

Towards a Europe free of avoidable noncommunicable diseases

The future course of premature mortality
in the WHO European Region



Discussion paper for the WHO European Meeting of
National NCD Directors and Programme Managers,
Moscow, Russian Federation, 8–9 June 2017

A vision of a WHO European Region free of avoidable noncommunicable diseases

The Action plan for the prevention and control of noncommunicable diseases (NCDs) in the WHO European Region (1) embraces a vision of a Region free from avoidable NCDs. This paper examines one dimension of that vision: the reduction of avoidable deaths caused by the four main NCDs – namely, cardiovascular diseases, cancers, diabetes and chronic respiratory diseases. This paper:

- examines what commitments governments have made to the prevention of avoidable NCD deaths;
- assesses the record of progress in the Region as a whole and in selected subregions; and
- proposes a scenario of accelerated achievement.

This discussion paper was prepared for the WHO European Meeting of National NCD Directors and Programme Managers in Moscow, Russian Federation, on 8–9 June 2017. It is accompanied by two papers showing the Region's progress against the global targets within the Global Monitoring Framework and against the indicators of the United Nations time-bound commitments.

The consensus on premature mortality reduction

The global consensus on NCD mortality reduction has proceeded in four increments, each represented by the adoption of a global voluntary goal or target.

1. **The original bold goal.** In 2007, the Sixtieth World Health Assembly, in resolution WHA60.23, adopted a goal “to strengthen national and local political will to prevent and control noncommunicable diseases as part of a commitment to achieving the target of reducing death rates from noncommunicable diseases by 2% annually for the next 10 years, as contained in the Eleventh General Programme of Work, 2006–2015” (2).
2. **The Global Monitoring Framework goal.** The original goal was later incorporated within global voluntary targets as part of the response to the Declaration of the United Nations High-level Meeting on the Prevention and Control of Noncommunicable Diseases (3). In May 2013, the World Health Assembly adopted the Global Monitoring Framework (4), the first target of which is “a 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases” over the period 2010–2025.
3. **The Health 2020 goal.** The WHO European Region, which in 2013 was devising targets for the newly adopted Health 2020 public health framework, set itself the goal of “a 1.5% relative annual reduction in overall (four causes combined) premature mortality from cardiovascular disease, cancer, diabetes and chronic respiratory disease until 2020” (5).
4. **Sustainable Development Goal (SDG) Target 3.4.** These three efforts were finally combined within Agenda 2030 in Target 3.4 of the SDGs, where Member States agreed that they would “by 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being” (6).

Thus emerged a global consensus, inspirational if non-binding, defining a premature NCD death as one that occurred between the ages of 30 and 69 years. It was further agreed that these deaths should be reduced by one third between 2010 and 2030, or by around 1.5 or 2.0 percentage points annually. For the purposes of this paper, these premature deaths will be deemed largely avoidable.

The successes in the Region

The long-term trends in premature mortality from NCDs are presented for Member States in the WHO European Region in Fig. 1. The figure shows the risk of an early death from all four NCDs for each country.

The countries exhibit a wide diversity of experiences but some common patterns can be observed.

- For practically all countries where robust mortality data are available, there is a clear decline in premature NCD deaths in the last decade.

Fig. 1. Trends in unconditional probability of dying between ages 30 and 69 years from four major NCDs in Member States in the WHO European Region, 1990–2015

