

# RESEARCH PRIORITIES IN ADOLESCENT HEALTH:

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## An Analysis and Synthesis of Research Recommendations



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### **National Adolescent Health Information Center**

The National Adolescent Health Information Center of the University of California, San Francisco was established in October, 1993. The Center is based within the Division of Adolescent Medicine, Department of Pediatrics and the Institute for Health Policy Studies. The Center's goal is to improve the health of adolescents by serving as a national resource for adolescent health information and research to assure the integration, synthesis, coordination and dissemination of adolescent health-related information.

Major activities include: 1) promoting collaborative relationships with the Maternal and Child Health Bureau (MCHB), other federal and state agencies, professional and research organizations, private foundations and advocacy groups; 2) collecting, analyzing and disseminating information through short-term and long-term analyses of new policies affecting the adolescent population; and 3) providing technical assistance, consultation and continuing education to states, communities, and providers in content areas that emphasize the needs of adolescents.

Throughout its activities, NAHIC emphasizes the needs of special populations who are more adversely affected by the current changes in the social environment for youth and their families.

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# Research Priorities in Adolescent Health:

AN ANALYSIS AND SYNTHESIS OF RESEARCH RECOMMENDATIONS

## Background

Concerns about the health status and future of young people in today's society have fueled a relative explosion of scholarly work on adolescents over the past two decades. Numerous national reports have reviewed what has been learned from these research efforts and have made recommendations for future research on adolescent health and development.

Research Priorities in Adolescent Health: An Analysis and Synthesis of Research Recommendations reviews the recommendations that have emerged from these reports, providing the reader with a collective assessment of the state-of-the-science. Our report identifies broad-based trends in research priorities, describes gaps in the existing knowledge base, and suggests ways that a national adolescent health research agenda could be developed and implemented.

The findings from this analysis can help inform future science policy by providing options for an adolescent health research agenda and a benchmark against which we can assess current policy and funding priorities.

## Methodology

Staff of the National Adolescent Health Information Center (NAHIC) at the University of California, San Francisco identified and reviewed 53 national documents that: were published between 1986-1997; focused on adolescents or youths; provided clear research recommendations concerning adolescent health and/or health-related areas; and reflected a collective perspective, rather than the views of the document's author or authors.

The documents include reports issued by government agencies, private foundations, professional organizations,

and national task forces and commissions. Requests for grant proposals from national agencies were also reviewed. A complete list of the documents reviewed is provided in the Appendix.

Collectively, the reports contained thousands of recommendations. Some recommendations identified particular content areas in which research should be conducted, while others made suggestions about how this research should be conducted or necessary resources for conducting the research. Together, they allow us to identify the crucial research questions in adolescent health, the appropriate approaches and the necessary resources for addressing those questions.

A more complete analysis of these recommendations appears in the Full Report, available from NAHIC at 415-502-4856 or [nahic@itsa.ucsf.edu](mailto:nahic@itsa.ucsf.edu), or through our website at: <http://youth.ucsf.edu/nahic>.

## Overview of Findings

Four major *content areas* for research were reflected in the recommendations: adolescent development, social and environmental contexts, health-related behaviors, and physical and mental disorders. In each of these content areas, specific areas of research priorities are described. In addition, four *cross-cutting* themes emerged, pointing to general priority issues for future research in adolescent health. These cross-cutting themes focused on the importance of: applying a developmental perspective to adolescent health research; emphasizing "health" in research on adolescence; using multiple influence models for understanding and improving adolescent health; and recognizing the diversity of the adolescent population.



## What Are the Crucial Research Questions in Adolescent Health?

Research priorities emerged in four major content areas: adolescent development; social and environmental contexts; health-enhancing and health-risk behaviors; physical and mental disorders.

### Adolescent Development

Adolescence represents a life stage characterized by significant biological, cognitive, and psychosocial development. Thus, it is not surprising that recommendations for future research included a focus on developmental questions and considerations. Recommended foci for developmental research clustered into priority areas that reflect three domains: biological development, cognitive development, and psychosocial development. Across these areas, there was a call for research that would increase our understanding of both typical and atypical development. A final priority area called for research on the reciprocal interaction of biological, social, and psychological development.

