

Bridging the Gap: Next Steps in Developing and Using Indicators to Improve Adolescent Health

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Introduction

In the effort to bring limited resources to bear on the health care needs of adolescents, health care professionals, advocates and communities are striving to identify a set of meaningful health indicators. In the last decade, efforts to monitor adolescent health have undergone several important phases of conceptualization. Understanding this conceptual evolution can help shape the future direction and steps necessary to establish a comprehensive, balanced approach to measurement and monitoring, as well as community mobilization. An underlying assumption throughout this paper is that a collection of indicators represents an important tool with which communities can develop priorities and strategies to improve the health status of their young people.

In the early 1990s, program effectiveness was measured primarily by process indicators. Without reference to outcomes, the implication of this reliance on process was that health goals would be achieved by ensuring that an adequate number and variety of services were delivered to the target population. While adequate health care access is obviously fundamental, access alone cannot guarantee positive outcomes. When outcomes were adopted as the measure of accountability, a significant shift occurred. This crucial change resulted in efforts to establish a set of meaningful indicators as a means of assessing and monitoring programmatic effects. This approach also demanded the creation of adequate data collection systems to measure progress in a consistent manner over time.

As discussed in the two accompanying papers (Oliva et al., 2001; Cagampang et al., 2001), a number of national indicator reports have helped drive policy formation and resource allocation. Initially, monitoring adolescent health indicators was thought to be sufficiently adequate to provide needed direction to professionals and communities. Many communities adopted (and continue to

use) a “report card” approach (Halfon, Newacheck, Hughes, and Brindis, 1998) to gauge the health status of adolescents. Further attempts to recognize health indicator differences led to the collection and analysis of data by gender, socioeconomic status (SES), race/ethnicity, and geographic variability. However, this important advance still did not provide communities sufficient tools for assessing which options to pursue in seeking to improve the health status of their youth.

Indicator reports are unable to tell a complete story; they don’t sufficiently capture the full array of factors that contribute to the existing health status of a community’s young people. But in the quest to create comprehensive reports, large numbers of indicators have been identified on many different aspects of adolescent health. A commitment to developing a comprehensive profile of adolescent health is reflected in recent efforts to establish the Center for Disease Control and Prevention’s 2010 National Health Objectives. Over 100 of the 2010 Health Objectives represent consensus among experts on the health indicators that reflect the current health status of young people. These objectives cover major areas of adolescent health, many of which stem from health behaviors, with short- and long-term implications for adult health.

While a comprehensive profile is useful in reviewing all aspects of adolescent health, it can also be overwhelming for communities in search of a starting point in their effort to respond to identified needs. Thus, a subset of 21 Critical Health Objectives was selected by the CDC and a national expert panel for special focus because they represent the most important health areas affecting youth: unintentional injury, violence prevention, reproductive health, substance use, mental health and suicide, and chronic disease prevention.

Although the 2010 Health Objectives were selected in part because of the availability of matching national and state data sets for monitoring purposes, the objectives do not provide communities with guidance regarding which strategies are needed to address health needs, nor how to prioritize among a variety of needs, given available resources and the political will necessary for action.

The use of indicators, as reflected in the 2010 Health Objectives, also perpetuates a categorical approach, where indicators are treated as independent, individual factors, and not as the

linked and interdependent forces they often are. Furthermore, indicators are not contextualized within the broader socio-political and health environment in which adolescents are raised. In reality, we must build on what research has clearly shown: risk behaviors tend to cluster, and engaging in one risk often contributes to other negative outcomes. For example, adolescents who drink alcohol are more likely to drive under the influence, have unprotected sex, use illicit substances, and/or engage in other unsafe and violent behaviors. In addition to focusing on a specific issue, such as alcohol use, we must consider indicators that factor in the multiple dimensions and connections among health risk behaviors.

The wide use of indicators also raises issues about measurement. For example, when the adolescent is furnishing the information, how do we reliably assess the family's SES? What are the most effective ways to measure risk-taking behavior among adolescents? Can adolescents recall different behaviors over their lifetime? Over a year, six months, or one month? Other potential problems include ascertaining the quality and consistency of the data being reported.

