

**POLICY REPORT**

INTEGRATING HEALTH SERVICES FOR YOUNG PEOPLE:

Tackling the Growing Noncommunicable Disease Epidemic

APRIL 2017

www.prb.org

AstraZeneca 
Young Health Programme
A global community investment initiative





Acknowledgments

This policy report was produced by Toshiko Kaneda, Ph.D., senior research associate at Population Reference Bureau (PRB) and Reshma Naik, Dr.P.H., senior policy analyst at PRB. Special thanks to Charlotte Feldman-Jacobs at PRB; Wendy Baldwin, Independent consultant; Rachel Nugent at Research Triangle Institute; Mychelle Farmer at JHPIEGO; Ann Blanc at Population Council; and Liam Sollis and Helen-Marie Seibel at AstraZeneca Young Health Programme for their insightful review and helpful comments. The authors also thank Lilian Mbau at Amref Health Africa in Kenya; Lilian Kayaro, Esther Muketo, and Edward Marienga at Family Health Options Kenya; and Sunil Mehra and Ajay K. Singh at MAMTA Institute for Mother and Child for providing the descriptions and data on their programs. The authors thank PRB interns, Sophie Merchant, Jialin Meng, Dana Drecksels, Anna Pettee, and Jordan Smith for their assistance with literature reviews.

This policy report was funded by the AstraZeneca Young Health Programme (YHP). YHP is a disease prevention programme with a unique focus on adolescents. It was founded in partnership with Johns Hopkins Bloomberg School of Public Health and Plan International, with local NGO partners implementing YHP programs on the ground. The YHP mission is to positively impact the health of adolescents in marginalized communities worldwide through research, advocacy, and on-the-ground programs focused on NCD prevention.



Young Health Programme

A global community investment initiative

www.younghealthprogrammeyhp.com

Cover photo: @RosalreneBetancourt 10 / Alamy. South African schoolgirls.

Interior photos: @Thomas Cockrem / Alamy; @Jake Lyell / Alamy; @Jonathan Torgovnik / Hewlett-Getty Images of Empowerment; @Marco Betti / YHP

INTEGRATING HEALTH SERVICES FOR YOUNG PEOPLE

Tackling the Growing Noncommunicable Disease Epidemic

BY **TOSHIKO KANEDA** AND
RESHMA NAIK

TABLE OF CONTENTS

INTRODUCTION	2
NCD PREVENTION AMONG YOUNG PEOPLE IS KEY	3
Box 1: Addressing Unique Risk Factors for NCDs and Injuries Among the World's Poorest Billion People	3
INTEGRATING NCD AND OTHER SERVICES FOR YOUNG PEOPLE CAN HAVE MULTIPLE BENEFITS	4
Box 2: Tackling NCD Risk Behaviors Among Young People Requires a Multisectoral Approach	4
A VARIETY OF NCD SERVICES CAN BE PROVIDED TO YOUNG PEOPLE IN INTEGRATED SETTINGS	6
Box 3: Selected Examples of NCD Service Integration Targeting Young People	8
RECOMMENDATIONS FOR INTEGRATING NCD AND OTHER HEALTH SERVICES FOR YOUNG PEOPLE	11
A WAY FORWARD: INTEGRATING NCD AND OTHER SERVICES CAN HELP YOUNG PEOPLE THRIVE	12
REFERENCES	13

POPULATION REFERENCE BUREAU

APRIL 2017



Young women in Malaysia.

Noncommunicable diseases (NCDs) are the leading causes of death in high-income countries, and also in many low- and middle-income countries where they account for almost three-quarters of all global deaths from NCDs. Compared to high-income countries, deaths from NCDs in low- and middle-income countries are far more likely to occur prematurely—before the age of 70—when individuals are typically at their peak economic productivity (30 percent of all NCD deaths in high-income countries are premature versus 48 percent in low- and middle-income countries). Beyond the effects on health, premature death disrupts the social and financial well-being of families, and hinders national economic growth and sustainable development.¹

Recognizing an urgent need for a fundamental shift in the way NCD services, including prevention, screening, and treatment are delivered, the World Health Organization (WHO) promotes integrating prevention and control of NCDs into other health programs, such as those addressing sexual and reproductive health (SRH), maternal and child health (MCH), HIV/AIDS, and communicable diseases.² Since preventing NCDs is

critical to curb rising epidemics in many regions, integration of services is particularly applicable to programming for young people—defined here as ages 10 to 24—who make up more than one-quarter of the population in low- and middle-income countries (LMICs), and who are a key target group since NCD risk behaviors typically start early in life.

Integrating NCD services—particularly those targeted at prevention and early intervention—with other health services for young people may have a number of potential benefits: more young people can be reached with NCD services; limited resources can be pooled to potentially gain cost and other efficiencies; and young people can receive more comprehensive services, which are essential for healthy growth and development. This policy report describes the rationale for integrating NCD services into SRH, HIV/AIDS, and MCH services for young people in health care settings, explains the types of services that could be integrated, shares case studies that illustrate integrated service delivery approaches, and discusses high-level and practical recommendations for future integration efforts.

NCD Prevention Among Young People Is Key

The four main NCDs defined by WHO—cardiovascular diseases (CVDs), cancers, diabetes, and chronic respiratory diseases—account for the majority of all NCD deaths, and share four key risk factors or behaviors: tobacco use, harmful use of alcohol, physical inactivity, and unhealthy diet. These four risk behaviors are typically initiated and established during adolescence and young adulthood, and are on the rise among young people in many LMICs, due in part to the effects of globalization, urbanization, and socioeconomic development.³ One key approach to minimizing the burden of the growing NCD epidemic is to curb the rates of the four main risk behaviors common among young people today.

Tobacco use, including cigarettes, is the foremost cause of preventable death, and is linked to all of the four main NCDs.⁴ Global surveys of secondary school students ages 13 to 15 conducted between 1999 and 2008 show that 12 percent of boys and almost 7 percent of girls globally smoked cigarettes.⁵ Alcohol use is linked to cancers, CVDs, and diabetes, among other diseases.⁶ Young people are typically more vulnerable to the effects of alcohol than adults; early drinking—before age 14—is associated with an increased risk for alcohol dependence and abuse at older ages.⁷ Though rates of tobacco and alcohol use are relatively low in many LMICs, both are projected to increase, since regulations are weak and incomes and availability of commercial products are steadily increasing.