#### Priority Areas for Research on Adolescent Development

- ▶ The Biology of Adolescence
- ▶ Adolescent Cognition
- ▶ Psychosocial Development During Adolescence
- ▶ Understanding the Reciprocal Interaction of Biological, Social and Psychological Development

Recommendations for basic research on biological development included attention to mechanisms and effects of biological and neuroendocrine maturation, sources of interference with or delay of pubertal processes (e.g., chronic illness), biological precursors to psychosocial and behavioral problems, and comparisons between the biology of adolescents and other age groups. Recommendations for biological research on puberty emphasized examination of the reciprocal relationship between pubertal maturation and behavior, including studies on the effects of pubertal timing and tempo on behavior as well

as investigations of the effects of behavior (e.g., physical activity) on pubertal delay.

Recommendations for research on adolescent cognition emphasized areas such as adolescents' health beliefs, attitudes and decision making. Studies on how changes in cognitive processing might influence decision making, the competence of adolescent decision makers, and the impact of adolescents' decision-making on health-enhancing and health-risk behavior were encouraged.

Priority areas for research on psychosocial development included: skills development, emotional development, and the development of interpersonal relationships. Aspects of skills development that were highlighted in the recommendations included the development of social skills, coping skills, and communication skills. Understanding more about the conditions and/or characteristics that promote psychosocial competence in these areas was a distinct theme. Emotional development was emphasized in the context of other developmental issues, such as the role of emotions as a mediator of biological transitions and health.

Numerous recommendations called for research to study the complex inter-relationships among biological, psychological, and social development during adolescence, as well as the influence of these developmental changes on adolescent behavior and health. The focus of many recommendations was on understanding how these aspects of development interact with and influence each other.

### Social and Environmental Contexts

During the adolescent years, significant contextual changes take place in adolescents' lives. By virtue of their growing independence, adolescents expand their horizons beyond the family to include more distal social networks and a variety of social institutions. Institutions familiar to adolescents also undergo changes in response to the changing needs of adolescents. During the past two decades, the social and economic contexts of adolescents' lives have undergone dramatic structural changes as well. Two notable examples are the increases in single parent families and the number of adolescents being raised in extreme poverty.

Social and environmental systems of importance to adolescent health can be conceptualized using the ecological framework (i.e. Bronfenbrenner, 1979<sup>1</sup>; 1986<sup>2</sup>), which classifies systems from most proximal to most distal. These include microsystems (the most proximal environmental contexts such as family and peers); mesosystems (the linkages between microsystems); exosystems (broader systems that influence adolescents such as communities or the health care system); and macrosystems (such as economic systems).

### Priority Areas for Research on Social and Environmental Contexts

- ▶ Parents, Families and Peers
- ▶ Schools
- ▶ Neighborhoods and Communities
- ▶ Health Care Systems and Policies
- ▶ Macrosystem Contexts

### Parents, Families and Peers

Recommendations for research concerning parents, families and peers identified five priority areas for further study: family influences on adolescent development, health and behavior; coping and resilience in families; strengthening families; adolescent parents; peer relationships; familial abuse and neglect.

Concerns with risk and resilience, the impact of dysfunctional families on adolescents, and the need to strengthen both adult- and adolescent-led families were themes that spanned the family-related research priority areas. Of particular interest were studies that would identify mechanisms by which family factors, such as coping and resilience, might mediate the effects of a variety of risks and stressors such as poverty, racism, family dysfunction, and predisposition for mental disorders. Research that would identify, develop and test methods for strengthening families was also highlighted. Research recommendations regarding the role of peer relationships in adolescent health and development called for a balanced and differentiated investigation of both positive and negative effects of peer relationships.

