

HEALTH EVIDENCE NETWORK SYNTHESIS REPORT 51

Investment for health and well-being: a review of the social return on investment from public health policies to support implementing the Sustainable Development Goals by building on Health 2020

Mariana Dyakova | Christoph Hamelmann | Mark A. Bellis | Elodie Besnier
Charlotte N.B. Grey | Kathryn Ashton | Anna Schwappach | Christine Clar



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Abstract

Governments across the WHO European Region need to take urgent action to address the growing public health, inequality, economic and environmental challenges in order to achieve sustainable development (meeting current needs without compromising the ability of future generations to meet their own needs) and to ensure health and well-being for present and future generations. Based on a scoping review, this report concludes that current investment policies and practices (doing business as usual) are unsustainable, with high costs to individuals, families, communities, societies, the economy and the planet. Investment in public health policies that are based on values and evidence provides effective and efficient, inclusive and innovative solutions that can drive social, economic and environmental sustainability. Investing for health and well-being is a driver and an enabler of sustainable development, and vice versa, and it empowers people to achieve the highest attainable standard of health for all.

Keywords

HEALTH POLICY, INVESTMENTS, PUBLIC HEALTH, PUBLIC POLICY, CONSERVATION OF NATURAL RESOURCES, HEALTH EQUITY

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ABBREVIATIONS

DALY	disability-adjusted life-year
EU	European Union
GDP	gross domestic product
NCD	noncommunicable disease
OECD	Organisation for Economic Co-operation and Development
OOP	out-of-pocket
QALY	quality-adjusted life-year
SDG	Sustainable Development Goal
SROI	social return on investment
UHC	universal health coverage



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SUMMARY

The issue


There are growing public health, inequality, economic and environmental challenges across the WHO European Region that require urgent and priority-focused investment if sustainable development (meeting current needs without compromising the ability of future generations to meet their needs) is to be achieved and health and well-being ensured for present and future generations. Human health and well-being is interrelated with sustainable development in a complex, bidirectional way, in that investment in health for all supports social, economic and environmental sustainability, while investment in a healthy planet with inclusive and sustainable growth and fair and secure societies supports health and well-being for individuals, families and communities. Investment to improve the social, economic, cultural, commercial and environmental determinants of health and to reduce health inequities is critical for achieving health and well-being for a population and is an enabler and prerequisite for sustainable development. Ensuring this investment must involve all governance levels, sectors and disciplines, as well as the public, the academic community and private stakeholders.

The synthesis question

The objective of this report is to inform and support a roadmap to implement the United Nations 2030 Agenda for Sustainable Development, building on the Health 2020 policy framework in the WHO European Region by examining the question: “What is the evidence for social return on investment from public health policies to support implementing the Sustainable Development Goals by building on Health 2020?”

Types of evidence

Evidence was gathered using a systematic scoping review of reviews using comprehensive search strategies adapted to the specific databases and using terms related to public health combined with terms related to policies, return on investment and reviews. Key English academic databases were screened and additional evidence was obtained from grey literature, including the databases of relevant international and intergovernmental organizations. Google, Google Scholar and recommendations from the contributors were also used as sources for potential evidence. The working languages for the contributors included Bulgarian,



English, French, German, Russian and Spanish, which allowed identification of evidence from a wide range of languages. Out of a total of 4620 sources screened covering a period from 1 January 2007 to 1 January 2017, a final set of 62 papers were included in the scoping review.

Results

The evidence reviewed for this report led to three key conclusions as to how investment for public health can help to achieve a peaceful, secure, inclusive, resilient and sustainable economy, society and planet:

- current investment policies and practices (doing business as usual) is unsustainable as it has high costs for individuals, families, communities, society, the economy and the planet;
- investment in public health policies provides effective, efficient, inclusive and innovative solutions, defined by values and evidence, and drives social, economic and environmental sustainability; and
- investment for health and well-being is a driver and an enabler of sustainable development and vice versa, and it empowers people to achieve the highest attainable standard of health for all.

Three pathways were identified through which investment for health and well-being drives (directly through the health sector) and enables (indirectly through other sectors) sustainable development:

- the **health and security pathway** through increasing life expectancy, improving quality of life, building human capital, enhancing labour productivity and activity, and ensuring national and global health security;
- the **social and equity pathway** through reducing the health gap along the social gradient and gender, building social capital, creating political stability, and achieving employment equity for women, young people and the poorest; and
- the **economic and innovation pathway** through direct, indirect and induced economic effects, such as providing employment and decent jobs, building skills, establishing infrastructure, purchasing supplies and technologies, delivering communications, logistics, induced tax and social security contributions, creating competitive medical services and technological innovations (especially “walking the talk” by the health sector) driving sustainable production and consumption.

Policy considerations

From the evidence derived in this analysis and the proposed WHO Regional Committee for Europe's roadmap to implement the 2030 Agenda for Sustainable Development in the WHO European Region, a set of 12 key public health policies for priority investment are suggested that all demonstrate strong social return on investment (SROI) and hence benefit sustainable development:

- address social, economic and environmental determinants of health through a proportionate universalism approach;
- ensure gender equity, ensure women's and girl's rights and empowerment and address violence and abuse;
- ensure the best start in life, leaving no child behind;
- ensure early and youth education, health literacy and decent employment;
- ensure healthy and active ageing;
- reduce smoking, alcohol misuse, obesity, unhealthy diet and physical inactivity;
- address noncommunicable diseases (NCDs) and communicable diseases;
- ensure universal health coverage (UHC) and minimize out-of-pocket (OOP) payments;
- strengthen public health systems, capacities and services to ensure national and global health security;
- transform, expand and optimize the health workforce;
- establish healthy and health-enabling places, settings and resilient communities, including sustainable natural and urban environments; and
- ensure a green and circular economy (minimizing waste and negative impacts) with sustainable production, consumption and procurement.

These can be considered for decision-making and policy-making in both the health and the non-health sectors and at all levels (European, national, subnational or local), depending on context. Investment for health and sustainable development is a rights- and results-based responsibility for all, driven by values, evidence and justice to ensure the well-being of present and future generations.



1. INTRODUCTION

1.1. Background

Today, the case for sustainable and equitable investment for health and well-being is stronger than ever in the face of multiple challenges. Global risks and threats (1), such as climate change and ecosystem deterioration have started to affect population health. The 2003 heat-wave caused 70 000 premature deaths in 12 countries in Europe and central Asia, and climate change is projected to cause 250 000 deaths globally by 2030 (2). Investing in global health security and emergency preparedness has become a priority in an increasingly globalized and interconnected world threatened by epidemics, climate change, natural and human-created disasters, violence and conflicts (3–5). Such investment is also critical to health equity, as vulnerable and marginalized people are often the major victims.

The WHO European Region itself faces challenges of growing and ageing populations; youth unemployment and child poverty; persisting and widening social, gender and health inequality gaps within and between countries; epidemics of NCDs and communicable diseases; displaced and vulnerable people living in disadvantage; environmental pressures; and austerity measures and tighter public budgets. All have an impact on the prospects for healthy, happy and productive lives across generations.

The economic and societal burden of ill health and inequalities is significant for governments, in addition to the human suffering caused. Trends suggest unmatched demand in health care and its economic burden will increase unless effective and cost-effective policies are adopted. The Organisation for Economic Co-operation and Development (OECD) has predicted that, if no additional measures are taken, the total cost of health care across OECD countries will almost double by 2050, reaching, on average, approximately 13% of gross domestic product (GDP) (6). This would place significant strain not only on health systems but also on social, economic and environmental sustainability, and it may widen health inequalities still further.

Governments can have a major impact on all factors influencing health and well-being, on the way people live and on their everyday choices. Working together with people and communities in a participatory and inclusive way (whole-of-society approach) as well as across different governmental sectors and levels (whole-of-government approach) is essential to inform, develop and implement successful

policies and interventions that are sustainable and conducive to health, well-being and equity, as well as to prosperity, security and peace.

Investment for health and well-being means investing to achieve the highest attainable standard of health for all at all ages, within each country and across countries. Human health and well-being is interrelated with sustainable development in a complex, bidirectional and dynamic way, in that investment in population health while leaving no one behind enables all three dimensions of sustainable development (social, economic and environmental), while investing in a healthy planet with inclusive and sustainable growth and fair and secure societies leads to healthy, happy, resilient and empowered people, families and communities (7).

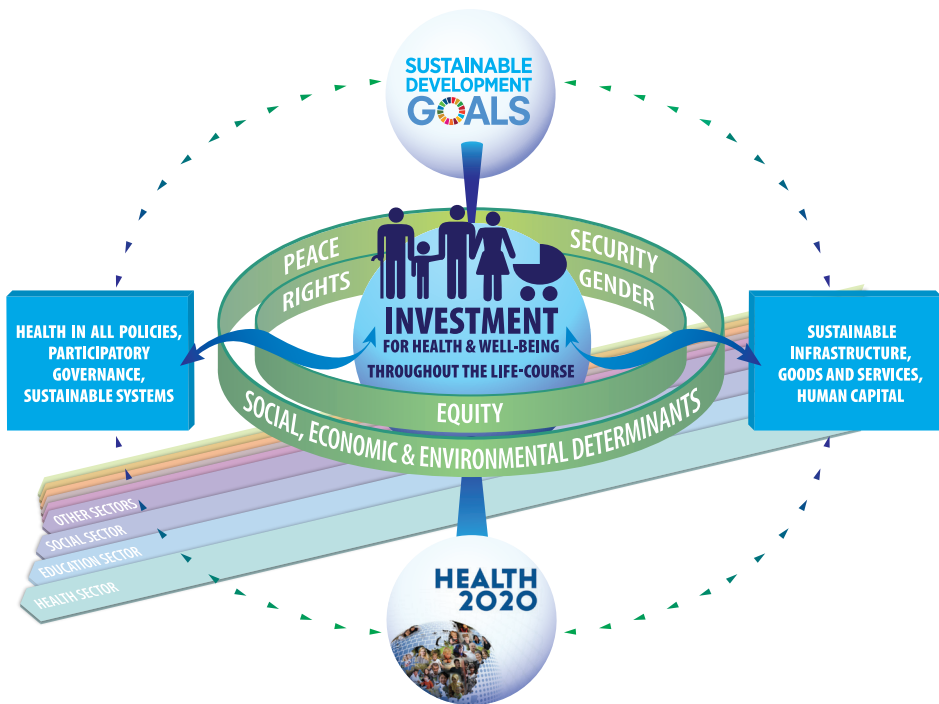
When attempting to assess investment for health and well-being, the basic financial concept of return on investment needs to be extended to take in a wider concept of value, capturing aspects across the triple bottom line of economic, social and environmental value. Decisions made purely on costs and instant return may not reflect wider and longer-term benefits. This led to the SROI evaluation method, which aims to capture not only the financial aspect (i.e. monetary or monetarized economic and socioeconomic benefits) but also the social aspects, such as empowerment, social cohesion and political participation, which are assessed in different quantitative and qualitative ways. The SROI method not only looks for returns generated for the investor but usually also focuses on what social value has been created for other stakeholder groups, including society as a whole. It involves a stakeholder consultation from the outset and throughout the process to help to establish boundaries and indicators and to verify assumptions made in the analysis (8,9).

The 66th WHO Regional Committee for Europe resolution in 2016 (EUR/RC66/R4: towards a roadmap to implement the 2030 Agenda for Sustainable Development in the WHO European Region) (10) reaffirmed that Health 2020, the European policy framework for health and well-being (11), and the WHO global and regional strategies and action plans provide a mandate to implement the United Nations 2030 Agenda for Sustainable Development (12); and that the 2030 Agenda provides renewed commitment and transformational opportunities for an integrated and multisectoral approach to Health 2020. The resolution requested the Regional Director for Europe to “develop a roadmap for the implementation of the 2030 Agenda for Sustainable Development in consultation with Member States, major groups and stakeholders as part of that process, for submission to the Regional Committee at its 67th session in 2017”.

1.2. A framework for investment for health and well-being

An overarching and comprehensive framework for investment for health and sustainable development has been developed informed by a review of the global and European strategic and policy context, with wide expert contribution (Fig. 1).

Fig. 1. Framework for investment for health and sustainable development



This framework recognizes the complex multisectoral and multilevel relation between investing for health and well-being and achieving sustainable development. It outlines the interdependencies, synergies and enablers between the Health 2020 and the 2030 Agenda, thus supporting the proposed roadmap for the WHO European Region. While this evidence synthesis report focuses on specific critical aspects of investment (i.e. in public health policies that bring return on investment), this is only

one aspect of a comprehensive strategy for sustainable investment, which should involve all government sectors, levels, policies and areas of life. The key elements and interrelations of investment for health and well-being are described below.

Within this framework, the central concept of investment for health and well-being throughout the life-course is guided by and contributes to achieving the 2030 Agenda and its Sustainable Development Goals (SDGs) (12) and builds on the strategic objectives and policy priorities of Health 2020 (11). A sustainable investment approach positions health as a driver of sustainability in the health sector and as an enabler of governance and regulatory processes that steer investment in other sectors to meet their own goals and to contribute to sustainable development, health and well-being.

A life-course approach suggests that the health outcomes of individuals and the community depend on the interaction of multiple protective and risk factors throughout people's lives, particularly those in the early years. Consequently, investment must occur throughout the life-course: ensuring a good start in life while leaving no child behind; building lifelong skills, resilience and healthy behaviours; supporting learning, employment and opportunities for young people; ensuring good living and working conditions; and ensuring a safe, healthy and active older age (13–18).

