

Summary of Methodologies to Measure Prevention of HIV/AIDS among Young People



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Preface

Below is a summary of the major tools that have been commonly used to measure prevention of HIV/AIDS among youth. This table has been designed to help program planners, policy makers, and others interested in understanding the status of youth HIV risk and youth HIV prevention programs at the national, regional, or local level identify sources of relevant information. In many cases, data are available at the national level to inform national-level programming (e.g., see methodology 1 below). For projects focused at a lower level (e.g., state, district or city levels), there may be similar representative household-level surveys available to inform youth programming. Alternatively, data may be available from targeted surveys (e.g., surveys of high-risk populations such as sex workers or surveys of youth at the school-level) that will provide the relevant information on youth sexual behaviors. These targeted methods are less commonly available; but when new data need to be collected, these approaches may be more feasible and affordable depending on the target population of interest (e.g., in places with concentrated epidemics, it may be best to undertake a Behavioral Surveillance Survey to learn about youth sex workers and to determine how to target these young people with the appropriate prevention messages). Other methods described below include special surveys that may be most relevant for programs seeking to target youth at a lower level (e.g., district, city, or neighborhood level). Finally, there is a wealth of existing data at the facility level that may provide the relevant information for program and policy decisions. Examples of indicators available from facility-level data sources are discussed as well; however, users are cautioned that the quality of facility-level data should be determined as part of the process to ensure that there is not under-reporting of the outcomes of interest.

For each methodology this document lists the most commonly used data collection tools to evaluate youth programs. Information is provided on the significance of the tool, how it is administered, what it can measure, the strengths and weaknesses of the tool, applications and examples of data use, and resources for where to find more information on each of the tools. For some methodologies, the data collected are for all ages but can be disaggregated by both age and sex to permit examination of youth-specific indicators. Moreover, some methodologies may collect information on only certain age groups, sexes or special high-risk populations that include youth samples. With regards to the specific indicators that each tool can measure, examples are given from the Global AIDS Response Progress Reporting (GARPR) 2012 Indicators, the President's Emergency Plan for AIDS Relief (PEPFAR) Next Generation Indicators, and the Millennium Development Goals (MDG) presented in the table below (under "Indicators or Measureable Concepts"). For more information on the specifics of each of the Global AIDS Response Progress Reporting 2012 Indicators see Appendix 1. PEPFAR Next Generation Indicators (accessed May 26, 2013) can be found at:

<http://www.pepfar.gov/documents/organization/206097.pdf>

The Millennium Development Goals Indicators (accessed May 26, 2013) can be found at:

