

**United Nations Expert Group Meeting on Priorities
for Improved Survival: ICPD beyond 2014**

New York, 21-22 October 2013

Report of the Meeting



United Nations

Department of Economic and Social Affairs
Population Division

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DESA

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PREFACE

The Population Division of the Department of Economic and Social Affairs (DESA) of the United Nations Secretariat serves the Commission on Population and Development of the Economic and Social Council, which each year meets to consider a special theme within the scope of population affairs. In light of the 20th anniversary of the 1994 International Conference on Population and Development (ICPD), the Commission's theme for 2014 is an "Assessment of the status of implementation of the Programme of Action of the International Conference on Population and Development". To inform these deliberations, the Commission has requested the Secretary-General to prepare a report on World Demographic Trends, with special attention to changes in population dynamics since the ICPD.

Accordingly, on 21-22 October 2013, the Population Division convened two Expert Group Meetings (EGM): one on mortality and health, and one on fertility trends and development. For the former, entitled "Priorities for Improved Survival: ICPD beyond 2014", experts in several fields related to health and mortality were invited to reflect on progress and challenges toward achieving the survival goals that were set out in the ICPD Programme of Action and to discuss anticipated future challenges to reductions in mortality that should be addressed in the ICPD beyond 2014 and in the post-2015 development agenda. Contributed papers and presentations addressed topics including challenges and opportunities for further reductions in infant and child mortality, evolving mortality risks associated with infectious diseases, priorities in women's health, the changing landscape of non-communicable diseases and associated risk factors, evolving trends in health and mortality at older ages, incentivizing use of health care, and promoting healthy lifestyles. The issues and recommendations discussed during the meeting, along with the outcomes of joint sessions held with the EGM on Fertility, Changing Population Trends and Development, are reflected in this report. Contributed background papers will be available in the Population Division's Expert Paper Series (<http://www.un.org/en/development/desa/population/publications/expert/index.shtml>).

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UNITED NATIONS EXPERT GROUP MEETING ON PRIORITIES FOR IMPROVED SURVIVAL: ICPD BEYOND 2014

A. INTRODUCTION

The Population Division convened an expert group meeting (EGM) on 21-22 October 2013 in New York on Priorities for Improved Survival: ICPD Beyond 2014. The objective of this EGM was to bring together experts to address key questions about the progress and challenges toward achieving the survival goals set out in the ICPD Programme of Action and future challenges to reductions in mortality. The results from the expert papers circulated before the meeting and the presentations and discussions at the meeting are summarized in this report. The results will be used to inform preparations for the forty-seventh session of the Commission on Population and Development in April 2014, the theme of which is an “Assessment of the status of implementation of the Programme of Action of the International Conference on Population and Development (ICPD)”.

In a departure from tradition, the opening session on the first day and two sessions on the second day of the EGM were organized and held jointly with a different expert group meeting organized by the Population Division on fertility, changing population trends and development. The lively discussions that ensued and exchange of ideas across disciplines and substantive research areas proved the jointly organized sessions to be successful.

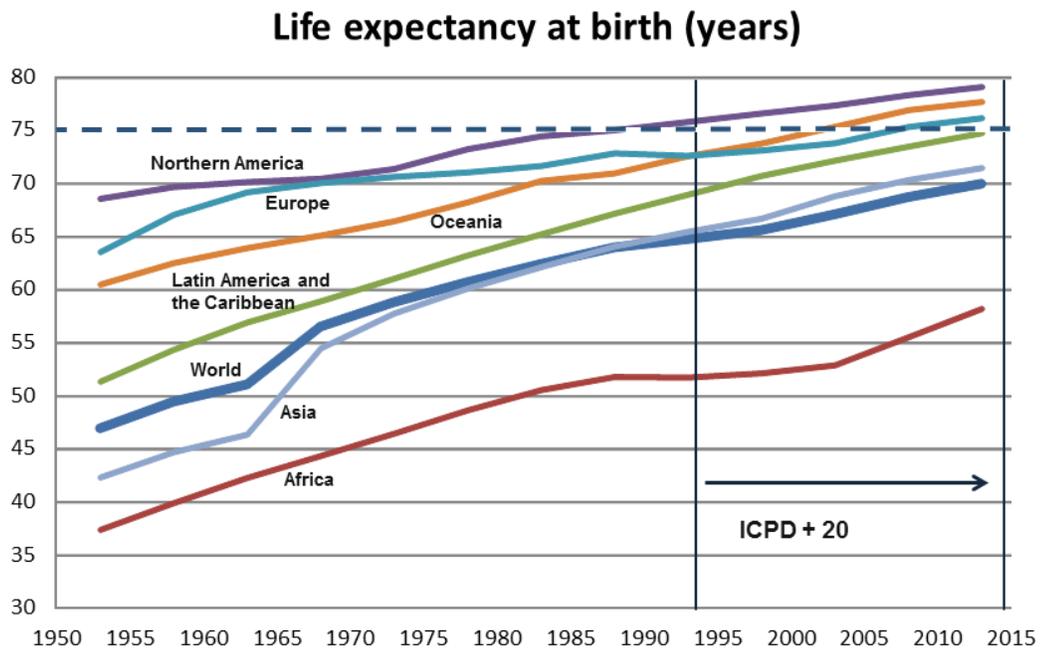
The first day of the meeting was devoted to presentations and discussions on progress and challenges in facets of health and mortality related to various age groups and causes of death, as well as promising policy avenues. The second day of the meeting began with summaries and debate on the key findings from the first day’s substantive presentations of each expert group meeting, including the prioritization of issues for the global development agenda moving forward. The EGM concluded with two presentations and a discussion on how to improve the accessibility and utilization of data and evidence on fertility and mortality for policymaking.

Ms. Cheryl Sawyer (Population Division) gave an overview of world mortality trends since ICPD from the 2012 Revision of *World Population Prospects* and contrasted the trends with three numerical targets set out in the ICPD Programme of Action: 1) to increase life expectancy to 75 years by 2015 (for countries with the highest mortality—not explicitly defined—the target of 70 years was noted); 2) to achieve an under-five mortality rate below 45 deaths per 1,000 live births by 2015 (later revised in Millennium Development Goal 4 to be a two-thirds reduction in the under-five mortality rate from the 1990 level); and 3) a three-quarters reduction in the maternal mortality ratio from the 1990 level. Key points from the overview of world mortality trends were:

- Since the ICPD in 1994, life expectancy for the world had increased to 70 years (an increase of five years) by 2010-2015 (figure I). Africa presently had the lowest life expectancy (58 years). The gap in life expectancy between Africa and Northern America, the region with the highest life expectancy, had narrowed but remained large at 21 years.
- There were wide variations in the life expectancy gains achieved by 2010-2015 in countries that started at similar levels in 1990-1995.

- Reductions in mortality since ICPD were most rapid for child mortality, while declines in the probability of dying between ages 15 and 60 were slower on average; some regions had experienced increases in adult mortality.
- Though a rising proportion of deaths now occurred at ages 60 and above, including in the less developed regions, adult mortality data in most developing countries were limited or of low quality, and survey methods developed to estimate mortality at younger adult ages did not offer evidence for the levels and patterns of mortality at older ages.
- Despite declines in mortality, the ICPD survival goals had not been met by many countries and regions. For example, the maternal mortality ratio has fallen by 47 per cent worldwide since 1990, but neither the world nor different regions are on track to meet the goal of a three-quarters decline between 1990 and 2015.
- Questions for the expert group meeting to address were: How would future health challenges be different from the recent past? How were risk factors evolving? And what were key gaps in knowledge?

Figure I. Life expectancy at birth for major areas, 1950-2015



Source: United Nations (2013). *World Population Prospects: The 2012 Revision*.

An overview of fertility trends (level and timing) and parallel changes in marriage and union formation and family planning behaviours was provided by Ms. Vladimira Kantorova (Population Division). In 1994, when the world met in Cairo for ICPD, the total fertility of the world was around three children per woman. Asia and Latin America and the Caribbean had experienced fast reductions in fertility over the past three decades. In contrast, total fertility in Africa had recently started to decline from a level just below six children per woman, the same level that Asia and Latin America and the Caribbean had in the early 1960s. Could African countries experience such fast fertility declines as Asia and Latin America and the Caribbean? Northern America, Europe and Australia and New Zealand were

all at or below two children per woman. Was this the end of fertility decline in these regions? Key points from the overview of world fertility trends since Cairo were:

- Since 1994, fertility in Africa declined at a much slower pace compared to Asia and Latin America and the Caribbean. In 2010-2015, total fertility in Africa was still above 4.5 children per woman.
- Fertility in parts of Europe (mainly Eastern and Southern Europe) and in East Asia declined to very low levels and in a short period of time (due in part to the impact of postponement of childbearing on period total fertility).
- Declines in total fertility in individual countries were not universal and countries with the same total fertility in early 1990s experienced different fertility trajectories.
- Adolescent childbearing and marriage was still common in Africa, and also in some countries in Asia (e.g., Afghanistan and Bangladesh). In Latin America and the Caribbean, adolescent childbearing remained high in many countries even though total fertility was close to replacement level.
- In 1994, more than 60 per cent of married or in-union women used any contraceptive method in all major areas, except Africa. Progress had been slow on ICPD-related benchmarks in reducing the unmet need for family planning across all regions.
- Questions for the expert group meeting on fertility to address were: Why was fertility decline in Africa different from other regions and would it stay exceptional in future? What had been the different pathways to low fertility around the world and would these differences persist? What were the changes in transitions to adulthood and their impact on childbearing? What were the key policy-relevant ways that women's empowerment and gender equality influenced childbearing? What were the population-level impacts of enabling women to exercise their reproductive rights?