While U.S. census data are generally considered reliable, it has been shown that the number of black, Hispanic, and white children in large urban settings are substantially underestimated. Other ethnic groups, such as Southeast Asian and Hispanic immigrants, are often overlooked. U.S. census data sources are often different and incompatible, including school catchment areas, census tracts, health districts and other specially defined service areas. This limits our ability to draw upon multiple and consistent data sources to produce comparable profiles of adolescents in different neighborhoods. Other problems include long time lags between data collection and their release, accessibility to the data, and changes in social policies or medical technology that result in a dramatic increase or decrease in an indicator, without any change in the actual rate of the behavior. For example, more sensitive detection tests of sexually transmitted infections can appear to reflect a dramatic increase in the number of chlamydia cases, when in actuality it is the increased sensitivity of new screening tests that uncovers previously undetected cases.

Despite these limitations, the initial use of indicators and sub-analyses began to show that different groups of adolescents required different kinds of interventions. However, communities

tended to focus on specific problem areas, such as substance abuse, teenage pregnancy, youth violence or injury—in other words, those problems perceived at any given time as the greatest threats to the health status of youth and the well-being of the community. Perhaps not surprisingly, the use of indicators led to categorical funding streams that narrowly defined responses to specific problem areas. While it is important to recognize that any one of these problems is complex in and of itself, the solutions that emerged were often limited in scope.

Even when extensive research began to document the many interrelated connections between health problems, as well as a common set of underlying antecedent factors, categorical health indicators drove one-dimensional community efforts. For example, while alcohol and drug abuse clearly represent health-damaging risks, their connection to other negative health behaviors are rarely taken into account by program planners and providers, or policy makers. Linking behaviors such as alcohol use and driving is an exception to a purely categorical approach, but typically, programmatic efforts to prevent such health-damaging behaviors as unprotected sexual intercourse (resulting in unintended pregnancies, sexually transmitted infections and HIV/AIDS), self-injury, and suicide attempts are approached categorically.

Shifting from Deficits to Assets

Many professionals have begun to call for a shift from monitoring adolescent “problems,” or deficits, to documenting assets. This new approach moves beyond defining health only as the absence of problems (e.g., pregnancy, violent behavior, drug use) to considering health and well-being as synonymous. The latter approach puts assets and protective factors, such as connection to supportive and pro-social adults, at the center of data collection and monitoring efforts. As this shift in focus has emerged, however, it appears that many professionals and communities do not have access to a comprehensive data set of indicators that allow communities to measure both strengths and limitations.

A broader audience is beginning to recognize that the majority of our previous approaches did not incorporate opportunities to harness such adolescent protective factors as connectivity to adults. Strategies now being adopted in some communities attempt to strengthen parent-child

connections, enhance resiliency, and build on the assets of young people. Beyond reducing morbidity and mortality, these communities intend to achieve improvements in successful functioning, health, and overall and well-being.

Fundamentally, this shift in philosophy influences the types of solutions that are selected. If we see youth as competent individuals and community assets, the approaches we take are likely to be more supportive and positive. In contrast, if we view adolescents as problems, then the solutions we adopt are likely to treat them as such. Focusing on strengths and healthy development points to the need to ensure access to services and opportunities for all youth to thrive. It turns our attention to creating supportive environments, rather than correcting deficiencies in teens. It calls for data collection that focuses on adolescents' strengths and assets, as well as their problem status. It also recognizes that adolescents are anchored in their social environments and need positive role models if they are to exhibit positive, socially responsible behavior.

The higher the number of risk factors in the environment, the more protective factors youth need in order to emerge into a healthy, successful adulthood. These social and community contextual factors have often been overlooked and not incorporated into the approaches selected. Thus, little attention has been placed on the influence of negative adult role models on adolescent behavior (i.e., directly within the home and community environment, as well as indirectly through the media).

We anticipate a more refined profile of adolescent health as the science behind asset indicators and effective measurement tools develops, and as national data sets incorporate these markers. While we currently collect data on the percentage of youth who smoke or use illicit drugs, we know very little about the percentage of youth who have protective elements in their lives (e.g., how many can identify at least one caring adult in their lives, which is an important indicator of resiliency). Such data would enable us to better ascertain whether or how assets interact with risk-taking behaviors. For example, research has documented that children of smokers are themselves more likely to smoke. However, further research is needed to ascertain whether there are protective factors that mitigate the temptation to smoke, such as internal assets of independent problem-solving skills, or such community factors as strong anti-tobacco health education campaigns and policies

restricting access to cigarettes. Clearly, increasing efforts to measure the availability of supportive environments will facilitate moving beyond narrow categorical approaches to monitoring adolescent health status. We need research that helps to illuminate the underlying internal and external mechanisms that influence adolescent behavior.