According to WHO, fewer than one in five adolescents globally get enough physical activity.⁸ Combined with shifts in diet away from healthier, traditional foods to those filled with sugar, salt, and saturated fat, increasingly sedentary lifestyles contribute to obesity and ultimately to a rise in NCDs, such as type 2 diabetes, CVDs, strokes, and certain cancers. Many LMICs, including those in South Asia and sub-Saharan Africa, are also undergoing a nutrition transition, with overweight and obesity emerging as critical public health issues even while undernutrition continues to be a significant problem.

Beyond the four main NCDs, other NCDs heavily affect young people in certain settings (see Box 1). In addition, mental health disorders, such as depression and anxiety, often emerge during adolescence and affect quality of life and the potential for healthy development.⁹ Among 15-to-24-year-olds globally, depression is one of the top three leading causes of burden of disease (as measured by disability-adjusted life years, a summary measure of illness and deaths), and suicide is among the top three leading causes of deaths.¹⁰ Suicides in LMICs account for three-quarters of all suicides around the world.¹¹ Depression can be linked to all of the four key NCD risk behaviors and can affect adherence to medication for NCDs and other diseases.¹² Addressing

BOX 1

Addressing Unique Risk Factors for NCDs and Injuries Among the World's Poorest Billion People

Compared to those who are more wealthy, the world's poorest one billion people—those in extreme poverty, defined as living on less than \$1.25 a day—are typically affected by a wider range of NCDs and risk factors.¹

This relatively young population (nearly 90 percent are younger than age 45), live predominantly in rural South Asia and sub-Saharan Africa, and are hit hardest by NCDs and injuries including type 1 and malnutrition-associated diabetes, rheumatic heart disease, Burkitt's lymphoma, cervical cancer, sickle-cell disease, kidney disease, epilepsy, depression, appendicitis, and trauma. These NCDs and injuries collectively account for more than one-third of the disease burden among this population, most heavily affect those under age 40, and are more likely to be caused by infections and poor environmental conditions than the behavioral risk factors typically associated with the four main NCDs.

In countries or regions with large populations living in extreme poverty, integration efforts for young people may need to address a broad set of risk factors, including but not limited to the four main ones. One example is providing vaccination for hepatitis B to young people seeking SRH, HIV/AIDS, or MCH services (see page 10). Another example is ensuring that young people are fully treated for strep throat—a bacterial infection in the throat and the tonsils—with antibiotics. Untreated strep infections can lead to rheumatic fever, which in turn can cause rheumatic heart disease, the most common heart disease in children and young people in many LMICs.²

REFERENCES

- 1 Gene Bukhman, Ana Olga Mocumbi, and Richard Horton, "Reframing NCDs and Injuries for the Poorest Billion: A Lancet Commission," *Lancet* 386, no. 10000 (2015): 1221-2.
- 2 World Heart Federation, "Rheumatic Heart Disease" (2012), accessed at www.world-heart-federation.org/fileadmin/user_upload/documents/Fact_sheets/2012/RHD.pdf, on March 14, 2017.

mental health disorders among young people, along with the four main NCDs and their risk factors, could go a long way to minimize the future burden of NCDs across the globe.

Curbing NCD risk factors among young people requires broad-ranging multisectoral efforts, including policy and regulatory shifts, changes to the environment, social and

behavioral interventions, and provision of health information and services (see Box 2). Within health care settings, reaching young people with health services, particularly preventive information and screening for NCDs and their risk factors, can be challenging given this is a group who typically feel healthy and are less likely to seek health care than other age groups. One way to better reach them is to integrate NCD services into existing SRH, HIV/AIDS, and MCH services, which are typically key entry points to the health system for young people.

Integrating NCD and Other Services for Young People Can Have Multiple Benefits

Despite varying levels of success, the SRH, HIV/AIDS, and MCH communities have vast experience providing young people with health services. Young people are a priority population for these communities because of their unique needs and vulnerabilities. Young women in many LMICs still lack access to family planning and are at high risk of unplanned pregnancies.¹³ Pregnancy and childbirth complications are the leading causes of death among girls ages 15 to 19 in many LMICs.¹⁴ Young people, especially women and girls living in sub-Saharan Africa, also bear a disproportionate burden of new HIV infections relative to their population size.¹⁵

Reaching young people is a clear priority for the NCD, SRH, HIV/AIDS, and MCH communities alike, and strong rationales exist for integrating these services to help achieve shared goals. Integrating NCD services by providing them at the same delivery point as at least one other type of service yields multiple benefits, including opportunities for pooling resources and increasing the reach and comprehensiveness of services. On a broader scale, integration can help achieve national and global targets for NCDs, SRH, HIV/AIDS, and MCH.

The concept of service integration is not new. Providing comprehensive primary health care (PHC) services was widely promoted in the 1980s and has enjoyed a resurgence in recent years. Integrated services and comprehensive PHC both have similar rationales that include addressing shared underlying determinants of health and beneficiaries, maximizing scarce resources, and optimizing health outcomes.

Across LMICs, integration has occurred in different ways within the health sector—for example, integrating SRH and HIV/AIDS services, and also SRH and MCH services. Although results vary across programs, these experiences can inform current efforts to integrate NCD services within other program areas. By taking full advantage of the unique strengths of NCD and other health services, and drawing on the synergies between them, integration has the potential to improve efficiency and effectiveness.

BOX 2

Tackling NCD Risk Behaviors Among Young People Requires a Multisectoral Approach

Young people's behaviors are influenced by many factors operating at different levels in the contexts where they live, work, attend school, or spend leisure time. Further, they often do not actively seek out health care at facilities. To fully address NCD risk behaviors and reap the benefits of integration, initiatives must reach beyond the sphere of health into other sectors. National policies and strategies should reflect high-level coordination across sectors such as agriculture, education, finance, information, sports, urban planning, trade, and transport. Implementation should involve a range of stakeholders including governments, civil society, educators, the private sector, and international organizations. Cross-sectoral programs that address youth and gender should also be considered as potential platforms for NCD integration.

Examples of cross-sectoral approaches for integration can include:

- School-based health education programs that offer SRH education along with nutrition, exercise, or harmful substance education and intervention programs, including parental or family engagement components.
- Community outreach programs that offer HIV testing and counseling to young people as well as HPV screening.
- Sports programs that offer young people safe venues to stay physically active and also provide information on SRH and HIV issues.
- Media- or social-media-based education and messaging on healthy living that addresses drinking, smoking, healthy eating, and exercise, as well as the risks of unprotected sex.
- SRH and NCD risk-factor screening and counseling, and tobacco and alcohol cessation programs offered in community and youth centers, youth clubs, and sports clubs.



