ISSUE BRIEF:

Towards Meeting the Needs of Adolescents: What Do We Know About Existing Adolescent Health Programs?

From the National Initiative to Improve Adolescent and Young Adult Health by the Year 2010

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What programmatic efforts has the U.S. Department of Health and Human Services (DHHS) supported to address the broad issue of adolescent health? This research brief follows up on a DHHS report, U.S. Teens in Our World*, that highlighted outcomes where American adolescents fare differently than their counterparts in other countries. We begin to paint a picture of the resources and programs available that may influence the areas of Health & Well-being, Fitness, Family & Peer Relationships, School Environment, Smoking, Alcohol Use, and Violence. Based on these findings, we provide implications for future efforts in adolescent health program development.*

Why is Adolescent Health Important?

The health and well-being of our country's adolescents have a major impact on the overall social and economic health of our nation. Today's adolescents are tomorrow's workforce, parents and leaders; and their future is shaped by the opportunities we create for them today. Adolescence represents a unique period of significant physical, cognitive and psycho-social development that brings with it special challenges and opportunities. Most adolescents are considered healthy when assessed by traditional medical markers, such as mortality rates, incidence of disease, and prevalence of chronic conditions. However, markers of overall well-being may require different assessments. Many adolescents may not seek care for chronic or persistent conditions because of lack of access to care or having irregular check-ups with medical visits used primarily for acute episodic issues such as respiratory infections or injuries. The *U.S. Teens in Our World* report shows that U.S. students rank at or among the highest of students in 29 countries in daily prevalence of backaches, stomachaches, headaches, difficulty sleeping, being tired in the morning and concurrent medication use for these problems. The clinical and public health community or parents may not be aware of the impact on youth well-being from these problems, particularly since they frequently occur as co-morbidities (Ghandour, Overpeck, Huang, Kogan, & Scheidt, 2004). As with these conditions, adolescents face a variety of physical and behavioral choices that can impact their health, safety and well-being. As a result, adolescents do encounter significant health problems, many of which are attributable to risky behavior. Furthermore, the attitudes and health practices developed in adolescence often continue into adulthood and play a major role in the development of adult health problems (Ozer, Park, Paul, Brindis, & Irwin, 2003). Thus, the definition of adolescent health has expanded beyond the prevention and treatment of disease and disability and the prevention of risky behaviors among individuals to the establishment of healthy environments.

This broader definition of health has important implications for programs that aim to improve adolescent health. Many of our traditional programmatic approaches have been directed primarily at changing individual behavior, often without considering the role of family, school, and community contexts in shaping individual behavior. An emerging consensus holds that without directing our efforts at each of these levels, we will continue to have limited success. An additional theme that emerges is that policy plays an important role in shaping adolescents'

The National Adolescent Health Information Center at the University of California, San Francisco and Child Trends are pleased to announce a new partnership. With support from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, our two institutions will collaborate to create resources and provide assistance to improve the health of young people and their families. This brief is one of the first products of our collaboration.

environments. Policy affects the types of resources made available to young people. Moreover, it reflects priority placed on investing in young people, for example, by having policies and practices that support youth and families.

Given the importance of this lifestage, it is important to assess where we are as a nation in terms of responding to the varied needs of adolescents. In 1982, an international research study (coordinated with the World Health Organization) began to examine the influences of individual assets and contexts on adolescent health in different countries (Currie, Hurrelmann, Settertobulte, Smith, & Todd, 2000). Since the initial cross-national data collection in 1983/84, data have been collected every four years. Findings from the study support the notion that family and school environments exert a strong influence on adolescent health and well-being. The study also provides prevalence data, showing cross-national comparisons across several health and environmental domains.