While there will continue to be a need to gather data on morbidity and mortality indicators, a balance between indicators of health-compromising behaviors and indicators of well-being will need to be achieved. Furthermore, far greater information about the antecedent factors of many health-risk behaviors will be needed, as will assistance for communities as they explore which levels to target (e.g., changing individual behavior, changing social and familial context, or both). In short, improvements are needed both in health indicators and indicators of well-being.

With the selection of a common set of indicators, questions arise as to the most appropriate levels for action for each type of indicator. The role of government at the federal, state, and local levels will be important in terms of resource allocation. The respective roles of community members, providers, program managers, and researchers must also be considered so that the use of data for program development and management can be determined.

Gaps in Advancing an Agenda: Telling the Indicator Story

Gaps and limitations in data are likely to delay an adolescent health agenda built on a common set of measurable indicators. Establishing a consensus of which domains to use for monitoring youth assets will not be easy, nor will developing well validated indicators, as direct or proxy measures, come simply and quickly. The domains in which risk-taking behaviors are measured have been well tested and incorporated across a number of national data sets. However, risk-related indicators are not always consistently measured across data sets, trend data are not always highlighted, and even the set of risks that are measured across instruments are not consistent. And, although there appears to be strong consensus in measuring and monitoring such health behaviors as tobacco, alcohol, and drug use, sexual behavior, and injury, little has been done to strengthen our analyses of these areas. Thus, beyond the “tip of the iceberg” set of indicators that receive a great

share of public attention, much remains to be done to refine the set of antecedent factors that impact the indicators being measured.

Defining antecedent variables is especially important because monitoring behavioral, risk-related outcomes is far more complex than monitoring the outcomes associated with infectious diseases. Achieving greater clarity about factors that may contribute to or are associated with behavioral outcomes has a far greater role to play in helping communities understand what they can do with the data and resources to which they currently have access. Understanding the pathways that lead to the outcomes being measured will enable communities to determine appropriate, effective points of intervention.

By clearly defining the problem and its antecedent factors, solutions can be better applied. For example, for homicide and suicide, the indicator is the same—unintentional injury. Yet the antecedent factors may be very different, requiring different approaches toward a solution. Coming up with an accurate problem analysis continues to be challenging; even when high quality information is readily available, knowledge of antecedent indicators may not provide communities with clear directions on which strategies to adopt. For example, in the area of pregnancy prevention, an extensive review of the literature documents that there are 20 contextual and 28 individual antecedent factors that have been shown to delay sexual initiation, six contextual and 31 personal factors that increase condom use, and 11 contextual and 16 individual antecedent factors that protect against too-early pregnancy (Kirby, 2001). Indicators from three community domains and five individual domains are protective antecedent factors to all three of these sexuality-related behaviors. How these associated relationships interact (e.g., how many are associated vs. how many can be treated as causal factors) creates a challenge for health and community professionals seeking to develop adolescent pregnancy prevention interventions.

Given the large number of indicators for a wide variety of adolescent health problems, and the fact that some may cluster across and within the behaviors, which antecedent factors are amenable to individual, family, and community levels of intervention? What are the underlying mechanisms or behavior patterns? Which of these antecedent factors should be targeted first? And

which should be targeted subsequently? Are the antecedent factors similar across gender, ethnic/racial, and developmental ages? If not, how do communities prioritize among the factors in shaping their strategies?

Furthermore, many of the antecedent factors shape an interrelated set of outcomes, and in turn, are influenced by additional antecedent factors. For example, results from the Add Health analyses document that academic problems significantly contribute to adolescent risk-taking behavior, such as substance abuse. Other literature also documents that parents' use of psychological control (e.g., demeaning and isolating punishments) as a parenting style contributes to academic problems in school. Thus, ascertaining in which areas to intervene raises ethical questions regarding the rights of society to shape parental discipline as a means of reducing risk-taking behavior among adolescents. Perhaps not surprisingly, communities have often focused on attempting to reduce adolescent risk by directly focusing on the problem behavior, rather than attempting to deal with the broader issues of academic success and parental disciplinary style. More research is needed to ascertain how these relationships actually influence behavior, and how they interact with other factors, such as community contextual factors, that either encourage or discourage growing up with a strong set of assets.

An example of the use of antecedent factors in “telling a compelling story” is the effort of the Robert Wood Johnson Foundation in the area of substance abuse. Their updated version of *Substance Abuse: The Nation's Number One Health Problem: Key Indicators for Policy* (Schneider Institute for Health Policy at Brandeis University, 2001), includes an analysis of short- and long-term trends in tobacco, alcohol and illicit drug use over the past three decades. Based upon these trends, researchers conclude that substance abuse causes more deaths, illnesses, and disabilities than any other preventable health problem today, and that there is a significant gap between what is known about prevention and treatment and what is actually done to prevent and treat the problem.