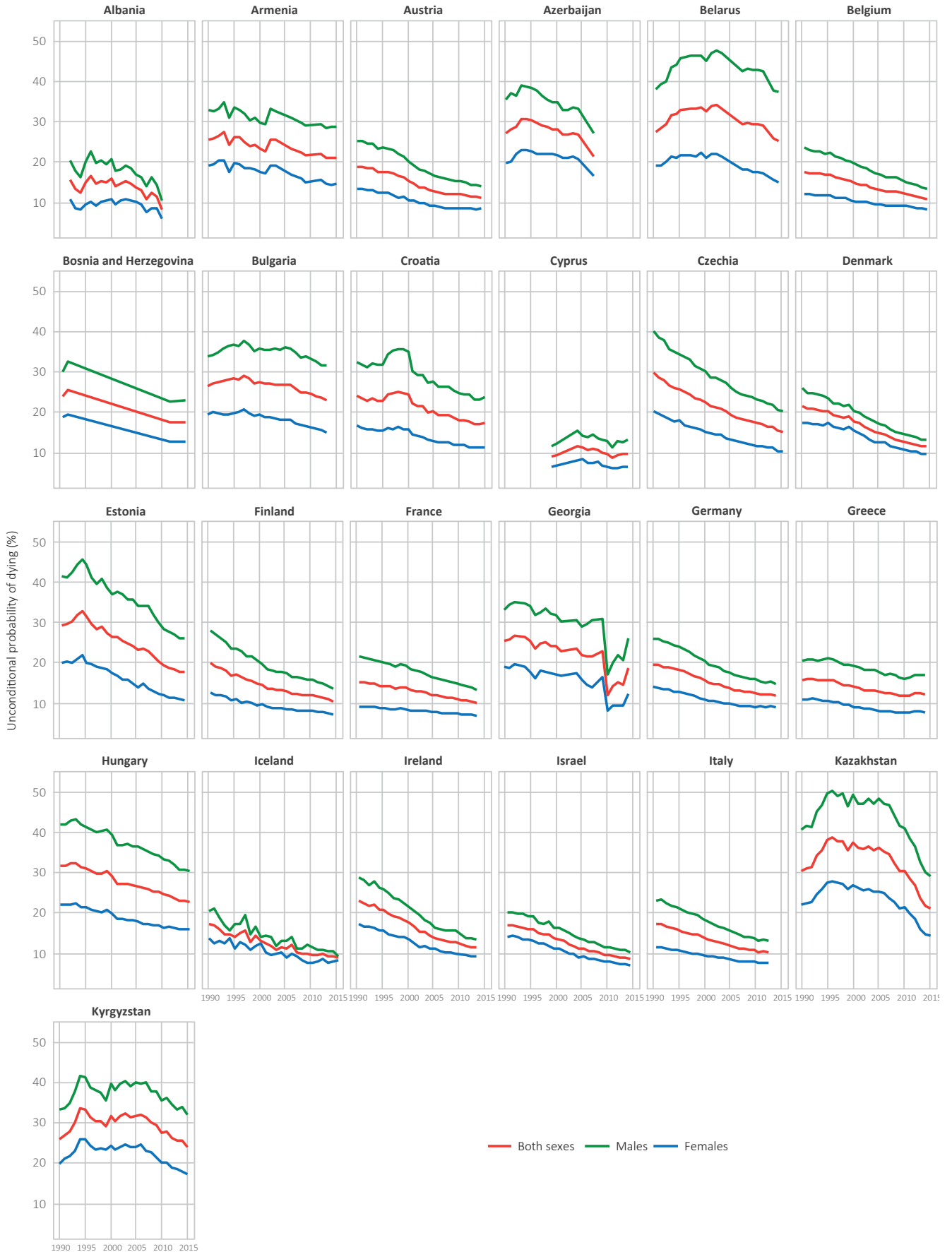