U.S. researchers prepared a special report, *U.S. Teens in Our World* (herein referred to as the *U.S. Chartbook*) (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2003), that highlighted those outcomes where American adolescents (11 to 15 years old) fare differently—sometimes better, sometimes worse—than their counterparts in other countries. These differences spanned seven content areas: Health & Well-being, Fitness, Family & Peer Relationships, School Environment, Smoking, Alcohol Use, and Violence. For instance, the Health & Well-Being content area covered topics such as feeling lonely, sleep difficulties, and having backaches or headaches, while the School Environment area covered topics such as pressure to do school work and student involvement in rule making. An important step in understanding how to respond to the differences between adolescents in the U.S. and those in other countries is to ascertain what resources and programs are available that may have an impact on those outcome areas where adolescents in the U.S. seem to be having more difficulties.

Goal of the Government Program Review

With the support of the Maternal and Child Health Bureau, The National Adolescent Health Information Center and Child Trends undertook an extensive programmatic review to better understand the types of youth programs available that may influence the health measures presented in the *U.S. Chartbook*. We reviewed the existing "state of the state" of information available on nearly 60 adolescent health programs supported by the Department of Health and Human Services (DHHS). In addition, our report, *Towards Meeting the Needs of Adolescents: An Assessment of Federally Funded Adolescent Health Programs and Initiatives within the Department of Health and Human Services*, addressed four important questions regarding federal efforts to improve adolescent health:

- Is there a national policy that addresses the promotion of adolescent health?
- Is DHHS making an effort to create healthier environments for adolescents through a multi-level approach?
- What is the status of evaluations of federally funded adolescent health programs?
- What can we learn from existing evaluations of programs that seek to influence adolescent health outcomes?

This review provides a picture for policymakers and program managers to help shape future efforts as they make the most effective use of resources in meeting the varied needs of adolescents, their families, and the communities in which they live. As such, we also provide implications for future endeavors.

We recognize that our review of adolescent health programs is not exhaustive. The reviewed programs provide a snapshot of the existing efforts at a given time. Due to the difficulties discussed within the full report regarding locating programs funded by federal agencies, we conclude that it would be near impossible to conduct a truly exhaustive review as there would be no way to know if any programs were being excluded.

Results

Building on the extensive data collected by the White House Task Force on Disadvantaged Youth, we performed a detailed review of the DHHS-funded programs identified in its final report (herein referred to as the *White House Report*) (The White House Task Force for Disadvantaged Youth, 2003). This report was chosen as the base for our program sample because it provided an up-to-date list of

Table 1: NUMBER OF DHHS-FUNDED PROGRAMS BY THE SEVEN CONTENT AREAS

SEVEN CONTENT AREAS	HEALTH & WELL BEING	FITNESS	FAMILY & PEER RELATIONSHIPS	SCHOOL ENVIRON-MENT	ALCOHOL	SMOKING	VIOLENCE
Health & Well–Being	52	12	48	28	26	11	27
Fitness	12	12	12	11	8	4	9
Family & Peer Relationships	48	12	49	28	26	11	27
School Environment	28	11	28	28	17	10	20
Alcohol	26	8	26	17	31	10	19
Smoking	11	4	11	10	10	11	7
Violence	27	9	27	20	19	7	27

Note: *Highlighted cells indicate the total number of programs within a content area. Non-highlighted cells indicate the number of those programs that also fall within, at least, one other category.*

highly relevant federal programs that serve youth, and reflected recent efforts by federal program staff to identify and collect program information. By selecting DHHS-funded programs only, we spotlight the efforts of the organization with the strongest portfolio and investment in the health arena, although we fully recognize that other federal Departments, for example, the Department of Education and Department of Justice, also make strong investments on behalf of young people. Of the 111 DHHS-funded programs in the *White House Report*, 57 were determined to serve adolescents in the age group covered by the *U.S. Chartbook* (11 to 15 years old) and cover at least one of the seven content areas. Detailed information on those 57 programs was obtained through Internet searches and reviews of program and research databases. Based on this information and a cross-reference check of the 33 program goals cited in the *White House Report*, each of the programs was classified within the content areas identified in the *U.S. Chartbook* (Health & Well-Being, Fitness, Family & Peer Relationships, School Environment, Smoking, Alcohol Use, and Violence). Table 1 shows the number of programs in each of the seven content areas and Table 2 shows each of the programs by the seven content areas. Please see the full report for detailed information on the methodology used in this review (available at http://nahic.ucsf.edu/index.php/recommendations/C3) and the MCH Library (http://mchlibrary.info).