### Priorities for Research on Parents, Families and Peers

- ▶ Family Influences on Adolescent Development, Health and Behavior
- ▶ Coping and Resilience in Families
- ▶ Strengthening Families
- ▶ Adolescent Parents
- ▶ Peer Relationships During Adolescence
- ▶ Familial Abuse and Neglect

### Schools

Since a large portion of adolescents' time is spent in school settings, there is significant interest in the role that schools play in the lives of adolescents. Priorities for school-related research included studies to evaluate the impact of school organization and institutional practices on adolescents. Research with an emphasis on studying adolescents in general, as well as vulnerable adolescents, such as those with chronic disabilities or at high risk for school failure, was urged.

Research on the effects of school transitions for a range of adolescent outcomes was identified as a second priority area. The emphasis on school transitions as a needed area of research calls attention to the fact that most adolescents change school environments at least twice during adolescence (from elementary to middle/junior high and from middle/junior high to high school). A third priority area focused on the development and evaluation of the use of schools as intervention and service delivery sites. These recommendations called for research that would evaluate school-based prevention and health promotion programs as well as the role of the school as a site for the delivery of health services.

### Priorities for Research on Schools

- ▶ School Organization and Practices
- ▶ School Transitions
- ▶ Schools as Intervention and Service Delivery Sites

<sup>1</sup>Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

<sup>2</sup>Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22, 723-742.

### *Neighborhoods and Communities*

Neighborhoods and communities represent an important environmental context for adolescents and their families, providing residents with specific resources and opportunities, role models for behavior, and exposure to a range of positive and/or negative elements. Community-oriented research recommendations identified three priority areas. Research to examine the role of community factors in shaping adolescent health was highlighted, although documents varied widely in the extent to which they defined the salient aspects of community functioning.

Also recommended were studies to develop methods for characterizing and assessing communities, including studies that would document the availability and accessibility of social services, patterns of deterioration and growth, rates of social and economic change, and the nature of social interactions in the community.

Recommendations urging the use of communities for social interventions differed in terms of the extent of focus on the community and community factors. In some, the community as a whole was conceptualized as the target of change; in others, the community was the setting in which individual-focused interventions were to be delivered and evaluated.

#### **Priorities for Research on Neighborhoods and Communities**

- ▶ The Role of Communities and Neighborhoods in Adolescent Health and Development
- ▶ Characterizing and Assessing Communities
- ▶ Using Communities as Intervention Settings

### *Health Care Systems and Policies*

Recommendations regarding adolescents and the health care system identified a number of priority areas, including studies on health services, health care providers, and health policy. In the area of health services, recommendations were separated into two priority areas. The first focused on the need

for research on adolescents' health service needs, including research on utilization, health outcomes, and cost-effectiveness. Many of these recommendations highlighted specific preventive and treatment services in such areas as mental health, primary care, emergency medical services, family planning, substance abuse, and chronic physical disorders.

The second priority area targeted research on the organization of health services, with particular interest in the description and evaluation of integrated, coordinated services. Consideration of the effectiveness of coordinated services programs for special populations (e.g. emotionally disturbed adolescents) was urged.

A distinct cluster of recommendations focused on questions regarding the role that different kinds of health care providers—physicians, nurses, and others—might play in influencing adolescents' access to and utilization of services and the quality and cost-effectiveness of those services.

Recommendations for research examining the effects of health policies on adolescents and their families included a broad range of topics concerning the impact of federal funding and legislation on adolescent health, such as questions about the effects of parental consent requirements and the effects of parental prerogatives on hospitalization of adolescents.

#### **Priorities for Research on Health Care Systems and Policies**

- ▶ Adolescent Health Services
- ▶ Organization of Health Services
- ▶ The Relationship Between Adolescents and Health Care Providers
- ▶ Health Policy Affecting Adolescents

### *Macrosystems*

The broadest and most pervasive environmental contexts are “macrosystems.” These are critical to consider as they provide the overall settings

in which individuals and their more proximal environmental contexts are situated. Macrosystem-level recommendations generally called for research to identify the effects of culture, economic status, race/ethnicity, and gender on adolescent health and development. Some recommendations were explicitly concerned with mapping the direct effects of macrosystem factors on adolescent development and risk behavior, whereas the majority of recommendations took a broader approach and urged consideration of multiple kinds of “diversity”. The need for more sophisticated analyses of the independent and interactive effects of multiple macrosystem factors (such as ethnicity and socioeconomic status) on adolescent health was urged.