During the discussion, experts highlighted measurement issues and new concerns in making progress on health and reproductive rights issues. They pointed out that now was an ideal time to propose more relevant and meaningful indicators to track progress in achieving health-related goals (e.g., monitoring the percentage of demand for contraception that is satisfied as an indicator of universal access to reproductive health). In low-fertility settings, achieving desired fertility might now be as relevant as preventing unintended pregnancies; that is, the “freely and responsibly” part of reproductive rights in the Programme of Action (“All couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so”) was not just about preventing unintended pregnancies, but also about people being able to achieve their desired number of children.

Participants agreed that Governments were showing increased attention to within-country inequalities, and as a result were demanding that whenever possible, demographic and development indicators be stratified by geographic region or socio-economic categories. Some of the challenges to measuring inequality were discussed. For example, interpreting inequality across wealth or income quintiles required an understanding of the population composition of the quintiles, which was often lacking. In addition to socio-economic inequalities, participants identified generational change (e.g., mothers' experiences versus daughters' experiences) in union and family formation as a potential driver of future trends in fertility and the consequences for children and families.

The discussion also pointed to a growing need for “public demography”; that is, re-energized attention to public education on population issues given frequent misinterpretations and incorrect assumptions about fertility and mortality trends, as well as progress on development goals. Mr. John Wilmoth, Director of the Population Division, stressed that educating the world on population issues was one of the key responsibilities of the Division and welcomed experts’ advice as to how to improve the Population Division’s work in that regard.

B. PRIORITIES FOR THE REDUCTION OF CHILD MORTALITY AND INFECTIOUS DISEASE MORTALITY BEYOND 2014

Ms. Sara Hertog (Population Division) gave a presentation entitled “Decomposing global disparities in life expectancy, with an emphasis on infectious causes of death”. The analysis was drawn from a 2012 report of the Population Division entitled *Changing levels and trends in mortality: the role of patterns of deaths by cause* (United Nations, 2012). Ms. Hertog recalled that increases in life expectancy at birth were associated with an “epidemiological transition” in which the share of deaths due to infectious diseases declined while the share due to non-communicable diseases rose. She then used a cause-of-death decomposition analysis to examine “survival gaps” between the world’s regions and a group of the 19 longest-lived populations (with an average life expectancy of 81.4 years).

Africa suffered the largest burden of infectious diseases; reducing its mortality rates from Group I causes of death (which included infectious diseases as well as maternal, perinatal and nutritional conditions) to the rates experienced by the longest-lived population would reduce Africa’s survival gap by 17 years, or 65 per cent. Important causes of death contributing to the gap were pneumonia and diarrhoea, as well as neonatal conditions, HIV/AIDS, tuberculosis, and malaria. In Asia, Latin America and the Caribbean, and developing Oceania, the absolute number of years of life expectancy to be gained from reducing mortality from Group I causes were smaller (5.5 years, 2.7 years and 7.8 years, respectively), but still accounted for a sizeable proportion of their overall survival gaps.

Considerable heterogeneity was observed across regions in the contributions of certain infectious diseases to the survival gaps. For example, excess mortality due to HIV/AIDS was responsible for close to half of the 30-year shortfall in life expectancy in Southern Africa, but just 8 per cent of Middle Africa’s 33-year gap. In Middle Africa, excess mortality due to malaria, pneumonia, diarrhoeal diseases and maternal causes of death caused larger survival gaps than they did in Southern Africa. Within Asia, South-Central Asia and South-Eastern Asia were more affected by infectious causes of death than Eastern Asia. The Caribbean experienced larger survival gaps due to infectious causes like HIV/AIDS and pneumonia compared to Latin America.

Eastern Europe was unusual in that it had a large survival gap with the longest-lived populations, yet very little of the gap was due to infectious diseases. About 9 years of Eastern Europe’s 12-year survival gap could be attributed to non-communicable diseases (NCDs). Ms. Hertog stressed that the gap due to NCDs was nearly as high in certain less developed regions that received more attention to their infectious disease burdens: Africa could achieve a gain in life expectancy of 7.6 years by reducing NCD mortality rates to those experienced by the longest-lived populations, while developing Oceania could gain 8.4 years. Heart disease ranked among the top five sources of survival deficits in every region. Ms. Hertog noted that detailed analysis of survival gaps due specific NCDs, as well as disaggregations by sex, could be found in the Population Division’s 2012 report.

Mr. Kenneth Hill (Harvard University) presented on the topic “Further reductions in infant and child mortality: opportunities and challenges”. Mr. Hill reviewed trends in the annual rate of change in under-five mortality over the period from 1990 to 2012. In general, declines in under-five mortality had

accelerated since the year 2000, especially in less developed regions. Faster progress had been achieved in the 1-4 age group compared to infants under age 1.

Causes of under-five deaths varied by age and region. In the neonatal period (the first month of life), preterm birth and intrapartum complications caused the majority of deaths in all regions, while infectious causes accounted for between 10 per cent and 30 per cent of deaths. After the first month of life, major infectious diseases including pneumonia, diarrhoea, malaria, meningitis, AIDS, and measles accounted for 70 per cent of deaths in sub-Saharan Africa, but less than 30 per cent of deaths in regions such as Europe and Latin America. Mortality from infectious causes such as neonatal tetanus and measles had declined rapidly since 2000, while mortality from malaria and injuries had declined more slowly.

Mr. Hill next focused on factors that were likely to provide favourable conditions for reducing infant and child mortality in coming years. Due to predicted continuation of urbanization, an increasing proportion of births in developing countries would occur in urban areas, where under-five mortality tended to be much lower than in rural areas as a consequence of the higher socio-economic status of urban dwellers as well as their superior access to health services. Mr. Hill said that recent analysis of Demographic and Health Surveys indicated that child mortality in slums located on the peripheries of large cities was not higher than in the urban cores, contrary to some earlier findings. Another factor portending continued reductions in child mortality was recent increases in the education level of women of childbearing age, reflecting improved access to education in recent decades. Research had demonstrated that child mortality risks were inversely correlated with mothers' level of education. Furthermore, more educated women tended to have lower fertility and were less likely to be poor, both of which were factors that would further reduce child mortality risks in the future.

There were challenges, however, to achieving continued rapid gains in child survival. Well-established vaccines had been widely distributed in developing countries and resulted in rapid declines in child mortality, but newer vaccines were not producing as dramatic an effect on under-five mortality overall. In a sense, the "low-hanging fruit" had already been picked. In addition, the fact that under-five deaths were increasingly concentrated in the neonatal period challenged future progress because proven interventions to reduce neonatal mortality, such as improving the capacities of health facilities to address mortality risks associated with preterm birth or intrapartum complications tended to be expensive. Mr. Hill noted further that because preventive interventions had been widely implemented but effective case management had lagged, including for highly cost-effective interventions such as oral rehydration therapy (ORT) for diarrhoea and antibiotics for pneumonia, a focus on improving access to and use of treatment was necessary to continue progress on child survival. Lastly, he suggested that interventions to reduce injury mortality, which had risen in 1-59 month-olds since 2000, were not well researched and could require expensive improvements to built environments.

Mr. Rene Ekpini (Health Division, UNICEF) provided comments on the two presentations. Responding to the presentation on changing causes of death by level of life expectancy, he said that a better understanding of the dynamics of NCDs was needed going forward, while recognizing that HIV, tuberculosis and malaria were still major killers, especially of women of reproductive age. He suggested decomposing the changing contribution of NCDs to survival gaps over time in order to understand evolving mortality risks and the disparities across countries and regions. Responding to Mr. Hill's presentation, Mr. Ekpini suggested looking at the opportunities and challenges from the standpoint of a country programme manager, who had to identify and address the needs of different groups. He stressed that the question of differentials in mortality between urban, peri-urban and rural areas was quite important from a manager's standpoint and should be examined more closely. Responses had to be cross-sectoral; for example to reduce the impact of high fertility on mortality, measures should be taken to reduce early marriage and early pregnancies, and to address barriers to girls' education and to family planning. UNICEF was in the midst of a major push to address neonatal mortality, which required health

system strengthening. However, the role of the community in improving neonatal health should not be discounted, both for providing care and for promotion of practices such as clean delivery. He ended by highlighting the need for political will and social movements to bring in sectors beyond the health sector.

Participants suggested that further insights into the possible future course of child mortality decline might be gained through additional decomposition analysis, which could identify the causes of death that were responding well to interventions. Modelling of child mortality change based on characteristics of mothers was also suggested. In relation to adult health and mortality, the infectious origins of some chronic diseases could also be considered.

Participants commented on the factors that influenced neonatal mortality risks, such as preterm birth, fertility decline, young age of childbearing, and prenatal and delivery care. Mr. Hill said that even with increased access to prenatal care, the standard of care was still low in many settings. Other factors challenging continued improvements in child survival was the slow decline of malaria mortality, particularly in areas outside of sub-Saharan Africa. Also noted was the rise in injury mortality, which Mr. Hill said was more likely a result of such factors as road injuries or the built environment, rather than violence. Some participants raised doubts about the finding that children in slum areas of big cities did not experience mortality disadvantages. Other studies had obtained different results, and a careful consideration of the methods and findings of conflicting studies was urged.