The review points to the complexity of categorizing these diverse efforts within a specific content area. Based upon their descriptions, we determined that the majority of the programs covered several content areas simultaneously. Within the seven content areas, broad areas such as Health & Well-Being, Family & Peer Relationships, and School Environment represent multi-faceted programs and initiatives, many of which also overlap with more specific content areas, such as Violence, Alcohol, and Smoking. For example, as shown in Table 1, of the 52 programs classified as Health & Well-Being, 26 also included a component on alcohol, 11 included a component on smoking, and 27 included a component on violence. Similarly, under the area of violence prevention, efforts to reduce alcohol and tobacco use were often included. Programs' reasons for including these additional areas may not be readily apparent, but might reflect research findings pertaining to the clustering of adolescent risk-taking behaviors and the necessity to deal with a variety of risk-taking behaviors simultaneously. Thus, while a program's focus may be specifically on the topic of tobacco

reduction, it may be incorporating the issue of relationships, such as helping young people examine the influence of peer pressure. Many of the content areas also include additional topics not specifically covered in the seven content areas examined by the *U.S. Chartbook*, such as depression and mental health. It is clear that programs overlap within and across the seven areas, but it was not easy to assess the level of cross-program communication and information sharing that is in place.

Types of Programs and Population Served

Table 2 provides the name of each program reviewed, classified by the seven content areas. As indicated by this list of programs, DHHS has a broad array of efforts underway. The majority of programs support grants for services or projects. Other funds support resource centers that provide in-depth information on specific content areas and broker information for professionals. Still other funds support research grants and informational campaigns to raise awareness on topics, such as mentoring and violence prevention. These efforts help reach thousands of low income and underserved adolescents. In fact, many of the programs include special groups of adolescents, such as medically indigent, homeless, abused, Latino, Latina, and Native American youth.

Funding

The challenge of narrowly categorizing existing programs within any one specific content area makes a financial analysis of federal investments in each of the content areas difficult. For example, as reported in the *White House Report*, the individual investments made in each of the seven areas vary greatly, from $100,000 (for programs such as Girl Power! and Soy Unica Soy Latina Hispanic) to $1.7 billion (for the Social Services Block Grant).[1] Within specific content areas there is also a tremendous range of investments, with the median ranging from $8.8 million (Alcohol) to $50.7 million (Smoking). There also did not appear to be any relationship between the number of programs within each content area and the amount of funding available. For example, in the area of Health & Well-Being, there were 52 different programs in place that pertained to this topic, with a median of $13.9 million dollars per initiative. In contrast, there were fewer programs (11), but higher funding levels (a median of $50.7 million) in the area of Smoking. Furthermore, as Health & Well-Being, Family & Peer Relationships, and School Environment have such a broad and overlapping mandate with the other content areas, it makes it difficult to comment on the specific dollars devoted to any one topic. For example, 49 of the 57 programs are classified as working in the area Family & Peer Relationships programs. Of the 49 programs, over half include some element on school environments and many of those programs also pertain to violence and alcohol.

Evaluation

It is also challenging to ascertain the relationship between program evaluation findings and current federal investments and service portfolios. This review found little information regarding current evaluation efforts underway within the seven content areas. In fact, it was unclear whether existing programs use previously evaluated curricula or other types of successful interventions. Analyzing whether research is being incorporated in new programmatic initiatives would be extremely useful in assuring that the next generation of Government-funded programs benefit from the lessons learned from well-evaluated programs, or at a minimum, best practices.