This new Chartbook examines a number of factors that influence trends in substance abuse, including early use, media depictions of use and abuse, and prevalence and use of treatment services. It also discusses the economic implications of substance abuse; the relationship between substance

abuse and education, income, and gender; and the role of regulatory strategies to reduce tobacco use and alcohol abuse. The Foundation has also created an online substance abuse resource center (<http://substanceabuse.rwjf.org>) that consolidates a wealth of data and reports from the Foundation, grantees, and other sources about the abuse of alcohol, tobacco, and illicit drugs and efforts to prevent harm from their use. Communities can use this resource as a starting point to consider options they wish to explore in responding to the issue of substance abuse.

In the area of adolescent health, such a repository of information would be needed in all major aspects (e.g., injury, sexual behavior, nutrition, and mental health, as well as links across the different problem areas) before communities could begin to consider where to establish their priorities. While substance abuse is clearly the major cause of preventable health problems, communities need to look closely at the specific needs of their own youth before determining the types of strategies they will want to prioritize.

Creating Consensus in Youth Development as a Means of Advancing the Indicator Agenda

In the area of youth development, resiliency, and protective factors, consensus regarding the set of indicators to measure within each of these domains has not yet been clearly established. As reviewed in the second paper (Cagampang et al.) in this series, there are areas of clear agreement across a number of theoretical schools about which concepts to highlight, but far less agreement as to which indicators constitute the means to adequately measure youth development. Findings regarding the level of resiliency, assets, strengths, and other aspects of what has been generally labeled “youth development” and its relationship to health protective factors, point to the need for a comprehensive and commonly adopted set of indicators. As consensus emerges on both which domains and which validated measurements are best utilized, it will be considerably easier to incorporate these indicators and/or their proxy measures into existing data sets. What will remain challenging is to prioritize among indicators so as not to add to the burden of survey respondents with instruments of exhausting length.

In the meantime, much can be done at the community level to bring together individuals concerned with promoting positive youth development and preventing adolescent risk-taking

behaviors. Attempts to increase adult and adolescent connections and to decrease feelings of isolation for youth lie at the heart of youth development and asset building. Mentoring and volunteer programs are but two arenas that support and encourage adults to develop meaningful and sustained relationships with children and youth.

Linking Indicators of Youth Development and Protective Factors to Social Contextual Indicators

The increasing body of research that documents the critical influence of family, peers, education, and community factors associated with positive health outcomes for adolescents suggests the need to develop stronger linkages between the contextual framework and that of the youth development movement. While tools to measure individual-level data receive the greatest attention, it is also important to consider the simultaneous development of measures of familial and community contextual factors and resources (also known as social capital) that shape external assets and opportunities available to youth.

The use of administrative data, for example, as well as self-report surveys, helps to draw a broader profile. Administrative data collected primarily by government entities can provide a snapshot of cognitive development (e.g., school administrative data that show how many students graduate, how many are behind in grade), outcomes and behaviors (e.g., vital statistics, health surveillance, social service data, crime data), and physical health (e.g., death certificates, hospital discharge data, emergency room data). Administrative data are considered to be weaker sources of data to measure psychological, emotional and social development. With the exception of the cognitive development domain, many of the indicators are heavily weighted towards negative outcomes. Among the social context domains that influence youth development, administrative data are strongest in the domains of safety, social norms, and opportunities for skill-building. They are weak to nonexistent in the domains of structure, emotional and intellectual support, opportunities for efficacy, and social integration.

Adolescents' perceptions of the types of social supports in their lives should also be considered. Further clarity regarding the role of such external assets as familial and community indicators points to the importance of monitoring these factors simultaneously with individual

factors. The social and community context also underscores the need for interventions aimed at that level, interventions that will focus on changing the environment to provide for a nurturing community.

Finally, the indicators selected should be scientifically valid, and the data elements measuring the indicator or its proxy should be feasible to collect in a variety of settings and over consistently long periods of time, and should be linked to a broad array of antecedent factors and community indicators.