#### **Priorities for Research on Macrosystems**

- ▶ Culture
- ▶ Economic Status
- ▶ Race/Ethnicity
- ▶ Gender

#### *Other Environmental Contexts*

Other environmental contexts that were mentioned in the recommendations included the juvenile justice system, welfare system, work settings, recreation facilities and mass media. Recommended research regarding the juvenile justice system included studies on the long-term impact of the juvenile justice system on the development of incarcerated adolescents, juvenile detention facilities as settings for service delivery, and alternatives to traditional detention for juvenile offenders. Recommendations regarding the welfare system were generally concerned with monitoring the functioning of youth within that system and the need to prevent future welfare dependence by creating positive incentives for adolescents to stay in school. Recommended research regarding the mass media focused on investigating the potential positive and negative influences of the media with regard to adolescents’ participation in either health-promoting or health-risk behavior.

#### **Other Environmental Contexts Recommended for Research**

- ▶ Juvenile Justice System
- ▶ Welfare System
- ▶ Work Settings
- ▶ Recreation Facilities
- ▶ Mass Media

#### **Health-Enhancing and Health-Risk Behaviors**

In North America, adolescence is generally viewed as a time of increased responsibility for and/or experimentation with a variety of health-related behaviors such as diet, exercise, romantic and/or sexual activity, and substance use. Habits formed during adolescence—both health-promoting and health-damaging—can set the stage for a lifetime of health-related practices.

Four priority areas for research on health behaviors were identified, including research on: biopsychosocial influences; risk behavior trajectories and covariation; the differentiation of healthy and unhealthy risk taking; and developing and evaluating interventions to promote healthy behavior and reduce health-risk behaviors.

Recommendations for studies on biopsychosocial influences highlighted the bi-directionality of the biology-behavior relationship. Research questions focused on the impact of health behavior on biological development, as well as the effects of pubertal shifts and predisposing biological risk factors on the initiation and maintenance of risk behaviors. Interest in studies that would map patterns of risk behaviors and trace the trajectory of risk behaviors over time were highlighted in order to identify early behaviors that serve as precursors or predictors of later or more severe risk behaviors. Research that would more clearly define health-risk behaviors and distinguish them from “normative” exploratory behaviors was encouraged.

In relation to intervention research, there was greater emphasis on the kinds of risky behaviors to be prevented or reduced than on the healthy behaviors to be promoted. Risk behaviors of concern included alcohol and other substance use,

sexual activity, and violent behavior. A wide range of approaches were suggested, with interventions targeted at the multiple levels and contexts of adolescents' lives.

In addition to these priority areas, a small but critical set of recommendations emphasized the importance of learning more about the functional meaning of risky behavior and about adolescents' perceptions of the risks involved in particular types of health-related behavior.

### **Priorities for Research on Health-Enhancing and Health-Risk Behaviors**

- ▶ Biological, Psychological and Social Factors: Their Inter-Relationships and Influences on Health Behavior
- ▶ Health-Risk Behaviors: Covariation and Trajectories
- ▶ Differentiating Healthy From Unhealthy Experimentation With Risk Behavior
- ▶ Developing and Evaluating Interventions to Promote Healthy Behavior and Reduce Health-Risk Behaviors

### **Physical and Mental Disorders During Adolescence**

During adolescence, many young people experience the onset of physical or psychological disorders. Others who already have a disorder may see changes in the course or severity of those disorders. Research on physical and mental disorders in the adolescent years can provide important insight not only into adolescent health needs, but also into the course and prevention of disorders that originate in adolescence and persist throughout the life span. Research priorities for both medical and mental disorders included: the prevalence and incidence of disorders; the natural history and course of disorders; and the evaluation of intervention and treatment for these disorders. The need to study the impact of chronic disorders on adolescents and their families; to develop consensus definitions of health and disorder; and to develop better, validated measures

were additional themes reflected in both mental and physical health-oriented recommendations.