The framework also reflects the wider determinants of health, both of individuals and the planet. These social, economic and environmental factors are multiple and interactive, taking into consideration equity, gender and human rights approaches and supporting security and peace. The practical investment mechanisms are embedded into developing human capital and sustainable infrastructure, goods and services on the one hand; and in implementing health in all policies using participatory governance and achieving sustainable systems on the other. Most importantly, investment for health and well-being happens in a whole-of-government and whole-of-society manner.

Health is a fundamental human right and an essential prerequisite for, and outcome of, gender equality. Investment through a human rights approach means that the right to health should be integral to all priorities and actions (19) and reducing health inequalities should be seen as a matter of fairness and social justice (13,20). Non-discrimination is critical to ensure gender equality and to support girls and women in achieving their full potential and well-being (21–23).



The conditions in which people live, work and age, and which shape their behaviour, are influenced by the distribution of money, power and resources at global, national and local levels. Investment that addresses this distribution is itself influenced by policy choices and will have impact on physical, mental and social well-being (13,24–26). Investing in the wider determinants of health drives health, well-being and resilience through influencing the social, cultural, political, economic, commercial and environmental conditions in which individuals are born, grow, live, work and age.

Alongside issues of equity are issues of peace and security. Achieving and maintaining peace, prosperity and security, nationally and globally, are fundamental for the sustainability of systems, infrastructures, goods and services across all sectors and levels (3–5). This requires participatory governance and joint, coherent and sustainable action that promotes, prioritizes and supports health and well-being and integrates health and equity into all policies (27,28). It also requires innovative and smart investment mechanisms (targeting clear strategic objectives such as required skills or infrastructures) and reconfiguration of existing governance and structural approaches to achieve the dynamic, sustainable and inclusive network that is vital for social, economic and environmental development (29,30).

The concept of healthy places/settings suggests a human habitat in which environmental, organizational, and personal factors in the widest sense interact to affect health and well-being. Investing in health-promoting and health-enabling places will support individuals, families and communities in achieving good health determinants, behaviours and outcomes; in turn, human impact upon the ecosystem and natural resources influences biodiversity and has a long-lasting effect on national and global sustainability (2,10,11,13,18,31). Cities, growing in size, population, number and complexity, present specific challenges and opportunities for enabling health and sustainability (18,32).


UHC is fundamental for a fair and resilient health system and contributes to social cohesion, social justice and sustainable development (33,34). UHC cuts across all of the health-related SDGs, but achieving UHC by 2030 is the specific goal of SDG 3 (good health and well-being) (35,36). UHC is defined as universality (access to good quality care for all), equity (equal access according to need, regardless of any other factors or ability to pay) and solidarity (financial arrangements to ensure accessibility to all) (35,37,38). It ensures that all people have access to quality health promotion, protection and improvement; disease prevention; and the curative, rehabilitative and palliative health services that they need without experiencing financial hardship.

Health system strengthening is considered the most critical field of investment for global health (39–43). This requires both an effective workforce and an effective public health service delivery. Effective investment in the health workforce helps to ensure the right number of quality jobs and appropriately skilled health workers in the right places (44–46). The WHO Regional Office for Europe has defined 10 essential public health operations that support stronger public health services and capacities (47,48). The most effective and efficient method of delivering these operations is through an integrated approach, rather than through vertical programmes. These operations centre around three main areas of service delivery: health protection, disease prevention and health promotion. These encompass population health surveillance; monitoring and response to health hazards and emergencies; health protection, including environmental, occupational, food safety; health promotion, including social determinants of health and health inequity; disease prevention and early detection; governance; a sufficient and competent workforce; a sustainable organization, structures and financing; advocacy, communication and social mobilization for health; and public health research to inform policy and practice. A core focus of public health is health promotion and early prevention of NCDs, communicable diseases and unhealthy behaviours. These require investing in social, economic and environmental determinants along the life-course (18) plus multidisciplinary, cross-sectoral action and public engagement and participation in decision-making (11,13,24,25,49–54).

This report aims to inform and support the development and implementation of the proposed roadmap to implement the 2030 Agenda, building on Health 2020, in order to strengthen the capacities of Member States to achieve better, more equitable, sustainable health and well-being for all at all ages in the WHO European Region; and to support the case for investment in public health as being central to sustainable development, and to national and global security, prosperity and peace. The roadmap is also supported by the linked report discussing key policies for addressing the socioeconomic determinants of health and health inequities, which suggests that specific policy options that affect living conditions have an impact on health and equity (18).

1.3. Policy question and approach

Within the wider framework for investment for health and sustainable development, this evidence synthesis report aims to answer the specific policy question: “What is the evidence for social return on investment from public health policies to support implementing the Sustainable Development Goals by building on Health 2020?”



Public health as “the art and science of preventing disease, prolonging life and promoting health through the organized efforts of society” (55) is central to achieving health and well-being for the current and future generations. It is a social and political concept aimed at improving health, prolonging life and improving the quality of life among whole populations through health promotion, disease prevention and other cross-sectoral and multidisciplinary interventions. In this review, public health policies are defined as population-level policies, programmes, projects or interventions led by national government and including health protection, promotion and improvement only within early (primary) prevention. Screening, treatment, rehabilitation and specialized care are not considered.

To assess the contribution of public health policies to sustainable development, the concept of SROI is used to consider issues of health and well-being (8,9). The purpose and scope of this review restricted SROI considerations to the broad socioeconomic costs and returns of investment only in monetary terms as assessed by any of the main economic evaluation methods (56): cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, cost-benefit analysis and cost-consequence analysis (see the Glossary).

To present the links and interrelations between Health 2020 and the 2030 Agenda, the evidence is summarized using the Health 2020 policy framework (11).

- 2.1. Improving health for all and reducing health inequalities
- 2.2. Supporting health through a life-course approach and empowering citizens
- 2.3. Tackling Europe’s major disease burdens of NCDs and communicable diseases
- 2.4. Strengthening people-centred health systems and public health capacity, including preparedness and response capacity for dealing with emergencies
- 2.5. Creating supportive environments and resilient communities.

These areas are interconnected and interdependent, with common determinants, challenges and solutions in that public health policies have multiple benefits (SROI) across areas. Key cross-cutting links are highlighted across the text and in the Discussion. The potential contribution of each policy area to the SDGs and their respective targets is also summarized.

Each section provides summary evidence in two aspects:

- the costs of business as usual (current investment policies and practices), outlining the problem and its health, social, economic or environmental burden; and
- the SROI of the public health policies, addressing and offering solutions to the problem.

1.4. Methodology

1.4.1. Sources for the review

The following databases were used to identify relevant evidence from academic peer-reviewed literature: MEDLINE/PubMed, SocINDEX, the Cochrane Database of Systematic Reviews and PROSPERO. To identify additional evidence and grey literature, databases of relevant international, intergovernmental organizations were searched: HEN Sources of Evidence, Health Systems Evidence, WHO Library (WHOLIS), United Nations General Assembly, European Observatory on Health Systems and Policies, European Union (EU) institutions and OECD (iLibrary). Additional searches were carried out using Google and Google Scholar. The contributors were consulted to provide documents in the key subject areas and from different Member States. Working languages included Bulgarian, English, French, German, Russian and Spanish; this allowed a wider set of evidence to be reviewed if identified through the searches or provided by the contributors. The searches covered the period from 1 January 2007 to 1 January 2017. Searches were performed in February–March 2017. Additional documents answering the inclusion/exclusion criteria received from the contributors or peer reviewers were added during March–May 2017.

1.4.2. Data extraction

A systematic scoping review of reviews was carried out using comprehensive search strategies adapted to the specific databases. Screening was based on a target population of whole populations/governments with a focus on WHO European Region Member States (evidence from other countries was included if appropriate) and considered terms related to:

- interventions focused on investment for public health (disease prevention or health promotion) and population-level policies relevant to Health 2020; and
- outcomes focused on evidence on health and well-being; economic, social or environmental benefits to populations; and costs of failing to address current public health challenges.

Annex 1 outlines the search terms and the specific inclusion/exclusion criteria.

The searches identified a total of 4657 records (4421 after duplicate removal). An additional 206 records were identified through the contributors and snowballing (199 after duplicate removal), resulting in a total of 4620 records screened using the PRISMA statement (57). After screening by title and abstract, 399 full text records were examined. Of these, 62 studies and reports were finally included in the



review (13,15,23,24,40,58–114). The quality of the included reviews/reports was ascertained through the selection criteria and considered when analysing the evidence and developing the report.

2. RESULTS

2.1. Improving health for all and reducing health inequalities

2.1.1. Cost of business as usual

Socioeconomic disadvantage is associated with ill health and health inequity

Socioeconomic disadvantage, such as unemployment, lower income/social status or lack of education, is associated with ill health and triggers unhealthy behaviours: smoking in the United Kingdom is more than two times higher in lower-income groups, prisoners and homeless people (13,65); ill health and deaths from alcohol misuse disproportionately affect poorer countries and poorer populations within countries (82,85); and ill health and comorbidities disproportionately affect those with low income and vulnerable groups such as migrants and minorities (13,82,83,90,100,101). Mothers of lower socioeconomic status in the WHO European Region are least likely to breastfeed, which has negative impacts on the health and life prospects of these mothers and their infants (115). Evidence from the EU highlights an association between higher unemployment and premature death (25). Lower-income groups suffer worse economic consequences as a result of a chronic illness than their wealthier peers (101). For example, in the Russian Federation, men earning below the national average income and suffering from chronic illnesses are 24% more likely to retire early compared with their healthy counterparts, whereas chronic illnesses have no impact on retirement age in men with high incomes (101). Children who live in poverty and deprivation are at a higher risk of dying early, developing obesity or experiencing ill health (65).

Poor health is associated with lasting socioeconomic disadvantage

People with physical or mental illness or disabilities are more likely to be unemployed or to have poor-quality jobs with fewer opportunities for advancement; to work in harmful conditions; to be less productive (presenteeism) and to be absent from work (absenteeism); and to earn less at all ages, with the pay gap increasing over the life-course (i.e. also affecting pension provision) and between men and women (25,116,117). For example, people in poor health in the United Kingdom are twice as likely to be unemployed, often through stigma or unsuitable employment conditions (118).



Gender-based inequalities undermine inclusive economic growth and sustainability

Gender inequalities based on norms, roles and discrimination undermine inclusive economic growth, decent jobs and the sustainability of health systems. They create inefficiency by limiting the productivity, distribution, motivation and retention of female workers, who also constitute the majority of the health workforce (see also section 2.4) (23,119). The burden of unpaid and informal work falls disproportionately on women and girls and this accentuates gender wage gaps (120,121). The gender employment gap and occupational segregation persist, with women 30% less likely to be employed than men, and women more likely to be employed in insecure and part-time jobs without contracts, regular pay or rights protection (2). This affects resources for the individual and the country. For example, the loss of resources at EU level resulting from underrepresentation of women on the labour market amounts to €370 billion per annum (2.8% of GDP) (122). On average, women earn 21.8% less than men in central and eastern Europe and central Asia and 16% less in the EU (123). The introduction of austerity measures by governments in some countries (e.g. wage and pension cuts, health subsidy cuts and health reforms) has many implications, among them impeded access of women and girls to crucial services for reproductive and sexual health (particularly those with disabilities, in rural areas or in poor areas) (2).

Age-based inequalities are associated with the risk of poverty

There are significant inequalities in the health of older people in Europe, which are highlighted by the large differences in the age at which people can, on average, expect to live another 15 years. This ranges from 62.3 years in the Republic of Moldova to 72.2 years in France (124). Poverty among people older than 65 years varies widely across Europe: estimated as 4% in Hungary, 5% in Luxembourg and 7% in Czechia, compared with 51% in Latvia, 49% in Cyprus and 39% in Estonia (125). The risk of poverty grows with older age and is much higher among women than men; for example, pensions for those aged 65 years and over are 28% lower, on average, for women than for men in OECD countries (126). Quality of life is also unequal, with women more vulnerable to falls than men (127).

Vulnerability is linked to socioeconomic disadvantage and higher risk of ill health

Particular groups, such as women, adolescents and marginalized people such as migrants, minorities and the homeless, are also vulnerable to socioeconomic and health inequalities that can lead to physical and mental illness. Europe and central


Asia have experienced increased population displacement and migration pressure, hosting sizable refugee, asylum-seeking and migrant populations; in 2015, there were 76.1 million international migrants living in the region, representing 10.3% of the total population (2). Often these vulnerable groups have poor access to basic facilities and health care and they are often exposed to hazards and stress, including heat, cold, poor sanitation and no access to healthy food and/or safe water (2).

Even a short spell of homelessness reduces a person's chances of reintegration into society and can lead to poor physical and mental health, including mental illness and substance abuse (both cause and outcome), and chronic and communicable diseases (128).¹ If long term, these consequences can become irreversible, with the lifespan of a homeless person reduced by as many as 30 years compared with the general population (128). There may be around 4.1 million people exposed to rooflessness and houselessness each year in the EU (128). More young people, affected by unemployment or poverty, are becoming homeless (128).