Kenyan schoolboys in assembly.

Addressing shared risk and protective factors can achieve efficiencies and better outcomes. Many of the same risk factors that lead to NCDs are also linked to poor SRH, HIV/AIDS, and MCH outcomes among young people. Alcohol use, for example, is a risk factor for various NCDs, and it can also impair judgment, leading to unsafe sex and unintended pregnancies or sexually transmitted infections (STIs), including HIV.¹⁶ Evidence also shows that alcohol use plays an important role in gender-based violence against women, and can increase HIV risks, particularly for young women.¹⁷

The same four main risk factors for NCDs also affect MCH outcomes. Alcohol use increases the risks of spontaneous abortion, fetal death, and conditions such as fetal alcohol syndrome.¹⁸ Tobacco use increases the chance of pre-term and low-weight births, as well as the risk of sudden infant death syndrome.¹⁹ Obesity is one of the risk factors for pregnant women developing gestational diabetes mellitus (GDM), a form of diabetes that occurs during pregnancy. GDM significantly increases the risk of maternal and child deaths and illness in the short-term, and also the risk of both the mother and child developing type 2 diabetes in the long-term.²⁰ NCD risk factors are also often clustered, and so are NCD and SRH risk factors. For example, young people who use tobacco are more likely to use alcohol, and also more likely to initiate sex at an early age.

NCDs, SRH, and MCH also share some protective factors. Participating in sports increases physical activity levels and lowers the use of alcohol and tobacco. It is also associated with better SRH outcomes among youth, such as delayed initiation of sex, greater use of contraception, and lower pregnancy rates.²¹ For pregnant young women, regular physical exercise can also improve pregnancy and birth outcomes.²²

These shared risk and protective factors for young people suggest that integrated NCD, SRH, HIV/AIDS, and MCH services could help ensure that limited resources are used more efficiently to achieve multiple goals. More research is needed, however, to identify which integration strategies have the most potential for improving efficiency and effectiveness of service delivery.

Offering comprehensive services can improve access to health services for young people. Young people's health care needs are wide-ranging, and integrating NCD services into existing SRH, HIV/AIDS, and MCH services can help ensure they receive more comprehensive and coordinated information and services. An integrated approach may encourage young people to view their health more holistically and understand the various short- and long-term



Young Argentine man making the “victory” sign.

impacts of their behaviors. They may even be more receptive to integrated NCD and SRH messages. For example, pregnant young women accessing MCH services may be particularly motivated to act on advice to stop smoking or drinking to ensure the health of their babies. Similarly, young people seeking SRH services may be more receptive to counseling about heavy drinking when they realize that it could reduce their chances of having unplanned pregnancies or contracting STIs, including HIV.

Young people’s contact with the health care system tends to be limited, though SRH and MCH services are among the more commonly used points of contact. Though data on health care use among young people in LMICs are not widely available, studies from selected cities in Ethiopia, Kenya, and Myanmar show that about one-quarter to one-half of young people access SRH services.²³ Integrated services are likely to widen the pool of young people who receive NCD information and services, since they might reach those who likely would not have sought them out. In addition, integration may also help attract and retain more young people in care by reducing the stigma or sensitivity typically associated with SRH or HIV/AIDS services, and by reducing the burden on young people to seek different types of care and information in multiple places. Being able to obtain multiple services on the same visit also means young people can spend less time away from school, work, or other activities and less resources on transport to access care. By increasing access to care in these ways, integrated services could also help reduce disparities in health care access and health outcomes among young people.

Using the existing HIV/AIDS infrastructure can improve service delivery and reach. NCDs and HIV/AIDS share many similarities—both are rooted in preventable risk behaviors, require complex and costly treatment, and can

reduce quality of life. For both conditions, prevention, especially for young people, is a priority. The connections between HIV/AIDS and NCDs are strong: Women with HIV are four to five times more likely to develop cervical cancer than those without it, and their risks are exacerbated by tobacco use and unhealthy diet.²⁴ Antiretroviral therapy increases the risk of developing diabetes among people living with HIV (PLHIV).²⁵ And PLHIV are also more likely to have hypertension.²⁶

Over the years, substantial investments in HIV/AIDS have led to good infrastructure, and a wealth of experience developing and testing various systems, tools, interventions, and innovative approaches for delivering information and services, particularly to young people in LMICs. Given the synergies between NCDs and HIV/AIDS, nascent NCD programming targeted at young people could adapt some of these approaches, and integrate messages and services within the existing HIV/AIDS infrastructure. Leveraging resources in this way would allow delivery of NCD services to young PLHIV, as well as to those who are being targeted for prevention through information, education, and communication efforts and through HIV counseling and testing. Young people’s use of HIV/AIDS services may also increase when these services are offered along with NCD services since it may help to lessen concerns about stigma.

A Variety of NCD Services Can Be Provided to Young People in Integrated Settings

The main options for integrating NCD services targeting young people include: information, education, and communication; risk factor screening and counseling; vaccination; and treatment. Integration could occur at all sites where young people seek care, including hospitals, health centers, and community-based health posts. The specifics of content, design, and delivery would depend on the local context, and factors such as community acceptability, available resources, health care worker/facility capacity, feasibility, and characteristics and needs of the young population.

Information, education, and communication (IEC). IEC, a public health approach aimed at changing or reinforcing health-related behaviors among a target audience, is commonly used to reach young people. To inform their behavior, young people need accurate information about NCD risk factors and their short- and long-term consequences. Some risky behaviors such as drinking and smoking, or even the use of e-cigarettes or hookah pipes, are typically portrayed as “cool” and young people may underestimate their dangers and addictiveness. Other behaviors, such as poor eating habits or lack of exercise, may not be on young people’s minds since their effects might not be immediately apparent.

Aligning the content of IEC approaches to address NCDs, SRH, HIV/AIDS, and MCH can ensure that a full range of information reaches young people with messages that can benefit their health. Health facilities can tailor information for adolescents, using formats such as attractively designed posters or brochures in easy-to-understand language. These materials could broadly address healthy behaviors such as safe sex, regular HIV testing, not smoking, not drinking (or drinking in moderation), healthy eating, and exercise, along with tips and referrals for how to get support for these behaviors. Similar messages could also be shared, for example, while young people are waiting for SRH services. During these times, they could watch an informational video on NCD risks or participate in group information and education sessions. IEC messages could also be shared via mobile phones with interactive content, possibly along with appointment reminders or other information.