Developing Analytical Approaches to Expand the Utility of Existing Information

The goal of achieving a comprehensive and multidimensional adolescent profile placed within a community context presents a daunting challenge. Monitoring efforts are often limited by the availability of the kind of data that are capable of being integrated to produce a comprehensive profile. Yet, a number of promising strategies are being explored. Apart from the need to include a full complement of antecedent indicators, appropriate proxy measures, and standardized indicators that measure adolescent assets, a variety of new domains and indicators to measure them are being examined. In part, this has been the result of recognizing that non-health aspects of an individual's life, such as SES and parent-child connections, have a great influence on health behaviors.

It is unrealistic for any one source of information or any one data collection approach to provide all of the information needed for communities to help adolescents successfully navigate their teenage years. Any given data set will bear the constraints of potential bias in the manner that the data are collected, as well as limitations or inconsistencies in measurement and timeliness. To compensate for such limitations, researchers have often turned to the concept of triangulation, utilizing several data sources to assess whether or not there are consistencies in results documented across different data sets. In the arena discussed in this paper, the concept of triangulation can be extended to include a variety of levels of data, from individual to family and community, to better ascertain the efficacy of both individual-level data and the interactions of the individual within his/her community. By layering data from specific communities or geographic areas, a comprehensive profile enables the linking of individual, social and community contextual factors.

The easiest approach to a more comprehensive profile would be to identify a discrete and uniformly defined set of questions on context and on assets that could be integrated into existing data collection instruments. The National Longitudinal Survey of Adolescents (Add Health) has attempted to accomplish some of this task. However, to truly cover all of the data items needed would greatly increase the length and cost of administering and analyzing a survey. A single, long, comprehensive instrument also places a burden on both the respondent and the individuals and institutions who must administer the survey. One approach being used with increasing frequency is the linkage of two or more data sets by identifying common data elements within each set. These common data elements, such as name, date of birth, and zip code of residence, can be used to confirm the identity of an individual within each database, thus enabling the compilation of information across multiple data sets. In California birth data have been linked with hospital discharge and Medicaid data. To explore the characteristics of teenage mothers, for example, access to a much greater amount of information on health care utilization and morbidity during pregnancy, follow-up care, and such birth certification information as marital status, would provide much more information than reliance solely on vital records data, as is currently the norm. This strategy does carry with it some risk of compromised confidentiality, but techniques that assign identifiers to link files, after which identifiers are discarded from the resulting database, can be used to protect individual privacy.

A second approach is to layer data from multiple data sets using a geographic identifier, such as census tract or ZIP code. There is a large body of research that combines the use of census data with individual-level data. For example, housing information, poverty level, and school-level data from census data, along with individual-level indicator data, has demonstrated an association between habitation in low-income communities and such poorer health outcomes as low birth weight, asthma and higher mortality rates.

Although this technique provides only ecological, or circumstantial, evidence on any given individual within a particular community, the results are consistent with survey data at the individual level. This is demonstrated by National Health Interview Survey data that show the link between reported income level and poor health outcomes. Using this technique requires that all data collection

instruments contain identical geographic locators and that there is a large enough sample size at the designated level to be representative of that area.

The benefit of this last approach is that numerous data sets exist that contain geographic identifiers along with a broad array of information on adolescents. Data from schools, social service agencies, local surveys, police departments, recreational agencies, etc., can be geographically layered to provide evidence for a better understanding of the role of context in shaping the health status of the adolescents living in each community.

As experts debate which elements to integrate, assurance is necessary that the indicators selected are scientifically valid, that the data elements measuring the indicator or its proxy are feasible to collect in a variety of settings and over consistently long periods of time, and that these can be linked to a broad array of antecedent factors, as well as community indicators.

The Needs of Communities in Utilizing Indicator Information

Most communities will need technical skills and assistance in knowing which types of interventions work best, for whom, and under what circumstances. Furthermore, communities may need help with prioritizing among the multiple options they encounter, given the type of indicator profile that may be available for their community. Obtaining sufficient data at the appropriate geographic unit of analysis can also be challenging to communities. In some instances, data are not available to the public, they may be collected over varying time spans, or definitions may change between collection periods. Often community groups do not have sufficient resources to collect comparison data, or the expertise to use a simulated comparison group.

In response, a number of states, including Alaska, California, Georgia, Maryland, and Vermont, have utilized the approach of Results-Based Accountability or Results-Based Budgeting, developed by Mark Friedman of the Fiscal Policy Center, Washington, D.C. (Friedman, 1996). This approach uses a very specific vocabulary and stepwise approach for use by interdisciplinary and interagency collaborative groups working together at the community level to improve the health of children and youth. Results or outcomes are defined

as a condition of well-being, articulated in non-technical language that reflects the desires of citizens, e.g., “all teens will be healthy.” For each “result,” five indicators (also called benchmarks) are selected to quantify the “result,” e.g., rates of teen births, rates of STIs in teens. The intent is for the participating agencies to develop programs targeting the indicator values. Progress is monitored by a related set of performance measures. States use a collaborative model comprised of different agencies and departments to achieve a common set of jointly selected and defined results, as well as the joint activities selected to achieve those results.