Discussion

Our results clearly demonstrate that the Federal government invests a significant amount of resources and offers a significant number of programs that may influence those outcome areas where U.S. adolescents are faring differently compared to youth in other countries; however, the information is not easily attainable or decipherable. Based on these results, we provide a discussion of four important questions regarding federal efforts to improve adolescent health as well as implications for future progress.

First, **is there a national policy that addresses the promotion of adolescent health?** Although there is significant investment in the area of adolescent health, no clearly articulated national policy pertaining to adolescent health was identified in this review. The review identified three implications for future work: 1.) Need for an articulated national policy on adolescent health; 2.) Need for

[1] The Social Services Block Grant (SSBG) funds States, territories, and insular areas for the provision of social services directed toward achieving economic seld-support or self sufficiency, preventing or remedying neglect, abuse, or the exploitation of children and adults, preventing or reducing inappropriate institutionalization, and securing referral for institutional care, where appropriate.

inter-agency collaboration; and 3.) Need for a federal adolescent health program repository and technical assistance (TA) center. Easily accessible information allows those individuals designing or selecting programs to be able to determine what does and does not work with different populations, as well as to identify important lessons on how to implement a program to achieve the greatest results. Additionally, by making this information readily available, those looking for programs will be able to choose programs that have been shown to be effective and avoid programs which have been shown to be ineffective. At a minimum, information on programs that have recently undergone or are undergoing evaluation could be listed and highlighted on federal websites.

Second, **is DHHS making an effort to create healthier environments for adolescents through a multi-level approach?** Promising efforts appear to be made in using a multi-level approach to improve adolescent health, yet much work remains in this area. Available information suggests that DHHS has begun to take environmental factors into account in program development, but additional systematic efforts are needed. Furthermore, available information indicates that there is strong commitment by DHHS to serve disadvantaged youth. In response to these findings, we identify five implications for future work: 1.) Need to utilize a greater number of resources and approaches to help deliver messages about adolescent health; 2.) Need to share lessons learned across content areas; 3.) Need to incorporate "character development" in programming, reflecting research that suggests that improving social skills and relationships can help adolescents to negotiate and navigate through this strategic developmental period and avoid risks (Jekielek, Moore, & Hair, 2002); 4.) Need to identify programming gaps across federal agencies; and 5.) Need to address adolescents' developmental stages in program development.

Third, **what is the status of evaluations of federally funded adolescent health programs?** Our search for evaluations of federally funded adolescent health programs found that very few programs have been experimentally evaluated. Similarly, it was not apparent whether at a minimum, existing programs use previously evaluated curricula or other types of successful interventions. In general, it is extremely difficult to determine if current program practices are evidence-based or if rigorous evaluations have been conducted because of the disconnect between large grants, such as demonstration projects, and programs with a national scope. For example, sources such as the White House Report and the Catalog of Federal Domestic Assistance (CFDA) give grant information which can not necessarily be linked to the specific program level where evaluations are performed. Likewise, it is impractical to perform the converse search to determine whether programs receive any federal funding, and if so, under what mechanisms, and what types of evaluation reporting are required (if any). Two primary implications emerge from this review: 1.) Need for more program evaluations and 2.) Need for more readily available program information (including program evaluation reports).

Fourth, **what can we learn from existing evaluations of programs that seek to influence adolescent health outcomes?** In the absence of evaluations of the DHHS-funded programs reviewed in this report, existing program evaluations of smaller but similar programs can help decision-makers make better selections among available programs and strategies and as a consequence develop better policies. Our review identified two implications regarding future evaluations: 1.) Need for synthesis of knowledge in the field and 2.) Need for greater accountability, including the incorporation of best practices and effective program interventions and the collection and public reporting of indicators of program effects.