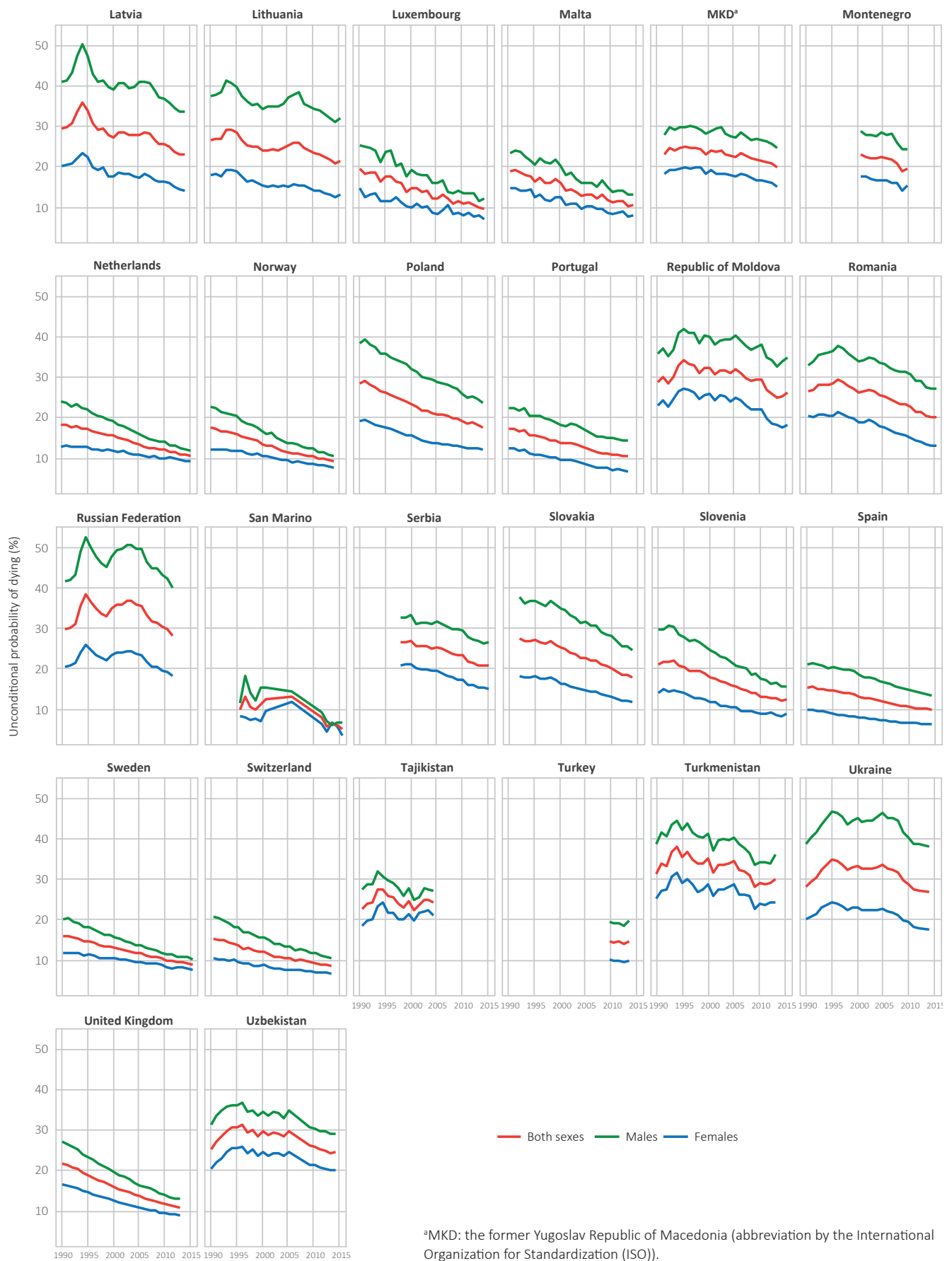