C. PRIORITIES IN WOMEN’S AND ADOLESCENTS’ HEALTH

Ms. Suzanne Petroni (International Center for Research on Women (ICRW)) presented on the topic “Improving the health of women and adolescents: an unfinished agenda”, reflecting on progress and challenges in women’s health, both in meeting the ICPD goals and addressing health challenges that were not included in the Programme of Action. Ms. Petroni recalled that the Programme of Action had introduced a new and more comprehensive concept of reproductive health that encompassed family planning, prevention of treatment of HIV and sexually transmitted infections (STIs), safe motherhood, and prevention of and response to gender-based violence. Since Cairo, there had been solid but uneven progress in reducing maternal mortality, and in improving coverage of skilled attendance at birth, prenatal care, and contraceptive access. More widespread progress had been achieved in regard to HIV prevention, treatment and care. Safe abortion, which had been addressed in a limited way in the Programme of Action, still received inadequate attention and funding. Gender-based violence, which encompassed issues such as female genital mutilation, rape, and child marriage, affected millions of women worldwide, but its contribution to morbidity and mortality was not well quantified.

Ms. Petroni then discussed women’s health issues that had not been prominent in developing countries at the time of ICPD, and were not addressed comprehensively in the Programme of Action. Over the past 20 years the proportions of deaths caused by NCDs and injuries had increased throughout the developing world, while the proportions caused by infectious diseases had dropped. Now heart disease and stroke were the leading causes of death among women globally.

Cervical cancer—which had infectious origins—and breast cancers caused more deaths than maternal mortality in many less developed countries, and health systems in many of these countries were ill-equipped to prevent, screen, and treat these cancers. HPV vaccine offered the promise of preventing cervical cancer in rising generations of young women, but rollout and uptake of this vaccine has been slow in many settings, in part because the vaccine needed to be administered during childhood and many parents were not comfortable vaccinating their young daughters against a sexually transmitted infection.

Ms. Petroni highlighted the effect on women’s health of indoor air pollution from cookstoves, which was linked to chronic obstructive pulmonary disease (COPD), pneumonia and lung cancer. COPD

was the fourth-leading cause of death of women worldwide. Tobacco marketing was also increasingly targeted at women in developing countries.

Ms. Petroni called for increased focus on the health of adolescents, both because of the large proportion of young people in the population (43 per cent of the world's population was younger than 25) and because adolescence was a profound and complex developmental period that could influence health outcomes throughout adult life. More attention was needed to the physical health of adolescents, but also to issues of mental health, substance use, and diet and exercise. She noted that causes of death among adolescents differed between boys and girls, with boys more likely to die of injuries, while girls, particularly in the least developed countries, were most susceptible to maternal mortality. Adolescent girls were subject to a range of sexual and reproductive health risks, often related to early marriage and pregnancy. Adolescent girls who lived in poverty bore heavy burdens of household labour, and faced high risks of anaemia and malnutrition. Ms. Petroni concluded that increased investments were urgently needed to support adolescent health and development. She called for disaggregated data on the health of pre-adolescents aged 10-14 and adolescents by age and sex.

Ms. Adrienne Germain, president emerita of the International Women's Health Coalition, provided invited comments. She called for a paradigm shift in the health sector, focusing not only on length of life, but on quality of life for individuals and groups. Key changes needed included a shift to an emphasis on prevention, rather than technical fixes; aiming for early diagnosis when conditions were more treatable; and making incremental changes to weak health systems. Ms. Germain saw the health of women and adolescent girls as a fulcrum, with investments in mothers reaping gains in the health of both women and their families. Advocates for sexual and reproductive health saw this area as a platform for treating reproductive cancers, preventing adolescents' adoption of NCD risk behaviours, and eventually for treating NCDs. Ms. Germain called attention to inequalities in health and the need for accountability. The capacity of countries to collect and analyze data on health and prevention, by age and sex, needed to be enhanced, and indicators should track equity and quality of health services.

Participants lauded the introduction of adolescent health into the discussion. They noted various challenges to adolescents' health, including early marriage and childbirth, poor access to family planning, and reproductive health care, including postnatal care, and inadequate attention to HIV prevention; and mental health among this age group. Gender and social protection were mentioned as overriding concerns. There was a need to involve adolescents in the design of programmes aimed at their age group. Participants reiterated the need for data disaggregated for the different stages of adolescence and youth (ages 10-14, 15-19 and 20-24), as needs were very different between the lower and upper ends of this range.

Discussion also emphasized the value of a life course approach to health, with attention not only to causes of death but also to morbidity at various stages of life and among population groups. Universal health coverage was often seen as a package of services, but a complementary approach would be to view it from the perspective of the health of the whole person.

D. PRIORITIES FOR REDUCING NON-COMMUNICABLE DISEASE MORTALITY AND MORTALITY AT OLDER AGES

Mr. Sanjay Basu (Stanford University), presented evidence and reflections on the changing landscape of NCDs and associated risk factors, with an emphasis on the cardiometabolic diseases, such as heart diseases and diabetes. He noted that there was movement away from describing NCDs as diseases of lifestyle, in recognition of the multitude of risk factors that came together to influence an individual's risk of developing an NCD, not all of which were within his or her power to change.

Mr. Basu gave a brief overview of evidence of the burden of morbidity and mortality attributable to NCDs, citing evidence from the 2012 Global Burden of Disease (GBD) study. The disability-adjusted life year (DALY) metric indicated that the global burden of NCDs was small among children and young adults, but that it became substantial in the middle-ages and grew through older ages. NCDs accounted for a larger proportion of global DALYs in 2010 compared to 1990. By 2010, ischemic heart disease had overtaken lower respiratory infections as the leading cause of DALYs worldwide.

Across regions of the world, there was substantial variation in the proportion of DALYs caused by NCDs, ranging from less than 20 per cent in parts of sub-Saharan Africa, to greater than 85 per cent in Australia, Canada and many countries in Europe. Mr. Basu urged caution when looking at national-level assessments of burden of disease. He noted that countries that appeared to have relatively low burdens of NCDs could still face large burdens among certain sub-populations within their countries.

Mr. Basu pointed out that the estimates he had presented from the GBD study, like other global health and mortality estimates, were subject to multiple sources of uncertainty. For many of the countries covered in the GBD, high-quality data on morbidity, mortality and risk factors were sparse and estimates relied upon non-representative samples, mortality and cause-of-death models, and patterns borrowed from neighbouring countries with better data. In particular, many of the estimates of morbidity and risk factor prevalence relied upon the results of surveys that oversampled from urban and hospitalized populations, which were then adjusted using demographic models and applied to the overall population.

In light of the weaknesses associated with existing data sources on NCD risk factors, Mr. Basu encouraged participants to think about alternative sources of information. For example, consumption of a few key commodities—tobacco, alcohol, and foods high in sodium, unhealthy fats or sugars—was known to be linked closely with the incidence of NCDs. Thus tracking data on sales of these products could yield insights into the past and future patterns of NCD burden. The industries that sold and distributed these commodities had compiled these data quite consistently on a per capita basis and over time.

Mr. Basu then examined the sales data pertaining to tobacco, alcohol and unhealthy foods to assess whether they shed light on the observed trends in NCDs. Evidence from the United States indicated correlations between sales of tobacco, alcohol, soft drinks and processed foods, thus it was difficult to identify the effect of any one factor on morbidity and mortality risks.

With respect to unhealthy foods, while the health risks of dietary sodium and unhealthy fats were well established, evidence of the risks of sugars was still preliminary. There was evidence that the quantity of sugars consumed was linked to diabetes risk. Mr. Basu posited that relative to trends in body mass index (BMI), trends in sugar consumption, which he examined using sales data on soft drinks, were a superior indicator of probable trends in metabolic disorders. Because metabolic disorders were often observed in people with normal BMI, many in the medical community were beginning to question the utility of BMI as an indicator of risk. Indeed, in Mexico, which had surpassed the United States in soft drink consumption and where soft drinks were consumed more than milk among children over five years of age, type 2 diabetes was being diagnosed among children who were not (yet) obese, indicating that obesity may follow, rather than precede, metabolic disorders. Mr. Basu suggested that increasing sugar consumption and incidence of metabolic disorders appeared not to be an inevitable corollary to economic development. For example, the Republic of Korea, Finland and Sweden had relatively low consumption of soft drinks per capita, relative to their gross domestic products. Soft drink consumption in these countries was similar to middle-income countries like Brazil.

Regarding tobacco consumption, several countries had seen declines in smoking prevalence over recent years, with reductions greater than 10 per cent between 1997 and 2010 in Denmark, Japan, Norway, Republic of Korea, Serbia and Slovenia. Globally, however, cigarette sales had increased from

around 5 billion sticks in 1997 to more than 6 billion sticks in 2013. Most of the increase was due to increased smoking in Asia: in China cigarette sales grew from around 1.5 billion sticks in 1997 to around 2.5 billion currently. Notably, smoking prevalence had not increased much in China, indicating that those who did smoke were smoking more heavily. An assessment of the impact of various tobacco-related interventions in India indicated that taxing tobacco products (bidis and cigarettes) was more effective than medical interventions in reducing the risk of mortality from myocardial infarction (heart attack). Mr. Basu attributed this result to the broad reach of taxation policies compared to Indians' uneven access to medical interventions.