Environmental health risks are associated with socioeconomic and health inequity

Environmental health risks exacerbate inequalities between and within countries, across the social gradient and across the life-course. Lower socioeconomic groups usually have increased exposure to environmental hazards and decreased ability to mitigate them (see also section 2.5): in countries in the WHO European Region with lower incomes, people have greater exposure to household and outside air pollution (111); in some Member States, basic housing issues such as a lack of indoor sanitary facilities still affect up to a fifth of people (130); in central and eastern Europe, 40% of the population is not connected to wastewater collection and treatment systems (96); and people who are from the most deprived areas have a 50% greater chance of dying after a road traffic accident than those in the least deprived areas (60). Children bear a particularly high burden of environmental hazards, which again affects the vulnerable and disadvantaged the most; for example, 26% of child deaths globally are linked to air pollution, unsafe water and sanitation and road traffic accidents (85,105). Poor housing is particularly damaging to children (60) and can shape future outcomes, such as likelihood of unemployment

¹ Homelessness is considered to cover rooflessness (without a shelter of any kind), houselessness (only a temporary place to sleep in an institution or shelter), living in insecure housing (insecure tenancies, threat of eviction, domestic violence) and living in inadequate housing (illegal campsites, unfit housing, extreme overcrowding) (129).



and poverty in adulthood (104). Social gradients can be further exacerbated by geographical inequalities. For example, people living in urban areas are exposed to greater air pollution from road travel than those in rural areas (60), whereas rural areas may lack basic facilities and/or easy access to health care. In some areas, such as the Caucasus and central Asia, 62% of the rural population live in homes without access to piped water, compared with only 9% of the urban population (96). Environmental determinants interact with gender and social determinants and have a different impact on men and women (131).

2.1.2. Public health policies which bring SROI

A proportionate universalism approach narrows the health divide

Proportionate universalism is defined as resourcing and delivering universal services at a scale and intensity proportionate to the degree of need (13). Services are universally available, not only for the most disadvantaged, and can respond to the level of presenting need. Such an approach to address the root causes of social and economic inequalities throughout the life-course is likely to be most effective and narrow the health divide (13,18,40,65). For example, investing in the United Kingdom in a combination of universal and targeted early years' interventions with paid parental leave could save £1.5 trillion of the £4 trillion spent over 20 years on social problems (e.g. crime, mental ill health, family breakdown, drug abuse and obesity) (13,65). Provision of quality education at all ages and to children of all backgrounds should help to challenge gender stereotypes and reduce gender-based job segregation (13,16,60,65,122).

Policies to ensure fair and decent work for all include investment strategies for an inclusive economy; active labour market programmes; extending worker representation, particularly for more disadvantaged workers; adequate health and safety legislation; and extending employment rights, particularly for self-employed, temporary, part-time and informal workers (who are mostly women) (13,16,18,60,65,122). Provision of a living wage (differing from a minimum wage in that it allows the earner to afford adequate shelter, food and the other necessities of life) is associated with improved mental health, lower premature mortality and possibly has transgenerational effects (13,16,18,60,65,122).

Ensuring universal social protection (18) through effective social transfers and provision of adequate and sustainable funding for social protection, legislation and administrative systems contributes to social, economic and environmental sustainability (see section 2.3) (24,66,89,100,132–135).

Population-level interventions can reduce health inequities

Investing in services that help to prevent ill health and to improve health, well-being and resilience across the population will contribute to reducing health inequalities and reduce the costs of avoidable ill health, for example that associated with unhealthy behaviours such as alcohol misuse or smoking (see section 2.3) (13,16,40,60,65,122).

Achieving gender equity and women's empowerment can narrow the health divide

Addressing health inequalities involves achieving gender equity and empowering women and girls. This includes reaching gender wage and pension equality and addressing how gender norms, values and stereotypes interact with the social and economic factors that might have a negative impact on health for both women and men (see section 2.4) (13,16,21,60,65,122).

Environmental interventions can reduce the social gradient

Interventions to improve the natural and built environment offer a unique opportunity to reduce the social gradient (18,40). For example, improving spatial planning and increasing access to green spaces can reduce the effects of deprivation on health; traffic-calming schemes (such as 20 mph (32 km/h) speed zones in disadvantaged areas) could lead to a 100% return on investment in the first 12 months based on the costs recovered from injury and the deaths avoided (see section 2.4) (13,16,60,65,122).

2.1.3. Summary

Investing in improving health for all and reducing health inequalities contributes across all SDGs and directly supports


- SDG 5
- SDG 10.

2.2. Supporting health through a life-course approach and empowering citizens

2.2.1. Cost of business as usual

Harmful childhood experiences are linked to long-lasting disadvantage and ill health

Harmful early childhood experiences (e.g. abuse, neglect, household dysfunction such as violence or substance abuse) can lead to substantial long-term costs to



people, society and the economy (14,60,65,106). Children who live in poverty and deprivation are at higher risk of developing obesity, experiencing ill health or dying early (65). For example, adverse childhood experiences lead to higher risks of adopting health-harming behaviours, developing chronic diseases and taking part in criminal activity later in life, with a total cost to society of £60 billion annually for England and Wales (65). The cost of lower cognitive ability, which is linked with insufficient breastfeeding, can reach US\$ 300 billion per year globally, with higher-income countries bearing over 75% of the cost (136).

Poor education and poor health literacy are detrimental to health and life prospects

Poor education and poor health literacy are detrimental to health, well-being and life prospects along the life-course, disempowering individuals to make healthy choices. Health literacy and access to information are key for people to have a better understanding of, and control over, their lives (11). Up to 47% of the European population is thought to have poor or inadequate levels of health literacy, which has a negative impact on health and well-being across the life-course (15). For example, in the United Kingdom, each young person (16–18 years of age) who is not in education, employment or training costs £56 000 to society over their lifetime based on welfare, tax, health and criminal justice costs (59); the cost increases to £104 000 when including losses incurred through under- and unemployment.

Youth unemployment remains one of the most significant development challenges

Youth unemployment remains one of the most significant development challenges. The severe effects of the economic crises, continuing growth in unemployment, inadequate access to social protection and an elevated risk of poverty in old age are creating a risk of a generation that is left behind. Youth unemployment has reached 50% in some countries and the youth labour market participation rates range from below 20% in the Republic of Moldova to over 60% in the Netherlands (137).

Unsafe and unhealthy workplaces can be damaging to the economy

Unsafe or unhealthy workplaces can have major implications for productivity and economic output for European countries (59,60,116). In Great Britain, workplace injuries and ill health had a social cost of £13.8 billion in 2010–2011; sickness absence and worklessness cost the British economy £100 billion a year; and 300 000 people fall out of work annually onto health-related state benefits (60). In Great Britain, work-related stress causes employers to lose 13 million working days a

year (60) and mental ill health costs the British economy £30 billion to £40 billion (see section 2.3) (59).

Disability, inequality and maltreatment in older people is linked to poor health and well-being

In countries with a high sociodemographic index, nearly everyone over the age of 75 years has some form of disability, and from 60 years of age half the population has severe or worse disability (138). About 30% of people aged over 65 years and 50% of those over 80 fall each year, with women more vulnerable than men, and environmental hazards causing 25–50% of falls (139). More than 90% of influenza-related deaths occur in those aged over 65 years (139). At least 4 million older people in the WHO European Region experience elder maltreatment annually: physical, sexual, mental and/or financial abuse and/or neglect (127). Women are more likely to be victims of elder abuse, as are those with dementia (see sections 2.3 and 2.5) (140).

Violence and abuse are associated with high individual, social and economic burdens

Community, domestic and gender violence and abuse are associated with high human, emotional and health costs and have a wider social and economic burden (see section 2.1). For example, 1.9 million disability-adjusted life-years (DALYs) are lost annually in the WHO European Region as the result of violence at any stage of the life-course (40). One in three women (35%) worldwide has experienced physical and/or sexual intimate partner violence or non-partner sexual violence in their lifetime (141). In the EU, violence against women costs society €226 billion per year (142); domestic violence costs £15.7 billion in the United Kingdom through human and emotional costs (65) and has an even higher long-term cost. Bullying at school impacts a child's psychological well-being and their educational attainment, with estimated loss of lifetime earnings of about £50 000 in 2008 (75).

2.2.2. Public health policies which bring SROI

Societal and economic benefits for all can be achieved by investing for health and well-being throughout the life-course, particularly in the early years. This investment can occur through different sectors, settings and approaches and by engaging and empowering people to take responsibility for their own health (11,17,18,60,116). This investment should target all of the issues raised above for the stages of the life-course and the specific areas of workplace health and prevention of violence and abuse.



Ensuring the best start in life for all benefits the individual, society and the economy

Investing in early years leaving no child behind includes adequate social and health protection and support for pregnant women, mothers and young families; breastfeeding and nutrition support; and progress towards universal, high-quality, affordable health, education and child care systems (42,65,143). Investing in the first 1000 days from conception to the second birthday is cost-effective and has the most potential for action in that early child development interventions are good value for money. The returns to society for each dollar invested varied considerably across high-income countries, ranging from \$1.26 to \$17.07, but, overall, indicated a significant SROI (65,85). Investing in breastfeeding clearly has an SROI (58,109): for example, in the United Kingdom, a 1% decrease in the number of never-breastfed children would bring a £17000–72000 increase in individual lifetime earnings, and increasing exclusive breastfeeding rates at 4 months of age from 7% to 45% could save up to £17.18 million annually from infections (104). Investing in parenting and family programmes can be cost-effective with an SROI (38,58). The Triple P Positive Parenting programme in the United Kingdom to reduce conduct disorder has a saving of 4.2 for every unit spent (saving £19.5 million for a delivery cost of £4.6 million) (60), and antisocial behaviour family support projects have a return of 17–44 per unit spent (40).

Good early education benefits society and the economy across generations

Investing in early education can result in high social and economic returns and has positive intergenerational effects. In the Netherlands, early education is calculated to return 1.3–5.8% per unit invested (109); every additional four years of education has multiple benefits, providing returns of up to 7.20 for every unit invested (60). School is an important setting for forming and changing health behaviours and for developing social and emotional skills, thus providing long-term SROI. Improving cognitive development and health outcomes in children has a positive impact on employment and health in adulthood by empowering individuals to make healthier choices (11,15,60,104). Improving health literacy in school-aged children through health promotion programmes can positively influence education and academic performance, with long-term benefits across the life-course (15). Gender stereotypes in education at all levels should be eliminated (21).

Educating and supporting young people benefit their health and the economy

Investing in adolescent health and well-being and supporting young people provides high economic and social returns. For example, interventions that reduce the

number of young people not in education, employment or training have substantial cost-savings (60). The SROI for adult education is 21.60 per unit invested at age 19–24 years in the United Kingdom; even among those aged 25 and over, the return is still 5.90 per unit invested (59). A Ready for Work programme for disadvantaged young people brings SROI of 3.12 per unit invested and an overall social impact of £3.2 million per year (59), mainly through reduced costs associated with homelessness, crime, benefits and health care (60).

Health-promoting workplaces benefit health, well-being and the economy

Investing in health-promoting workplaces has positive impacts on individual health and well-being, the health system and workforce productivity, thus substantially reducing the economic burden (60,67). Workplace health promotion can be cost-effective, reducing health risks and absenteeism and improving performance (67). Investing in employment support to get people back into work in London has brought an SROI of 17.07 per unit spent (59); workplace interventions to promote mental health could save up to €135 billion a year by reducing absenteeism and early retirement (66). A range of behaviour-change programmes in the workplace return at least 2 per unit spent and may return as much as 10 (59,60).

Interventions to support healthy ageing are cost-saving and benefit health and well-being

A life-course approach to healthy ageing gives people a good start in life and influences how they age, giving them the capability to live a better life and empowering them to adopt healthier lifestyles throughout their lives and to adapt to age-associated changes (11). Investing in healthy and active ageing could be cost-saving and bring an SROI (60,65,83–85,91,127,139). Interventions include falls and injury prevention; physical activity; communicable disease prevention and vaccination; preventing mental ill health and elder maltreatment; multifaceted housing interventions; and reducing poverty, social isolation and exclusion by providing public support for informal care and home care.


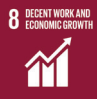







Prevention of violence benefits the individual, society and the economy

Prevention and detection of community, domestic and gender violence has a clear SROI. For example, in the United Kingdom, parenting programmes for families with children with conduct disorders has an SROI of almost 8 per unit invested (6,83). Programmes addressing emotion-based learning in schools may be cost-effective and provide an SROI of 50 for each unit invested within the first year through savings in health and social care and in the criminal justice sector (60).

Investing in interventions to identify and provide care for women victims of domestic violence can also be cost-effective (40).

2.2.3. Summary

Investing in health through a life-course approach and empowering citizens contributes to specific targets within the SDGs (12):

	1.2, 1.4, 1.5		8.3, 8.5, 8.6, 8.8
	2.1, 2.2		9.1
	3.1, 3.2, 3.7		10.1, 10.2
	4.1–4.7		16.1, 16.2, 16.9, 16.a
	5.1–5.6, 5.a–5.c		

2.3. Tackling Europe’s major burdens of NCDs and communicable diseases

2.3.1. Cost of business as usual

Unhealthy lifestyles have substantial health, well-being, societal and economic costs

Smoking, alcohol misuse, physical inactivity and an unhealthy diet are among the leading risk factors for ill health and disability in the WHO European Region with high costs for the individual, society and the economy (40,65,78,85,88,90,100,101). The effects of tobacco cost the world economy \$500 billion a year (85), and alcohol

misuse costs society 1–3% of GDP annually (40,85,88). In the WHO European Region, physical inactivity costs society an estimated €150–300 per person per year (40,65). In the Russia Federation, smoking was estimated to have health care costs of Rub35.8 billion (€800 million) in 2009 (76), while in the United Kingdom, physical inactivity results in £1.06 billion (~€1.50 billion) in indirect medical costs (40). These risk factors and the diseases they are associated with show important gender differences (82,85): alcohol misuse disproportionately affects men, while physical inactivity is higher among women in most European countries (65,85).


The burden of NCDs is significant, with high societal and economic costs

NCDs, including mental ill health, form a substantial burden in the WHO European Region, with high costs to people, the health system, society and the economy (65,86,90,144). Two thirds of premature deaths in 2016 were caused by the four main NCDs: cardiovascular diseases, diabetes, cancer and respiratory diseases (144); these are responsible for an annual economic loss of \$139 per person in countries with a gross national income under \$12 475 per capita (86). Cardiovascular diseases and cancers alone are estimated to cost society €169 billion and €117 billion, respectively, in the EU (40). In countries of central and eastern Europe and the Commonwealth of Independent States, NCDs in general, and cardiovascular diseases in particular, are the main contributors to the burden of disease and main drivers of mortality during transition periods (77,101).