Fig. 1. continued



- The decline is fastest in the countries with the highest mortality, and the Region is converging at a steady rate, leading to a reduction in east–west inequity.
- Almost all countries in the Region have comfortably achieved the original bold goal of a 2% annual reduction over the decade 2007–2017; this applies both to countries that had already been declining as far back as the 1970s and to countries whose risk of premature NCD death peaked in the period 2000–2005.
- The Health 2020 goal of a regional 1.5% annual reduction is well on the way to being achieved and even exceeded in the next three years.

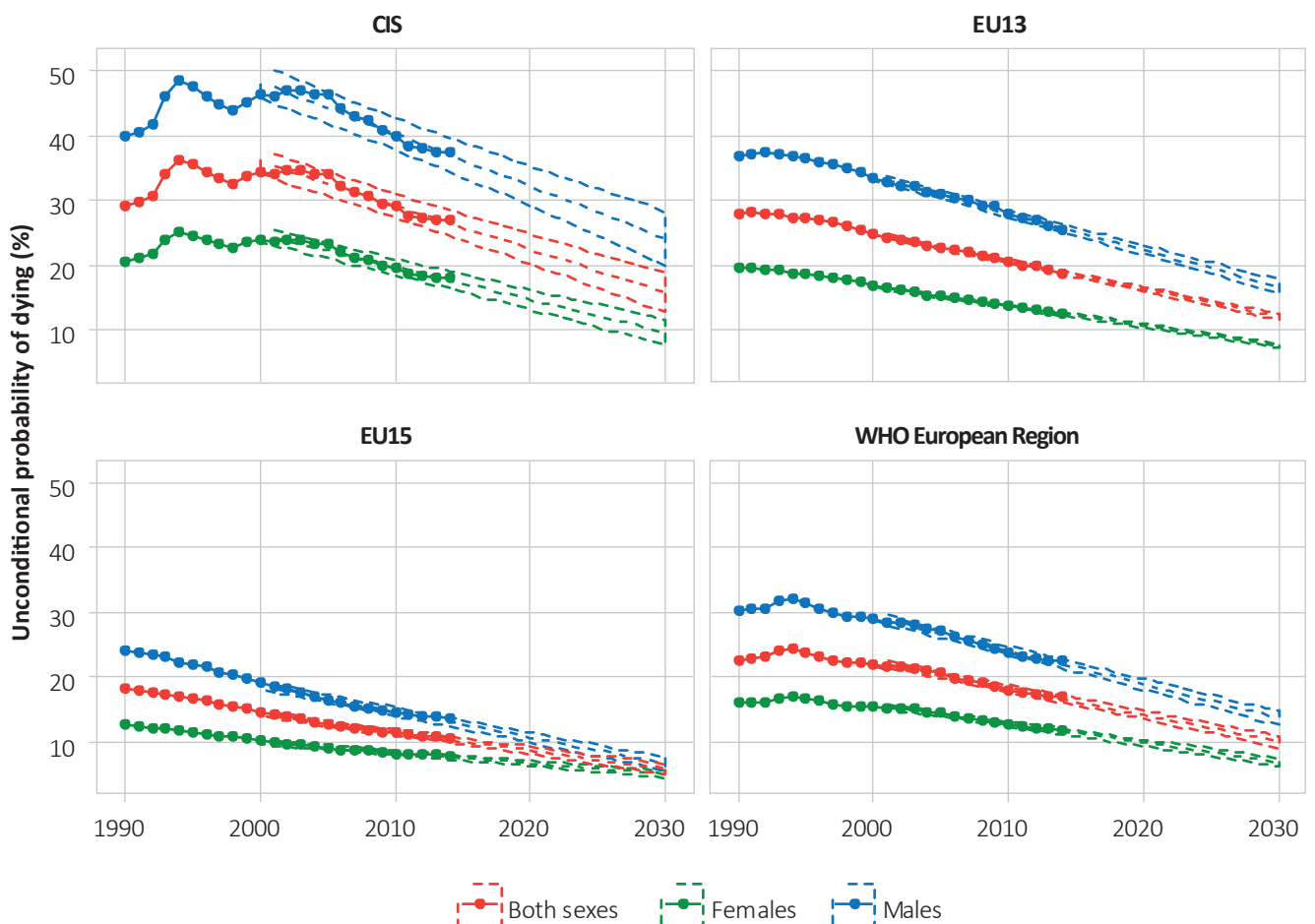
These observations have global significance and may point the way towards the positioning of the forthcoming United Nations review of progress on NCDs in 2018. A preliminary analysis suggests that the Region is not unique in this achievement and that similar patterns may be seen in high-income countries around the world. It is also possible that, as in the European Region, middle-income countries may be achieving a turning point. The challenge here remains how to accelerate and maximize these declines, especially in those countries that are not making optimal use of interventions such as taxation and control of high blood pressure.

A rationale for ambition: the possibility of leapfrogging

Analyses to be presented at the WHO European Meeting of National NCD Directors and Programme Managers have modelled and compared the trajectories of NCD mortality in three groups of countries (Fig. 2):

1. the countries of the Commonwealth of Independent States (CIS);
2. members of the European Union (EU) before May 2004 (EU15); and
3. members of the EU from May 2004 (EU13).

Fig. 2. Observed unconditional probability of dying between ages 30 and 69 years from four major NCDs in the WHO European Region and selected country groups, 1990–2015 and projections to 2030



The comparison of time series among these three groups suggests that, on average, if the CIS continues on its present trajectory, it will take around 50 years to achieve the current low mortality levels of the EU15. The EU13, while better off than the CIS, is around 25 years behind the EU15. The CIS and the EU13 are thus one and two generations respectively behind the EU15 in terms of NCD avoidable mortality. At the same time, the CIS and the EU13 have the advantage of technologies, evidence, mandates and experience that the EU15 did not possess so many years ago. The United Nations Declaration (3) and the SDGs (6) add further impetus. This lag between epidemiology and experience raises the possibility that, should the middle-income countries in the Region more fully exploit the better knowledge they now have access to, they may accelerate achievement and leapfrog the prolonged period of slow decline seen in the EU15.

The fact that so many of the indicators on tobacco, alcohol, salt and control of high blood pressure are showing poor progress in much of the Region suggests that there is wide scope for this leapfrogging to take place.