<http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>

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Method Examples <i>How it is done/Why it matters</i>	Indicators or Measureable Concepts <i>What it can measure</i>	Strengths	Weaknesses	Applications/Data Use <i>Examples</i>	Resources
1. Nationally representative surveys					
<p>Demographic and Health Surveys (DHS)</p> <p>AIDS Indicator Survey(AIS)</p> <p>Multiple Indicator Cluster Survey(MICS)</p> <ul style="list-style-type: none"> MICS: UNICEF-assisted household surveys, coordinated with DHS- MICS data collected every 3 years; DHS-AIS collected about every 5 years Collects data on a range of indicators including health education, child protection and HIV/AIDS Has been an important data source for monitoring the MDGs and GARPR (formerly UNGASS) targets on HIV/AIDS Need to disaggregate 	<p>Prevalence of HIV among young people: (<i>GARPR 1.6, PEPFAR P8.23N, & MDG 6.1</i>)</p> <p>Knowledge of HIV prevention (<i>GARPR 1.1, PEPFAR P8.8.N, & MDG 6.3</i>)</p> <p>Prevalence of condom use at high risk sex (<i>GARPR 1.4, & PEPFAR P8.12.N, MDG 6.2</i>)</p> <p>Prevalence of HIV testing and knowing results (<i>GARPR 1.5 & PEPFAR P11.2.N</i>)</p> <p>Prevalence of early sex (<i>GARPR 1.2 & PEPFAR P8.10.N</i>)</p> <p>Prevalence of multiple partnerships (<i>GARPR 1.3 & PEPFAR P8.11</i>)</p> <p>Other items often measured:</p> <ul style="list-style-type: none"> Transactional sex/condom use during transactional sex 	<p>Household and individual questionnaires usually conducted every 3-5 years with female and male participants ages 15-49 years (for some surveys male age range may be 15-59)</p> <p>Range of outcome level indicators can be disaggregated by age to identify the youth population; this sample is representative of general population of youth (living in households) that can be compared across many countries</p> <p>Wide range of outcome level indicators collected across many countries (comparability)</p> <p>Can measure program coverage</p> <p>Instruments well tested (quality control)</p>	<p>Not suitable for district-level estimates unless survey is designed to obtain estimates at that level</p> <p>Data not routinely collected; data generally available every 3-5 years</p> <p>Data cannot detect small changes or changes over short periods of time without large sample sizes</p> <p>Expensive to implement at national level</p> <p>Cost varies based on which indicators are collected</p> <p>Estimating HIV prevalence among youth is expensive to collect; also, where the HIV prevalence is low, a large sample size is</p>	<p>Moore et al. <i>Trends in Youth Reproductive Health in Ethiopia 2000-2005</i></p> <p>http://www.measuredhs.com/publications/publication-od46-other-documents.cfm</p> <p>MEASURE DHS. <i>The Future is in Our Hands: Tanzanian Youth, Reproductive Health and HIV</i></p> <p>http://www.measuredhs.com/publications/publication-dm3-other-dissemination-materials.cfm</p> <p>The Population Council. <i>The Adolescent Experience In-Depth: Using Data to Identify and Reach the Most Vulnerable Young People: Benin 2006</i></p> <p>http://www.popcouncil.org/pdfs/PGY_AdolDataGuides/Benin2006.pdf</p> <p>Stone & Vaughan-Smith. <i>Understanding Adolescent Girls' Protection Strategies against HIV: An Exploratory</i></p>	<p>MEASURE DHS STATcompiler: www.statcompiler.com</p> <p>MEASURE DHS HIV Database: http://hivdata.measuredhs.com/</p> <p>MEASURE DHS Youth Corner: http://www.measuredhs.com/topics/Youth-Corner/index.cfm</p> <p>MICS Web site http://www.childinfo.org/mics.html</p> <p>UNICEF. <i>The State of the World's Children 2011: Adolescents: An Age of Opportunity</i> http://www.childinfo.org/files/SOWC_2011.pdf</p> <p>UNICEF. <i>Progress for Children: A Report Card on Adolescents</i> [Number 10, April</p>

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<p>by age if not youth specific</p> <p>Youth-specific household surveys</p> <ul style="list-style-type: none"> Household and individual questionnaires specifically tailored to youth ages, usually 15-24 years of age) 	<ul style="list-style-type: none"> Cross-generational sex Condom use at first sex Attitudes toward sex education Access to condoms (knowledge of sources) Stigma toward people living with HIV/AIDS Youth violence experience (if domestic violence module included) Childbearing experience and timing STI symptoms and care Concurrent partnerships Sexual experience among never married Recent sex among never married 		<p>needed to permit having reliable estimates; this also increases the costs</p>	<p><i>Study in Urban Lusaka</i></p> <p>http://www.popcouncil.org/pdfs/2010PGY_ZambiaGirlsHIVProtection.pdf</p> <p>Pettifor al. Young people's sexual health in South Africa: HIV prevalence and sexual behaviors from a nationally representative household survey. <i>AIDS</i>. 2005;19(14):1525-1534.</p>	<p>2012]</p> <p>http://www.childinfo.org/files/PFC2012_A_report_card_on_adolescents.pdf</p>