Conclusion

Ultimately, there are multiple efforts underway to address adolescent health, reflecting this complex, multifaceted issue. More can be done, however, to help guide and improve these efforts. Greater collaboration across federal agencies and accessibility to program information will facilitate both the creation of programs to improve adolescent health and the collection of better information on adolescent health status. Greater accessibility to information allows program practitioners to find better program models to follow when implementing programs and also allows for collaboration and collective learning. Publicly available program evaluations allow for program practitioners to learn from other programs and avoid "reinventing the wheel" when implementing new programs or

adapting current programs. Additionally, shared information allows for a collective approach to addressing difficult questions about adolescent health, such as "Which approaches to adolescent health have the greatest effects?" and "How do you get a child's family and community involved to help create a comprehensive approach for addressing adolescent health?"

Clearly, the scope of reviewing even one federal agency among several that touch the lives of adolescents and their families demonstrates the complexity of conducting such a synthesis and analysis. We encourage others within the federal government, as well as stakeholders concerned with adolescent health at the state and community levels, to consider such an analysis of their own endeavors.

Table 2: DHHS-FUNDED PROGRAMS BY SEVEN CONTENT AREAS

PROGRAM NAME	HEALTH & WELL BEING	FITNESS	FAMILY & PEER RELATIONSHIPS	SCHOOL ENVIRON-MENT	ALCOHOL	SMOKING	VIOLENCE
Alcohol Research Center Grants					X		
Alcohol Research Programs					X		
Circles of Care	X		X				
Community Based Family Resource and Support Program	X		X				X
Community Initiated Interventions	X	X	X	X	X	X	X
Community Services Block Grant	X	X	X	X	X		X
Community Youth Mental Health Promotion and Violence/Substance Abuse Prevention	X		X	X	X		X
Comprehensive Community Mental Health Services Program for Children and Their Families	X		X				
Consolidated Health Centers	X	X	X	X			
Cooperative Agreements for Strengthening Communities in the Development of Comprehensive Drug and Alcohol Treatment Systems for Youth	X		X		X		X
Development of Comprehensive Drug/ Alcohol and Mental Health Treatment Systems for Persons Who Are Homeless	X		X		X		

Table 2: DHHS-FUNDED PROGRAMS BY SEVEN CONTENT AREAS (continued)

PROGRAM NAME	HEALTH & WELL BEING	FITNESS	FAMILY & PEER RELATIONSHIPS	SCHOOL ENVIRON-MENT	ALCOHOL	SMOKING	VIOLENCE
Drug Abuse Research Programs					X		
Family Support (PNS)	X		X				
Girl Power!	X				X		
Grants to Improve the Quality and Availability for Residential Treatment and its Continuing Care Component for Adolescents	X		X		X		X
Healthy Schools Healthy Communities	X	X	X	X	X		X
Hispanic Latino Boys and their Fathers			X		X		
Hotline Evaluation and Linkage Program	X						
Injury Prevention and Control Research	X		X	X			X
Integrated health and behavioral health care for children, adolescents, and their families	X		X		X		
Maternal and Child Health Block Grant	X		X				
Mental Health Block Grant	X						
Mental Health Research Grants	X						
Mentoring and Family Strengthening	X		X	X	X		X
National Academic Centers for Excellence on Youth Violence Prevention	X		X	X			X
National Adolescent Health Information Center; Adolescent Health Center for State Maternal and Child Health Personnel	X		X		X	X	X
National Association for Children of Alcoholics	X		X		X		

Table 2: DHHS-FUNDED PROGRAMS BY SEVEN CONTENT AREAS (continued)