There is at least one indication that this is already happening. In the last three years, there has been rapid expansion in the area of tobacco control in the Region. On 1 June 2013, comprehensive tobacco control legislation entered into force in the Russian Federation; this was followed by a decline in tobacco sales of around 6–8% annually. The adoption of the Tobacco Products Directive propelled the adoption of pictorial health warnings in the EU, and of the eight countries that at the time of writing have adopted laws on plain packaging worldwide, seven are in the Region. It appears that tobacco control in the Region is reaching a tipping point of exponential change, rather than a slow, incremental improvement.

The scope for rapid improvement

Large gains can be made in two areas of premature NCD mortality: addressing excess mortality by gender and addressing avoidable cardiovascular deaths.

Missing men

Fig. 3 shows the risk of premature death in women and men across all Member States in the WHO European Region, arranged in ascending order. Most countries at the lower end of the graph are western European. In those countries, the risk gradient is slowly increasing for both men and women, and the slopes for the two sexes are fairly parallel. In the middle-income countries of the Region, the gradient for male premature mortality increases suddenly relative to women and dramatically compared to men of the same age in western European countries.

The adverse mortality experience of these men of working age has a profound demographic, economic and political impact. This burden of avoidable mortality is so large and has been observed for such a long time that in many countries it is seen as almost a natural phenomenon and unmodifiable. The gradient observed in western European countries shows up this fallacy. The Region has much to gain from interventions that reduce the excess mortality among men. This would be one mechanism for accelerating the declines in mortality.

Interventions that target this excess male mortality would probably focus on men's disproportionate exposure to alcohol and tobacco and their lack of access or utilization of clinical preventive services, as well as on deeper determinants such as attitudes to masculinity and the role of men in society.

Cardiovascular deaths

A similar logic (Fig. 4) suggests that in a decade of accelerated action against avoidable NCD mortality, cardiovascular diseases deserve a special focus. While gradients for the other three main NCDs are fairly even across the Region, the slope for cardiovascular diseases defines two blocks of countries: one is largely high-income with a low slope in cardiovascular disease mortality; the other is middle-income with a steep gradient. This further reinforces the notion of a fundamental division in the Region: many countries have the potential to make rapid gains by addressing excess deaths from heart attack and stroke.

A focus on cardiovascular diseases in countries with a high burden would raise the priority given to a set of more clinical interventions that has been largely undervalued to date. There is much to gain in countries where salt is consumed at high levels, where effective control of blood pressure is not the norm in primary care and where acute responses to myocardial infarction and stroke are deficient.

Fig. 3. Unconditional probability of dying between ages 30 and 69 years from four major NCDs for males and females in Member States in the WHO European Region, latest available data