Screening and counseling. Identifying and addressing risk behaviors as well as physiological markers of NCDs early in life is an important route to prevention. One way to do this is to incorporate screening and counseling using validated tools and approaches into existing SRH, HIV/AIDS, or MCH facility visit. For example, brief screening questionnaires could assess eating and exercise habits, alcohol and tobacco use, and depression. Screenings could take place during waiting periods or during sessions with health care workers. Clinic visits for services, such as HIV testing or family planning, could also provide an opportunity to take height and weight measurements to calculate body mass index (BMI) and screen for overweight and obesity, or measure blood pressure to screen for prehypertension and hypertension that increase the risk of developing CVDs.

Another opportunity for integration is to provide cervical cancer screening to high-risk young women who come in for SRH or HIV/AIDS services. Although universal screening for cervical cancer is generally recommended only for women starting at age 25 or older, the International Federation of Gynecology and Obstetrics (FIGO) recommends screening for all women with high risks, including HIV-positive women and those who have had early sexual exposure, multiple partners, or previous abnormal cervical cancer screening results. Screening for cervical cancer (using visual inspection with acetic acid followed by timely treatment of precancerous lesions) is one of WHO's Best Buy interventions for the prevention and control of NCDs.²⁷ In addition, young pregnant women should be screened during antenatal care visits for GDM and hypertensive disorders (that lead to preeclampsia and eclampsia), both significant causes of maternal and child deaths and illness in LMICs. FIGO recommends universal screenings among pregnant women for both GDM and hypertensive disorders, yet in many settings, they are not always done.²⁸ Results of all screenings can be used to offer appropriate counseling, referrals, or treatment.



A nurse takes the blood pressure of a young mother in Senegal.

Prevention through vaccination. Vaccinations for human papillomavirus (HPV) and hepatitis B are relatively low-cost interventions that can significantly reduce the incidence of infection-related cancers. Cervical cancer, the leading cause of cancer-related deaths among women in most LMICs, is caused by certain types of HPV that are sexually transmitted, putting it directly at the intersection of SRH and NCDs.²⁹ HPV prevalence is typically higher for young people than adults. WHO recommends HPV vaccination as a cost-effective method of prevention for girls ages 9 to 13, and for older youth and young women if resources are available.³⁰

The vaccine is increasingly available in LMICs and is offered in different settings including SRH and HIV/AIDS clinics, as well as pediatric clinics and schools. Since vaccination requires multiple doses at different times, it also provides an opportunity to reach girls with NCD information and services during each of their visits.

Another opportunity for integration is providing young people with vaccination for hepatitis B, which can be sexually transmitted and can cause liver cancer. Sub-Saharan Africa



A nurse measures the height of a young woman in Zambia.

Selected Examples of NCD Service Integration Targeting Young People

MINISTRY OF HEALTH AND FAMILY WELFARE, INDIA

To better serve the needs of young people, governments in many LMICs are beginning to offer comprehensive, youth-friendly health services within PHC settings. In 2014, the Ministry of Health and Family Welfare in India launched *Rashtriya Kishor Swasthya Karyakram* (RKSK), the country's first comprehensive adolescent health program.¹

RKSK targets 10-to-19-year-olds, and expands the scope of the previous national adolescent SRH program to include comprehensive health services that address SRH, nutrition, substance use, mental health, NCD prevention, and injury and violence prevention. Along with SRH and other services, Adolescent-Friendly Health Clinics under RKSK measure BMI and offer screening for hypertension and diabetes. They also provide information and personal interventions for these conditions, along with substance use, nutrition, and mental health, and make referrals when necessary.

MINISTRY OF HEALTH, MOLDOVA

In Moldova, the Ministry of Health scaled up the number of youth-friendly health centers (YFHC) from three in 2001 to 38 in 2013 to cover all 35 districts in the country.² In 2012, more than 100,000 young people (about 14 percent) ages 10 to 24 visited a YFHC, and either obtained services, attended information sessions, or participated in group activities. Young people ages 15 to 19 were the most common visitors. About 38,800 young people who visited YFHCs received nearly 57,000 consultations in total. Many of these visits were for SRH-related services, though a substantial proportion was related to NCDs or NCD risk factors. Among all of the consultations, about 11 percent (6,300) were services related to substance abuse, including tobacco and alcohol; 9 percent (5,100) were related to nutritional issues; and 8 percent (4,600) were related to mental health. An external review of Moldova's YFHCs conducted in 2014 revealed some challenges including: weak regulations, prohibitive policies, limited collection of operations data, inadequate allocation of funding in the health insurance system, training gaps among health care workers, and delays in the implementation of a monitoring system. In an effort to sustain the provision of critical health services to young people, the government of Moldova has since taken steps to address these limitations.

FAMILY HEALTH OPTIONS KENYA, KENYA

Family Health Options Kenya (FHOK), a nongovernmental organization operating in 17 counties in Kenya, offers a wide range of SRH and HIV/AIDS services to young people and the general

public, along with various services addressing NCD risk behaviors and mental health.³ In 2015, the FHOK provided SRH services to 179,000 young people ages 10 to 24; about 20 percent were ages 10 to 14 and 30 percent were ages 15 to 19. Services are provided to young people in a range of settings including primary health care facilities, youth-friendly corners within facilities, stand-alone facilities designated for youth, or youth centers. Approximately 104,000 young people, mostly ages 15 to 24, visited the youth centers in 2015, with about 40 percent of the users in the 15-to-19 age group. Boys made up 60 percent of the users in the 15-to-19 age group, while they made up half in the 20-to-24 age group.

FHOK provides HPV vaccination and education and counseling on cervical cancer to young women. Young people are also offered BMI measurements and education on healthy eating habits, and are given the opportunity to participate in physical activity programs such as sports tournaments and dance competitions. Youth coordinators at the eight youth centers organize weekly meetings to discuss SRH and other topics, such as alcohol, tobacco, and drug use. One center that is adjacent to a health clinic offers SRH services and has a fully functional gym where young people can participate in weight management sessions and physical training. FHOK also screens young people for alcohol abuse and mental health issues. Referrals for any needed care and treatment are made within a strong network of counsellors, psychiatrists, psychologists, in-house specialists, and county and subcounty health facilities. In 2015, FHOK provided counseling on various risky health behaviors, including alcohol abuse, to 8,600 men and 4,200 women under age 25.