### *Physical Disorders*

Other priority areas for research on medical disorders included studies on the psychological and developmental impact of medical illnesses on adolescents, longitudinal studies of the costs and benefits of preventive health care services for youth, and the inclusion of adolescents in national clinical trials conducted by the National Institutes of Health and Food and Drug Administration.

### **Priorities for Research on Physical Disorders**

- ▶ Prevalence and Incidence of Medical Problems
- ▶ Natural History and Etiology of Medical Problems
- ▶ Evaluating the Prevention and Treatment of Medical Problems

### *Mental Disorders*

Recommendations regarding mental health treatment outcomes focused less on overall treatment effects and more on comparing the effectiveness of particular treatment modalities (e.g., group, family, individual, school) for well-defined populations of adolescents (e.g., abused and neglected, those with multiple disorders). Attention was also placed on the need to investigate the effectiveness of emergency mental health services for special populations of adolescents such as those with special medical needs (e.g., AIDS, physical injury) or those who have experienced violence, abuse, and/or suicide attempts.

### **Priorities for Research on Mental Disorders**

- ▶ Prevalence and Incidence of Mental Disorders
- ▶ Biopsychosocial Causes and Risk Factors of Mental Disorders
- ▶ Factors that Promote Resilience to Mental Disorders
- ▶ Evaluating Treatment and Services for Mental Disorders



## How Should the Crucial Research Questions in Adolescent Health Be Addressed?

Many of the documents reviewed went beyond suggestions regarding the content of recommended research on adolescent health and development. These recommendations suggested ways to improve the overall research endeavor, primarily through changes and advances in the methodological approaches used to study adolescent health. Additionally, recommendations were made regarding the research, human, and fiscal resources that will be necessary in order to conduct the recommended research.

Recommendations for improving adolescent health research included: increasing the diversity of populations studied; conducting longitudinal and theory-based studies; using a broader set of research perspective and approaches; and improving the evaluation of interventions.

### Recommendations Concerning Populations, Methods, and Approaches for Studying Adolescent Health Issues

- ▶ Increase the Diversity of Research Participants
- ▶ Conduct More Longitudinal Research
- ▶ Integrate Theory into Basic and Applied Research
- ▶ Integrate Diverse Research Perspectives and Approaches
- ▶ Improve the Evaluation of Interventions

Recommendations from many documents emphasized the importance of using more heterogeneous samples of adolescents in both basic and applied research studies. Adolescents with the following characteristics were specifically cited for greater participation in adolescent health research: low-income, racial/ethnic minority, low-achieving, immigrant, rural-dwelling, gay, homeless or runaway, those from families experiencing divorce, those with mental disorders and/or substance abuse problems, school

dropouts, disabled, and those living in institutions or residential settings. Investigating the underlying causes of between-group differences was also highlighted by recommendations for research on social and psychological processes such as marginalization, social influence, stigma and racism.

Research recommendations across a broad range of content areas highlighted the need for longitudinal studies to better understand developmental changes, the effects of developmental transitions, variations in developmental trajectories, precursors of various health and health-related problems, and short- and long-term health outcomes.

Recommendations also emphasized the importance of theory-based research, including testing current theories, using validated theories to inform adolescent research and intervention projects, and generating new theoretical models to better understand adolescent health and development.

There was a call for using diverse research perspectives and approaches in studies on adolescent health. Recommendations called for increased attention to multidisciplinary research, qualitative and ethnographic research, and research combining qualitative and quantitative methods.

Recommendations concerning intervention research highlighted the need for: research linking the processes and outcomes of interventions; uniform and valid outcome measures for interventions; follow-up to assess the long-term and residual effects of early interventions throughout adolescence and into adulthood; and the integration of small- and large-scale outcome studies.