Method Examples <i>How it is done/Why it matters</i>	Indicators or Measureable Concepts <i>What it can measure</i>	Strengths	Weaknesses	Applications/Data Use <i>Examples</i>	Resources
2. Targeted surveys (targeted in terms of geographical areas and/or sub-population of young people)					
<p>Behavioral Surveillance Surveys (BSS)</p> <p>Biological and Behavioral Surveillance Surveys (BBSS)</p> <ul style="list-style-type: none"> Tracks HIV risk behaviors over time among various segments of the population: adults ages 15 – 49, unmarried male and female youth, female sex workers (SW), men who have sex with men (MSM), injection drug users (IDU), and truck drivers Especially useful for collecting detailed information on at-risk sub-populations hard to reach through household surveys such as sex workers and their clients, men who have sex with men, injection drug users and truck drivers Need to disaggregate by age if not youth specific 	<p>Knowledge of HIV prevention (<i>GARPR 1.1, PEPFAR P8.8.N, & MDG 6.3</i>)</p> <p>Prevalence of condom use at high risk sex (<i>GARPR 1.4, & PEPFAR P8.12.N, MDG 6.2</i>)</p> <p>Prevalence of early sex (<i>GARPR 1.2 & PEPFAR P8.10.N</i>)</p> <p>Prevalence of multiple partnerships (<i>GARPR 1.3 & PEPFAR P8.11.N</i>)</p> <p>Prevalence of condom use among female/male sex workers with most recent client (<i>GARPR 1.8; PEPFAR P9.17.N</i>)</p> <p>Percentage of most-at-risk (IDU, MSM, SW) who received an HIV test and results in the last 12 months (<i>GARPR 1.9; GARPR 1.13; PEPFAR P9.10.N</i>)</p> <p>Percentage of MSM use condom at last anal sex (<i>GARPR 1.12; PEPFAR P9.4.N</i>)</p> <p>Percent of the targeted population reached with individual and/or small group level preventive interventions (<i>GARPR 1.7; GARPR 1.11; PEPFAR P8.1.D; PEPFAR P.8.3.D</i>)</p>	<p>Detailed information collected to track risk behaviors and high-risk behavior concurrency in specific target groups and high-risk populations to inform prevention efforts</p> <p>Able to focus data collection on groups most at risk for acquiring and transmitting HIV</p> <p>Highly adaptable to meet specific needs regarding the state of a country's epidemic and program activities – Behavior data may provide early warning signs for increases in HIV transmission</p> <p>Generally less expensive than nationally representative household surveys. Cost varies based on number of respondents, geographic coverage, sampling design, and frequency and</p>	<p>Data collection requires extensive human resources</p> <p>Respondents may not provide honest information on sensitive behaviors</p> <p>Collects highly sensitive information on target groups vulnerable to stigmatization, must have sophisticated system to protect subjects and data collected</p>	<p>TDRC, National AIDS Council, FHI/IMPACT. <i>Behavioral and Biologic Surveillance Survey Zambia: Female Sex Workers</i></p> <p>http://www.fhi360.org/sites/default/files/media/documents/Behavioral%20and%20Biologic%20Surveillance%20Survey%20Female%20Sex%20Workers.pdf</p> <p>Lao People's Democratic Republic MOH. <i>Integrated Behavioral Surveillance Survey 2009 Laos</i></p> <p>http://www.fhi360.org/sites/default/files/media/documents/Integrated%20Behavioral%20Biological%20Surveillance%202009%2028Laos%29%20among%20sex%20workers.pdf</p>	<p><i>Guidelines for Conducting HIV/AIDS Risk Behavioural Surveillance Surveys</i></p> <p>http://203.90.70.117/PDS_DOCS/B3301.pdf</p> <p>Amon et al. <i>Behavioral Surveillance Surveys, BSS. Guidelines for Repeated Behavioral Surveys in Populations at Risk</i></p> <p>http://www.poline.org/node/176517</p>

Method Examples <i>How it is done/Why it matters</i>	Indicators or Measureable Concepts <i>What it can measure</i>	Strengths	Weaknesses	Applications/Data Use <i>Examples</i>	Resources
	Other items often measured: <ul style="list-style-type: none"> • Condom use among IDU • Transactional sex/condom use during transactional sex • Cross-generational sex • Condom use at first sex • Know of HIV among most at risk • Prevalence of anal sex • Percentage of IDU sharing needles • Percentage of IDU using sterile equipment • Percentage of IDU using condoms • Concurrency of high risk behaviors • Condom use consistency • Age at first sex and number of partners 	methods of data collection. Cost will drop as BSS becomes routine part of monitoring and evaluating HIV response, and experience is gained on data collection.			
Global School-Based Student Health Survey (GSHS) <ul style="list-style-type: none"> • Collaborative surveillance project between the WHO and CDC to help countries measure and assess the behavioral risk factors 	Drug and alcohol use Sexual behaviors: <ul style="list-style-type: none"> • Core Module: Age of first intercourse, number of partners, condom use, knowledge of HIV and prevention, education • Expanded Module: Frequency of intercourse, consistency of condom use, 	Relatively low-cost Allows for comparability of school-based HIV prevention programs and youth risk behaviors within and across countries May provide a representative sample of youth depending on	Selection bias – only captures information from youth in school Limited age range – limited to youth under 15 Opportunity costs of administering the survey – may take away from precious	Twa-Twa & Oketcho. <i>Global School Based Student Health Survey 2003 – Uganda Country Report</i> http://www.who.int/entity/chp/gshs/Uganda%20Final_Report.pdf For complete list of countries that have conducted GSHS: http://www.who.int/chp/gshs/country/en/index.html	GSHS Core Questionnaire Module: http://www.who.int/entity/chp/gshs/GSHS_Core_Modules_2009_English.pdf GSHS Expanded Questionnaire Module:

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<p>and protective factors in 10 key areas among young people: alcohol use, dietary behavior, drug use, hygiene, mental health, physical activity, protective factors, sexual behaviors that contribute to HIV infection, STIs and unintended pregnancy, tobacco use, violence and unintentional injury.</p> <ul style="list-style-type: none"> Primarily conducted among young people aged 13 to 15 years. 	<p>source/ ability to procure condoms, knowledge of condom use/ ability to navigate condom use, HIV testing, accuracy of HIV knowledge and knowledge of treatment options, HIV stigmatization</p> <p>Violence</p> <p>Protective factors including: school attendance, perceived social support at school, parental regulation and monitoring, parental bonding and connection</p> <p><i>[NOTE: Does not capture age range measured by the standardized PEPFAR/GARPR/MDG indicators. Focused specifically on early adolescent years. Focused specifically on in-school youth.]</i></p>	<p>county and region specific enrollment</p> <p>Standard scientific sample selection process generalizable to school-based populations</p>	<p>education hours</p> <p>Sustainability varies with country as well as region based on strength of and stability of education systems</p>		<p>http://www.who.int/chp/gshs/GSHS_Questionnaire_Core_Expanded_2009_English.pdf</p>
<p>Youth Risk Behavior Surveillance System</p> <ul style="list-style-type: none"> Data collected by CDC's Division of Adolescent and School Health on youth and school policies and practices Assesses prevalence and trends of high risk behaviors among students, and 	<p>Alcohol and other drug use</p> <p>Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection</p> <p><i>[NOTE: Does not capture age range measured by the standardized PEPFAR/GARPR/MDG indicators. Focused specifically on in-school population.]</i></p>	<p>Allows for comparability of school-based HIV prevention programs and youth risk behaviors within and across states in the U.S.</p> <p>Comprehensive data collected on a variety of indicators on youth from a range of ages</p> <p>Data is representative at state, regional and</p>	<p>Sustainable in U.S context; needs to be determined in other contexts</p> <p>Does not capture high risk behaviors of youth not in public or private school, particularly older youth who leave high school early; numbers of youth leaving high school</p>	<p>CDC. Trends in HIV- and STD-related risk behaviors among high school students — United States, 1991–2007. <i>MMWR</i>. 57(30):817-822.</p> <p>http://www.cdc.gov/mmwr/PDF/wk/mm5730.pdf</p> <p>CDC. Sexual identity, sex of sexual contacts, and health-risk behaviors among students in grades 9-12 in selected sites – youth risk</p>	<p>CDC Youth Risk Behavior Surveillance Web site:</p> <p>http://www.cdc.gov/healthyyouth/yrbis/index.htm</p>

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<p>concurrencies of high risk behaviors among nationally representative biennially collected sample of middle and high school students in public and private schools</p> <ul style="list-style-type: none"> • Mostly implemented in the U.S 		<p>national levels</p> <p>Data has been routinely collected since 1991 allowing detailed analysis of trends in high risk behaviors among youth</p>	<p>early may vary by state, region and school district and thus create selection bias among that age range</p> <p>Less on sexual behavior in the younger youth sample</p> <p>May not be representative if the minimum number of schools to randomize is not attained</p>	<p>behavior surveillance, United States. 2001-2009. <i>MMWR</i>. 2011;60:1-133.</p> <p>http://www.cdc.gov/mmwr/pdf/ss/ss60e0606.pdf</p>	