MAMTA HEALTH INSTITUTE FOR MOTHER AND CHILD, INDIA

Between 2012 and 2014, the MAMTA Health Institute for Mother and Child, a nongovernmental organization in India, together with Lund University and the Himachal Pradesh State Health Mission, undertook an intervention model for mainstreaming adolescent reproductive and sexual health (ARSH) and NCD interventions within public youth-friendly health services in three districts of Himachal Pradesh. A formal evaluation showed that the model worked well and could be scaled up. Compared to baseline scores, program managers and health care providers demonstrated an 89 percent increase in knowledge and skills related to ARSH and NCDs. Quality of services, measured by perceptions of young people served, increased by 33 percent.⁴ Other project outcomes included the establishment of 15 ARSH-NCD clinics at the primary health center level and the development of three training curricula that could be used in different states and regions to address a range of ASRH-NCD integration issues. In addition, the project supported a strong monitoring system that provides the state with critical information for health planning.

BOX 3 (CONTINUED)

HEALTHY HEART AFRICA PROJECT, KENYA

In 2014, AstraZeneca in collaboration with the Ministry of Health and five nongovernmental organizations in Kenya, launched Healthy Heart Africa (HHA), an initiative that aims to treat 10 million people with hypertension across Africa over a 10-year period.⁵ The project's approach includes raising public awareness of hypertension; encouraging screening and treatment; developing and using a simplified treatment protocol; training service providers; and ensuring that facilities, especially those at the lower-level, have the equipment and medicines necessary for screening and treatment. During the first 18 months, the five NGO partners in Kenya integrated hypertension services into various public, private, and faith-based health programs to build an understanding of different models of service delivery.

Amref Health Africa in Kenya, one of the five partners added hypertension screening and treatment to the primary health care services they were already providing in an urban slum in Nairobi, including MCH and HIV/AIDS. Although not specifically targeted, many young people were screened for hypertension because they made up a large proportion of the population in the area. Between July and September 2015 alone, 27,813 young people under age 25 who sought health care at out-patient departments of Amref-supported health facilities were screened for hypertension.⁶

Over the last 2 years of HHA, across all five demonstration projects, the initiative screened 3 million adults and young people, identified over 600,000 with high blood pressure, and diagnosed over 120,000 with hypertension.⁷ The project trained over 3,000 health care workers across 31 counties in Kenya and ensured that 400 health facilities had essential equipment. These successes have led to HHA being scaled up to 48 health care facilities in Ethiopia. HHA has also been scaled up in Western Kenya such that hypertension services are integrated into PEPFAR (the U.S. President's Emergency Plan for AIDS Relief's) existing HIV/AIDS infrastructure.

VIDA NUEVA PROJECT, COLOMBIA

The Vida Nueva Project in Barranquilla, Colombia, involved a collaboration among the World Diabetes Foundation, the Mayor's Office of Barranquilla, Novo Nordisk, and Accenture.⁸ Spanning three years between 2012 and 2014, the project integrated GDM screening and care into antenatal care services provided in the city's public facilities. The comprehensive approach included: raising public awareness; developing GDM diagnosis and treatment guidelines; training more than 1,250

health care professionals on GDM and new protocols; and implementing a "Pregnant Women Control Programme" through which the trained health care workers offered GDM services, including nutrition counseling to those positively screened for GDM.

The integrated program showed promising results. Within three years, awareness of GDM, other NCDs, and healthy living had increased for more than 80 percent of all pregnant women served in public facilities. GDM screening rates increased from 5 percent of pregnant women to 97 percent. The proportion of pregnant women diagnosed with GDM increased from 0.2 percent to nearly 9 percent. About 30 percent of women diagnosed with GDM did not have any risk factors, underscoring the importance of generalized screening. Ninety percent of the women who were diagnosed with GDM attended nutrition counseling. Vida Nueva also achieved policy success when the project's user-friendly GDM guidelines were adopted by the Mayor's Office as well as by the Ministry of Health in Colombia. Further, use of the guidelines is now mandated as a national standard for antenatal care.

REFERENCES

- 1 National Health Mission, Ministry of Health and Family Welfare, *Guidelines for Implementation of Rashtriya Kishor Swasthya Karyakram (RKSK)* (New Delhi: Government of India, 2014).
- 2 Susanne Carai, Stela Bivol, and Venkatraman Chandra-Mouli, "Assessing Youth-Friendly-Health-Services and Supporting Planning in the Republic of Moldova," *Reproductive Health* 12, no. 1 (2015): 98.
- 3 The information and data were provided via personal communication from the Family Health Options Kenya office.
- 4 Lund University, State Health Mission, Himachal Pradesh, and MAMTA Health Institute for Mother and Child, "Develop District Design for Mainstreaming Adolescent Reproductive and Sexual Health and Non-Communicable Conditions in Youth Friendly Health Services (YFHS)," (2014), accessed at <https://openaid.se/activity/SE-0-SE-6-5504021601-IND-12220/>, on March 22, 2017.
- 5 AstraZeneca, *AstraZeneca's Healthy Heart Africa Program Overview and Critical Learnings to Date*, unpublished manuscript, Dec. 2015.
- 6 The data were collected by the Amref Health Africa in Kenya. They were obtained via personal communication with the Amref Health Africa in Kenya office.
- 7 The data were obtained via personal communication with the AstraZeneca Healthy Heart Africa Project office.
- 8 Anastasia Thatcher, Oliver Dallmer, and Meha M. Chiraya, *Gestational Diabetes: A Window of Opportunity to Improve Maternal and Child Health, Lessons Learned From the Vida Nueva Project in Colombia* (Washington, DC: Accenture Development Partnerships, 2015).