## What Resources Are Needed To Conduct Research on Adolescent Health?

Recommendations were made concerning a variety of resources that will be necessary to address crucial research questions. Among these resources are surveillance research and valid measurement tools. Training investigators in adolescent health and facilitating collaborative research were also identified as priorities.

### Recommendations Concerning Resources Needed to Conduct Research on Adolescent Health

- ▶ Expand Surveillance Research
- ▶ Improve the Development and Validation of Measurement Tools
- ▶ Train Investigators in Adolescent Health
- ▶ Facilitate Collaborative Research

The systematic collection of surveillance data regarding adolescent health by national, state and local agencies are needed to provide databases that would allow researchers to address a variety of high priority research questions. More comprehensive national surveillance data on family income; the inclusion of fertility data in surveillance data regarding substance use; and surveillance data on psychological disorders, physical problems, and causes of morbidity were urged. Oversampling of ethnic minority, low-income and other adolescents from special populations in these surveillance systems was highlighted as a priority.

Reports highlighted the need for the development, expansion and refinement of culturally- and developmentally-appropriate measures for adolescents in a wide range of areas, including biological, psychosocial and cognitive development; social skills and competence; mental health; risk behavior; and characteristics of family, peer and community contexts. There was a call for greater uniformity of measures and for the establishment of more standardized criteria and definitions for assessing aspects of healthy and unhealthy adolescent functioning.

In order to develop the knowledge base and skills needed to conduct sound, scientific studies, recommendations called for more intensive support and training of prospective and current adolescent health researchers. Priorities included: the recruitment of ethnically diverse students into child and adolescent health fields; the inclusion of child and adolescent disorders in basic educational curricula for students in medical and mental health fields; the provision of financial support at each stage of career development to encourage prospective adolescent researchers; and the establishment of scientific retreats and summer institutes at which

prospective students or post-doctoral fellows could interact with leading investigators in the field.

Collaborative research partnerships and linkages among federal, state and local governments, public and private agencies, private foundations, researchers and communities were urged. The need for increased collaboration within large federal agencies such as the National Institutes of Health was also emphasized. Recommended methods for institutionalizing or otherwise fostering such collaboration included center grants, multi-site studies, interdisciplinary conferences, conferences specifically designed to develop measures to be used across studies, and informal colloquia. To promote national-level collaboration on adolescent health issues, recommendations called for: a national symposium of research and service providers to define and develop a blueprint for a comprehensive national database on youth; a permanent council established by the Executive Branch to provide ongoing advice to federal agencies on research directions in adolescent health; clinical research centers to conduct research on particular disorders or classes of disorders; Centers of Excellence for research on mental disorders of children and adolescents; demonstration projects within states to build on federal initiatives; and the provision of new and increased support for prevention research networks.

### Cross-Cutting Priorities for Research

Recommendations that emerged across content areas are important indicators of cross-cutting research priorities. Four cross-cutting themes emphasized the importance of utilizing developmental perspectives, focusing more on health, considering multiple influence models, and recognizing adolescents' diversity.

#### Cross-Cutting Priorities for Research on Adolescent Health

- ▶ Applying a Developmental Perspective in Adolescent Health Research
- ▶ Emphasizing "Health" in Adolescent Health Research
- ▶ Using Multiple Influence Models for Understanding and Improving Adolescent Health and Development
- ▶ Recognizing the Diversity of the Adolescent Population

A life-span perspective views adolescence within the context of the developmental process, considering what has preceded it (i.e., neonatal development, infancy and childhood) as well as what will follow (i.e., adulthood). Life-span research allows us to understand how earlier development shapes the experience of adolescence, how the experience of adolescence unfolds, and how adolescence itself influences subsequent development and functioning. Information from life-span studies has implications for choosing both the optimal time for interventions and the most important areas in which to intervene. A life-span perspective requires longitudinal research that follows children into adolescence, adolescents into adulthood, and adolescents throughout their adolescent years.