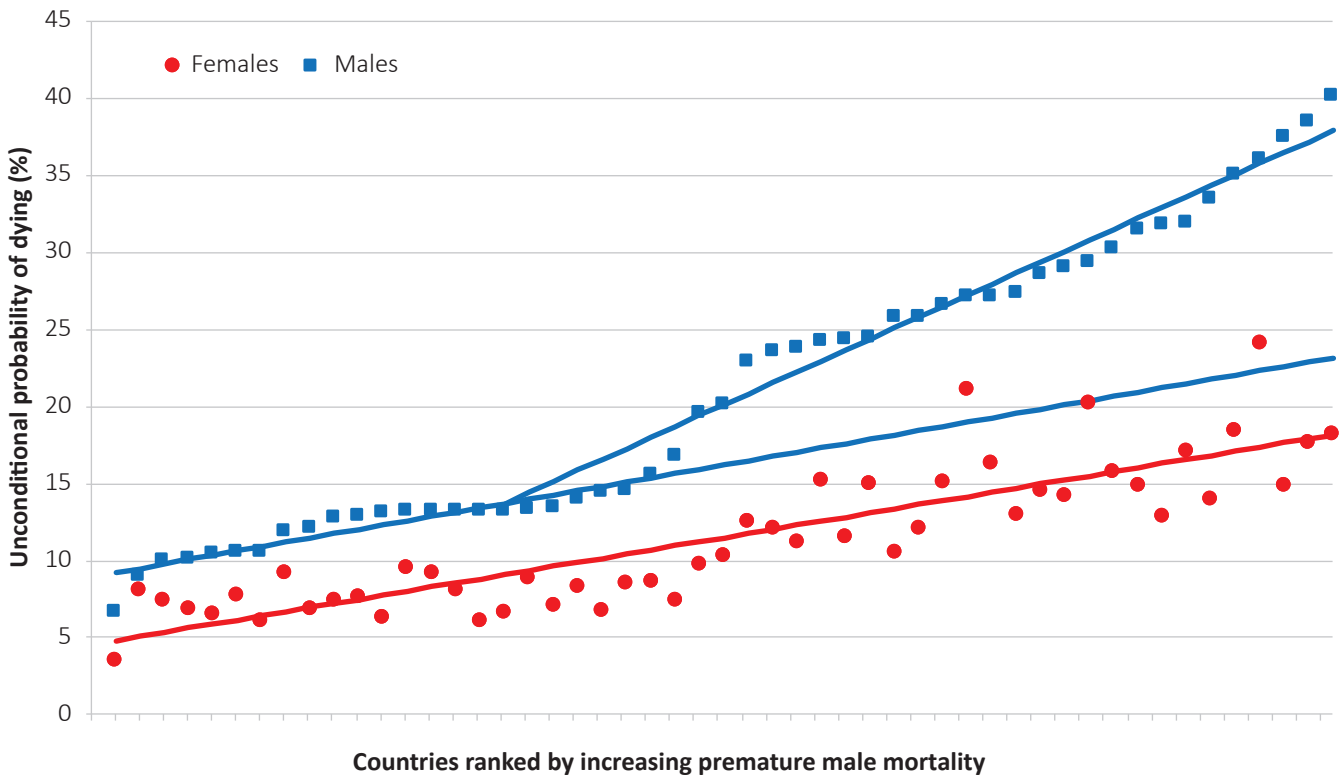
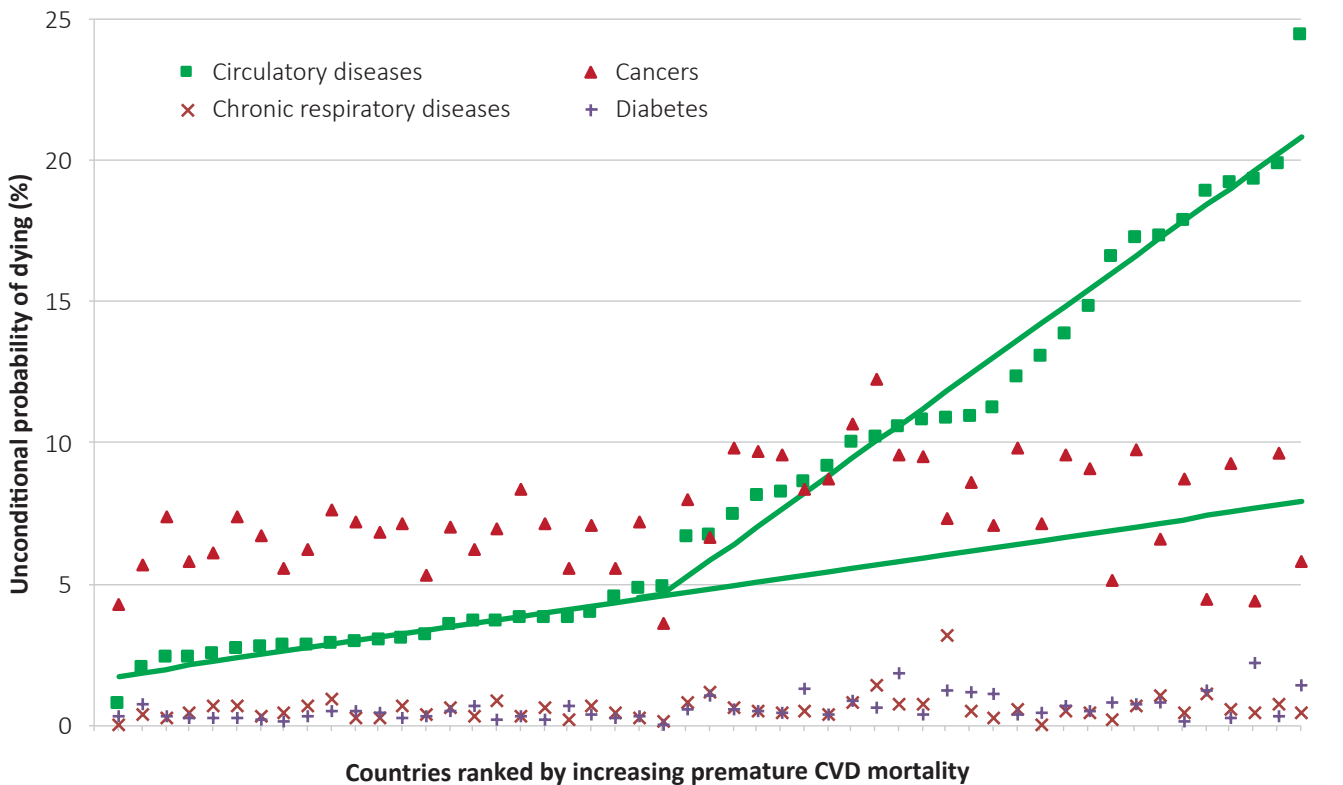