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3. Special surveys					
<p>Relationship History Calendaring (RHC) Method</p> <ul style="list-style-type: none"> Collect 10-year retrospective data on sexual relationship histories and romantic (non-sexual) histories, using a calendar to minimize recall errors on the occurrence of sexual intercourse, frequency of sex, and consistency of condom use Information recorded in a timeline format on a foldout calendar to provide memory aids for recalling relationships and sexual events RHC may be embedded in qualitative interview style to promote rapport between interviewer and respondent (decrease social desirability bias) 	<p>Prevalence of condom use at high risk sex (<i>GARPR 1.4, & PEPFAR P8.12.N, MDG 6.2</i>)</p> <p>Prevalence of early sex (<i>GARPR 1.2 & PEPFAR P8.10.N</i>)</p> <p>Prevalence of multiple partnerships (<i>GARPR 1.3 & PEPFAR P8.11.N</i>)</p> <p>Other items often measured:</p> <ul style="list-style-type: none"> Transactional sex/condom use during transactional sex Cross-generational sex Condom use at first/last sex Concurrent partnerships last 6 or 12 months Sexual experience/activity among never married Recent sex among never married Use of contraception at first/last sex <p><i>[NOTE: The Relationship Calendaring History Method can be adapted to collect a variety of relevant information on HIV prevention. The above list includes standard indicators collected in studies that applied this method with youth.]</i></p>	<p>Minimizes recall bias</p> <p>Decreases social desirability bias - tendency for truthfulness for behaviors that tend to be misreported due to social desirability bias</p>	<p>More expensive and requires greater amounts of human resources than other surveying techniques</p> <p>Lengthier interviews: human resource burden, and interview fatigue on the part of the respondent</p> <p>Collection may vary in precision based on variations among interviewers – more extensive training necessary for quality control</p> <p>Persons with a large number of partnerships in the last 10 years may have less reliable reporting than persons with only a small number of partnerships</p>	<p>Luke et al. The relationship history calendar: Improving the scope and quality of data on youth sexual behavior. <i>Demography</i>.2011;48(3):1151-1176.</p> <p>Luke et al. Social exchange and sexual behavior in young women’s premarital relationships in Kenya. <i>J Marriage Family</i>. 2011;73(5):1048-1064.</p>	

Method Examples <i>How it is done/Why it matters</i>	Indicators or Measureable Concepts <i>What it can measure</i>	Strengths	Weaknesses	Applications/Data Use Examples	Resources
<ul style="list-style-type: none"> Particularly relevant for youth who often experience multiple and rapid sexual transitions 					
<p>Priorities for Local AIDS Control Efforts (PLACE)</p> <ul style="list-style-type: none"> Data collection tailored to variations in local transmission networks Provides strategic information to prevention programs based on the unique features of local HIV transmission networks Identifies geographic areas where key HIV transmission networks are most prevalent Assesses coverage of HIV prevention programs and provides actionable information to address gaps in prevention programming – focuses on new partnerships Has been adapted for youth populations 	<p>Prevalence of condom use among female/male sex workers with most recent client (<i>GARPR 1.8; PEPFAR 9.2.N</i>)</p> <p>Percentage of most-at-risk (IDU, MSM, SW) who received an HIV test and results in the last 12 months (<i>GARPR 1.9; GARPR 1.13; PEPFAR 9.10.N</i>)</p> <p>Percentage of MSM use condom at last anal sex (<i>GARPR 1.12; PEPFAR 9.4.N</i>)</p> <p>Percent of the targeted population reached with individual and/or small group level preventive interventions (<i>GARPR 1.7; GARPR 1.11; PEPFAR P8.1; PEPFAR P.8.3.D</i>)</p> <p><i>[NOTE: The indicators above are specific to high-risk youth and are thus not generalizable to all youth in a country; the indicators available with this method depend on the approach taken and the target group studied.]</i></p>	<p>Able to focus data collection on areas most in need of HIV prevention efforts</p> <p>Affordable option for countries where resources are limited</p> <p>Suitable when resources are limited due to the fact that data collection is focused on geographic target areas based on the type and location of the epidemic</p>	<p>Collects data on potentially stigmatized populations which could put them at risk</p> <p>Data not generalizable and more difficult to compare across locations</p>	<p>Ndubani et al. <i>PLACE in Zambia: Identifying Gaps in HIV Prevention in Mongu, Western Province, 2005</i></p> <p>http://www.cpc.unc.edu/measure/publications/tr-06-42/at_download/document</p> <p>Singh et al. <i>PLACE in Zimbabwe: Identifying Gaps in HIV Prevention among Orphans and Young People in Hwange District, 2006</i></p> <p>http://www.cpc.unc.edu/measure/publications/tr-08-66</p> <p>Speizer et al. <i>Risk-Taking Behaviors among Youth Socializing in Target Venues of Carrefour, Haiti: Adaptation of the Priorities for Local AIDS Control Efforts (PLACE) Methodology</i></p> <p>http://www.cpc.unc.edu/measure/publications/tr-07-59</p>	<p>PLACE tools:</p> <p>http://www.cpc.unc.edu/measure/tools/hiv-aids/place</p>