With respect to the unhealthy consumption of alcohol, there was a need to track not only the volume of alcohol consumed in a population, but also the patterns of alcohol use. For example, relatively large volumes of alcohol were consumed in Cyprus, Italy, Portugal and Spain, but the associated risks posed for NCDs were small because people tended to drink only small amounts of alcohol at a time. In contrast, in parts of Eastern Europe, particularly the Russian Federation and Ukraine, large volumes of alcohol were consumed through a high prevalence of binge drinking (consuming many drinks in rapid succession), with significant implications for NCD risk.

Mr. Basu then considered one non-commodity risk factor, physical activity. He noted that major declines in physical activity had occurred in many parts of the world. In particular, occupational activity had declined with a shift towards more sedentary tasks. This shift had occurred in rural as well as urban areas. Contrary to the common assumption that increases in the use of vehicular transport was behind a shift towards less activity, the declines had often been observed to precede motorization. Women tended to have much higher rates of physical inactivity than men, even after adjusting for age. Degrees of activity versus inactivity seemed to have separate risks, Mr. Basu explained. In other words, someone who exercised vigorously three times per week but was mostly sedentary for eight hours per day would likely face greater risk than someone who engaged only in light exercise but had few extended sedentary periods.

Mr. Basu concluded his presentation by reminding participants that disparities in diagnosis—a consequence of disparities in access to and quality of health care—impeded the development of the knowledge base on NCDs and risk factors and undermined the potential of interventions. Among the poor most NCDs went undiagnosed, whereas among the rich most NCDs were diagnosed. There was a need to recognize that the types of NCDs and important risk factors that burdened low-income countries might differ importantly from those in high-income countries. An example was the substantial risks of respiratory diseases among women in low income countries associated with indoor pollution generated by cookstoves.

Mr. Alberto Palloni (University of Wisconsin, Madison) then delivered a presentation titled, "Longevity in the 21st century: how strong is the tug of the past," in which he examined the importance of changes in the health-related characteristics across birth cohorts to both inform projections of life expectancy and understand the nature of future trends.

Recalling Mr. Basu's references to unhealthy diets and the rising diabetes burden in Mexico, Mr. Palloni predicted that similar trends would soon be observed in other countries as well. He noted three major cohort shifts in Latin America and the Caribbean. First, adult cohorts were changing relative to their past exposure to early conditions. A growing body of research indicated that individuals who experienced adverse exposures in childhood were more susceptible to developing chronic illnesses later in life. Second, adult cohorts were changing with respect to their smoking behaviour. For the region as a whole, the cohorts that smoked the most were today around 60 years old. Third, adult cohorts were changing with respect to their prevalence of obesity. In Mexico, obesity prevalence among adults was

around 38 per cent and other Latin American and Caribbean countries were showing increasing obesity rates as well.

All three shifts implied changes in the risk of chronic conditions, such as cardiovascular disease, cancers, type-2 diabetes and respiratory diseases. In addition, the shifts had the potential to slow improvements in longevity by preventing the reductions in mortality that typically occur in adult ages during the mortality transition. Furthermore, the shifts implied changes in the demand for health infrastructure, services and expenditures, particularly those related to the long-term chronic care required for patients with type-2 diabetes.

Adult mortality risks in different countries could be understood according to their locations within the four stages of the tobacco epidemic: 1) an early epidemic where the prevalence of smoking was increasing among men, but tobacco use had not yet contributed to a substantial proportion of deaths; 2) the prevalence of smoking was high and rising among men and lower but rising among women, and the proportion of deaths attributed to tobacco use was growing, especially among men; 3) smoking prevalence was declining among men, peaking among women, and the proportion of deaths due to tobacco use was growing rapidly, especially for men; and 4) smoking prevalence was declining among men and women, and the proportion of deaths due to smoking was declining among men, but still rising among women due to the lag time between adoption of smoking behaviour and smoking-related death. While Northern America was in the late stages of the tobacco epidemic, many countries of Latin America and the Caribbean, such as Mexico, Cuba, and Peru, among others, were still in the middle stages of the epidemic, while others, such as Brazil, Argentina and Chile, were in the mid-to-late stages.

Mr. Palloni presented the results of an analysis that estimated what the life expectancy at age 50 in each country would have been if the tobacco epidemic had not occurred. In Argentina, male life expectancy at age 50 would have been 6 years higher in 2010 if the men had never smoked; for women, the lost years of life due to smoking was around 2 years. Males in Brazil had lost between 3 and 4 years of life expectancy at age 50 due to smoking, while the difference was less than one year for females. In Cuba, still in the middle stages of its tobacco epidemic, men lost between five and six years of life expectancy at age 50 due to smoking (the impact was only slightly smaller for women), effectively negating the gains in life expectancy achieved over the previous 20 years. Mr. Palloni explained that the effect of smoking emerged not as a decline in life expectancy since mortality risks related to other causes were declining, but as an unrealized gain. The prevalence of smoking among cohorts just reaching adulthood would predict future mortality risks. Recent surveys had indicated that younger people in Brazil smoked less than older adults, suggesting that public campaigns against smoking were having the desired effect. In Chile, however, it appeared that the campaigns were not successful and younger people were smoking more than older adults.

Mr. Palloni then discussed the impact of changing cohort composition with respect to obesity on levels and trends in longevity. He focused on the case of Mexico to estimate the excess mortality due to diabetes and overweight. Analysis indicated that Mexicans lost between 3 and 4 years of life expectancy at age 50 due to overweight and obesity, accounting for between 9 and 14 per cent of the total expected years of life lived after 50. He noted that the effects would have been even larger if the association between smoking and obesity in producing excess mortality had been taken into account. While the analysis found some evidence for an effect of poor nutrition in childhood on mortality risks at older ages, the associations were weaker than those for smoking and obesity.

Ms. Karen Sealey (World Health Organization) offered a discussion of the presentations delivered by Mr. Basu and Mr. Palloni. She recalled that, unlike for many other regions, obesity had been identified as a major target for intervention in the WHO plan for the Latin American and Caribbean region. She noted the need to consider carefully the challenges to implementing commodities-based

interventions in certain contexts. In many parts of Latin America and the Caribbean, for example, alcohol sales and consumption were considered a critical component of the tourism industry, thus efforts to decrease consumption tended to be viewed unfavourably. Both culture and gender needed to be considered in measuring NCD risks and developing policies to address them.

Ms. Sealey cautioned participants against overreliance on health transition theories that predict that developing countries will follow the paths already taken by developed countries on things like risk behaviours and disease risk patterns. She proposed instead thinking of different risk profiles as mosaics. Accordingly, it was critically important to improve the evidence base, especially in low-resource settings, and Mr. Basu's incorporation of industry data on sales and consumption represented a significant contribution in this regard. She emphasized that the research community should not wait until they have a perfect database, but should explore potential proxies that could enrich understanding of health and mortality trends. At the country-level it was critical to build capacity to analyze the data that had already been collected. Participants agreed that it was important to keep in mind the limitations of existing data in terms of both uncertainty and lack of generalizability across countries and regions.

The ensuing discussion focused on the degree of disability associated with NCDs. Participants noted that much of the attention of this meeting and others tended to focus on mortality, but that disabilities associated with NCDs accounted for much of the burden that countries needed to be prepared to respond to as their populations aged and exposure to risk factors changed. The costs of medical treatments associated with diabetes management and care, for example, were far greater than the mortality impact of the disease. The ability to forecast the coming burdens on health care systems and societies was particularly crucial for low- and middle-income countries that were ageing much faster than high-income countries had in the past. While quantifying disability was difficult, efforts to develop disability scales by the WHO and others seemed reasonable and consistent.

Next, participants shared their thoughts on the origins of differences in NCD diagnosis by income group. Some thought that differences in health-seeking behaviour might explain the disparity, with lower-income people tending to access health services less regularly, in part related to their distance from health care facilities. Others suggested that the explanations were more complex. Evidence emerging from country surveys in the WHO Study on Global Ageing and Adult Health (SAGE) dataset had indicated that variations in access to and utilization of health care could not explain all of the differences in diagnosis. Notably, variations in insurance coverage also could not explain the differences.

E. EFFECTIVE POLICY AND PROGRAMME APPROACHES TO IMPROVE HEALTH OUTCOMES

Mr. William Dow (University of California, Berkeley) presented evidence from a growing body of research on incentivizing the use of health care. He invited participants to think about incentives as positive rewards whereby people were paid to utilize health care. To economists, this approach represented an extreme version of a price subsidy, such as those that subsidize doctors' fees or medication costs. One could think about a positive reward as compensation for the associated costs that people incurred in accessing health care, such as those related to transportation or time spent in waiting rooms.

Three main questions typically arose when considering whether and how to use incentives to increase peoples' access to and utilization of health care: 1) were incentives affordable? 2) could incentive programmes be administered? and 3) did incentives exacerbate corruption?