Mental ill health and self-harm represent 30% of the WHO European Region's burden of diseases (73) and mental illness is the leading cause of disability and absence from work (14). Depressive disorders are the second biggest cause of years lived with disability worldwide; in the WHO European Region they affect 33.4 million people at any one time and their cost to the European economy is between €2 million and €136.3 billion (63,85), mostly from losses in productivity (73,83,85). The human, social and economic cost of mental ill health is estimated at between £105 billion and £110 billion per year in England (65). Mental ill health and conduct disorder in children have lifelong impacts, with an average cost to society of between £11 030 and £59 130 per child per year in the United Kingdom (40,65).

The health, social and economic burden of communicable disease remains significant

The burden of communicable diseases is significant across the WHO European Region but also varies by country and region. Every year, 15.9 million DALYs are lost in the WHO European Region through communicable diseases (40). Major



infections with substantial costs and wider impact include seasonal influenza (90), measles, pertussis (90), hepatitis B and C, sexually transmitted infections (90,145), HIV/AIDS (94,100,101,146–148) and tuberculosis (94,100,149,150). Certain communicable diseases, such as sexually transmitted infections, HIV/AIDS or tuberculosis, are strongly linked with socioeconomic and/or gender inequalities and vulnerability (100). There are also substantial costs associated with indirectly transmitted disease such as those borne in food, vectors or water (72). Despite considerable progress during past decades, 62 million people in Europe and central Asia do not enjoy access to basic sanitation and 1.7 million people still practise open defecation (2). This has a negative effect on health, with a disproportionately large effect on women’s lives and their health (see section 2.1) (115).

The increase in antimicrobial drug resistance threatens effective treatment and control of communicable diseases and poses threats to global health security (90).

2.3.2. Public health policies which bring SROI

Cross-sectoral interventions to tackle unhealthy lifestyles show SROI

Public health policies to prevent and tackle smoking, alcohol misuse, obesity, unhealthy diet and physical inactivity can be cost-effective and show returns to the economy and society. The policies and interventions presented here are those that have clearly demonstrated SROI according to two criteria: (i) recommended as “most cost-effective and feasible for implementation” by WHO-CHOICE analysis and/or supported by evidence from this review; and (ii) recommended by WHO (on other grounds) and supported by strong evidence from this review (151).

Increasing tax on tobacco products is considered the most cost-effective tobacco control policy, with specific considerations of the inequality implications (61,67,85,88,91,97,152). For example, a 10% increase in cigarette price would reduce smoking prevalence by 4% in high-income countries (40,85,97). Combining taxation with other tobacco control interventions, such as smoking cessation support, advertising and smoking bans or educating the public, can also have an SROI (61,63,67,85,91,113). Such a combination would cost less than \$1 per person per year in middle-income countries and would lead to 25 million to 30 million DALYs averted (40) or more than 5 million deaths averted across 23 countries in nine years (82).

The most cost-effective measures to prevent and address alcohol misuse remain price interventions through taxation or increased minimum unit pricing (40,65,82,85).


Restricting access to retail outlets or implementing comprehensive advertising bans costs about \$0.50 per person and is very cost-effective (67,82,85,97,100). The cost-effectiveness of individual interventions (such as primary care counselling) depends on the country (67,82,85,91,100). Combining these interventions is likely to be cost-effective (63,67,82,85,100,113) for a cost per capita under \$5 (82,85) or even less than \$1 per capita in countries with a gross national income per capita under \$12 475 (92). Combination of such interventions may achieve a reduction of the global alcohol burden by 10–20% (40).

Interventions addressing obesity, unhealthy diet and physical inactivity may provide SROI (40,85,98) depending on national and local contexts (40,67,68,82,85,98). Policies targeting the market environment and food choices may be cost-effective (40,97), generate savings in the short term (98) and seem to be more effective than interventions targeting the individual (82,85). Interventions reducing the consumption of ingredients such as salt or trans-fat through regulation and reformulation of foods seem to provide greater SROI and are likely to be cost-effective or cost-saving (40,63,67,68,85,98,113). Mass media campaigns to promote physical activity can be implemented at a low cost (40) and be cost-effective or cost-saving (63,85,113), generating a gain of 1 life-year for every 115 to 121 individuals for a cost of \$2 per person (98). Depending on local contexts, promoting active travel (walking and cycling), which also provides wider environmental and social benefits (see section 2.5) (60), and counselling in primary care (91) can be cost-effective (40,82,85).

Early prevention of NCDs and health promotion can bring SROI

Early prevention of NCDs and promotion of good physical and mental health and well-being can bring SROI in multiple areas. The WHO Regional Office for Europe recommends a comprehensive approach including both population-wide and targeted policies and recognizes that individual interventions tend to cost more than population/group ones (40). Success varies across the WHO European Region, depending on national context (61). A 10% reduction of cardiovascular diseases alone in countries with a gross national income per capita under \$12 475 would reduce economic losses by \$25 billion a year (63,113). In the Russian Federation, the reduction of adult NCDs and injury rates to the levels seen in the EU15 (15 EU Member States before May 2004) would represent a gain of between 3.6% and over 30% of GDP depending on the sectors considered (101).

Universal approaches to promote mental health and well-being and to prevent mental illness tend to provide wider SROI than targeted ones (84,85,91). In addition, interventions across the life-course are cost-effective although the degree of



success varies with the national context (see section 2.2) (65,75,83–85,91,114). In the EU, interventions to promote mental health in the workplace may save up to €135 billion a year by reducing absenteeism and early retirement (66) and are likely to be cost-effective (65,75,83,85,91).

Measures to combat communicable diseases show SROI

Prevention and control of communicable diseases with a combination of vaccination programmes, environmental interventions, surveillance and control measures show substantial SROI, with benefits seen across sections: for the health system, productivity, educational achievements, reduction of health inequalities and improvements in wider societal well-being and economic development.

Emerging epidemics and pandemics and the effects of climate change, which increase the probability of outbreaks, require a strong, resilient and sustainable health system with good emergency preparedness (see section 2.4) (40). Vaccination, where already developed, provides SROI and is generally less costly than the therapeutic alternatives. Some childhood vaccinations, including for norovirus, rotavirus, influenza and pneumococcal infection, can demonstrate an SROI within five years. In Spain, pneumococcal vaccination of children under 2 years of age saved €22 million in one year (40). Rotavirus vaccination targeting young children may show better SROI than routine universal immunization (72). A key prerequisite for SROI is good immunization coverage of the population (153). For example, in the United Kingdom, the combined measles, mumps and rubella vaccination saves an estimated £240 730–544 490 over 10 years in reduced treatment costs (38); seasonal influenza vaccine returns 1.35 per unit spent, with savings rising to £12 per vaccination when health care workers are vaccinated (40).

Public health interventions to prevent sexually transmitted infections, viral hepatitis and tuberculosis are cost-effective compared with treating these diseases (91). Prevention of HIV through interventions such as counselling, testing, referral and partner notification and expanded testing have demonstrated good SROI, which reflects the high burden from infection and the benefits of prevention (81). A practical example and application of this is the recently developed optimized investment approach for the national HIV response in Uzbekistan and Tajikistan (154,155).








Environmental interventions, surveillance and control measures show substantial SROI for vector-borne diseases. Improved provision of water supply and sanitation has demonstrated SROI of 20 times the cost for these services in selected countries, including health and time savings (72). Control of the transmission of Salmonella

through surveillance and early withdrawal of products has an SROI of 3.5 times and 23 times, respectively, of the costs to the public sector and to society (72).

2.3.3. Summary

The areas covered in this section are very interlinked, and investment in preventing one disease can have an impact on other diseases. For example, policies to reduce and control NCDs can have reciprocal impacts on communicable diseases: smoking, alcohol misuse and diabetes increase the risk of developing tuberculosis and reduce the chance of treatment.

Investing in tackling Europe’s major disease burdens of NCDs and communicable diseases contributes to specific targets within the SDGs (12):


	3.3–3.6, 3.b, 3.d		11.6, 11.7
	4.7		16.1
	5.6		17.1, 17.7, 17.17
	10.4		

2.4. Strengthening people-centred health systems and public health capacity, including preparedness and response capacity for dealing with emergencies

2.4.1. Cost of business as usual

Low public investment in health threatens sustainability of health systems

Public investment in health and its efficiency (technical, productive and allocative; see Annex 2 for definitions) vary greatly in the WHO European Region. Total



expenditure on health as a percentage of GDP is around 8%, on average, but ranged from less than 5% in Armenia, Kazakhstan and Turkmenistan to more than 11% in Austria, France, Germany, Sweden and Switzerland in 2014 (156). The share of public spending within the total expenditure on health shows even greater variation, ranging in 2014 from about 20% in Azerbaijan and Georgia to more than 80% in 11 countries of the Region (156). In addition, public spending on health as a percentage of total government spending in 2013 showed an increasing gap between countries of high and middle incomes, with governments in the former allocating about 15% of total government spending to health whereas those with incomes of upper-middle and lower-middle levels allocating only 11% and 9%, respectively (156). Similarly, spending on public health (i.e. on health protection, improvement and promotion and prevention of risks and diseases) varies substantially across the WHO European Region although comparisons are difficult because of inconsistencies in national definitions and international classifications.² Based on OECD data, it is estimated that, on average, only around 3% of the health expenditure is allocated to public health (66). For example, in 2014 in the United Kingdom, 4.1% of total health expenditure was classified as preventive (157).

While increasing health care spending in the EU Member States is a challenge to the sustainability of health systems (66), many of the countries in central and eastern Europe and the Commonwealth of Independent States may not be allocating enough resources nor using them in an efficient way to ensure UHC and to adequately respond to the needs of their populations (100). Changing demographics and disease patterns and increasing population needs and demands require radical reforms and optimization of health and social services, focusing on integrated, people-centred health services (23).


The health sector remains vulnerable to policy responses (cuts in health budgets) to global and national economic crises and to austerity measures. For example, as a response to the economic crisis of 2007–2011, several countries reduced their health care budgets, including Bulgaria, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Portugal, Romania and Spain, with a risk of creating new inefficiencies, undermining access to and the quality of care, damaging health outcomes and ultimately jeopardizing the sustainability of the health system (158).

² As a result of the adoption of the System of Health Accounts 2011 guidelines by almost all OECD and European Economic Area Member States from 2016, it is possible for the first time to compare health care spending consistently across most European and OECD countries. Data produced to this 2011 standard do not form the basis of the figures published for all Member States by the OECD as many only have data available based on an earlier System of Health Accounts that is not comparable with the 2011 one. Not all countries are supplying data on the same basis.

High individual spending to meet health needs drives inequalities and can lead to poverty

Unmet health need is generally low in the EU (under 4% on average) (103); however, it affected more than 10% of the populations in Estonia, Greece and Latvia in 2014. Unmet health need has been concentrated in low-income groups, where it is four times higher than in high-income groups (90). One of the main reasons (along with geographical access and waiting times) for unmet health needs is financial constraint, which is also related to discrimination, stigma and vulnerability of certain population groups (e.g. Roma, ethnic minorities, migrants, sexual minorities and those disadvantaged or infirm). This remains a challenge for reducing the risk of impoverishment due to health costs in the WHO European Region (11). Inefficiency is estimated to take up 20–40% of total health spending (132); consequently, reducing inefficiency would allow a country's health system to achieve more with the available resources.

Financial pressure is one of the major contributory factors for unmet health needs, with individuals forgoing health care because of the required OOP payments or moving into financial catastrophe and impoverishment as a result of obtaining care. A high proportion of OOP payments drives inequalities along the social gradient; OOP health expenditure drives millions of people into poverty worldwide every year (159). In the WHO European Region in 2014, OOP payments were about 28% of total health expenditure, on average, with a large variation between 5% and 72% (156). In 12 countries of the WHO European Region, over 40% of total health expenditure came from OOP payments. In contrast, 13 other countries managed to keep the level of OOP payments below 15% of total health expenditure and to secure good financial protection against the cost of ill health (156). While the level of OOP payments as a proportion of total health expenditure is a good proxy for financial protection, it needs to be complemented with data on household OOP spending related to income and the social gradient to allow consideration of the likelihood of OOP pushing people below the poverty line. Fees or co-payments for health care that reach a certain level in relation to income can result in financial catastrophe for the individual or the household (159); this is estimated to affect 1–18% of the population of European countries (103). For example, the incidence of catastrophic payments in Tajikistan was 18.8% in 2011 (160). All EU countries but one (Cyprus) have government schemes and/or a compulsory health insurance system as the main health-financing structure. However, in Bulgaria, Cyprus, Greece and Romania, at least 10% of the population has no cover for health care; this particularly affects vulnerable groups such as unemployed or self-employed people, workers in the informal sector and disadvantaged communities or minorities (90). In countries



of eastern Europe and central Asia, the percentage of people defined as poor can increase by 3–9% because of catastrophic OOP payments for health care (100).

Health workforce deficit and unequal distribution threatens access to health and health security

Health services are affected by insufficient health workforce, migration of health workers and persisting gender inequalities. This results in unequal access to health services and poses a potential threat to national and global health security, especially in crises and emergency situations (23,161–164). The high risk of major health crises is widely underestimated. The world's preparedness and capacity to respond is insufficient, and future epidemics could potentially result in millions of deaths and cause major social, economic and political disruption (164).