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	Other items often measured: <ul style="list-style-type: none"> • Condom use among IDU • Transactional sex/condom use during transactional sex • Cross-generational sex • Prevalence of anal sex • Concurrency of high risk behaviors • Condom use consistency 				

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4. Program/service data					
<p>Facility and community-based data sources</p> <ul style="list-style-type: none"> • Include information on age of client/participant; these data can be used to measure the number of youth served by a facility or community-based program • HIV/AIDS Testing and Counseling (HTC), Prevention of Mother to Child Transmission (PMTCT), and Youth Outreach programs all collect service data of individual clients that can be used to measure reach among youth 	<p>Number of the targeted population reached with individual and/or small group level preventive interventions (<i>PEPFAR P8.1.D</i>)</p> <p>Number of the targeted MARP population reached with individual and/or small group level preventive interventions (<i>GARPR 1.7; GARPR 1.11; PEPFAR P8.3.D</i>)</p> <p>Number of most-at-risk (IDU, MSM, SW) who received an HIV test and results in the last 12 months (<i>GARPR 1.9; GARPR 1.13; PEPFAR 9.10.N</i>) (note Number and not percent available from this source)</p> <p>Other items often measured:</p> <ul style="list-style-type: none"> • Number of individuals who received an HIV test and results in last 12 months • Number of pregnant women who received HIV test and results 	<p>Monitoring data for each individual are routinely available through client intake forms and outreach registries</p> <p>Data recorded by age of participant/client permitting calculation of indicators specific to youth</p>	<p>Facility-level and community-level monitoring data often are of poor quality; if these data are to be used for youth program monitoring, some investment may be needed to ensure accuracy and completeness of data</p> <p>Data are often aggregated for higher level reporting which limits the possibility to examine youth-specific indicators (more effort required to obtain youth-specific measurements)</p> <p>Facility-based data at the national level often do not include private sector facilities; these data sources are likely to under-report youth service use</p>		

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5. HIV Modeling					
<p>Use models to estimate the impact, cost, and cost-effectiveness of different HIV prevention strategies in different settings based on context specific inputs (i.e. prevalence, risk behaviors, and demographics)</p> <p>Models can be modified to generate estimates among young people or other sub-populations</p>	<p>Prevalence of HIV among young people: (<i>GARPR 1.6, PEPFAR P8.23N, & MDG 6.1</i>)</p> <p>Other measurable indicator concepts:</p> <ul style="list-style-type: none"> • Percentage of young people living with HIV • Number of new HIV infections among young people • Number of AIDS-related deaths among young people • HIV incidence/prevalence among young people 	<p>Allows program managers to predict the effectiveness of HIV prevention interventions and assess their cost-effectiveness</p> <p>Relatively easy to implement, however requires input data from varying sources that may be difficult to obtain or out of date</p>	<p>Requires substantial amounts of data on a wide variety of indicators</p> <p>Results only as valid as the data inputs in the model</p>	<p>Nagelkerke et al. Modelling HIV/AIDS epidemics in Botswana and India: impact of interventions to prevent transmission. <i>WHO Bull.</i> 2002;80(2):89-96.</p> <p>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2567721/pdf/11953786.pdf</p> <p>Salomon et al. Integrating HIV Prevention and Treatment: From Slogans to Impact. <i>PLOS Medicine</i>. 2005.</p> <p>http://www.plosmedicine.org/article/fetchObjectAttachment.action;jsessionid=A5287D1C368F0F6D668B90DADBE9735C?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.0020016&representation=PDF</p> <p>Kumaranayake et al. Economic evaluation of HIV prevention activities: dynamic challenges for cost-effectiveness analysis. In: Roberts J and Archibald K, eds. <i>The Economics of Infectious Diseases</i>. Oxford: Oxford University Press; 2006.</p>	<p>Spectrum:</p> <p>http://www.unaids.org/en/dataanalysis/tools/spctrumepp2011/</p> <p>London School of Hygiene and Tropical Medicine Web site with free downloads of models:</p> <p>http://www.hivtools.lshtm.ac.uk/index.htm</p>

Appendix 1: Global AIDS Response Progress Reporting 2012 (GARPR)

http://www.unaids.org/en/media/unaids/contentassets/documents/document/2011/JC2215_Global_AIDS_Response_Progress_Reporting_en.pdf; Guidelines for 2013 available at: http://www.unaids.org/en/media/unaids/contentassets/documents/document/2013/GARPR_2013_guidelines_en.pdf

Global AIDS Response Progress Reporting 2012

TARGETS AND INDICATORS

Progress towards the targets in the UN General Assembly 2011 Political Declaration on HIV/AIDS will be monitored using the following indicators. Some indicators may track multiple targets.