Ethical concerns were prominent in most discussions of incentivizing health behaviours. Concerns that offering payments for changing behaviour could be coercive were common. An ethics working group considered the issues surrounding incentives and proposed "that concerns around the

potential for incentives to undermine recipient autonomy are misplaced when incentives are used to overcome economic obstacles or a lack of effective motivation, and when recipients are incentivized to engage in health-related behaviours or practices with which they are already familiar and which they regard as beneficial and worthwhile”¹. Thus incentives were considered ethical if they moved people in the direction that they already wanted to go.

Guidance on how to design and implement incentives drew heavily on the psychological literature that distinguished between intrinsic motivation—the desire to engage in a behaviour without any expectation of reward—and extrinsic motivation—the desire to engage in a behaviour in order to earn a reward or avoid a punishment. A common goal was to use extrinsic incentives to activate an individual’s intrinsic motivation. In order to ensure that an incentive programme was beneficial overall, designers needed to understand not only the efficacy of the incentive in encouraging people to change their behaviour, but also the impact of incentive programmes on those who did not get paid, or when payments stopped.

Incentives could be used to overcome various barriers that often stood in the way of people acting on their intrinsic motivation. For example, incentives could help to overcome the tendency to focus on the present and discount the future, which was especially common within high-poverty contexts. Incentives aimed to bring the rewards closer to the present in order to help people attain what they really wanted in the future. Incentives could also be employed to counter procrastination. Small incentives, called “nudges”, were sometimes used to help people to avoid putting off behavioural changes. For certain health behaviours, incentives could be a powerful tool to help individuals and those around them to think differently about their motivations. For example, a person could use the promise of an incentive to justify seeking an HIV test to friends or family, without having to admit having engaged in behaviours that carried the risk of HIV infection.

In designing effective and non-coercive incentive programmes, it was necessary to consider the size of the incentive, the frequency with which it was dispersed, whether receipt of the incentive was certain or based on lottery, who was being incentivized (i.e., patient, parent, doctor, etc.), who was receiving the income (e.g., patient, clinic, hospital), and whether the incentive was means tested.

Incentives had been deployed in a variety of health domains in the past. Demographers often associated the term incentives with controversial sterilization programmes that were implemented in some countries in the past, clearly an unethical use of incentives for an irreversible procedure. More appropriate and successful examples of the use of incentives existed for other health domains. Giving bednets away at the doctor’s office increased attendance at prenatal care visits. Paying women to give birth in facilities substantially increased rates of skilled birth attendance in India. Giving away free food in vaccination camps resulted in large increases in vaccination coverage. Incentive programmes had been implemented successfully for HIV screening and tuberculosis medication adherence as well.

Incentives had also proven useful in encouraging people to change certain non-medical health behaviours. Rewards to substance abusers who abstained from using and payments for quitting smoking were promising in some settings. There was no evidence, however, that incentives worked to encourage physical activity. There were some initiatives to incentivize health outcomes, such as weight loss, but these were deemed problematic because the control that people had over their own weight varied across individuals. One trial in Tanzania tested incentives to encourage people to protect themselves against sexually transmitted infections (STI). It found a 28 per cent reduction in STI incidence related to the

¹ London, A.J., D.A.Borasky Jr., A. Bhan, for the Ethics Working Group of the HIV Prevention Trials Network (2012). Improving ethical review of research involving incentives for health promotion. *PLoS Medicine* 9(3).

incentives, but the trial was not designed in such a way that the programme could be scaled up to a national level.

Conditional cash transfer programmes were one type of incentive initiative that had been implemented successfully on a large scale. Mr. Dow gave the example of the Oportunidades programme in Mexico, which paid people to utilize prenatal and well child care services, receive vaccinations and access health education. Mr. Dow said that research indicated that unconditional cash transfers, in which payments were not contingent on performing certain health behaviours or achieving a health outcome, could potentially be effective, but perhaps not in the long run.

Mr. Dow concluded that there was strong potential for incentive programmes to be cost-effective tools to improve utilization of health care and adoption of healthier behaviours. He emphasized that the design and implementation of any such programme must be context-specific, dependent on prevailing prices and incomes, for example, as well as people's knowledge and attitudes about the programme. Critically, adequate administrative capacity was needed to implement and monitor any incentive programme.

Ms. Rachel Nugent (University of Washington) then presented the evidence on effective policy and programme approaches to promoting healthy lifestyles. She noted that many effective and cost-effective interventions to prevent morbidity and mortality from NCDs had been identified, but that most of the studies were conducted in developed countries. Nonetheless, there was sufficient evidence to point to the likely efficacy of interventions aimed at tobacco, diet and physical activity in developing countries as well.

Health promotion was defined as the process of enabling people to increase control over, and to improve, their health. This included not only efforts focused on influencing individuals' behaviours, but also those interventions that aimed to effect social and environmental changes.

Ms. Nugent described that health promotion could take many forms. Information, education and communication (IEC) campaigns on specific health topics were a common type of health promotion, but were often ineffective. It had been suggested that IEC sometimes failed because the health behaviour policymakers desired to change was rooted not in ignorance, but in preferences. Regulatory actions—such as taxation, bans and marketing restrictions—comprised a type of health promotion strategy that essentially removed choices from individuals; these required the cooperation of agencies outside of public health, as well as strong monitoring and enforcement capacity. Other types of health promotion strategies included environmental, engineering and structural initiatives, as well as incentive-based policies.

For tobacco, there was strong evidence that taxes on tobacco products worked to reduce consumption. Taxes needed to be large, such that they increased the price of tobacco products by anywhere from 50 per cent to 100 per cent. Large tax hikes administered at once had more impact than a series of smaller tax increases spread out over time. Evidence indicated that young people and the poor were most responsive to price increases on tobacco. In response to concerns that the poor were disproportionately disadvantaged by tobacco taxation, one study concluded that the marginal effects of tobacco taxation were not regressive because those who bore most of the costs also reaped most of the benefits. Other tobacco interventions that seemed to be cost effective included: subsidies for smoking cessation, bans on smoking in public places, restrictions on tobacco marketing aimed at youth, and strong warning labels on packaging.

Common health promotion strategies to reduce the harmful use of alcohol included: prohibitions on alcohol availability, such as legal age for purchase or consumption and restricted hours of sales; laws

that restricted drinking and driving; restrictions on advertising and sponsorships by alcohol companies; and taxation and tiered pricing systems that taxed lower-quality alcohol more heavily.

Several health promotion strategies were available to promote healthier diets, such as sustained, community-based information campaigns that focused on specific food and drinks, coupled with labelling and regulation. Regulations that restricted marketing of unhealthy foods and drinks to children were both low-cost and effective, as were school-based diet and activity programmes, garden programmes and fresh fruit and vegetable programmes. Economic incentives toward healthier eating had taken the form of subsidies to lower the prices of healthful foods, taxes to increase the prices of less healthful foods, and long-term agricultural and infrastructure changes to facilitate the production, transport and marketing of healthier foods. Strategies known to be ineffective to promote healthier diets included short term media efforts that targeted multiple risk factors simultaneously, detailed nutrition facts labels, menu labelling, and restricted accessibility to vending machines in schools, among others.

There was less evidence available to assess the cost-effectiveness of initiatives aimed at promoting physical activity. Most studies had focused on high-risk populations, older persons or work site interventions, and thus their findings were not generalizable to the greater population. Some initiatives had proven effective at increasing physical activity in middle- to high-income countries, and were considered promising in low- to middle-income countries. One such programme was Brazil's Academia da Cidade Programme (ACP) which provided free, supervised physical activity classes in public parks. Ms. Nugent noted that the indirect cost benefits of physical activity initiatives were greater, in general, than the direct medical benefits, but were even less researched.

Interventions in the built environment to promote physical activity, such as urban design that incorporated walking and biking paths, for example, were being explored. The potential utility of e-technology for case management and health promotion was also inspiring a large amount of research. There were opportunities to leverage the tools and expertise of multiple sectors to promote improved health ("crowding-in"). There was increasing private sector involvement and investment in health promotion, such as workplace incentive programmes for physical activity or weight loss, but most studies of their cost-effectiveness were small and not well evaluated. Ms. Nugent concluded that more research was needed on health promotion strategies that seemed promising, but were unproven.

Mr. Jean Christophe Fotso (Concern Worldwide, United States) discussed the various policy and programme approaches to improve health outcomes from the two presentations. He noted that both had prioritized prevention, which was appropriate especially for developing countries where the health systems were not yet sufficiently equipped to provide effective treatments for many NCDs.

Mr. Fotso said that it was important to identify where the successes achieved in high-income countries could be adapted to low- and middle-income countries while recognizing that not all strategies would be transferrable. Tobacco taxation was an example: many countries in the global South had signed free trade agreements that placed prohibitions on tobacco taxation. This was not to say that tobacco regulation was impossible, but that careful implantation strategies were required. A top priority was adopting initiatives to prevent young people from starting to smoke. School-based programmes could be coupled with taxation and other regulations. Some of the same types of initiative could be used to prevent alcohol use among young people.

With respect to unhealthy diet, many of the programmes in high-income countries lent themselves to adaptation in low-income countries. To ensure availability, accessibility, and quality of healthy foods was paramount. Mr. Fotso identified initiatives that encourage bicycle riding underway in many countries as promising to increase levels of physical activity.

