding opportunities as an MCH student has been her year-long fellowship with the University of Minnesota Leadership Education in Neurodevelopmental and Related Disabilities (LEND) program,[3] a HRSA-funded interdisciplinary leadership-training program. In any given year, about 10 graduate student LEND fellows study a variety of topics related to disabilities from the perspective of many disciplines (e.g., medicine, public health, social work, nursing, psychology, occupational therapy, special education). Fellows must complete 20 service hours at the University of Minnesota's Autism Clinic and participate in weekly seminars and discussion hours with other fellows, their mentors, and faculty. They are also paired with a family, who has a child or young adult with a disability, with whom they are to interact with for approximately 20 hours over the course of the year. MN LEND has defined the fellows' work with families as the "Families as Teachers" approach.[4] This approach values the expertise of families with a child with a disability and enables fellows to learn about systems navigation and other aspects of disability from a family perspective. Fellows also have options to shadow professionals in craniofacial and cleft palate clinics.

Because of the range of fellowship opportunities, Nelson has seen first-hand the value of creating a patient-centered medical home[5] for individuals with disabilities. The National Committee for Quality Assurance defines a patient-centered medical home as "a health care setting that facilitates partnerships between individual patients, their personal physicians and, when appropriate, the patient's family."[6] Individuals with disabilities often see many medical specialists on a routine basis. Medical homes for persons with disabilities have been shown to reduce the fragmentation of care and ensure continuity of care and communication among many medical specialists, the patient, and the family.[7]

LEND fellows are also matched with an experienced mentor with whom they discuss current research and professional networking opportunities. Nelson's LEND mentor has been Dr. Peter Scal, a University of Minnesota MCH MPH graduate and a physician, whose area of expertise is adolescents with special health care needs. "This fellowship has allowed me to learn from students and professionals in other disciplines," Nelson said, "and has encouraged the expansion of my interests in

studying disabilities within a global context."

In addition to her praise for the LEND fellowship opportunities, Nelson also values the experiences she shares with all MCH MPH graduate students. "The approachability of [MCH] faculty, the diverse mix of students in the School of Public Health, the first-year mentorship program, and local and national conferences have all shaped my worldview," Nelson said. She also highlighted the high quality of MCH MPH courses and discussed how these courses assisted her in approaching research more critically and in developing materials that could be used in a professional setting. For example, she developed a factsheet on healthy relationships and sexuality for individuals with disabilities in a global reproductive health class that will appear as a professional educational tool on LEND's website.

Nelson encouraged all MCH graduate students to follow her path by seeking out experiences that can expand knowledge, enlighten future goals, and create indispensable life-long professional and social networks. Her professional aspirations are to improve the health of individuals with disabilities in developing countries by developing culturally relevant training tools for specialists who work with them and conducting program evaluations with nonprofit public health organizations. Nelson's MPH training in the MCH Program—and her passion for meaningful work—are certain to lead her to a successful professional career as a public health practitioner.

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MCH STUDENT SUSAN WYATT WINS UM LEADERSHIP AND SERVICE AWARD

Susan Wyatt, a Master of Public Health student in Maternal and Child Health, received the President's Student Leadership and Service Award from the University of Minnesota in April 2013. This award recognizes students at the University of Minnesota-Twin Cities for exceptional leadership and service to the University and surrounding community. It is presented to approximately one-half of one percent of the student body.

Wyatt is the 2012–2013 President of the School of Public Health Student Senate, where she developed a Strategic Plan that reflected the diverse perspectives of the School of Public Health and led a team in implementing it. Her goal was to make the SPH Student Senate a more effective and efficient organization. This required some re-thinking of processes when it was discovered that one event was not amenable to the process changes that had streamlined other events and fundraisers.

Wyatt said, "It is important to have a clear vision and plan for success, to share that broadly within your organization and collect buy-in from its members, and to remain flexible and adaptable, knowing that change can be challenging and will not always happen exactly the way you planned."

Wyatt has also worked as an intern for a small reproductive health clinic in the Twin Cities and volunteers as a youth group leader for high school girls at a church. In addition, she has worked with the Minnesota AIDS Training and Education Center (MATEC) for almost two years as a student worker and is currently helping to develop a toolkit of pre-conception counseling resources for HIV clinicians in the Twin Cities. Wyatt can be seen in a video about why she chose to attend the School of Public Health at the University of Minnesota at http://www.youtube.com/watch?v=kBs5PXA2oa0.

Left to right: Jessie Wyatt, Mike Wyatt, Susan Wyatt, and Mary Wyatt

Web Resources: Early Childhood Health and the Life Course

The following websites—and those listed at the end of several articles in this volume—provide resources about research and/or the application of early childhood programs and policies.