The health workforce will need an additional 40 million jobs globally by 2030, particularly in countries of high and middle incomes (22). Paired with this insufficient supply, health worker migration has been increasing. There are skills mismatches and inequalities within populations, with rural and remote areas typically underserved. Failure to invest in and reform the global supply of qualified health workers contributes to health care inefficiencies, such as the avoidable annual cost of \$500 billion linked to a lack of responsible use of medicines (162). The health sector relies heavily on unpaid and informal work, which falls disproportionately on women and girls (see section 2.1) (23,163).

Health information systems also need strengthening to support and respond to the increasing need for access to relevant, timely and quality health information and for use as evidence in policy-making, in addition to providing disaggregated data (2).

Environmentally harmful practices threaten sustainable development and our planet

Environmentally harmful practices and services in the health sector (e.g. polluting the air, inadequately managing hazardous waste) are unsustainable and pose a serious threat to the health of our planet (110,165). Health systems affect climate change by increasing emissions of carbon dioxide and other greenhouse gases through direct energy usage, patient and staff travel, and the procurement of goods and services (110). NHS England is responsible for around 4% of all emissions and 5% of all road traffic in the United Kingdom, with its total carbon footprint estimated at 24.7 million tonnes in 2012, comparable to the entire carbon footprint of Croatia (110). Health systems also impact on environmental sustainability through waste and waste disposal, contaminating wastewater with a variety of chemical

hazards (e.g. pharmaceutical, cytotoxic and endocrine-disrupting chemicals; heavy metals; and microbial hazards) (110,165). NHS England generates around 34 billion litres of wastewater annually (110), while western European countries produce 3–6 kg of solid waste per bed-day and eastern European countries 1.4–2.0 kg per bed-day. Countries with higher income tend to have more effective and regulated waste-disposal mechanisms (110). Landfill disposal can lead to direct environmental risks, and incineration of waste can lead to high levels of pollutants such as mercury. Hospitals may be hazardous to the environment through the use of materials such as asbestos in their construction (110). Health care facilities use significant amounts of environmental resources, such as water and food, with a considerable impact on the sustainability of health systems and the environment (110).

2.4.2. Public health policies which bring SROI


The health sector is a major economic driver providing jobs and health security

The aggregate size of the health sector globally is over \$5.8 trillion per year (22). Investment in the health economy potentially generates decent and inclusive jobs, with gains for social protection, human and health security, equity and human rights, and women's and youth's economic empowerment (21,23,39,166–168). UHC enhances sustainable and inclusive economic growth, reduces the risk of impoverishment and fights inequalities (24,66,89,100,132–135). The economic returns on investing in UHC can be more than 10 times the costs at early stages when the path to UHC focuses on highly cost-effective interventions (76). Equally important is that UHC protects households from impoverishing financial risks (169).

Education, labour, wage and social protection policies, strong labour rights and expansion of women's leadership roles can address the persistent gender inequalities in the health sector (18,23). For example, if countries match the historical progress towards gender parity achieved in all sectors of employment by their best-in-region country, then \$12 trillion could be added to global GDP by 2025: an increase in GDP of 11% above current trajectories (170).

The WHO High-level Commission on Health Employment and Economic Growth recommends four reforms to optimize health service delivery (23):

- prioritizing health promotion and disease prevention;
- optimizing the scope of practice of health workers and developing multidisciplinary and complementary practices;
- building integrated people-centred systems with stronger linkages between the health and social sectors; and

- 
- empowering people and communities to play a greater role in designing health systems and to participate in their own health care.

Strengthening public health capacities and services shows significant SROI

Investing in public health includes health protection, health improvement, health promotion and disease prevention (see sections 2.2 and 2.3). Investing in human resources, organization of services and legislation are key enablers for strengthening public health capacity and services. Local and national public health interventions are highly cost-saving, showing a return of 14.3 for each unit invested in high-income countries (81). Studies in the United Kingdom show notable long-term benefits of effective public health policies on the health care system: an effective public health policy could save over £30 billion a year for the National Health Service by 2022–2023 (80).

Public investment in health shows clear SROI

Public investment in health (an essential component of UHC) is associated with improved health outcomes, reduced child and maternal mortality and reduced adult deaths. For example, more government spending in the health sector in the EU25 (Member States in 2004) was associated with positive economic growth in the short term, including in times of recession, with a two- to four-fold return (1.92 to 4.32) per unit spent (called a positive fiscal multiplier) (95). A 10% increase in government spending for health could, on average, reduce deaths in children under 5 years of age by 7.9/1000 children and adult deaths by 1.3/1000 (89). In addition, the “social investment concept” recognizes that protective and active measures are two aspects of the same thing and that social protection is an integral part of a successful investing strategy (171).

Investment in better systems for health can promote inclusive and economic growth

Investing in the health system benefits sustainable growth through several pathways (23).

- A **health dividend** is generated from the intrinsic value that health has for people. It has secondary economic benefits through increased life expectancy, improved quality of life, enhanced activity in the labour market, increased economic productivity and advantages through optimal levels of health.
- An **economic dividend** derives from direct, indirect and induced economic effects of the wider health economy in providing employment and decent jobs, building skills through education and training, establishing infrastructure and facilities, purchasing supplies and technologies, delivering communications

and logistics, spending the generated income and generating tax payments and social security contributions.

- A **social protection dividend** derives from investment in decent jobs in the health sector, which contributes to social protection financing and thus enhances social protection schemes and systems (e.g. social benefits for sickness, disability, unemployment and retirement, and financial protection from OOP and catastrophic health expenditure).
- A **social cohesion dividend** is created through the political stability seen in more equal societies; such stability is an important precondition for economic growth. UHC, together with decent jobs for women, young people and the poorest, is a vital element in delivering greater equity in society.
- An **innovation and diversification dividend** arises when investment in the health economy has been used as a deliberate means of increasing a country's economic growth, for example by creating internationally competitive medical services that attract foreign patients or through technological innovations (e.g. genetics, biochemistry, engineering and information technology).
- The **human security dividend** is generated through investment to ensure a resilient health system that provides effective surveillance, prevention, response and control of crises and emergencies, such as outbreaks, epidemics and pandemics. This strengthens a country's ability to protect its people (and, therefore, its economy) from the effects of NCDs and communicable diseases.

An example of generating these dividends is the expanded health economy in Germany, which is estimated to contribute nearly 11% of gross value added and an additional 8% in terms of indirect and induced effects (23,172).









Sustainable production, consumption and procurement for health can drive the green economy

Savings in the health sector can be achieved by investing in innovative health services, practices and technologies, which also facilitate environmental sustainability (102,110,165,173,174). Better use of information and communication technology (e.g. e-health, tele-health and m-health) has the potential to reduce the need for travel (110,165) but might not be accessible and affordable for everyone. The use of tele-care for long-term conditions could reduce carbon dioxide emissions and save £2.55 million per year by 2020 in England (102). Social prescribing for mental illness is highly cost-effective and has a smaller carbon footprint than cognitive behavioural therapy or medication. Mobile health services may increase environmental sustainability; for example using mobile breast screening clinics reduces greenhouse

gas emissions by around 75 tonnes per year, while also improving patient experience (110). Waste management can also achieve cost-savings; for example, hospitals in Kyrgyzstan achieved, on average, a 33% annual cost-saving from improved management of waste (110). In England, reducing medicine waste could save £37.5 million a year and reduce carbon dioxide emissions by more than 7 tonnes per year by 2020 (102). Behaviour change among staff may also contribute to environmental sustainability. A report from six London hospitals in 2015 showed that educating staff to turn off equipment and lights and close doors/windows reduced carbon dioxide emissions by 1900 tonnes over two years and reduced energy costs by around \$650 000 (110). Encouraging staff to use healthy/active means of travel could avoid the emission of over 4 tonnes of carbon dioxide per year by 2020, save £19.5 million per year by 2026 and improve staff health by 114 000 quality-adjusted life-years (QALYs) by 2020 if only 3% actually did become more active (see section 2.5) (102). To understand and mitigate the environmental impact from waste created by global health initiatives in the WHO European Region, rapid country assessments are conducted by the United Nations Development Programme in the Region, including Bosnia and Herzegovina, Kyrgyzstan, Tajikistan and Uzbekistan (173,174).

2.4.3. Summary

Investing in strengthening people-centred health systems and public health capacity contributes to specific targets within the SDGs (12):

 <p>1 NO POVERTY</p>	1-3	 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	9-4
 <p>3 GOOD HEALTH AND WELL-BEING</p>	3.8, 3.d	 <p>10 REDUCED INEQUALITIES</p>	10.4
 <p>4 QUALITY EDUCATION</p>	4.3, 4.4	 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	11.5, 11.b
 <p>5 GENDER EQUALITY</p>	5-3, 5-4	 <p>13 CLIMATE ACTION</p>	13-2, 13-3

Contd.

 <p>6 CLEAN WATER AND SANITATION</p>	6.2–6.4, 6.a	 <p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	16.6
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	7.2, 7.3	 <p>17 PARTNERSHIPS FOR THE GOALS</p>	17.8, 17.17, 17.18

2.5. Creating supportive environments and resilient communities

2.5.1. Cost of business as usual

Environmental hazards are detrimental to human health, with a high societal and economic burden

Environmental hazards are detrimental to human health and well-being with high costs to the health system, society and the economy. A growing body of evidence shows that the health of humanity is intrinsically linked with the health of the planet. An estimated 12.6 million deaths worldwide were attributable to the environment in 2012: 23% of all global deaths and 12% of all deaths in Europe (105).

Major local and global environmental threats with high health, social and economic burden include air pollution, noise pollution, harmful chemicals, poor water quality and sanitation, and climate change.

Air pollution is the largest contributor to the environmental burden of disease

Air pollution has multiple effects on health (65) and large economic costs to the WHO European Region. For example, as of 2010, the annual economic cost of premature deaths from air pollution across the countries of the Region stood at \$1.4 trillion and the overall annual economic cost of health impacts and mortality from air pollution, including estimates for morbidity costs, stood at \$1.6 trillion (111). Air pollution generated by road traffic was responsible for 54% of the economic cost of the health impacts (111). The combustion of fossil fuels in coal-fired power plants in Europe remains a threat to health, associated with serious harms such as impacts on fetal development, cancer and heart disease and premature death (175).



Noise pollution has multiple negative effects on people's lives

Noise is a particular problem in urban environments (176,177). It is estimated that there are at least 1 million healthy life-years lost every year from traffic-related noise in western European countries (176).

Poor water quality and sanitation is still a burden in some parts of the WHO European Region

Poor water quality has been identified as the second largest environmental contributor to the global burden of disease (69). Inadequate water quality and sanitation still occur in Europe, resulting in nearly 10 people per day dying from diarrhoea in some countries (see section 2.3) (69,96,105).

Harmful chemicals adversely affect health and the economy

The extent of the impact depends on the chemical involved (40,69,85). It is estimated that, globally, there will be an estimated \$29.4 billion in lost productivity from mercury pollution by 2020 (40). Chemical exposure to lead, pesticides, flame retardants, plastics and endocrine-disrupting chemicals is harmful to health, particularly for children (88). The WHO European Region still accounts for the majority of the global asbestos-related disease burden as a consequence of heavy asbestos use during previous decades (178).

Climate change poses threats to population health and the economy

Climate change may affect health through heat- and cold-related effects, as well as through other impacts such as flooding and infections (72,105). Health-related costs for the EU from climate change are estimated to reach €147 billion by 2080 (72).

Unhealthy built environments can have serious negative health, social and economic impacts

There is evidence of a link between good health and the wider physical environment in which people live. The effects of inadequate housing, such as cold, damp and dangerous homes, are significant (60,118), with the annual health costs of treating people with illnesses directly linked to poor housing estimated to reach €194 billion in the EU (130). Residential segregation, deteriorated housing and overcrowding, as well as homelessness, are linked to displaced and minority groups and result in health inequalities (see section 2.1).

Road traffic injuries are associated with high individual and societal costs across the WHO European Region (85). For example, road traffic collisions cost the EU €153 billion each year, or up to 2% of GDP in countries of middle and high incomes (40).

Many countries in central Asia and eastern Europe face the challenges of inefficient use and increasing cost of energy, with unsustainable and unaffordable heating and a high carbon footprint; this is mostly the result of energy losses from old infrastructure. Fossil fuels remain dominant. For example, the global energy share of fossil fuels reached 81% in 2014, with western and central Europe's share at 71% and central Asia's share at 94% (2). Renewable energy sources other than hydropower accounted for only 3.7% of the energy supply in 2014, reflecting the high cost for renewable energy technologies and informational, technical, regulatory, financial and administrative barriers (2).

2.5.2. Public health policies which bring SROI

Investing in environmental cross-sectoral public health policies has benefits for the social and economic determinants of health and well-being and for the health of the planet. Interventions to reduce the impact of environmental threats can produce large returns, often for relatively modest investments (40,60,70,72,85,88,99,105,111,165). Investing in environmental sustainability creates in its turn healthy places and settings that enable and support community resilience.

Reducing the impact of environmental threats can have large benefit–cost ratios


Interventions to reduce the impact of environmental threats can produce large returns, often for relatively modest investments (85).

There is a positive benefit–cost ratio for air pollution control measures

This varies by sector, ranging from three in agriculture, five in industry, six in transportation and energy, 16 in household interventions and 17 in the service sector in Hungary for a unit cost (72). Pollution emission reduction in the oil extraction industry has an estimated benefit–cost ratio of 5.7:1 per year in Kazakhstan (72). A review of options to reduce pollution estimated a 6:1 benefit–cost ratio in the United Kingdom (179). Reducing emissions through adding filters to trucks and buses would save an estimated 120 000 lives a year, with a net benefit of \$24.7 billion, or 200 000 life-years and \$10 billion when applied to individual vehicles (99).