Mr. Fotso concluded his discussion by emphasizing the importance of exploring opportunities for the public health community to cooperate with the private sector to encourage healthier choices and behaviours. He said that most companies were aware of their social responsibilities and would be willing to participate in health promotion initiatives.

Participants expressed concern that individuals may not have as much control over their health outcomes as much of the health promotion and incentive research implied. Physiological barriers that varied across individuals (e.g., genes) could prevent people from losing weight, for example. Mr. Dow responded that, in general, physiological barriers were likely to be only a small part of what determined an individual's likelihood of success.

Participants also discussed the difficulty of determining whether programmes that promoted or incentivized healthier eating, for example, were effective. It was difficult to obtain valid measures of how much unhealthy fat or sodium people were consuming because respondents tended to misrepresent their consumption in food diaries. In this respect, population-level data on consumption proved more reliable. One participant suggested that a cap-and-trade policy on sodium had the potential to improve the quality of diets by limiting the amount of sodium available for consumption in processed foods.

F. KEY CHALLENGES AND OPPORTUNITIES FOR FURTHER PROGRESS IN IMPROVING LIFE EXPECTANCY AND RESPONDING TO IMPLICATIONS OF FERTILITY TRENDS FOR THE GLOBAL DEVELOPMENT AGENDA

On Tuesday, 22 October 2013, participants in the two expert group meetings joined together once again to engage in discussion of key challenges and opportunities for further progress in improving life expectancy and responding to implications of fertility trends for the global development agenda. The intent of the joint sessions was to take advantage of synergies between the two substantive expert groups and ultimately to guide the substance and recommendations with respect to current and future fertility and mortality trends to be included in the 2014 report of the Secretary-General on World Demographic Trends.

Mr. Alberto Palloni (University of Wisconsin-Madison) summarized the most salient points discussed in the mortality meeting, organizing his comments around the key health and mortality concerns that applied to the various stages of life. On mortality in childhood, although some parts of Africa, Asia and Oceania lagged behind, enormous progress had been achieved in reducing mortality risks among children ages 1 to 4. These successes were attributed to expanded vaccination coverage and widespread use of effective treatments for some of the major infectious diseases of childhood. With reductions in child mortality, a growing proportion of child deaths were occurring in the neonatal period (the first month of life), a time during which mortality risks tended to be especially difficult to address. Women's nutrition, prenatal care and delivery care were identified as promising avenues for continued reductions in both child and maternal mortality, recognizing the strong links between women's health and neonatal mortality.

In order to leverage past successes to address remaining challenges on child mortality, new tools and research were needed. Decomposition tools could point to which causes of death need to be addressed to improve survival. New indicators could be developed to account for demographic shifts that influence the risk of child mortality. It might be useful, for example, to track child mortality risks by parity, since as fertility rates fell the proportion of high parity births declined and high parity births tended to be associated with greater mortality risks. Geographical differences in risk of child death, including the variable risks in peri-urban areas, also merited further examination.

On adolescent health, a priority need was for better indicators to track adolescent health and mortality risks over time. Demographers tended to focus on the age group 15-59 years when discussing mortality risks in early- and middle-adulthood, but this broad range was not particularly useful to those working to identify priorities to improve adolescent health and survival. Indicators disaggregated for the age groups 10-14 and 15-19 were needed to better understand the needs of adolescents. Indeed, the health concerns of adolescents increasingly were recognized as important to national and global health agendas given that many of the important risk behaviours that led to morbidity and mortality later in life—such as tobacco use, poor nutrition, physical inactivity and the harmful use of alcohol—tended to be established in adolescence and young adulthood. The incidence of injury and death associated with accidents and violence among adolescents was also cause for concern, and gender differentials associated with culture played an important role in shaping those risks.

The age range 15-59 was a crucial period to address women's health, not only to reduce the risk of morbidity and mortality associated with reproductive and maternal conditions, but also to address the circumstances that increased women's risk of chronic diseases. Exposure to indoor air pollution, for example, was responsible for a substantial portion of the burden of respiratory diseases in adult women. Insufficient access to diagnosis and treatment of certain diseases like breast cancer was also identified as a priority area to address to improve the health and survival of women.

With respect to health and mortality risks among adults over age 60, life expectancy at age 60 tended to progress linearly over time and an open question was whether there was much room to accelerate that progression. Addressing risk factors associated with chronic diseases such as diabetes and cancers offered some opportunity for intervention. Many of the countries in the midst of their epidemiologic transitions faced a double burden of infectious and chronic diseases.

Mr. Palloni concluded that precisely which types of interventions could be effective to accelerate improvements in health and survival remained unclear. Gains to be made from investing in maternal and child health interventions were more certain than those that aimed to address adult mortality more generally. Evidence for the effectiveness of incentive-based interventions was sparse, and there was a host of ethical issues to consider before recommending this type of policy approach. Information, education and communication interventions seemed not to be effective, and while there was strong evidence for the impact of regulatory action on alcohol use and taxation on tobacco use, it was unclear whether similar actions would be effective for other risk factors, such as unhealthy diet. Some participants suggested that successes in combating and treating HIV/AIDS offered some good practices that could potentially be adapted to address other health concerns. Others noted that the evidence on mortality risks among adults was even sparser than that for children and where it did exist, it focused primarily on maternal health.

Ms. Monica Das Gupta (University of Maryland) presented a summary of the key points from the fertility meeting. The first issue, given that most of the countries still experiencing high fertility were in sub-Saharan Africa, was whether fertility trends in this region were unique compared to other regions. Sub-Saharan Africa has had slightly higher pre-transitional fertility levels, a much later onset of the fertility transition and a slower pace of fertility decline. Moreover, the fertility transition in sub-Saharan Africa began at lower levels of development than when it began in other regions. Fertility stalled in mid-transition for some countries, a pattern that had rarely been observed in other regions. Future prospects for change rested on investments in girls' education and family planning programmes.

A swift and continuous fertility decline could produce a sharp change in the age structure of a population with a rise in the number of working-age adults relative to the numbers of children and elderly adults. Sub-Saharan Africa was facing several opportunities and challenges to reaping the potential economic benefits from relatively large cohorts entering the working ages (i.e., a demographic dividend). Countries in the region that were still early in their fertility transitions or had experienced stalled

transitions were not yet in a position to realize the potential benefits of a demographic dividend. Countries in which fertility declines had occurred disproportionately among high socio-economic status groups often had difficulty mobilizing resources to invest in their young people.

The traditional policy levers, including investment in education and family planning, needed to be refined in order to better address the challenges facing youth in the region, especially unemployment and underemployment, the gap between skills and jobs, early marriage among girls and limited sexual and reproductive health services for youth. Such refinements included, for example, managing the transition from school to work. Several years lapsed between the end of schooling and the beginning of the first job for young people in many countries. Some of the potential unintended consequences of increased investment in education were also noted, such as when disparities in school quality opened up new levels of inequality in a country or if lowering the cost of education to families bolstered high fertility rates.

In other regions of the world, fertility had declined to low levels but followed different pathways that raised questions about the implications of lower fertility for transitions to adulthood (e.g. moving out from the parental home, marrying, having a child or obtaining a job). In Europe, fertility declined to below-replacement levels in the 1990s, recuperated somewhat in the 2000s and experienced further declines after the 2008 economic crisis. Policies to influence fertility tended to be either explicitly pronatalist and nationalistic or focused on creating conditions for women and men to have the children they wanted by promoting gender equality in the home and work-family policies. In Europe, a new pattern of transitions to adulthood had taken root, one that was late, protracted and complex. Marriage and parenthood were postponed more so than entry into union. In addition, delayed transitions to adulthood had implications for individuals' economic achievement later in life.

In Latin America and the Caribbean, most countries were moving towards or had reached low fertility but the region was unique in that high levels of childbearing at young ages continued and this was connected, in part, to inequalities in schooling. There was also some evidence of a growing, voluntary retreat from childbearing. Asia was a region where some of the most rapid declines in fertility had occurred (the Islamic Republic of Iran was an example), and where recent efforts to increase fertility had not yet shown results. Countries in Asia were still generally characterized by low rates of cohabitation but diverse patterns in age at marriage. Meeting participants noted other conditions influencing the transition to adulthood: housing availability and prices; technology, such as the use of mobile phones to increase young people's access to sexual and reproductive health information; and culture, which dictated which paths through cohabitation, marriage and childbearing were socially acceptable.

Gender was an important dimension to consider in understanding the drivers of trends in fertility and the transition to adulthood. Youth-friendly societies also tended to be woman-friendly and family-friendly. Some evidence pointed to reversals in gender inequality in education (i.e., more girls achieving high levels of schooling than boys), such as in Europe and Latin America, that could potentially affect trends in union formation and childbearing. Furthermore, some research indicated that couples in more egalitarian households tended to have more children than couples in less egalitarian households.

Ms. Das Gupta closed with a summary of the population-level benefits of empowering women and enabling people to exercise their reproductive rights. When women had access to better control over reproduction they tended to obtain more schooling, have better job prospects and achieve higher lifetime earnings. Studies showed that the poorest women tended to reap the greatest benefits and that those benefits boosted their children's human capital accumulation and earnings as well. Satisfying the unmet need for family planning accelerated fertility decline, ending unsafe abortion improved maternal health, and ensuring skilled attendance at birth benefitted the health of both mothers and their infants. She noted that taking a rights-based approach to fertility and reproductive health meant being prepared for people to exercise their preference to have more children instead of fewer.