There is no attempt within this framework for an *a priori* definition of domains or categories, nor any attempt to guarantee age, cultural or racial balance. There is also an assumption that the wisdom of the group will result in an appropriate selection of indicators. There is, however, a requirement that the “headline” indicator, for example, one that could be reported on the front page of a newspaper, be expressed as a summary measure, such as the rate per 1000 births to teens aged 15-19. At least five years of trend data are required. Community groups are also encouraged to identify other relevant information about the indicator that can be used to present the “story behind the indicator.” However, there is no specific requirement for the story content, nor is there an effort to present both an assets and resiliency model, along with the indicator data.

Thus far, the process has been highly effective in bringing people together in communities to focus on improving the health and well-being of children and youth. Because it represents a simple and clear planning approach, it has been effective in communicating to policy makers and to the public in a way that more sophisticated frameworks have previously not been able to accomplish. Furthermore, the framework links performance measures and budgetary outcomes, ensuring the attention of legislators at a time when they are focused on financial accountability.

Some of the states, such as Alaska and Vermont, have combined this approach with conducting surveys of adolescents’ assets, primarily using the Search Institute’s instrument, as a means of focusing community efforts to promote healthy development. Despite the adoption of Results-Based Accountability, and the use of self-reports by adolescents regarding their perceptions

of their internal and external risks and assets, all of these efforts have been limited by the lack of clearly defined indicators for many areas. These include a lack of timely data, the lack of indicator data available at the local level, and the lack of data to help analyze underlying factors that contribute to selected indicators.

As noted earlier, a further barrier for communities lies in the nature of current national data. While national data point to some of the major problems across the country, the profiles of adolescents in the vast number of communities that comprise the American population vary dramatically. This discrepancy may give stakeholders in some communities the impression that they are somewhat “immune” to the adolescent health concerns identified by national indicators. Ascertaining the relevance of national data to particular states and localities may thus be a requisite step before identifying the adolescent health issues these communities should address. Even when the most compelling health problems of young people are identified in a given community, it may be difficult to prioritize which merit the greatest investment. Communities may also feel overwhelmed in sorting through which options they should choose, given the indicators they most want to impact, and at which level they will intervene.

Communities may thus wish to receive external technical assistance from consultants such as the Search Institute, Catalano and Hawkins, Karen Pittman, Mark Friedman, and others experienced in doing this work. Before selecting their consultants, communities need to consider what they hope to accomplish and review the progress consultants have been able to make in comparable communities. Communities are likely to benefit from such a process when they are able to identify available resources and focus realistically on a set of key indicators where interventions promise to be most efficacious.

Furthermore, prioritizing outcomes based on data does not translate into knowing how to mobilize the community resources needed to assess those community efforts that may be already under way, and which gaps still exist. There are also cases in which people are not aware of the technical assistance or the many national, state, and local resources available, and how to access them. In some communities, the lack of strong political leadership, and the public commitment

needed to improve adolescent health, may be the greatest obstacle to overcome. Competing demands and a lack of interest or fear may also interfere with efforts to meet the needs of young people. Clearly, the variety of communities, conditions, resources, and leadership, let alone the complexity of the problems being considered, do not allow for a simple, “cookbook” approach to creating solutions.

Prioritization may be influenced by the data profile of adolescent health indicators, the availability of data on assets and strengths of youth within the community, clear knowledge of those strategies which appear to work in response to the identified problem or issue, the resources available, and the political will and shared agenda needed for action. Once prioritized, implementing the portfolio of strategies selected may require new or unfamiliar skills; many interventions may not have been tested with the populations in question. Indicators, instruments, and potential interventions must be validated while matching the profile of adolescents being served in the community. While tools to measure individual-level data receive the greatest attention, it is also important to consider the simultaneous measurement of community contextual factors that have been shown to be so crucial in shaping the types of opportunities that enable youth to grow and successfully mature.