PROGRAM NAME	HEALTH & WELL BEING	FITNESS	FAMILY & PEER RELATIONSHIPS	SCHOOL ENVIRON-MENT	ALCOHOL	SMOKING	VIOLENCE
National Bone Health Campaign	X	X	X	X			
National Clearinghouse on Alcohol and Drug Information	X		X	X	X	X	
National Suicide Prevention Resource Center	X		X	X			
National Youth Sports Program	X	X	X	X	X	X	X
National Youth Violence Prevention Resource Center	X		X	X			X
Parenting is Prevention/ National Families in Action	X		X	X	X		X
Policy Research and Evaluation Grants	X	X	X	X			X
Practice Improvement Collaborative	X		X		X		X
Prevention of Underage Alcohol Use	X		X	X	X	X	X
Prevention Research Centers Program	X	X	X				
Projects of National Significance	X		X				
Promoting Safe and Stable Families	X		X		X		X
Regional Alcohol and Drug Awareness Resource Network (part of NCADI contract)					X		
Runaway and Homeless Youth–Basic Center program	X		X	X	X		X
Runaway and Homeless Youth - State Collaboration/ Demonstration Grants for Positive Youth Development	X	X	X	X	X		X
Runaway and Homeless Youth–Transitional Living Program and Maternity Group Homes	X	X	X	X	X	X	X

Table 2: DHHS-FUNDED PROGRAMS BY SEVEN CONTENT AREAS (continued)

PROGRAM NAME	HEALTH & WELL BEING	FITNESS	FAMILY & PEER RELATIONSHIPS	SCHOOL ENVIRON-MENT	ALCOHOL	SMOKING	VIOLENCE
Runaway and Homeless Youth/Education and Prevention Grants to Reduce Sexual Abuse of Runaway, Homeless and Street Youth: Street Outreach Program	X	X	X	X	X		X
Rural Health Outreach Grant Program	X		X				
School Guidelines and Related Activities of National Strategy for Suicide Prevention	X		X	X			X
Social Economic Development Strategies	X		X				
Social Services Block Grant	X		X				X
Social Services Research and Demonstration program	X		X				
Soy Unica Soy Latina Hispanic Initiative	X		X	X	X	X	X
State Incentive Grants Discretionary Program	X		X	X	X	X	
Statewide Family Networks	X		X				
Substance Abuse Prevention and Treatment Block Grant	X	X	X	X	X	X	X
Substance Abuse Prevention and Treatment Block Grant/ Prevention Set-Aside	X		X	X	X	X	
Targeted Capacity Expansion– Prevention and Early Intervention	X		X	X			
Tobacco Control Program	X		X	X		X	
Youth Violence Prevention Program	X		X	X			X
TOTALS	**52**	**12**	**49**	**28**	**31**	**11**	**27**

Note: *Categorization within the seven content areas is primarily based upon the program goals cited in the White House Report. Therefore, imprecise categorization may be the result of reporting instruments and ambiguous definitions used for the compilation of that report. However, as noted previously, the White House Report has been determined to be the best available source of DHHS-funded adolescent health program information.*

Bibliography

Currie, C., Hurrelmann, K., Settertobulte, W., Smith, R., & Todd, J. (2000). *Health and health behavior among young people. Health Behavior in School-aged Children: A WHO cross-national study (HBSC) international report.* Copenhagen, Denmark: Health Promotion and Investment for Health, World Health Organization Regional Office for Europe.

Ghandour, R.M., Overpeck, M.D., Huang, Z.J., Kogan, M.D., & Scheidt, P.C. (2004). Headache, Stomachache, Backache, and Morning Fatigue Among Adolescent Girls in the United States. Associations With Behavioral, Sociodemographic, and Environmental Factors. *Arch Pediatric & Adolescent Med,158*:797-803.

Jekielek, S., Moore, K.A., & Hair, E.C. (2002) *Mentoring programs and youth development: A synthesis*. Washington, DC: Child Trends.

Ozer, E.M., Park, M.J., Paul, T., Brindis, C.D., & Irwin, C.E., Jr. (2003). *America's adolescents: Are they healthy?* San Francisco, CA: University of California, San Francisco, National Adolescent Health Information Center.

U.S. Department of Health and Human Services, Health Resources and Services Administration. (2003). *U.S. Teens in Our World*. Rockville, Maryland: U.S. DHHS.

The White House Task Force for Disadvantaged Youth. (2003). *White House Task Force for Disadvantaged Youth: Final Report.* Washington, DC: Author.

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