Following the two expert group summary presentations, an interactive discussion coalesced around three key issues of relevance for both fertility and mortality levels and trends: 1) how to organize the discussion of demographic trends to better explain the different challenges and priorities of countries at various levels of fertility and mortality, 2) how to consider incentive-based programmes that aim to address challenges posed by current demographic trends, in the context of existing ICPD language and 3) whether the expert group wanted to recommend that countries set new targets in order to accelerate progress in health, survival, and universal access to reproductive health, including family planning.

Participants from the fertility meeting appreciated the life course approach used to organize the discussion of global health and mortality trends and challenges, but they noted that a similar approach did not lend itself to the discussion of fertility trends and challenges. For mortality, reducing mortality rates was a universally shared goal, but with respect to fertility, some countries were interested in lowering fertility rates while others aimed to raise fertility rates. Furthermore, while the mortality transition seemed to be constrained by an upper-limit on the length of life, the end of the fertility transition was unknown.

One promising approach to organize the fertility discussion entailed classifying countries according to their fertility level and the potential consequences for families and the economy. The challenges and priorities of countries with persistently high levels of fertility were different from those of countries with fertility around the replacement level, which, in turn, were different from those of countries with fertility rates well below the replacement level. However, one challenge to a classification drawn along levels of fertility was that those levels tended to change over time, and even countries with below-replacement level fertility could experience increased fertility (e.g., periods of low fertility were driven, in part, by tempo effects that eventually subsided).

The discussion then turned to consider the potential utility of incentive-based programmes that aimed to improve access to or use of health care services, including reproductive health services and family planning. Mr. Wilmoth called participants' attention to paragraph 7.22 of the ICPD Programme of Action, which read "Governments are encouraged to focus most of their efforts towards meeting their population and development objectives through voluntary measures rather than schemes involving incentives and disincentives." He asked whether revisiting the recommendations with respect to incentive-based programmes was worthwhile in light of the changes that had taken place in the 20 years since the ICPD.

Participants recalled that the specific language quoted from the Programme of Action was borne of a history of abusive government policies with respect to family planning in some countries. The sterilization incentive programme implemented in India in the late 1970s, for example, was ethically inappropriate, since the payments to those who underwent the procedures were large enough to be considered coercive and the procedures themselves resulted in irreversible changes to the patients' bodies. In general, participants agreed that while some incentive programmes could be effective, they needed to be designed on a local level, taking into account contextual and cultural factors, and with careful and closely monitored implementation.

Mr. Dow described several types of incentive programmes—such as subsidies, conditional cash transfers and performance-based financing for providers—with the common thread being that each aimed to lower the price of a behaviour. Programmes that subsidized the price of visiting a doctor or purchasing a medication or family planning method could all be considered incentive-based and were widely implemented around the world. Initiatives that lowered the price below zero, thereby paying people, were less common and tended to be more fraught with concerns about coercion. There was some evidence that conditional cash transfer programmes tied to behaviours like attending antenatal care visits, well-child checks, and talks that disseminate information on family planning were both successful in influencing

behaviours and cost-effective. Financial incentives around provider quality, such as ensuring that they stocked supplies of a range of family planning methods or counselled a minimum number of women, were also considered, although some worried that the incentives could encourage providers to act in a way that was not in the best interest of the patient.

Participants noted that incentive programmes were common in many areas of health policy. For example, health care costs were frequently subsidized by Governments and incentive programmes for smoking cessation had been implemented in multiple contexts. Participants suggested that regulatory actions could also be considered incentive programmes. Laws that prohibited recreational drug use, for example, provided a disincentive by threatening punitive action for illicit behaviour. Outside of health policy, tax rates that varied according to marital status could be considered incentive programmes as well.

Some participants emphasized that incentives should be used only to help move people in the direction that they already wanted to go, thereby improving the outcome from both the individual and policy perspectives. Others wondered if externalities could be a consideration in whether to implement incentive-based programmes. If an individual's behaviour had negative externalities for others, was it appropriate to incentivize a change in behaviour even if the individual did not already desire to change?

Participants expressed concern that carrying over incentive programmes from other health policies into family planning risked compromising the principles of the ICPD. It was deemed different to incentivize smoking cessation, for example, than to incentivize limiting fertility or having additional children. Examples of family planning incentives that would move people in the direction that they already wanted to go included to lower the cost of contraception for women who did not want more children and to lower the cost of childrearing for those who did want more children. It was more controversial to consider paying people to use particular methods of contraception, since there was a substantial risk of coercion. One possible approach to minimize coercion in incentivizing family planning was to keep the amounts of the payments very small. Research had indicated that small incentives, called “nudges”, could help people to overcome barriers (such as transportation costs or the tendency for procrastination) in order to carry out their wishes with respect to family planning.

The discussion also considered how incentive-based programmes were being utilized in several low-fertility settings in order to encourage families to have more children, an issue that was growing in prominence since the ICPD. Policies included payments for the birth of a child and subsidized child-care and education costs, among others. One participant observed that in some countries of Western Europe the rhetoric around fertility policy seemed to emphasize enabling people to fulfil their wishes with respect to family size, but that in parts of Eastern Europe the pronatalist policies were explicitly driven towards incentivizing higher fertility.

Participants agreed that any use of incentives needed to be rooted in a human rights framework that aimed to eliminate barriers that stand in the way of improved health and well-being. The four dimensions of human rights standards in regard to the right to health—accessibility (including affordability), availability, acceptability, and quality—were cited as central to designing and implementing effective policies for health and family planning. In that regard, it was important to consider whether incentive-based programmes were the best use of resources for a given setting, especially when progress was still lagging in ensuring good quality of care. Participants noted that poor quality of care was often a disincentive itself (e.g., lack of information, counselling and availability of different contraceptive methods led to a higher likelihood of method discontinuation and of not seeking a replacement method). Some participants expressed concern that the incentive programmes could prove unaffordable or unsustainable, and could appropriate resources that were otherwise needed to improve health systems more generally.

The discussion then shifted to whether the expert groups wanted to recommend that countries aspire to particular targets with respect to health, mortality and fertility into the future. On health and mortality, one participant emphasized that while enormous success had been achieved in recent decades on water and sanitation, it was important to establish new targets in order to continue that momentum. It was noted that economic analysis deemed water and sanitation infrastructure projects to be less cost-effective relative to other interventions to reduce diarrhoeal diseases. There was interest in establishing new methods and means of evaluating cost-effectiveness over time and space.

Some participants expressed concern about the role of obesity in current and future trends in the burden of morbidity and mortality. Whereas taxation policies had succeeded in reducing tobacco use in some countries, in others they were ineffective and it was not clear whether such tax policies could be successfully extended to incentivize shifts towards healthier diets. The potential for interventions in the built environment was offered as a potential avenue to reduce physical inactivity and obesity, although like water and sanitation projects, such urban infrastructure projects tended to be costly. A target on traffic hours in urban areas was suggested as a possible means to incorporate concerns about physical inactivity and obesity into the development agenda.

Participants noted that policies and targets related to non-communicable diseases (NCDs) needed to be sensitive to the particular epidemiological context. Countries that were challenged by double burdens of disease (high burdens of infectious and non-communicable diseases) or even triple burdens (infectious diseases, NCDs and injuries) needed policies that addressed their needs. Contrary to a common belief that infectious diseases and maternal causes needed to be addressed before addressing NCDs, participants emphasized a need for a more coherent framework that acknowledged the concurrent burdens caused by different types of health conditions at the individual, household and population levels. Participants suggested that decomposing changes in morbidity and mortality by region or by urban/rural geography could identify areas where the epidemiological changes were happening independent of the demographic transition, and thus pinpoint priority areas for intervention.

On the issue of fertility policy and targets, participants emphasized the need to keep a rights-based focus, ensuring that individuals and couples are able to decide freely and responsibly the number and spacing of their children, in line with the language of the ICPD Programme of Action. With that in mind, there was a need to promote voluntary family planning in all countries to address persistently high levels of unmet need. Furthermore, there was a need to ensure that the barriers to having children were not too high for individuals and couples that wished to have children. Participants agreed that the World Demographic Trends report should describe the symmetrical situation in high-fertility and low-fertility contexts and provide some guidance as to what types of interventions were appropriate.

G. PERSPECTIVES ON HOW TO IMPROVE ACCESSIBILITY AND UTILIZATION OF DATA AND EVIDENCE FOR POLICYMAKERS

The interactive discussion on perspectives on how to improve accessibility and utilization of data and evidence by policymakers sought to answer the following questions: Is the utilization by policymakers of health and population data and evidence more of a supply or demand issue? What are the gaps between policymakers' needs and data availability? What innovative strategies are there to get data and evidence to be used by policymakers?