As communities move forward, it should not be surprising if dispirited or overwhelmed feelings arise at times. Many of the problems or conditions underlying the indicators represent some of the most difficult health behaviors to change. Professionals and their communities may hesitate to take on certain health problems out of fear that they are so socially embedded as to seem virtually intractable. Yet, as previously discussed, many health problems—and their solutions—are very much related to the social, cultural, political, and economic conditions of the community. It may be tempting for health providers, community members, and funders to redirect efforts out of discouragement at failing to achieve significant inroads.

Nevertheless, people cannot allow slow progress (or even early successes) to diminish the kind of focus and investment of resources necessary to positively address adolescent health outcomes and to sustain any gains that might be achieved. Progress will not be instantly visible, but

it will occur. Communities need to commit themselves to a realistic timeline against which to measure improvements in adolescent health, and to reassess, if necessary, which multi-pronged approaches to adopt, and which additional stakeholders to actively engage. It would pay great dividends if local areas, states, and the nation as a whole would focus on the investments and outcomes for indicators to determine which critical factors have made a difference in achieving success, even when that success is initially modest.

Given the challenges inherent in attempting to influence human behavior, and the systemic complexities that underlie risk behaviors, communities should acknowledge the potential of their interventions, even if small, whether changes are in terms of primary prevention (especially preventing the onset of risk behaviors), or the amelioration of risk behaviors that have already been adopted. Even relatively small changes can play a substantial role in improving adolescent health. For example, because adolescent peer behavior is such a powerful influence, many youngsters adopt smoking as one way to belong to their peer group. But the reverse can also be true—finding a way to decrease the pool of adolescent smokers can discourage others from taking up the habit, once smoking is perceived as “uncool.”

Finally, it may seem overwhelming to select pertinent indicators from the multitude potentially available, particularly in view of the complexity of the underlying and antecedent factors responsible for many risk behaviors. Even when a commitment has been made, adequate indicators to monitor may not exist, in which case proxy measures must be selected as a compromise.

Despite all these challenges, however, community stakeholders should be encouraged to select a small but meaningful set of indicators (e.g., Results-Based Accountability), and begin to work on those areas that most impact the greatest number of adolescents in their community. By using such criteria as prevalence, level of community and political will, available financial and other resources, and knowledge of tested and effective intervention strategies, a meaningful set of indicators can be selected.

Future Vision

Monitoring indicators becomes an iterative process. In part, this reflects the building of a new body of science: moving beyond studies that demonstrate the protective relationship between assets/strengths and a reduction in risk-taking behaviors, to the next phase of testing interventions which link strengthening assets to a reduction in risk-taking behaviors. Ultimately, the goal is not just the absence of risk and disease, but a state of well-being. Thus, the National Longitudinal Study of Adolescent Health (Add Health) helped to advance the field by demonstrating the links between adolescents' sense of connection to meaningful adults, peers, and schools, to a reduction in risk-taking behaviors.

The data also made a strong case for effective parenting styles (e.g., warm, nurturing, clear expectations and consequences, monitoring) as a protective factor. Thus, while the field continues to build the necessary consensus and momentum to incorporate youth development-related indicators, it is also necessary to create interventions that will demonstrate the ability to engender such protective outcomes. For example, teaching parents effective parenting skills at their work sites, churches, and schools, and finding ways to create stronger, supportive communities within schools, appear to be key in assuring adolescent well-being.

Moreover, considering the broader definition of what influences healthy adolescence (and, in turn, healthy adulthood), we must also expand the list of individuals and institutional partners who make a difference in the lives of youth. Thus, our perceptions of the potential ways that interventions can be successfully implemented changed our perceptions of the potential ways that interventions could be developed, and thus the need to expand the types of stakeholders involved. This also calls for different levels of interventions, linkages across interventions and indicators, and shifts the definition of social responsibility for adolescent health problems to one in which all adults in the community have to consider ways of engaging youth.

Other challenges also exist. First, our ability to measure across different levels of indicators within one geographic area (e.g., individual, family, and community) can be difficult in view of the kinds of data currently available and the difficulty in linking different data sets. A second challenge

is how to collect data on all adolescents of interest—not just adolescents encountered in school settings but out-of-school youth, and homeless, incarcerated, or other marginalized youth who may be especially at risk. Also, because an increasing number of communities require active vs. passive parental consent for an adolescent to participate in surveys that include risk-related topics, there is growing concern as to how representative school-based samples actually are.

A third, perhaps broader, more philosophical challenge, is how to help communities develop the skills to advocate for the collection of adolescent-specific information that is comprehensive in nature. In other words, although communities would like to deny any risk-taking behavior among their young people, and would prefer to collect data on community protective factors, the reality is that a truly comprehensive profile of information is necessary before communities can realistically respond to the needs of young people.