Provision of clean water and sanitation reduces preventable disease

An investment of \$1 in small-scale water supplies in the WHO European Region leads to a return, in terms of reduced preventable disease, of between \$2 in higher-income countries and \$21 in lower-income countries (96). Interventions to attain universal access to improved sanitation in the



Caucasus and central Asia have estimated a benefit of 4.8 for every unit invested (71) with the level of this return likely to vary and to be lower in more developed countries (69).

Chemical hazards include both *old* and *new* chemicals

Existing chemical hazards include asbestos from construction of older buildings. Effective waste-disposal mechanisms for health service-related hazards (e.g. pharmaceuticals, heavy metals and microbial hazards) tend to be more effective in countries with higher incomes. Implementation of EU regulations aiming at combating the effects of new chemicals has an associated cost of between \$3.6 billion and \$6.7 billion, with estimated economic benefits of \$34 billion to \$68 billion over the next 30 years (85).

Mitigating climate change has effects on life expectancy and health costs

Reducing greenhouse gases in the EU by 20% in 2020 would improve life expectancy by 3.3 months and reduce health damage costs by €12 billion to €29 billion (72). Cross- and multisectoral interventions provide the most benefit (72).

Ensuring safe and healthy housing conditions

Homes that are dry, warm and free of fuel poverty are likely to produce the greatest benefits to health (18,130). Dutch evidence shows that for every €1 spent on preventing homelessness, about €2.20 is saved elsewhere, including in emergency health care, psychiatric services and prisons, and that healthy housing remains a multisectoral responsibility (128). Multifaceted and wide-ranging interventions that involve residents are most likely to succeed (130).

Reducing road traffic injuries

Numerous European interventions show SROI (40,81,85) for road traffic injury reduction. Examples include a return on investment of 6.80 per unit spent in medical and societal costs over two years from the use of speed cameras in an urban setting in Spain (81), an estimated SROI of 29 per unit spent in the United Kingdom on encouraging the use of bicycle helmets (104), a return of 3.23 per unit spent for families who buy car seats in Sweden (88), and a cost-saving per life-year saved of \$5550 in a Greek scheme allowing new parents to borrow child car seats (88). The most effective strategies are likely to involve a combination of interventions to reduce speed, increase safety and modify the driving environment (85), although some safety features are likely to be more cost-effective in low- and middle- income countries if their costs could be reduced (85,100).

Improving spatial and urban planning

Spatial and urban planning initiatives benefit individuals through increased social cohesion, with reciprocal benefits for the individual and the wider community (60). Increases in green spaces such as parks, gardens and playgrounds are linked to improved health (59,104): every 10% increase in exposure to green space translated into a reduction of five years in the age of expected health problems in the Netherlands (60). An active health campaign in the United Kingdom gave a return of up to 23 per unit spent in benefits in terms of quality of life, reduced health care use, increased productivity and gains to the local authority (59). Health and well-being improvements are likely to be related to increased levels of physical activity and reduced obesity, resulting in fewer NCDs, fewer mental health admissions and improved educational performance (see section 2.3) (60).

Encouraging active methods of travel

Increasing active travel (walking and cycling) has the potential to reduce environmental harm, improve road safety and improve the health of the individual (60,64). Increasing active travel across urban England and Wales could save the health system £17 billion over 20 years, with savings of between £539 and £641 a year for every person who cycles instead of using their car, in terms of the health benefits to individuals, health care cost-savings, productivity gains and reductions in air pollution and congestion (40,60). The economic return on investing in cycle networks in Norway is between three and 14 times greater than the costs (see section 2.3) (72).

Building resilience

Investing in social networks can increase people's resilience to threats to health and well-being and improves recovery from illness (60). Social capital is reciprocally associated with better health and well-being (100,180,181). For example, every single unit spent on health volunteering returns between 4 and 10 in benefits, which is shared between service users, volunteers and the wider community (60). A health champions community project has shown an SROI of 3.55 for every unit spent (104). A range of community interventions to improve diet and nutrition, increase physical activity and improve mental health through an asset-based approach showed an SROI of between 0.79 and 112 per unit spent (104). Other interventions such as time banking (where people contribute and exchange their time and skills) have demonstrated a net economic benefit of £667 a year, rising to £1312 if improvements in quality of life are also included (104).

2.5.3. Summary

Investing in creating supportive environments and resilient communities contributes to specific targets within the SDGs (12):

 <p>1 NO POVERTY</p>	1.2, 1.4, 1.5	 <p>10 REDUCED INEQUALITIES</p>	10.1, 10.3, 10.4
 <p>2 ZERO HUNGER</p>	2.4	 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	11.1–11.7, 11.a, 11.b
 <p>3 GOOD HEALTH AND WELL-BEING</p>	3.2, 3.6, 3.9, 3.d	 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	12.2, 12.4–12.9, 12.c
 <p>5 GENDER EQUALITY</p>	5.5, 5.a, 5.c	 <p>13 CLIMATE ACTION</p>	13.1–13.3, 13.a, 13.b
 <p>6 CLEAN WATER AND SANITATION</p>	6.1–6.3	 <p>14 LIFE BELOW WATER</p>	14.1
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	7.1–7.3, 7.a	 <p>15 LIFE ON LAND</p>	15.1
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	8.3, 8.4	 <p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	16.3, 16.6, 16.7
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	9.4, 9.5	 <p>17 PARTNERSHIPS FOR THE GOALS</p>	17.7, 17.17

3. DISCUSSION

The purpose of this evidence synthesis report is to inform and support the creation of a roadmap to implement the 2030 Agenda and to build on Health 2020 in the WHO European Region. It achieves this through:

- developing a framework for investment for health and sustainable development; and
- synthesizing evidence for SROI from public health policies to support implementing the SDGs by building on Health 2020, thus contributing to the proposed WHO European roadmap.

3.1. Strengths and limitations of the review

The report uses a review of reviews methodology including both peer-reviewed and grey literature. This approach has limited the authors' ability to include primary research on specific policies/intervention or economic evaluation/modelling that has not been assessed and published at a review level. This can also be considered as adding strength, as it increases the validity of the evidence presented, which, by definition, has already been reviewed by independent researchers before inclusion in this report.

Despite searching only English language databases, the composition of the authors' team and expert group allowed evidence to be considered in other European languages, including Bulgarian, French, German, Russian and Spanish. The review results may be influenced by publication bias and selection bias because of the focus on Health 2020 as a review framework.

The identified policies and interventions varied substantially in approach, scope, method, implementation, evaluation and context. Using economic methods, which focus on a single intervention, creates difficulties in comparing studies and countries or generalizing outcomes, as real-world practice usually involves a package of interventions (182). Another challenge is the time horizon (achieving returns in the short, mid and long term) when comparing policies as well as when considering the public finance sector, which usually operates with a short-term perspective (182). Here the SROI concept becomes very useful in providing a common methodology to measure the wider social, economic and environmental value of interventions. However, studies using targeted application of SROI in its full scope were rare, especially in the context of sustainable development and



health; consequently, application was restricted to evidence from cost–benefit (and related monetary) analyses (9,183).

Populations and communities differ from country to country, and the fact that one policy or model works in one place does not necessarily mean that it will work in another. Consequently, conclusions and policy options should always be considered with particular attention to the national and local context, system limitations and cultural considerations.

There is much scope for further in-depth research to explore the contextual and qualitative aspects of policy evaluation and to identify challenges, barriers and enablers for successful implementation. The importance of regional, national, subnational and local context should be explored and how different levels influence implementation across the WHO European Region.

A large body of evidence considered and evaluated health and the health sector only from an economic perspective. Policy- and decision-makers need to consider that health, equity and well-being have an inherent value for people and communities (living longer, having a better quality of life and better opportunities) and contribute to social capital, social cohesion, peace and security, which are unrelated to the economic argument (184). The SROI method is particularly suitable in this context and the existing evidence base can be enriched by applying genuine SROI approaches, taking explicit account of the non-monetary social benefits or social returns of investments for health and well-being. Assessing and measuring gains in community and personal resilience and empowerment is particularly challenging and complex and require further attention.

3.2. Policy options and implications

Informed by the review evidence, three key conclusions were drawn regarding investment for health and well-being:

- current investment policies and practices (doing business as usual) are unsustainable as they have high costs for individuals, families, communities, society, the economy and the planet;
- investment in public health policies provides effective, efficient, inclusive and innovative solutions, defined by values and evidence, and drives social, economic and environmental sustainability; and
- investment for health and well-being is a driver and an enabler of sustainable development and vice versa, and it empowers people to achieve the highest attainable standard of health for all.

From the evidence, three pathways could be identified through which investment for health and well-being drives (directly through the health sector) and enables (indirectly through other sectors) sustainable development:

- **health and security pathway** through increasing life expectancy, improving quality of life, building human capital, enhancing labour productivity and activity and ensuring national and global health security;
- **social and equity pathway** through reducing the health gap along the social gradient and gender, building social capital, creating political stability and achieving employment equity for women, young people and the poorest; and
- **economic and innovation pathway** through direct, indirect and induced economic effects, such as providing quality employment, building skills, establishing infrastructure, purchasing supplies and technologies, delivering communications, logistics, induced tax and social security contributions, creating competitive medical services and technological innovations (especially by the health sector), thus driving sustainable production and consumption.

Based on the evidence and expert contributions and in support of the roadmap, a menu of 12 key public health policy options for priority investment is suggested. This menu can be used by decision- and policy-makers from the health and non-health sectors as potential options when considering their own specific context. All 12 address areas of high health, social, economic and environmental burden and demonstrate strong SROI and hence benefit sustainable development.

Proportionate universalism to address social, economic and environmental determinants of health

Poor health and health inequalities are associated with lasting socioeconomic disadvantage across the life-course, incurring high costs for individual, families, the health system and wider society. For example, the total welfare loss linked to health inequalities in the EU in 2004 amounts to 9.4% of GDP or €980 billion (65), and England has estimated £31 billion to £33 billion of productivity losses per year and £20 billion to £32 billion of lost taxes and welfare payments (13,65). Conversely, socioeconomic disadvantage is associated with ill health and health inequity, with certain marginalized groups such as migrants, minorities and the homeless being particularly vulnerable. Reducing the health inequality gap is key to accelerating sustainable development. This requires investing in proportionate universalism policies to reduce the social gradient, for example through provision of a living wage, ensuring universal social protection coverage, providing free child care and having active labour market programmes.



Ensure gender equity, women's rights and address violence and abuse

Gender-based inequalities undermine inclusive economic growth, decent jobs and the sustainability of health systems. Violence and abuse are associated with high emotional and health costs to the individual, society and the economy. Achieving gender equity requires investment in approaches such as ensuring gender wage and pension parity, non-discrimination, actively promoting women for senior posts and identifying and providing care for victims of domestic violence.

Ensure the best start in life, leaving no child behind

Harmful early childhood experiences can lead to long-lasting disadvantage and ill health, with accompanying high costs for the individual, society and the economy. Investing in interventions to support health throughout the life-course has economic, social and environmental benefits. Investment should target especially the early years and preventive policies as this offers good value for money; examples include supporting breastfeeding and healthy mother nutrition, providing parenting and family programmes, providing universal affordable high-quality child care systems and ensuring early, universal and non-discriminatory education.

Ensure early and youth education, health literacy and decent employment

Poor education and poor health literacy are detrimental to health, well-being and lifelong prospects. Youth unemployment remains one of the most significant development challenges. Unsafe and unhealthy workplaces can have a negative impact on productivity and the economy. Investment is required across all sectors and settings, not just the health sector, to provide health literacy and behavioural interventions in schools, provide youth education and active employment (ready to work) programmes, ensure safe working conditions and provide well-being programmes at the workplace.

Ensure healthy and active ageing

Disability, inequality and maltreatment in older people are linked to poor health and well-being with high accompanying costs to individuals, the health system, society and the economy. Healthy-ageing interventions include actions to prevent falls and injury, programmes to increase physical activity, vaccination, multifaceted housing interventions, and protection against poverty, social isolation and exclusion.

Tackle smoking, alcohol misuse, obesity, unhealthy diets and physical inactivity

Smoking, alcohol misuse, physical inactivity and an unhealthy diet are among the leading risk factors for ill health and disability in the WHO European Region and have substantial health, well-being, societal and economic costs. Investing in preventing harmful behaviours and promoting health should be done through a comprehensive strategy combining cross-sectoral, gender-responsive multilevel interventions, for example minimum unit alcohol pricing, comprehensive advertising bans, restricted access to retail outlets, primary care counselling, food regulation and encourage reformulation of products to reduce salt, sugar and fat.

Address NCDs and communicable diseases

The health, social and economic burden of NCDs, including mental ill health, is substantial. A similar burden is linked to communicable diseases, which have significant but varying impacts across the WHO European Region. Investing in protecting health and in preventing disease can be highly efficient, with multiple benefits to health, equity, well-being, society and the wider economy. This includes tackling NCDs through universal and targeted interventions to promote good physical and mental health, interventions to prevent and control communicable diseases (e.g. with vaccination programmes, early detection, environmental interventions, surveillance and control measures). These areas are very interlinked and investment in preventing one disease can also have an impact on other diseases.

Ensure UHC and minimize OOP payments

Low public investment in health threatens the sustainability of health systems, and the requirement for high OOP payments drives inequalities along the social gradient and may push people into poverty. Investing in UHC and increasing public financing for health improves social and financial protection and enables prosperity and sustainable development.

Strong public health systems support national and global health security

Achieving fair, efficient and resilient systems for health, strengthening public health capacity and services, and prioritizing health promotion and disease prevention contribute to national and global health security and bring significant SROI. Approaches include providing training for emergency preparedness and responses and developing universal and targeted health promotion and early prevention interventions.