Alberta Family Wellness Initiative

http://www.albertafamilywellness.org/initiative/integrating-science-policy-practice

The Alberta Family Wellness Initiative provides good resources about brain development and addiction, including learning modules about a variety of topics: brain architecture, the interplay of early experiences and gene expression, stress, and building cognitive, emotional, and social capacities.

Association of Maternal & Child Health Programs (AMCHP)

http://www.amchp.org/pages/default.aspx

AMCHP disseminates best practices in MCH programs that serve women, youth, and families. The website includes resources and webinars on a variety of programmatic and policy topics as well as legislative alerts.

Futures Without Violence

http://www.futureswithoutviolence.org/

The mission of Futures Without Violence is to prevent and end violence against women and children through policy and program development in schools, homes and workplaces. Its website has many resources about violence prevention initiatives and policies in the U.S. and worldwide, as well as descriptions of its several violence prevention initiatives.

Harlem Children's Zone

http://www.hcz.org/home

The Harlem Children's Zone (HCZ), under the leadership of President and CEO Geoffrey Canada, focuses on education, children, and the effects of poverty on families. Its programs include Baby College parenting workshops, Harlem Gems school readiness program for 4 year olds, Harlem Peacemakers, and the HCZ Asthma Initiative (1,436 children enrolled since its inception). Its renowned Promise Academy Charter School has served 1,200 students.

Life Course Center, Department of Sociology, University of MN

http://www.soc.umn.edu/research/lcc.html

The Center provides resources and professional and graduate education training. It also conducts several life course studies across the age span.

National Child Traumatic Stress Network (NCTSN)

http://www.nctsn.org/

The NCTSN was formed to improve access to care, treatment, and services for traumatized children and adolescents. Its website has dozens of resources about helping children and youth cope with a variety of stressful events (e.g., natural disasters, hospitalizations, acquaintance rape, school crisis).

National Healthy Start Association

http://www.nationalhealthystart.org/

National Healthy Start Association works to improve health equity, birth outcomes, and family well-being. Its resources include a leadership training institute, a Healthy Start project directory, publications, and brief reports.

Voices for America's Children

http://www.voices.org/

Voices for America's Children is a network of child advocacy organizations that works on issues related to equity and diversity, child health, school readiness, school success, child and family safety, and family economic stability. Its website has resources for advocates, information about member organizations, and summaries of child advocacy research.

Zero to Three: National Center for Infants, Toddlers, and Families

http://www.zerotothree.org

Zero to Three works to promote the health and development of infants and toddlers by training and supporting professionals, policymakers, and parents. Its website has resources on behavior and development, maltreatment, care and education, and public policy.

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Save these dates *for upcoming conferences and events*

JUNE 5-7, 2013
Dakota Conference on Rural and Public Health
Mandan, ND
http://ruralhealth.und.edu/dakotaconference/

JUNE 13-14, 2013
Minnesota Early Intervention Summer Institute
Collegeville, MN
http://www.cehd.umn.edu/ceed/events/summerinstitute/2013institute/sessions.html

JUNE 15-19, 2013
Association of Women's Health, Obstetric, and Neonatal Nurses Annual Convention
Nashville, TN
http://www.awhonnconvention.org/index.asp

JUNE 17-18, 2013
Society for Pediatric and Perinatal Epidemiologic Research Annual Meeting
Boston, MA
http://www.sper.org/meeting/index.html

JUNE 17-19, 2013
Global Health and Well-Being: The Social Work Response
New York, NY
http://www.socialworkresponse.org/

JUNE 17-19, 2013
Global Health Metrics & Evaluation Conference
Seattle, WA
http://ghme.org/conference

JUNE 18-21, 2013
46th Annual Society for Epidemiologic Research Meeting
Boston, MA
http://www.epiresearch.org/meeting/

JUNE 21-22, 2013
26th Annual Postpartum Support International Conference: Innovation and Advocacy to Support the Mental Health of Pregnant and Postpartum Families
Minneapolis, MN
http://www.postpartum.net/News-and-Events/PSI-2013-Conference-Minneapolis-MN-.aspx

AUGUST 9-12, 2013
Society for Nutrition Education and Behavior 2013 Annual Conference: Moving from Good to Great
Portland, OR
http://www.sneb.org/events/conference.html

SEPTEMBER 19-20, 2013
39th Annual Minnesota Perinatal Organization Conference
Breezy Point, MN
http://www.minnesotaperinatal.org/conferences