Research with a focus on health would be a distinct departure from much of the current problem-focused research on adolescent health. Although problem-oriented research has been productive and illuminating, it has limited our knowledge in important areas of adolescent health and development, including resilience, healthy decision-making and prosocial behavior. Research on health and healthy development can also help to identify alternatives to health-damaging behaviors that are attractive to adolescents while serving motivational needs. Similarly, research on successful adaptation and coping with adversity could have important implications for intervening with the many adolescents who are raised in less than ideal conditions.

Multiple influence models are viewed as important for both basic and applied research. Biopsychosocial models of causal influence consider both the interrelationships among biological, psychological and social development as well as their effects on behavior and health outcomes. Within these developmental domains, multiple sources of influence operate as well, such as the varied kinds of social and environmental contexts that interact to affect adolescent health and development. Using multiple settings for intervening with adolescents allows for the simultaneous delivery of reinforcing prevention messages from different individuals, groups, institutions, and/or systems.

Adolescents come from a wide variety of racial, ethnic, economic, cultural and language backgrounds. Greater recognition and representation of this

diversity is necessary to assure research results that have greater validity and generalizability and to better understand issues of relevance to specific populations. The expansion of research to include groups that differ in their salient sociocultural characteristics would also provide data with which to address cross-cultural and other comparative research questions.

## **Next Steps**

Concerns about the health status and future of young people in today's society have fueled an explosion of scholarly work on adolescents. The time is now opportune for building on this knowledge base and using it to improve the health and well-being of young people today and in the future. The results of our analysis point to a number of next steps that can be taken to implement a national research agenda for adolescent health. These include a more comprehensive articulation of the research agenda, strategic planning, and further assessment of human and fiscal resource needs.

### *Articulating the Research Agenda*

The full report points to a number of ways in which the research agenda could be better articulated. For example, there was great variability in the level of specificity evident in recommendations from different sources. If a research agenda is to serve as a useful tool for directing national research efforts, the research questions themselves must be clearly conceived and articulated. In terms of content, it is important to consider the broad, overarching research questions as well as identifying gaps in basic and foundation-building research. Few of the recommendations we reviewed focused on advances in the knowledge base that would be necessary to enable investigation of the ambitious research questions posed. We recommend that a task force be established to articulate the content of the research agenda for adolescent health. This task force would identify the broad, overarching issues of highest priority in adolescent health research; articulate critical research questions in each high priority area; identify essential, foundation-building research areas in need of further development; provide recommendations for research priorities; and develop a long-range plan that would incorporate both short-term goals and longer-term development.



While a number of previous activities have occurred that would provide essential information to such a task force, efforts of the scope we are suggesting for adolescent health have not been undertaken in a systematic way.

#### **Recommendation 1:**

Establish a task force to further articulate the content of the research agenda for adolescent health.

#### ***Strategic Thinking and Planning***

Strategic thinking and planning are crucial elements in developing an action plan that will allow for the implementation of a national research agenda for adolescent health. Elements in this process include careful identification of existing barriers, development of strategies for reducing their impact, and recognition of impending events that provide opportunities for action.

Both human and fiscal barriers were identified in the reports as impeding progress in research on adolescent health. Although there have been studies assessing the need for human resources to deliver clinical services to adolescents, less attention has been paid to human resource needs in the area of adolescent health research. To address these issues, we recommend that a task force on training needs for adolescent health research be established to: identify the highest priority areas for training in adolescent health research; assess current training activities and gaps in training opportunities; identify impediments to developing and/or implementing enhanced training initiatives; and make recommendations for action.

#### **Recommendation 2:**

Establish a task force on training needs for adolescent health research.

Moving the adolescent health research agenda forward will also require fiscal resources. Currently, children and adolescents receive less than 3% of

research funds allocated nationally; thus, many areas of child and adolescent research receive inadequate levels of funding. Funding needs were explicitly identified in recommendations spanning a wide range of content areas, as well as for grants to fund long-term longitudinal research, basic “foundation-building” research, methodological research with important application value, and research directed toward the development of high quality measurement tools for assessing a range of fundamental developmental and health-related constructs. We recommend the establishment of a task force on funding for adolescent health research. Using the content of the research agenda as a guide, this task force would: examine current levels of support for adolescent health research; determine levels of funding necessary to achieve research goals; identify the high priority research areas that are the most under-funded; and explore alternatives for increasing funding of adolescent health research.