Transform, expand and optimize the health workforce

An inadequate health workforce, migration of health workers and persisting gender inequalities result in unequal access to health services, which carries high economic costs and poses a potential threat to health security. Ensuring a sufficient, optimally distributed, motivated and qualified health workforce requires investment in improving education and training in medicine and health care, increasing the quota for training, redistributing and incentivizing health professionals and ensuring gender wage parity and non-discrimination.

Healthy and health-enabling settings help to reduce the social gradient

Environmental hazards are detrimental to human health and well-being with high costs to the health system, society and the economy. Environmental health risks exacerbate inequalities between and within countries, across the social gradient and across the life-course. Key issues are air pollution, noise pollution, harmful chemicals, poor water quality and sanitation, and climate change. There is a link between good health and the quality of people's homes and the wider physical environment in which they live. Investing in the immediate human, natural and built environment and in planetary health through multifaceted, cross-sectoral interventions is a key determinant of health, well-being and equity. There is an explicit link to sustainable development, community resilience, social cohesion and social capital. Environmental public health policies and interventions that demonstrate co-benefits to individuals, communities and the planet include establishing healthy and health-enabling settings and resilient communities and creating sustainable natural and urban environments with increased access to green spaces and encouragement for active travel (walking, cycling).

Ensure a *green and circular* economy with sustainable production, consumption and procurement

Environmentally harmful practices and services in all sectors are unsustainable and threaten the health of people and the planet. Achieving innovative and environmentally sustainable systems for health and well-being include implementing appropriate information and communication technologies, using mobile health and e-health and improving waste management.

These policy suggestions are supported by a companion report discussing key policies for addressing the socioeconomic determinants of health and health inequities, which suggests that specific policy options that affect living conditions have an impact on health and equity (18).

All public health policies have a complex cross-sectoral multidimensional nature. Leaving no one behind requires addressing wider determinants that have an impact on the health and well-being of individuals (behaviours, NCDs and communicable diseases) and on community resilience across the life-course. It is also dependent on ensuring UHC and creating supporting environments. Living in safe and healthy places and settings enables people to make healthy choices and practise healthy behaviours, which can provide the essential prerequisites for good health and well-being from the early years through to active and healthy ageing. Such settings support the reduction of NCDs and infectious diseases and ensure sustainable and safe and health sector facilities and infrastructure. Finally, health system strengthening and UHC support financial and social protection and work towards a green health economy. Such protection is important to avert poverty and decrease the social gradient; to ensure availability and access to vital health services, including health promotion and disease prevention; and to protect and improve health and well-being over the life-course.

Evidence and practice clearly show that investment for human and sustainable development cannot be carried out in isolation by just one (i.e. the health) sector. Investment pathways extend across all policies (health in all policies approach), all sectors and all governance levels (whole-of-government approach). They need public and community involvement and participation (whole-of-society approach) (18,28). The interconnected and interdependent nature of current challenges and solutions requires strong leadership, strategic and political commitment and new approaches, including networking, collaboration and citizen involvement at all policy and governance levels (28). Monitoring and evaluation, and establishing integrated and harmonized information systems and data collection and analysis for health, are part of this (185). Useful approaches and tools to drive cross-sectoral and participatory governance and related investment include health, equity, environmental and well-being impact assessment (186,187) and tools to assess gender equality (188).

Multisectoral and participatory governance for health and well-being is gaining momentum, supported by the Paris Declaration of 2016, which committed to partnership for the health and well-being of our young and future generations, leaving no child behind (189,190), and the Ostrava Declaration of 2017, which advanced actions on environment, health and well-being in the WHO European Region (191). A recognition of health as a “necessary component for socioeconomic stability” is growing nationally and globally. Health leaders from the leading highly industrialized and emerging economies have committed to adopting a health



in all policy approach, prioritizing the most vulnerable, engaging citizens and communities in policy processes, filling health data gaps, and using evidence to inform policy and practice and strengthening health systems contributing to UHC (192,193). A new conceptual framework of social and global boundaries is emerging (194) which recognizes that human well-being depends on enabling every person to lead a life of dignity and opportunity while safeguarding the integrity of Earth's life-supporting systems. It calls for addressing the existing deep inequalities and for transforming policy-making and economies so that they become regenerative and distributive. Achieving a green and circular economy is considered not only efficient but also fair and socially inclusive, where economic growth and environmental responsibility are mutually reinforcing, supporting progress on social and human development and building sustainable systems, infrastructure, goods and services for the present and future generations (7,10,195–197).

Looking forward, the developed framework for investment for health and sustainable development and the policy options suggested from the evidence outlined here align with and support strategic and policy documents and processes already in place with WHO and the United Nations. The report outlines options to enable the proposed roadmap to advance the implementation of the 2030 Agenda, thus translating national, regional and global commitment into tangible action and investment-driving transformational change.

4. CONCLUSIONS

Investment for health and well-being aims to achieve the highest attainable standards of health for all at all ages. It should be guided by the principles, goals and targets of the 2030 Agenda, while building on Health 2020 and using an equity, gender and human rights approach. Investment needs to have a local, national, regional and global context and requires participatory governance for decision-making that builds on the principle of solidarity. Investment should optimize the SROI across the continuum of health promotion and protection, as well as for disease prevention, treatment, rehabilitation, care and support.

A sustainable investment approach for health and well-being would demonstrate a fair, rights- and evidence-informed, context-tailored and efficient prioritization of resources (considering technical, productive and allocative efficiency) across all governance levels, sectors and disciplines. This is beneficial not only for health but also for reducing health inequalities and achieving prosperity, security, peace and societal wealth.

Evidence is strengthening to support the case for investment in public health as a driver and enabler of social, economic and environmental sustainability, and as a method of contributing to national and global prosperity and security. This involves addressing the root causes of inequalities (in health, society, economy and environment) and establishing UHC and sustainable and resilient health systems. Priority areas include investing across the life-course, particularly the early years; investing to create safe, healthy and resilient settings; and investing to protecting health from risks and crises.

Momentum is building towards integrated, collaborative, participatory action and investment across all sectors and governance levels to achieve health and well-being, leaving no one behind. It requires innovative and smart financial mechanisms and governance reforms, as well as a fundamental change in the mindset towards valuing human life and health, equity, sustainable development, planetary health, security and peace more than pure economic growth.


Investment for health and sustainable development is a rights- and results-based responsibility for all, driven by values and intergenerational justice and ensuring the well-being of present and future generations.



REFERENCES

1. The global risks report 2017, 12th edition. Geneva: World Economic Forum; 2017.
2. Building more inclusive, sustainable and prosperous societies in Europe and central Asia: from vision to achievement of the sustainable development goals – call for action from the regional UN system. New York: United Nations Development Group; 2017 (Regional Advocacy Paper).
3. International health regulations, 3rd edition. Geneva: World Health Organization; 2005.
4. Sendai framework for disaster risk reduction 2015–2030. Geneva: United Nations Office for Disaster Risk Reduction; 2015.
5. Health emergencies programme. Geneva: World Health Organization; 2016 (http://www.who.int/about/who_reform/emergency-capacities/emergency-programme/en/, accessed 8 July 2017).
6. de la Maisonneuve C, Martins JO. The future of health and long-term care spending. *OECD J Econ Stud.* 2015;2014:61–96.
7. Bell R, Grobicki L, Hamelmann C. Ensure healthy lives and well-being for all: addressing social, economic and environmental determinants of health and the health divide in the context of sustainable human development – analysis of the project portfolio of the UNDP Regional Bureau for Europe and the Commonwealth of Independent States. New York: United Nations Development Programme; 2014.
8. Charles J, Tudor Edwards R. A guide to health economics for those working in public health: a concise desktop handbook. Bangor: Centre for Health Economics and Medicines Evaluation; 2016.
9. Yates BT, Marra M. Social return on investment (SROI): problems, solutions and is SROI a good investment? *Eval Program Plann.* 2016;64:136–44.
10. Towards a roadmap to implement the 2030 Agenda for Sustainable Development in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/R4).
11. Health 2020: a European policy framework and strategy for the 21st century. Copenhagen: WHO Regional Office for Europe; 2013.
12. The sustainable development agenda. New York: United Nations; 2016 (<http://www.un.org/sustainabledevelopment/development-agenda/>, accessed 8 July 2017).
13. Marmot M, Allen JD, Goldblatt P, Boyce T, McNeish D, Grady M et al. Fair society, healthy lives: the Marmot review. London: UCL Institute of Health Equity; 2010.
14. Universal social protection floors for better health and well-being for all children and adolescents. Copenhagen: WHO Regional Office for Europe; 2016 (Thematic Paper 1).
15. McDaid D. Investing in health literacy: what do we know about the co-benefits to the education sector of actions targeted at children and young people? Copenhagen: European Observatory on Health Systems and Policies; 2016.


16. Schools and pre-schools promoting health and well-being for all children and adolescents. Copenhagen: WHO Regional Office for Europe; 2016 (Thematic Paper 2).
17. The Minsk declaration: the life-course approach in the context of Health 2020. Copenhagen: WHO Regional Office for Europe; 2015 (WHO European Ministerial Conference on the Life-course Approach in the Context of Health 2020; http://www.euro.who.int/__data/assets/pdf_file/0009/289962/The-Minsk-Declaration-EN-rev1.pdf?ua=1, accessed 8 July 2017).
18. Saunders MD, Barr B, McHale P, Hamelmann C. Key policies for addressing the socioeconomic determinants of health and health inequities. Copenhagen: WHO Regional Office for Europe; 2017 (Health Evidence Network (HEN) synthesis report 52).
19. Constitution of the World Health Organization. New York: United Nations; 1946.
20. Stronks K, Toebes B, Hendriks A, Ikram U, Venkatapuram S. Social justice and human rights as a framework for addressing social determinants of health. Copenhagen: WHO Regional Office for Europe; 2016 (Final report of the Task Group on Equity, Equality and Human Rights: review of social determinants of health and the health divide in the WHO European Region; http://www.euro.who.int/__data/assets/pdf_file/0006/334356/HR-task-report.pdf, accessed 8 July 2017).
21. Strategy on women's health and well-being in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016.
22. Global strategy for women's, children's and adolescents' health (2016–2030). New York: United Nations Every Woman Every Child; 2015.
23. High-Level Commission on Health Employment and Economic Growth. Working for health and growth: investing in the health workforce. Copenhagen: WHO Regional Office for Europe; 2016.
24. Commission on Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health: final report. Copenhagen: WHO Regional Office for Europe; 2008.
25. Good governance for the health and well-being of all children and adolescents. Copenhagen: WHO Regional Office for Europe; 2016 (Thematic Paper 3).
26. Building resilience: a key pillar of Health 2020 and the sustainable development goals – examples from the WHO Small Countries Initiative (2017). Copenhagen: WHO Regional Office for Europe; 2017.
27. Health in all policies: framework for country action. Geneva: World Health Organization; 2014.
28. Kickbusch I, Gleicher D. Governance for health in the 21st century. Copenhagen: WHO Regional Office for Europe; 2012.
29. Kickbusch I, Gleicher D. Smart governance for health and well-being: the evidence. Copenhagen: WHO Regional Office for Europe; 2014.
30. Kickbusch I, Behrendt T. Implementing a Health 2020 vision: governance for health in the 21st century. Making it happen. Copenhagen: WHO Regional Office for Europe; 2013.

- 
31. Shanghai declaration on promoting health in the 2030 Agenda for Sustainable Development. Geneva: World Health Organization; 2016 (9th Global Conference on Health Promotion, Shanghai; <http://www.who.int/healthpromotion/conferences/9gchp/shanghai-declaration.pdf?ua=1>, accessed 8 July 2017).
 32. Environment and health for the European cities in the 21st century: making a difference. Copenhagen: WHO Regional Office for Europe; 2017 (http://www.euro.who.int/__data/assets/pdf_file/0020/341615/bookletdef.pdf?ua=1, accessed 15 July 2017).
 33. Resolution on universal health coverage. New York: United Nations; 2012 (<http://universalhealthcovereday.org/un-resolution/>, accessed 8 July 2017).
 34. Council conclusions on common values and principles in European Union health systems. Brussels: Council of the European Union; 2006 ([http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006XG0622\(01\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006XG0622(01)), accessed 8 July 2017).
 35. Declaration of Alma-Ata. Copenhagen: WHO Regional Office for Europe; 1978 (International Conference on Primary Health Care, Alma-Ata, Russian Federation).
 36. Health financing for universal coverage. Geneva: World Health Organization; 2017 (http://www.who.int/health_financing/universal_coverage_definition/en/, accessed 8 July 2017).
 37. New urban agenda. New York: United Nations; 2016 (Resolution 71/256 adopted by the General Assembly on 23 December 2016; <http://habitat3.org/wp-content/uploads/New-Urban-Agenda-GA-Adopted-68th-Plenary-N1646655-E.pdf>, accessed 8 July 2017).
 38. Health 21: the health for all policy framework for the WHO European Region. Copenhagen: WHO Regional Office for Europe; 1999.
 39. Tallinn charter: health systems for health and wealth. Copenhagen: WHO Regional Office for Europe; 2008 (WHO European Ministerial Conference on Health Systems, Tallinn, Estonia; http://www.euro.who.int/__data/assets/pdf_file/0008/88613/Eg1438.pdf, accessed 8 July 2017).
 40. The case for investing in public health: a public health summary report for EPHO 8. Copenhagen: WHO Regional Office for Europe; 2014.
 41. Priorities for health systems strengthening in the WHO European Region 2015–2020: walking the talk on people centredness. Copenhagen: WHO Regional Office for Europe; 2015 (EUR/RC65/13).
 42. Strengthening people-centred health systems in the WHO European Region: framework for action on integrated health services delivery. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/15).
 43. Strategy and action plan for refugee and migrant health in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016.
 44. Global strategy on human resources for health: workforce 2030. Geneva: World Health Organization; 2016.
 45. Human resources for health and implementation of the outcomes of the United Nations' High-Level Commission on Health Employment and Economic Growth. Geneva: World Health Organization; 2017 (A70/18: Report by the Secretariat).