Fig. 4. Unconditional probability of dying between ages 30 and 69 years by disease in Member States in the WHO European Region, latest available data



The WHO European Region can aim higher: towards a 45% decline in mortality

It is proposed here that the Region should aim to reduce premature mortality from NCDs by 45% or more between 2010 and 2030 as part of an accelerated effort to harness the momentum and the spirit of the United Nations Declaration, of Health 2020, and of the SDGs (3,5,6). The logic for such an ambition is based on the following claims.

- Premature mortality from NCDs is declining throughout the Region. For many countries, attainment of the SDGs represents merely proceeding on their historical trajectory. More can be done to take advantage fully of the cost-effective interventions that have been established.
- The excess deaths in some countries of males aged 30–69 years from cardiovascular diseases represent an opportunity for targeted intervention and further acceleration of achievement.

The ambitious goal would require different strategies in countries across the Region and different levels of ambition to match.

- In high-income countries the original goals were modelled on trends in decline in the most developed countries of the world. This means that high-income countries in the Region are simply pursuing their natural trajectory in attaining a reduction of mortality by one third. While it is recognized that these countries can probably not steepen the decline by a large amount, they could consider a heightening of ambition that drives them beyond “business as usual”.
- Middle-income countries with high mortality are now on a steep mortality decline, but this rate will only bring them to the level of the higher-income countries within a span of two generations, during which a dramatic and avoidable loss of life will be incurred. The current level of knowledge and evidence calls for consideration of a concerted effort to reduce mortality at even faster rates. The accelerated achievement in these countries in the Region also represents a laboratory for researching what can be achieved in the rest of the world.

A three-pronged strategy

There are three key components of a strategy to reduce mortality by 45%: a broad prevention approach that would accelerate progress on the “best buys” for NCDs in all countries (7); a concerted effort to reduce excess mortality in working-age men; and a similar effort to address excess mortality from cardiovascular diseases.

1. **Fully exploit the “best buys”.** Other analyses presented in companion papers at this conference indicate that the current mortality declines are taking place at the same time as slow progress is being achieved in implementation of the “best buys” – the most cost-effective interventions for the prevention and control of NCDs. While some progress has definitely been registered in the Region, there are many shortcomings. Taxation of tobacco and alcohol are far below the levels needed to truly affect consumption in many countries; controls on availability of alcohol, the adoption of smoke-free public places, the elimination of trans-fats and the reduction of salt in processed food can all be vastly improved; programmes for promotion of physical activity are still sparsely available; and access to effective control of high blood pressure is not a given. The application of a full set of “best buys” would accelerate the impact on mortality across the Region.
2. **Reduce excess male mortality.** There is a group of countries with a high level of avoidable male mortality. While biological sex is a given and non-modifiable in this context, gender is radically modifiable as it is a sociological, anthropological, cultural and political construct. Constructs of maleness are at the heart of the excess mortality, and it is time for these dimensions of masculinity to start to be regarded as a determinant in their own right, modifiable and worthy of study and intervention as a direct cause of avoidable death and disease. Cultural expectations of drinking and smoking behaviour, cultural barriers to self-care and help-seeking and the amenability of health systems to the expectations and needs of men require study and direct intervention.
3. **Reduce excess cardiovascular mortality.** There is also a group of countries with a high level of avoidable cardiovascular deaths. Apart from the preventive and male-focused measures discussed above, these deaths also draw policy-makers’ attention to the importance of control of NCDs and specifically control of high blood pressure in primary health care. Such services are not routinely available across the Region and their availability should be a touchstone of quality. Many deaths can also be averted by investment in acute emergency services for myocardial infarction and stroke – another quality improvement that can save lives.

The first element is key to the success of this ambition. Full exploitation of the “best buys” would reduce mortality across the whole adult population of the Region and in all countries. It would provide the broadest benefit and serve as the foundation for accelerated achievement. Targeting of excess mortality in males and from cardiovascular diseases would be akin to the high-risk strategy of preventive medicine, bringing a large benefit to a small number of people.