In her presentation, Ms. Kirsty Newman (Department for International Development (DFID), United Kingdom) described her organization's experience in working to improve the use of evidence in policy-making. Many research findings ended up on shelves or in peer-reviewed journals and were not, in the end, used by policymakers or other types of decision-makers. One approach to increase the utilization

of research in policy decisions was to develop the capacity of and opportunities for researchers to communicate their research findings via such mechanisms as advocacy, lobbying or writing policy briefs, and to evaluate researchers by the impact that their research had on policy decisions. She noted two dangers of this approach. The first danger was that researchers might then pay less attention to conducting good quality research and instead spend more time lobbying, advocating and promoting their research findings. The second danger was that researchers would provide evidence to policymakers in an oversimplified way, with the risk that policymakers would merely accept the research findings as presented instead of engaging the researchers and interrogating the data. Ms. Newman suggested an alternative approach to encourage the use of research evidence at two different levels. First, senior officials who could champion the use of research evidence should be identified and engaged in order to obtain political buy-in. Second, working relationships with and training of the technical support staff whose role was to synthesize and understand the research on behalf of their superiors should be established. DFID was working in several countries on how to integrate research into policymaking using this alternative approach.

Mr. Hans Rosling (Karolinska Institutet and Gapminder Foundation) gave a presentation on his experience in communicating population data to diverse lay audiences. He was astonished at how many people in the world lacked basic knowledge of population facts and trends. The problem was not ignorance but rather pre-conceived ideas, which were often at odds with the data, and the inability or unwillingness to look to the future. Population estimates and projections could generally be trusted. For example, he showed that the current estimate of world population was discrepant by only 4 per cent from the population projections made for the current period by the Population Division in the early 1960s. Hence, the problem with getting evidence on population trends to be utilized by policymakers was not so much a problem with the data themselves, but with the manner in which data were communicated.

Population issues must be communicated in simple terms. He demonstrated how a complicated concept of population momentum could be explained by the “inevitable fill-up” of adults for many years in the future that would occur even if every couple decided immediately to have only two children. Mr. Rosling also emphasized that it was no longer tenable to dichotomize the world into “developed” and “developing” regions or countries. Countries classified as developing now differed substantially from one another on multiple demographic and development indicators. Continuing to lump them together as a group perpetuated widespread misunderstanding of the substantial progress in development achieved in recent decades. He strongly encouraged all colleagues to stop using this dichotomy.

In the discussion that followed, participants acknowledged that it was possible for researchers to be partial to their own work or areas of research, and that civil servants who could assess, synthesize and communicate research findings played an important role in informing policymakers. Another issue raised was that the use of data in many countries was impeded by policymakers fatigued by advocates from other countries who pushed for specific priorities without considering the budget implications. Researchers who lived in the country and who could work in the capacity of “in-house adviser” to policymakers could improve the utilization of research in policy decisions. One participant raised the example of the Council of Economic Advisers, an agency within the Executive Office of the President of the United States of America, where researchers served for a short defined period to analyze and interpret research evidence and provide economic policy advice that included recommendations for sound policy ideas and to stop bad policy ideas from advancing. Others noted that the demand for research did not necessarily mean a demand for “new” research but also the ability to use existing research.

Discussion then turned to whether the need for improved data (their accuracy and coverage) was meriting sufficient attention and resources from the international community. For example, the Secretary-General’s High-Level Panel of Eminent Persons on the Post-2015 Development Agenda called for a “...data revolution for sustainable development, with a new international initiative to improve the quality

of statistics and information available to citizens”. Some participants noted that there had been little research on how to improve civil registration and that more efforts were needed in this area. Improving civil registration for valid cause-of-death attribution was more resource-intensive than improving the coverage of birth and death certification. While divergent views emerged on the priority of intensive investments to obtain complete civil registration data in settings where it is severely lacking, there was agreement that countries should develop their own integrated data systems, including civil registration, surveys and censuses and strengthen their capacities to collect, analyze and disseminate their own data. The discussion ended with the recognition that, as researchers, the topic had drifted from utilization of data and evidence by policymakers to the availability and quality of data, an area that was perhaps more comfortable for researchers. Participants acknowledged that the concrete suggestions provided by Ms. Newman and other experts on improving data and evidence utilization and the communication points made clear (and in a lively manner) by Mr. Rosling merited action.

In summary, the presentations and discussion indicated that improving the utilization of health and population data and evidence by policymakers was more of a supply issue, impeded in part by the lack of simplicity in presenting and explaining the data and the lack of opportunities for focused engagement and critical interrogation of research by policymakers and working-level staff that could synthesize research evidence for policymakers. The data needed to be presented in clear and jargon-free ways by, ideally, credible, independent and resident technocrats, and prioritized in consideration of national and local budgets. Academic researchers or experts could be embedded within national and local legislatures, line ministries and other relevant policymaking bodies to work with technical personnel tasked to synthesize and understand research analyses on behalf of their superiors.

H. CONCLUSION

The Director of the Population Division thanked all participants for their active engagement and noted that their inputs would be used in preparations for the forty-seventh session of the Commission on Population and Development in April 2014. The final versions of the background papers that experts had prepared prior to the meetings would be made available on the Population Division website for Member States and the general public to access. The new fertility and mortality-related issues and trends and related policy actions that were raised at the meetings would be taken into account during the preparation of the Secretary-General’s report on World Demographic Trends, which would be prepared as part of the documentation for the next session of the Commission on Population and Development.



**UNITED NATIONS EXPERT GROUP MEETING ON
“PRIORITIES FOR IMPROVED SURVIVAL: ICPD BEYOND 2014”**

United Nations Secretariat
Department of Economic and Social Affairs
Population Division
New York, 21-22 October 2013

ORGANIZATION OF WORK

Monday, 21 October

Location: DC2-23rd floor conference room (9:00-10:15), DC2-19th floor conference room (10:30-6:00)

9:00-10:15 (joint with Expert Group Meeting on Fertility, Changing Population Trends and Development: Implications for the Future)

- 1. OPENING OF THE MEETING:** John Wilmoth, Director, Population Division
- 2. OVERVIEWS OF TRENDS IN MORTALITY AND FERTILITY SINCE ICPD:**
Cheryl Sawyer (Mortality Section, Population Division)
Vladimira Kantorova (Fertility and Family Planning Section, Population Division)

10:15-10:30 Break

10:30-12:00

- 3. PRIORITIES FOR THE REDUCTION OF CHILD MORTALITY AND INFECTIOUS DISEASE MORTALITY BEYOND 2014**

Moderator: Barney Cohen (Population Division)

- (a) *Decomposing global disparities in life expectancy, with an emphasis on infectious causes of death*

Sara Hertog (Population Division)

- (b) *Challenges and opportunities for further reductions in infant and child mortality*

Kenneth Hill (Harvard University)

Discussant: Rene Ekpini (UNICEF)

12:00-1:00

4. PRIORITIES IN WOMEN'S HEALTH

Moderator: Barney Cohen (Population Division)

Improving the health of women and adolescents: an unfinished agenda

Suzanne Petroni (International Center for Research on Women)

Discussant: Adrienne Germain (President Emerita, International Women's Health Coalition)

1:00-2:30 *Lunch break*

2:30-4:00

5. PRIORITIES FOR REDUCING NON-COMMUNICABLE DISEASE MORTALITY AND MORTALITY AT OLDER AGES

Moderator: Jorge Bravo (Population Division)

(a) *The changing landscape of non-communicable diseases and associated risk factors*

Sanjay Basu (Stanford University)

(b) *Longevity in the 21st century: how strong is the tug of the past?*

Alberto Palloni (University of Wisconsin, Madison)

Discussant: Karen Sealey (World Health Organization)

4:00-4:15 *Break*

4:15-5:45

6. EFFECTIVE POLICY AND PROGRAMME APPROACHES TO IMPROVE HEALTH OUTCOMES

Moderator: Victor Gaigbe-Togbe (Population Division)

(a) *Incentivizing use of health care*

William Dow (University of California, Berkeley)

(b) *Effective policy and programme approaches to promoting health lifestyles*

Rachel Nugent (University of Washington)

Discussant: Jean Christophe Fotso (Concern Worldwide, U.S.)

5:45-6:00

7. CLOSING OF DAY 1 AND GUIDANCE FOR MORNING SESSION OF DAY 2

Moderator: Barney Cohen (Population Division)

Tuesday, 22 October (joint with Expert Group Meeting on Fertility, Changing Population Trends and Development: Implications for the Future)

Location: DC2-23rd floor conference room

9:00-11:00

**1. SUMMARIES AND INTERACTIVE DISCUSSIONS:
KEY CHALLENGES AND OPPORTUNITIES FOR FURTHER PROGRESS IN IMPROVING LIFE
EXPECTANCY AND RESPONDING TO IMPLICATIONS OF FERTILITY TRENDS FOR THE
GLOBAL DEVELOPMENT AGENDA**

Experts: Alberto Palloni (University of Wisconsin, Madison) and Monica Das Gupta (University of Maryland)

Moderator: John Wilmoth (Population Division)

11:00-11:15 - *Break*

11:15 – 1:00

**2. INTERACTIVE DISCUSSION:
PERSPECTIVES ON HOW TO IMPROVE ACCESSIBILITY AND UTILIZATION OF DATA AND
EVIDENCE BY POLICYMAKERS**

Experts: Kirsty Newman (DFID, by videolink) and Hans Rosling (Gapminder Foundation)

Moderator: Francesca Perucci (Population Division)

1:00 – 1:30

CONCLUSIONS AND FUTURE DIRECTIONS: John Wilmoth, Director, Population Division

**UNITED NATIONS EXPERT GROUP MEETING ON
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Population Division
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United Nations Secretariat
New York
21-22 October 2013

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