#### **Recommendation 3:**

Establish a task force on funding for adolescent health research

#### ***Implementing Action Plans***

Moving a research agenda forward calls for the support of crucial stakeholders and decision-makers early and throughout the process of agenda-setting and implementation. Casting a wide net is particularly important given the variety of interests and institutions that could influence or be influenced by the research agenda.

Accomplishing this will require that linkages between research and practice be strengthened. Individuals and institutions involved in education, clinical practice, program development, community building and media will be more invested in and better served by research when it addresses the questions of greatest relevance to them and their respective constituencies. The practice community can educate the research community about the questions of greatest relevance to practitioners, thereby enhancing the value of research as a tool to answer relevant questions. Translating the results of

this research for the practice community further assists the research community in its dissemination and diffusion efforts. The development of community-based research networks will also be essential for conducting research to answer many of the most pressing research questions. Establishing formal mechanisms to link these diverse communities will be especially important in cases where spontaneous connections are unlikely to occur.

Establishing a bridge between research and policy is also essential. Policies regulating research are numerous and far-reaching, ranging from rules concerning adolescents' rights to participate in research studies to funding decisions that limit the kinds of research that can be conducted.

Recognition of policies that impede scientific progress in high priority areas may warrant efforts to change those policies. Educating policy-makers about the value of adolescent health research and enlisting their support for the research agenda should remain a stable component of any realistic implementation plan. Communicating the research agenda to policy-makers will require the efforts of individuals and groups who are able, through established channels, to reach those policy-makers and who are willing to advocate strongly for adolescent health research.

In order to succeed a research agenda and action plan must be responsive to changes that take place both inside and outside the research world. Research findings may point to new directions for inquiry and suggest changes in research priorities. Outside of the research world, an enormous variety of events could prompt changes in direction. These could include events as disparate as changes in the nature of graduate education, the development of new technologies, or the occurrence of political events that open or close acceptable research arenas.

Finally, a research agenda and plan for action needs to include plans for evaluating progress. Periodic assessments may lead to changes in priority-setting; they can also provide welcome reassurance. Without a means for assessing progress, we have no way of knowing which of our efforts have been successful, which have been failures, or why. Examining earlier efforts to establish a research agenda for adolescent health may be an important first step in helping to

identify appropriate action plans for the future and to stimulate thoughts about how to establish mechanisms for future evaluation efforts.

## Final Summary

Scholarly work on adolescence has expanded dramatically over the past twenty years. Many journals devoted specifically to adolescents have been established. It is no longer difficult to fill a large textbook with summaries of empirical research on adolescence; indeed, many such volumes have been published, especially over the last decade. Two professional organizations are devoted exclusively to this age group: the Society for Adolescent Medicine (formed in 1968) and the Society for Research on Adolescence (in 1986). Fueled in part by the availability of an empirical research base, numerous commissions and task forces focusing on adolescent issues have been established by government agencies (such as the former Congressional Office of Technology Assessment); quasi-governmental agencies (such as the Institute of Medicine and the National Research Council); philanthropic organizations (such as the Carnegie Corporation of New York and the William T. Grant Foundation); professional organizations (such as the American Medical Association and the American Psychological Association); and advocacy groups (such as the Children's Defense Fund). And, in 1992, the United States Congress established the Office of Adolescent Health within the Maternal and Child Health Bureau, Health Resources and Services Administration.

All these signs point toward a field that is growing, despite enduring fiscal challenges, and toward efforts that are clearly worth continuing and expanding. The time has come to take the crucial next steps that will allow us to identify and answer the most pressing research questions and to ensure the healthy development of youth in this and subsequent generations.



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