Within such a strategy, it would be essential to retain a broader view of more general public health principles that modify the targets and actions for each country.

- Addressing **disability and healthy life expectancy**. The same interventions will also reduce a large amount of preventable disability. A broad approach to health improvement is inherent to Health 2020 (5) and should remain a focus of the renewed strategy.
- Addressing NCDs in **women**. Men are indeed the vulnerable group in relation to excess mortality: the numbers are so high as to merit attention on the basis of human rights and social justice. Having said that, women aged over 50 years approach men in their risks of mortality as they lose the protections they enjoy before the menopause. The approach represented here should also attend to the inclusion of the special needs of women. The findings of the European Report on Women’s Health and Well-being (8) and the European Women’s Health Strategy (9) are fully embraced by this proposal and should be taken into account by NCD planners, especially in areas such as the underdiagnosis of NCDs in women and their exclusion from clinical and public health research on these diseases.
- Reducing **premature mortality (prior to age 70 years)** from NCDs is the focus of the Global Monitoring Framework, but the burden of ill health due to NCDs continues to increase at older ages and constitutes the majority of the disease burden. In the WHO European Region, 70% of deaths from the four major NCDs in 2014 occurred after the age of 70 years, ranging from 78% among EU15 countries to 62% among CIS countries. Thus, to reduce the burden of ill health from NCDs, it is important not only to focus on premature deaths but also to retain the focus of actions across the life-course. Analysis of causes of death among older adults can provide important insights into which causes can be further reduced or delayed, even at older ages. The key to the reduction of the overall burden of NCDs in the Region lies in the reduction of NCD risks **across the life-course**, from prenatal influences, through childhood and adolescence, to old age – not only premature deaths. Effective measures for the prevention and control of cardiovascular diseases through the life-course are urgently needed across the Region, with particular emphasis on and accelerated action required in countries with the highest burden. This position is entirely consistent with the ambition to accelerate the decline in premature deaths proposed here.
- The focus on cardiovascular disease might seem to reduce the attention to **cancer, diabetes and chronic respiratory diseases**. This is far from the case. The core “four by four” approach, which WHO has advocated for many years, remains central to the attainment of the proposed target. The work proposed in this paper represents an adaptation of that approach in the context of a Region that has shown initial success and in response to the data on excess mortality that are becoming available. As ever in NCDs, there needs to be a broad approach on all four risk factors and the four diseases combined with intensive interventions for high-risk populations.
- Target 3.4 of the SDGs (6) rightly unifies **mental health and well-being** with the reduction of NCD mortality. The core issue of male excess mortality is excessive exposure to risk that arises from social constructs of masculinity, from attitudes to risk-taking and help-seeking behaviours, from issues of self-esteem and coping skills, from a holistic understanding of roles and relations between women and men and from other variables intimately related to mental health and well-being. Indeed, the approach presented here is an effort to put in practice the mental and physical dimensions of the SDG target.
- Finally, an accelerated decline in NCD mortality must attend to the root causes – the **social determinants of health**. A systematic effort to improve the social determinants is essential to the success of this proposal. One of the primary determinants of health is gender, and this is central to the attainment of the ambitious goal being proposed. Also central is access to health services, another of the social determinants highlighted by the Global Commission on Social Determinants of Health (10). Furthermore, NCDs are a complex social phenomenon affected by social, environmental, commercial and economic determinants throughout the life-course. Multiple determinants need to be addressed: in analytic work (such as real-time surveillance, simulations, network analyses), in planning and evaluation (including the adoption of natural experiment techniques) and in intervention (using intersectoral and whole-of-society approaches as appropriate).

Attaining the vision

It is proposed here that the WHO European Region is poised to make the next advance in the attainment of the SDGs. It should work to reduce premature mortality from NCDs by 45% or more between 2010 and 2030 as part of an accelerated effort to harness the momentum and the spirit of the United Nations Declaration, of Health 2020 and of the SDGs (3,5,6).

Adopting such a voluntary commitment, at national or regional levels, would raise the bar for NCDs worldwide. This can be done in the WHO European Region. It would have far-reaching implications for the populations of the Region. It would set an example for the rest of the world and drive policy in other regions by leading the way with evidence-based commitment. It would reduce inequity between countries, within countries and between men and women. This paper invites a start to the scientific and political considerations that are needed to usher in an era of accelerated gains on the largest killer of Europeans.

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