Young Indian woman.

and East Asia have the highest prevalence of hepatitis B with rates of chronic infection between 5 percent and 10 percent in the adult population. Hepatitis B vaccination to prevent liver cancer is on WHO's Best Buy list of interventions for prevention and control of NCDs and is recommended universally at birth, and also for all children below age 18 who have not previously been vaccinated if they live in countries where hepatitis B is at low or intermediate levels.³¹

Early treatment and care. Integrated services can include treatment of certain conditions identified through screening, such as substance use or abuse, depression, or cervical cancer. Evidence shows that low-cost generic antidepressants and brief psychotherapy provided by primary care providers can be effective, even in low resource settings.³² Therapies for smoking cessation based on cognitive-behavioral or motivational interviewing strategies have generally been shown to be effective for youth and could be offered at the same sites as SRH, HIV/AIDS, or MCH services.³³

Integrated interventions could be supplemented with other resources, such as telephone helplines and support groups. When care cannot be offered onsite, either due to the severity of the condition or resource constraints, strong referral systems should be established. For example, young women who test positive for precancerous lesions on the cervix could be treated with cryotherapy (freezing of abnormal cells) at the same sites as SRH, HIV/AIDS, or MCH services, while those diagnosed at a more advanced stage should be referred to higher-level facilities for further evaluation and treatment. Similarly, young people who abuse alcohol or drugs may need to be referred to a specialized clinic or treatment facility.

Recommendations for Integrating NCD and Other Health Services for Young People

While integrating NCD services within existing SRH, HIV/AIDS, and MCH programs serving young people can potentially increase the NCD community's reach to a significantly larger number of young people, integration is not a magic bullet or simple solution. Successful implementation will require an understanding and application of various high-level and practical actions, many of which have emerged as insights from integration efforts in other aspects of health:

- Raise awareness about NCDs and the potential benefits of integration.
- Generate more context-specific evidence on the effectiveness of integration for young people.
- Develop guidelines and operational plans for integrating services targeting young people.
- Ensure that integrated services are youth-friendly.
- Address human resource constraints for service delivery.
- Shift from a disease-centered approach to a more people-centered approach to funding health programs.

RAISE AWARENESS ABOUT NCDs AND THE POTENTIAL BENEFITS OF INTEGRATION.

In many LMICs, the commonly held view is that NCDs primarily affect older populations. The gravity of NCDs and the importance of curbing NCD risk factors among young people are not well understood or prioritized, even among those in the SRH, HIV/AIDS, and MCH communities who work with young people. Thus a critical first step for a move toward integration would include reframing the dialogue to focus on how best to address young people's needs, so that ownership of the issue goes beyond the NCD community. A key priority should be raising awareness among a range of policymakers, high-level managers and other decisionmakers, and health care workers about NCDs and the potential benefits of providing integrated messaging and services to young people. Such steps could lead to forming or strengthening advocacy coalitions to work collectively to increase political commitment and resources for integration at national and subnational levels.

GENERATE MORE CONTEXT-SPECIFIC EVIDENCE ON THE EFFECTIVENESS OF INTEGRATION FOR YOUNG PEOPLE.

The rationale for integrating NCD services within SRH, HIV/AIDS, and MCH programs serving young people is strong. However, evidence showing whether or not, and in which settings, the anticipated outcomes, as well as efficiency, effectiveness, and cost-effectiveness are achieved is scarce.³⁴ The lack of evidence is due to various reasons including: integration is still uncommon in most LMICs; methodologies that have been used for evaluating complex, integrated programs lack methodological rigor; and many programs and services that offer a range of services for young people, including those that address NCD risk factors, are not necessarily identified as integrated and as such, do not prioritize or track certain outcomes.

In the future, it will be important to develop evaluation frameworks in advance, define key outcomes, and determine

which indicators to measure, when, and how. Some of the data that would be useful to inform service delivery include: costs of delivering integrated services to young people compared to stand-alone services, cost-effectiveness of different integrated approaches to reach young people in varied settings, and measures of patient satisfaction. Once a body of context-specific evidence has been built, it can contribute to developing a roster of best practices that can inform service delivery.

DEVELOP GUIDELINES AND OPERATIONAL PLANS FOR INTEGRATING SERVICES TARGETING YOUNG PEOPLE.

Successful efforts will require that individual countries prioritize and implement strategies for integrating prevention and control of NCDs into other programmatic areas. Context-specific, empirical evidence on the benefits and cost-effectiveness of different integration approaches must inform new or revised national health policies and action plans for implementing such service integration.³⁵ Corresponding resources for implementation must also be allocated and released, including earmarked funding to provide comprehensive health services for young people through service integration. New health policies and strategies should acknowledge the role of other relevant sectors and be effectively disseminated from the national to subnational levels and across all levels of health services.

Beyond national level guidance, health sectors should develop operational plans and guidelines at lower levels—regional, district, facility, and community—that reflect and address new or adapted approaches for providing services that target young people in a different way. Systemic changes will be required at subnational and facility levels to policies, management structures, operational guidelines, and resource allocation. Operational guidelines must address changes that are needed across all-levels of operation, including development

or adaptation of training curricula; staff capacity building, supervision, and support; record keeping; patient support; logistics and supply systems; and monitoring and evaluation.

ENSURE THAT INTEGRATED SERVICES ARE YOUTH-FRIENDLY.

One key lesson learned from the experiences of the SRH and HIV/AIDS communities is the importance of offering youth-friendly services.³⁶ Poor attitudes among providers are among the top barriers for young people in accessing health services. As such, appropriate training for providers—on treating young people respectfully, understanding their developmental needs and concerns, and ensuring confidentiality—is critical and can go a long way toward building trusting relationships and delivering high-quality care. Concern about lack of privacy is a well-documented barrier, with tested solutions, such as creating separate waiting areas and private counseling spaces, and setting up separate hours for young people.

Other ways to increase access to integrated health services among young people are to: ensure that facilities are accessible via public transport, and increase visibility and traffic by locating them in or near places where young people gather, such as schools, youth centers, sporting venues, or shopping malls. Providing free or low-cost services could also increase young people's access. Young people may appreciate flexible scheduling including both fixed appointments to reduce wait times and walk-in appointments to accommodate unplanned visits. Finally, when integrated services are offered, they should be widely advertised with clear information about what is available beyond SRH and HIV/AIDS services, as well as cost, location, benefits, and attractive service delivery approaches like private counseling or evening hours. Advertising can be done throughout the community at places such as schools, youth clubs, and health clinics, using a variety of formats, like posters and brochures, as well as through media and social media platforms.

ADDRESS HUMAN RESOURCE CONSTRAINTS FOR SERVICE DELIVERY.

Many LMICs have a shortage and high turnover of qualified health care workers, and those who are working are typically overburdened. While this existing challenge could make integration difficult, alternatives exist. Task shifting and task sharing are two viable approaches that are already happening in many countries. For integration, task shifting might mean that certain tasks, such as screening for NCD risk factors among young people, are conducted by a lower-level health care worker. Or in some cases, task sharing, whereby tasks are split among health care workers at different skill levels, can be effective to maximize the use of available time and human resources.