Fourth, in addition to help in understanding and interpreting the data, community members may also need support in actively using the information to make changes at the local level. Communities should also be encouraged to develop and pilot different strategies based on the data and tailored to different segments of their adolescent population—strategies that deal not only with the consequences of adolescent behaviors, but their antecedent factors as well. While communities may feel frustrated that a firmly established science that can tell them which are the best interventions to adopt may not exist, they need to recognize that they can play a role in creating the science of best practices and effective outcomes, thus advancing the overall level of knowledge available.

A potential next step is to develop a Resiliency and Protective Factor Modular Evaluation Data Set (RPF-MED) for use by health and education professionals to measure the strengths and assets of their school and other program participants. The RPF-MED would be comprised of indicators of resiliency and protective factors and validated measures. Modules would be created in areas such as: supportive and caring environment, high expectations for achievement and social competence, opportunities to perform simulated adult roles, appropriate supervision and monitoring, and a sense of psychological autonomy. Within this modular structure, indicators could be included

that help to measure: young people's need for a safe and structured environment, a sense of belonging and membership, close relationships to adults and peers, a sense of independence and control over one's life, a sense of social contribution, and mastery and a sense of confidence through challenging experiences that develop a sense of competence. Thus, the RPF-MED would synthesize a series of different questions to measure different aspects of assets and resiliency, including potential indices for use by program managers to assess the assets of the populations they serve, as well as the outcomes they are able to achieve.

Once such a modular system was in place, communities could choose which protective indicators they would want to include as part of their community youth assessments, with links, for example, to the Youth Risk Behavior Survey. Utilizing specific criteria for selection of validated measures, a list of potential items could be generated that communities could use to measure the strengths and assets of their adolescent population in different domains. The RPF-MED would also incorporate a guide for how to select questionnaire items from one or more modules, depending upon the links to program goals, objectives, and activities, as well as the amount of time available to gather the data.

Apart from the potential use of the RPF-MED, there is a growing need for the collection of annual, longitudinal data on youth that incorporates both the data collected through the YRBS, as well as questions that measure assets and strengths. This would enable a broader number of communities to assess continuous trends, along with measures collected through such traditional data collection approaches as schools, community indicators, and other administrative sources of information. In view of the potential survey burdens created through such a data collection requirement, some states could select representative sub-samples of schools to monitor. Another option would be to link the YRBS and other measures of assets to exams that measure educational skills, such as the National Assessment of Educational Progress, which is also done biannually to very large and representative samples, but not to the same students. This would have the limitation of documenting cross-sectional samples of students, but would link health and assets to educational outcomes, which have become such a national priority for measurement. Linking the three types of data questions together would also diminish the artificial divide between these outcomes in the eye

of the public.

In conclusion, as a broader definition of what contributes to health and well-being becomes accepted, a different set of approaches becomes necessary, many of which may not fall within the traditional umbrella of health interventions. Strategies now need to strengthen resiliency and build on the assets of young people in order to achieve improvements in health, rather than restrict their goals solely to the reduction of morbidity and mortality risk factors. This shift in philosophy is fundamentally important to the types of solutions that are selected. If we see youth as competent individuals and assets to the community, the approaches we take are likely to be more supportive and positive. In contrast, if we view adolescents as problems, then the solutions we adopt are likely to treat them as such. Focusing on resiliency and healthy development points to the need to ensure access to services and opportunities for all youth to thrive. It calls for data collection that focuses on adolescents' strengths and assets as well as gathering information on their risk-taking behaviors. It turns our attention to creating supportive environments, rather than correcting deficiencies in teens.

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Measuring the Positives: Review of Positive Indicators and Guidelines for their Use

NAHIC conducted a comprehensive review and analysis of approaches to and measures of positive youth development. In these papers, based on work supported by the W.T. Grant Foundation, NAHIC staff compared the theoretical frameworks of the primary schools of thought in this arena, and examined the domains and constructs of the variables utilized by each. The papers also identify potential pitfalls of inappropriate use of these measures, and offer recommendations for using positive indicators.

This is one of four papers in a series funded by the W.T. Grant Foundation. A brief and two other papers, *Assessing the 'Multiple Processes' of Adolescent Health: Youth Development Approaches* and *Developing a Conceptual Model to Select Indicators for the Assessment of Adolescent Health and Well-Being*, are available online at:

http://nahic.ucsf.edu/index.php/data/article/measuring_the_positives_review_of_positive_indicators_and_guidelines/ .

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