Target 1.

Reduce sexual transmission of HIV by 50 per cent by 2015

Indicators for the general population

- 1.1 Percentage of young women and men aged 15–24 who correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission*
- 1.2 Percentage of young women and men aged 15–24 who have had sexual intercourse before the age of 15
- 1.3 Percentage of adults aged 15–49 who have had sexual intercourse with more than one partner in the past 12 months
- 1.4 Percentage of adults aged 15–49 who had more than one sexual partner in the past 12 months and who report the use of a condom during their last intercourse*
- 1.5 Percentage of women and men aged 15–49 who received an HIV test in the past 12 months and know their results
- 1.6 Percentage of young people aged 15–24 who are living with HIV

Indicators for sex workers

- 1.7 Percentage of sex-workers reached with HIV prevention programmes
- 1.8 Percentage of sex workers reporting the use of a condom with their most recent client
- 1.9 Percentage of sex workers who have received an HIV test in the past 12 months and know their results
- 1.10 Percentage of sex workers who are living with HIV

Indicators for men who have sex with men

- 1.11 Percentage of men who have sex with men reached with HIV prevention programmes
- 1.12 Percentage of men reporting the use of a condom the last time they had anal sex with a male partner
- 1.13 Percentage of men who have sex with men that have received an HIV test in the past 12 months and know their results
- 1.14 Percentage of men who have sex with men who are living with HIV

Target 2.

Reduce transmission of HIV among people who inject drugs by 50 per cent by 2015

Indicators

- 2.1 Number of syringes distributed per person who injects drugs per year by needle and syringe programmes
- 2.2 Percentage of people who inject drugs who report the use of a condom at last sexual intercourse
- 2.3 Percentage of people who inject drugs who reported using sterile injecting equipment the last time they injected
- 2.4 Percentage of people who inject drugs that have received an HIV test in the past 12 months and know their results
- 2.5 Percentage of people who inject drugs who are living with HIV

Target 3.

Eliminate mother-to-child transmission of HIV by 2015 and substantially reduce AIDS-related maternal deaths¹

Indicators

- 3.1 Percentage of HIV-positive pregnant women who receive antiretrovirals to reduce the risk of mother-to-child transmission
- 3.2 Percentage of infants born to HIV-positive women receiving a virological test for HIV within 2 months of birth
- 3.3 Mother-to-child transmission of HIV (modelled)

Target 4.

Have 15 million people living with HIV on antiretroviral treatment by 2015

Indicators

- 4.1 Percentage of eligible adults and children currently receiving antiretroviral therapy*
- 4.2 Percentage of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy

Target 5.

Reduce tuberculosis deaths in people living with HIV by 50 per cent by 2015

Indicators

- 5.1 Percentage of estimated HIV-positive incident TB cases that received treatment for both TB and HIV

Target 6.

Reach a significant level of annual global expenditure (US\$22–24 billion) in low- and middle-income countries

Indicators

- 6.1 Domestic and international AIDS spending by categories and financing sources

Target 7.

Critical enablers and synergies with development sectors

Indicators

- 7.1 National Commitments and Policy Instruments (NCPI) (prevention, treatment, care and support, human rights, civil society involvement, gender, workplace programmes, stigma and discrimination and monitoring and evaluation)
- 7.2 Proportion of ever-married or partnered women aged 15–49 who experienced physical or sexual violence from a male intimate partner in the past 12 months
- 7.3 Current school attendance among orphans and non-orphans aged 10–14*
- 7.4 Proportion of the poorest households who received external economic support in the past 3 months

* Millennium Development Goals indicator

¹ The Global Plan Towards the Elimination of New HIV Infections Among Children by 2015 and Keeping their Mothers Alive defines this target as:

1. Reduce the number of new HIV infections among children by 90%
 2. Reduce the number of AIDS-related maternal deaths by 50%
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