An extension of task shifting that involves training people living with diseases has also been successful in some settings, especially for HIV/AIDS. Young people living with

HIV can be trained to manage their own conditions, and also to provide care and support to other HIV-positive young patients as peer counselors. This approach can be applied to integrated services and can help increase the available pool of human resources for service delivery to young people.³⁷ Another approach to address gaps in human resources is allocating resources to provide health care workers with incentives to undergo training and take on additional responsibilities, such as for NCD screening and counseling.

SHIFT FROM A DISEASE-CENTERED APPROACH TO A MORE PEOPLE-CENTERED APPROACH TO FUNDING HEALTH PROGRAMS.

One high-level action by the donor community that could facilitate integration is to shift away from a disease-centered to a more people-centered approach for health program funding.³⁸ Current vertical, or disease-centered approaches targeting single diseases, such as HIV/AIDS, malaria, or tuberculosis, make innovative strategies, such as NCD and SRH integration, challenging to implement. Vertical funding can make it particularly hard to effectively address NCDs, which include a broad range of health conditions and different risk factors. This approach means that only few select diseases, such as breast cancer and heart disease, may draw the majority of attention and resources, masking what is needed in the health system to address other NCDs.

In contrast, a horizontal, or people-centered approach to funding supports health systems broadly, allowing for patients' needs to be assessed and addressed holistically within a context of comprehensive PHC. As such, this type of funding might better support integrated programs for young people that address various underlying issues that cause or contribute to NCD, SRH, HIV/AIDS, and MCH health problems.

A diagonal approach may also be effective in this case, leveraging the ability of vertical disease specific programs to deliver well-focused services, and the capacity of horizontal programs to strengthen the health system and to achieve broader outcomes.³⁹ Such an approach would be especially useful in settings that lack existing infrastructure or platforms for NCD service delivery, but which have strong infrastructure for other conditions affecting youth, such as SRH or HIV/AIDS. For example, providers can deliver NCD services to young people by integrating them into a strong, existing HIV/AIDS infrastructure, while also helping to strengthen shared systems and resources, such as staff, facility planning, and patient records.

A Way Forward: Integrating NCD and Other Services Can Help Young People Thrive

NCD epidemics are at various stages across LMICs, affecting the health of populations and imposing increasing burdens

on health care systems. Reducing NCD risk behaviors among young people is one critical way to change the expected trajectory of NCDs. Investing in young people's health by offering comprehensive, integrated services can avert the premature onset of NCDs and also address important SRH, HIV/AIDS, and MCH needs. With better health, young people can reach their full potential, be more productive, and contribute to national growth and vitality.

By fully taking advantage of the synergies between NCDs and other program areas, service integration can help optimize limited resources that can be pooled across programs, potentially leading to cost and other efficiencies. It will be important to ensure that critical gaps in evidence are filled by rigorous monitoring and evaluation in order to identify areas for improvement as well as best practices for different contexts and health care systems. With a set of strong policies, strategies, and guidelines in place, successful plans for addressing NCD risk behaviors and NCDs among young people can be adapted and scaled up across countries and in different settings. Integrated programs can be implemented successfully through collaboration, coordination, creative thinking, and the involvement of young people. With a cohort of healthy young people, countries can thrive and realize a bright future.

References

- World Health Organization (WHO), *Global Status Report on Noncommunicable Diseases 2014* (Geneva: WHO, 2014).
- For more information on the inclusion of NCDs in other programmatic areas, see the WHO GCM/NCD Working Group (Working Group 3.1, 2016-2017) at www.who.int/global-coordination-mechanism/working-groups/working-group-3-1/en/, accessed on March 14, 2017.
- WHO, *Global Status Report on Noncommunicable Diseases 2014*.
- Smoked cigarettes at least one day in the previous 30 days; Charles W. Warren et al., *Global Tobacco Surveillance System: The GTSS Atlas* (Atlanta: CDC Foundation, 2009).
- U.S. Department of Health and Human Services, *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General* (Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014).
- WHO, *Global Status Report on Noncommunicable Diseases 2014*.
- WHO, *Global Status Report on Alcohol and Health 2014* (Geneva: WHO, 2014).
- WHO recommends 60 minutes of moderate to vigorous-intensity physical activity daily for children and adolescents aged 5-17 years; WHO, "Physical Activity" (2017), accessed at www.who.int/mediacentre/factsheets/fs385/en/, on March 14, 2017.
- United Nations Children's Fund (UNICEF), *State of the World's Children 2011, Adolescence: An Age of Opportunity* (New York: UNICEF, 2011).
- Nicholas J. Kassebaum et al., "Global, Regional, and National Disability-Adjusted Life-Years (DALYs) for 315 Diseases and Injuries and Healthy Life Expectancy (HALE), 1990-2015," *Lancet* 388, no. 10053 (2016): 1603-58; and Ali H. Mokdad et al., "Global Burden of Diseases, Injuries, and Risk Factors for Young People's Health During 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013," *Lancet* 387, no. 10036 (2016): 2383-401.
- WHO, *Preventing Suicide: A Global Imperative* (Geneva: WHO, 2014).
- Marc A. Schuckit, "Alcohol-Use Disorders," *Lancet* 373, no. 9662 (2009): 492-501; Karen J. Lasser et al., "Smoking and Mental Illness: A Population-Based Prevalence Study," *JAMA* 284, no. 20 (2000): 2606-10; and Adrian L. Lopresti, Sean D. Hood, and Peter D. Drummond, "A Review of Lifestyle Factors That Contribute to Important Pathways Associated With Major Depression: Diet, Sleep, and Exercise," *Journal of Affective Disorders* 148, no. 1 (2013): 12-27.
- Venkatraman Chandramouli et al., "Contraception for Adolescents in Low and Middle Income Countries: Needs, Barriers, and Access," *Reproductive Health* 11, no. 1 (2014): 1-8.
- WHO, "Adolescent Pregnancy" (2014), accessed at http://apps.who.int/iris/bitstream/10665/112320/1/WHO_RHR_14.08_eng.pdf, on March 17, 2017.
- UNICEF, *For Every Child, End AIDS: Seventh Stocktaking Report, 2016* (New York: UNICEF, 2016).
- WHO, *Alcohol Use and Sexual Risk Behaviour: A Cross-Cultural Study in Eight Countries* (Geneva: WHO, 2005).
- Seth C. Kalichman et al., "Alcohol Use and Sexual Risks for HIV/AIDS in Sub-Saharan Africa: Systematic Review of Empirical Findings," *Prevention Science* 8, no. 2 (2007): 141-51.
- S. Harlap and P. H. Shiono, "Alcohol, Smoking, and Incidence of Spontaneous Abortions in the First and Second Trimester," *Lancet* 316, no. 8187 (1980): 173-6.
- Robert L. Andres and Mary-Clare Day, "Perinatal Complications Associated With Maternal Tobacco Use," *Seminars in Neonatology* 5, no. 3 (2000): 231-41.
- Moshe Hod et al., "The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus: A Pragmatic Guide for Diagnosis, Management, and Care," *International Journal of Gynecology & Obstetrics* 131, no. S3 (2015): S173-211.
- Douglas Kirby, "Effective Approaches to Reducing Adolescent Unprotected Sex, Pregnancy, and Childbearing," *Journal of Sex Research* 39, no. 1 (2002): 51-57.
- R. Artal, M. O'Toole, and S. White, "Guidelines of the American College of Obstetricians and Gynecologists for Exercise During Pregnancy and the Postpartum Period," *British Journal of Sports Medicine* 37, no. 1 (2003): 6-12.
- Tigist Tefera, "Assessment of Reproductive Health Service Utilization and Associated Factors Among High School Youths in Addis Ababa, Ethiopia," master's thesis, Addis-Ababa University, Addis-Ababa, Ethiopia, 2015; Meskerem Abebe and Worku Awoke, "Utilization of Youth Reproductive Health Services and Associated Factors Among High School Students in Bahir Dar, Amhara Regional State, Ethiopia," *Open Journal of Epidemiology* 4, no. 2 (2014): 69-75; Atitegeb Ayehu, Teketo Kassaw, and Getachew Hailu, "Level of Young People Sexual and Reproductive Health Service Utilization and Its Associated Factors Among Young People in Awabel District, Northwest Ethiopia," *PLoS ONE* 11, no. 3 (2016): e0151613; Obonyo Perez Akinyi, "Determinants of Utilization of Youth Friendly Reproductive Health Services Among School and College Youth in Thika West District, Kiambu County, Kenya," doctoral dissertation, Kenyatta University, Kahawa, Kenya, 2009; and Phyu Phyu Thin Zaw et al., "Equity of Access to Reproductive Health Services Among Youths in Resource-Limited Suburban Communities of Mandalay City, Myanmar," *BMC Health Services Research* 12, no. 458 (2012): 1-12.
- Joint United Nations Programme on HIV/AIDS (UNAIDS), *HPV, HIV and Cervical Cancer: Leveraging Synergies to Save Women's Lives* (Geneva: UNAIDS, 2016).
- Mohammed K. Ali et al., "HIV and Metabolic, Body, and Bone Disorders: What We Know From Low-and Middle-Income Countries," *Journal of Acquired Immune Deficiency Syndromes* 67, no. S1 (2014): S27-39.
- Gerald S. Bloomfield et al., "HIV and Non-Communicable Cardiovascular and Pulmonary Diseases in Low- and Middle-Income Countries in the ART Era: What We Know and Best Directions for Future Research," *Journal of Acquired Immune Deficiency Syndromes* 67, no. S1 (2014): S40-53.
- FIGO, *Global Guidance for Cervical Cancer Prevention and Control* (London: FIGO, 2009); WHO, *WHO Guidelines for Screening and Treatment of Precancerous Lesions for Cervical Cancer Prevention* (Geneva: WHO, 2013); and UNAIDS, *HPV, HIV and Cervical Cancer*.
- Hod et al., "The International Federation of Gynecology and Obstetrics (FIGO) Initiative on Gestational Diabetes Mellitus"; ed. Laura Magee et al., *The FIGO Textbook of Pregnancy Hypertension: An Evidence-Based Guide to Monitoring, Prevention, and Management* (London: Global Library of Women's Medicine, 2016).
- UNAIDS, *HPV, HIV and Cervical Cancer*.
- WHO, "Human Papillomavirus Vaccines: WHO Position Paper, October 2014," *Weekly Epidemiological Record* 89, no. 43 (2014): 465-92.
- WHO, "Hepatitis B" (2016), accessed at www.who.int/mediacentre/factsheets/fs204/en/, on Jan. 22, 2017.
- Vikram Patel et al., "Treatment and Prevention of Mental Disorders in Low-Income and Middle-Income Countries," *Lancet* 370, no. 9591 (2007): 991-1005.
- Ravinder Gabbie et al., *Smoking Cessation Interventions for Youth: A Review of the Literature* (Toronto: Ontario Tobacco Research Unit, 2015).
- Peter Lamprey et al., "Discussion Paper on How to Promote the Inclusion of the Prevention and Control of Noncommunicable Diseases Within Other Programmatic Areas," *WHO GCM/NCD Working Group 3.1* (Geneva: WHO, 2016).
- Lamprey et al., "Discussion Paper on How to Promote the Inclusion of the Prevention and Control of Noncommunicable Diseases Within Other Programmatic Areas."
- Sue Alford, "Best Practices for Youth-Friendly Clinical Services" (2009), accessed at www.advocatesforyouth.org/publications/publications-a-z/1347-best-practices-for-youth-friendly-clinical-services/, on March 22, 2017.
- WHO, *Task Shifting: Rational Redistribution of Tasks Among Health Workforce Teams—Global Recommendations and Guidelines* (Geneva: WHO, 2008).
- Lamprey et al., "Discussion Paper on How to Promote the Inclusion of the Prevention and Control of Noncommunicable Diseases Within Other Programmatic Areas."
- NCD Alliance, "Tackling Noncommunicable Disease: What Can Health Systems Do?" NCD Alliance Briefing Paper (London: NCD Alliance, 2011).



POPULATION REFERENCE BUREAU

The Population Reference Bureau **INFORMS** people around the world about population, health, and the environment, and **EMPOWERS** them to use that information to **ADVANCE** the well-being of current and future generations.

www.prb.org

POPULATION REFERENCE BUREAU

1875 Connecticut Ave., NW
Suite 520
Washington, DC 20009 USA

202 483 1100 **PHONE**
202 328 3937 **FAX**
popref@prb.org **E-MAIL**