46. Human resources for health and implementation of the outcomes of the United Nations' High-Level Commission on Health Employment and Economic Growth. Geneva: World Health Organization; 2017 (WHA70.6).
47. European action plan for strengthening public health capacities and services Copenhagen: WHO Regional Office for Europe; 2012.
48. Coalition of partners expert meeting on strengthening public health capacities and services in Europe. Copenhagen: WHO Regional Office for Europe; 2017 (<http://www.euro.who.int/en/media-centre/events/events/2017/01/coalition-of-partners-expert-meeting-on-strengthening-public-health-capacities-and-services-in-europe>, accessed 8 July 2017).
49. UN Interagency Task Force on NCDs (UNIATF). New York: United Nations; 2017 (<http://www.who.int/ncds/un-task-force/en/>, accessed 8 July 2017).
50. Ottawa Charter for Health Promotion. Geneva: World Health Organization; 1986 (First International Conference on Health Promotion, Ottawa).
51. Global action plan for the prevention and control of non-communicable diseases 2013–2020. Geneva: World Health Organization; 2013.
52. Political declaration of the high-level meeting of the General Assembly on the prevention and control of non-communicable diseases. New York: United Nations; 2011 (A/RES/66/2).
53. NCD global monitoring framework: ensuring progress on noncommunicable diseases in countries. Geneva: World Health Organization; 2013 (<http://www.who.int/nmh/global-monitoring-framework/en/>, accessed 8 July 2017).
54. Action plan for the prevention and control of noncommunicable diseases in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/11).
55. Acheson D. Public health in England: the report of the Committee of Inquiry into the Future Development of the Public Health Function. London: HMSO; 1988.
56. Higgins AM, Harris AH. Health economic methods: cost-minimization, cost-effectiveness, cost-utility, and cost-benefit evaluations. *Crit Care Clin.* 2012;28(1):11–24.
57. Mohr D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Ann Intern Med.* 2009;151(4):264–9.
58. Batura N, Hill Z, Haghparast-Bidgoli H, Lingam R, Colbourn T, Kim S et al. Highlighting the evidence gap: how cost-effective are interventions to improve early childhood nutrition and development? *Health Policy Plann.* 2015;30(6):813–21.
59. Buck D. Local action on health inequalities: understanding the economics of investments in the social determinants of health. London: Public Health England; 2014 (Health Equity Briefing 9; <http://www.hullpublichealth.org/assets/PHE/Briefing9.pdf>, accessed 8 July 2017).
60. Buck D, Gregory S. Improving the public's health: a resource for local authorities. London: King's Fund; 2013.
61. Busse R, Blümel M, Scheller-Kreinsen D, Zentner A. Tackling chronic disease in Europe: strategies, interventions and challenges. Copenhagen: European Observatory on Health Systems and Policies; 2010.

- 
62. Cavill N, Kahlmeier S, Rutter H, Racioppi F, Oja P. Economic analyses of transport infrastructure and policies including health effects related to cycling and walking: a systematic review. *Transport Policy*. 2008;15(5):291–304.
 63. Chisholm D, Abegunde D, Mendis S. Scaling up action against noncommunicable diseases: how much will it cost? Geneva: World Health Organization; 2011.
 64. Davis A. Value for money: an economic assessment of investment in walking and cycling. London: Department of Health; 2010.
 65. Dyakova M, Knight T, Price S. Making a difference: investing in sustainable health and well-being for the people of Wales. Cardiff: Public Health Wales NHS Trust; 2016.
 66. Investing in health. Brussels: European Commission; 2013 (Commission Staff Working Document Social Investment Package).
 67. Figueras J, McKee M. Health systems, health, wealth and societal well-being: assessing the case for investing in health systems. Copenhagen: European Observatory on Health Systems and Policies; 2012.
 68. Gaziano TA, Galea G, Reddy KS. Scaling up interventions for chronic disease prevention: the evidence. *Lancet*. 2007;370(9603):1939–46.
 69. Hunt A. Policy interventions to address health impacts associated with air pollution, unsafe water supply and sanitation, and hazardous chemicals. Paris: Organisation for Economic Co-operation and Development; 2011 (Environment Working Paper 35).
 70. Hunter PR, Pond K, Jagals P, Cameron J. An assessment of the costs and benefits of interventions aimed at improving rural community water supplies in developed countries. *Sci Total Environ*. 2009;407(12):3681–5.
 71. Hutton G. Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage. Geneva: World Health Organization; 2012.
 72. Hutton G, Menne B. Economic evidence on the health impacts of climate change in Europe. *Environ Health Insights*. 2014;8:43–52.
 73. Mental health in all policies: situation analysis and recommendations for action. Lisbon: Joint Action on Mental Health and Well-being; 2015.
 74. Kalinina AM, Kontsevaya AV, Deev AD. Long-term economic effectiveness of the multifactorial cardiovascular prevention programme in the context of primary health care. *Cardiovasc Ther Prevent*. 2013;12(1):60–6.
 75. Knapp M, McDaid D, Parsonage M. Mental health promotion and mental illness prevention: the economic case. London: Personal Social Services Research Unit, London School of Economics and Political Science; 2011.
 76. Kontsevaya AV, Kalinina A. Costs of the health care in Russia associated with smoking. *Ration Pharmacother Cardiol*. 2011;7(3):306–12.
 77. Kontsevaya AV, Kalinina A, Oganov R. Economic burden of cardiovascular diseases in the Russian Federation. *Values Health Reg Issues*. 2013;2:199–204.


78. Krysanova VS, Zhuravleva MV, Dralova OV, Rogacheva OA, Kameneva TR. The problem of obesity and overweight in the Russian Federation and its pharmaco-economic assessment. *Alm Clin Med.* 2015;1(1):36–41.
79. Langer A, Meleis A, Knaul FM, Atun R, Aran M, Arreola-Ornelas H et al. Women and health: the key for sustainable development. *Lancet.* 2015;386(9999):1165–210.
80. Money well spent? Assessing the cost effectiveness and return on investment of public health interventions. London: Local Government Association; 2013.
81. Masters R, Anwar E, Collins B, Cookson R, Capewell S. Return on investment of public health interventions: a systematic review. *J Epidemiol Community Health.* 2017;71:827–34.
82. Mattioli B, Quaranta MG, Vella S. Review on the evidence on public health impact of existing policies. Rome: FRESHER; 2016 (D6.2; http://www.foresight-fresher.eu/en/upload/Project_material/Project_Documents/D6.2%20Review%20on%20the%20evidence%20on%20public%20health%20impact%20of%20existing%20policies%20corrected.pdf, accessed 8 July 2017).
83. McDaid D. Making the long-term economic case for investing in mental health to contribute to sustainability. Brussels: European Union; 2011.
84. McDaid D, Park AL. Investing in mental health and well-being: findings from the DataPrev project. *Health Promot Int.* 2011;26(suppl 1):i108–i139.
85. McDaid D, Sassi F, Merkur S. Promoting health, preventing disease: the economic case. Copenhagen: European Observatory on Health Systems and Policies; 2015.
86. Mendis S, Chestnov O. Policy reform to realize the commitments of the political declaration on noncommunicable diseases. *Br Med Bull.* 2013;105(1):7–27.
87. Meneses G. The Lancet: breastfeeding could add \$300 billion into the global economy and save lives. Geneva: Partnership for Maternal, Newborn and Child Health; 2016 (http://www.who.int/pmnch/media/news/2016/lancet_breastfeeding/en/, accessed 8 July 2017).
88. Merkur S, Sassi F, McDaid D. Promoting health, preventing disease: is there an economic case? Copenhagen: European Observatory on Health Systems and Policies; 2013.
89. Moreno-Serra R, Smith PC. Does progress towards universal health coverage improve population health? *Lancet.* 2012;380(9845):917–23.
90. Health at a glance: Europe 2016 – state of health in the EU cycle. Paris: Organisation for Economic Co-operation and Development and European Union; 2016.
91. Owen L, Morgan A, Fischer A, Ellis S, Hoy A, Kelly MP. The cost-effectiveness of public health interventions. *J Public Health.* 2012;34(1):37–45.
92. Patel V, Chisholm D, Dua T, Laxminarayan R, Medina-Mora ME. Mental, neurological, and substance use disorders. Washington (DC): International Bank for Reconstruction and Development and World Bank; 2015.
93. Pennington M, Visram S, Donaldson C, White M, Lhussier M, Deane K et al. Cost-effectiveness of health-related lifestyle advice delivered by peer or lay advisors: synthesis of evidence from a systematic review. *Cost Eff Resour Alloc.* 2013;11(1):30.

- 
94. Rechel B, Richardson E, McKee M. Trends in health systems in the former Soviet countries. Copenhagen: European Observatory on Health Systems and Policies; 2014.
 95. Reeves A, Basu S, McKee M, Meissner C, Stuckler D. Does investment in the health sector promote or inhibit economic growth? *Global Health*. 2013;9:43.
 96. Rickert B, Barrenberg E, Schmoll O. Taking policy action to improve small-scale water supply and sanitation systems: tools and good practices from the pan-European Region. Copenhagen: WHO Regional Office for Europe; 2016.
 97. Sassi F, Belloni A. Fiscal incentives, behavior change and health promotion: what place in the health-in-all-policies toolkit? *Health Promot Int*. 2014;29(suppl 1):i103–i112.
 98. Sassi F, Cecchini M, Lauer J, Chisholm D. Improving lifestyles, tackling obesity: the health and economic impact of prevention strategies. Paris: Organisation for Economic Co-operation and Development; 2009 (Health Working Paper 48).
 99. Scapecchi P. The health costs of inaction with respect to air pollution. Paris: Organisation for Economic Co-operation and Development; 2008 (Environment Working Paper 2).
 100. Suhrcke M, Rocco L, McKee M. Health: a vital investment for economic development in eastern Europe and central Asia. Copenhagen: European Observatory on Health Systems and Policy; 2007.
 101. Suhrcke M, Rocco L, McKee M, Mazzucco S, Urban D, Steinherr A. Economic consequences of noncommunicable diseases and injuries in the Russian Federation. Copenhagen: European Observatory on Health Systems and Policies; 2007.
 102. Securing healthy returns: realising the financial value of sustainable development. Cambridge: Sustainable Development Unit for NHS England and Public Health England and the Healthcare Financial Management Association NHS Environmental Sustainability Special Interest Group; 2016.
 103. Thomson S, Evetovits T, Cylus J, Jakab M. Monitoring financial protection to assess progress towards universal health coverage in Europe. *Public Health Panorama*. 2016;2(3):357–66.
 104. Tudor Edwards R, Bryning L, Lloyd-Williams H. Transforming young lives across Wales: the economic argument for investing in early years. Bangor: Centre for Health Economics and Medicines Evaluation, Bangor University; 2016.
 105. Healthy environment, healthy people. Nairobi: United Nations Environment Programme; 2016.
 106. Conception to age 2: the age of opportunity report. Appendix 4: the economics of early years' investment. Croydon: WAVE Trust; 2013.
 107. Health in the green economy: health co-benefits of climate change mitigation – health care facilities. Geneva: World Health Organization; 2011 (Preliminary findings, initial review).
 108. Health in the green economy: health co-benefits of climate change mitigation – transport sector. Geneva: World Health Organization; 2011.
 109. The economics of social determinants of health and health inequalities: a resource book. Geneva: World Health Organization; 2013.


110. Towards environmentally sustainable health systems in Europe: a review of the evidence. Copenhagen: WHO Regional Office for Europe; 2016.
111. Economic cost of the health impact of air pollution in Europe: clean air, health and wealth. Copenhagen: WHO Regional Office for Europe; 2015.
112. WHO Executive Board. Preparation for the Third High-level Meeting of the General Assembly on the prevention and control of noncommunicable diseases, to be held in 2018. Geneva: World Health Organization; 2016.
113. World Economic Forum. From burden to “best buys”: reducing the economic impact of non-communicable diseases in low- and middle-income countries. Geneva: World Health Organization; 2013.
114. Zechmeister I, Kilian R, McDauid D. Is it worth investing in mental health promotion and prevention of mental illness? A systematic review of the evidence from economic evaluations. *BMC Public Health*. 2008;8(1):20.
115. WHO European Region has lowest global breastfeeding rates. Copenhagen: WHO Regional Office for Europe; 2015 (<http://www.euro.who.int/en/health-topics/Life-stages/maternal-and-newborn-health/news/news/2015/08/who-european-region-has-lowest-global-breastfeeding-rates>, accessed 8 July 2017).
116. Women's health and well-being in Europe: beyond the mortality advantage. Copenhagen: WHO Regional Office for Europe; 2016.
117. Working together for better health and well-being. Promoting intersectoral and interagency action for health and well-being in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (Background Paper).
118. Statistical bulletin: adult health in Great Britain. London: Office for National Statistics; 2012 (<http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/rel/ghs/opinions-and-lifestyle-survey/adult-health-in-great-britain--2012/stb-health-2012.html>), accessed 8 July 2017).
119. World employment social outlook: trends for women 2017. Geneva: International Labour Office; 2017.
120. High-Level Commission on Health Employment and Economic Growth. Final report of the expert group. Geneva: World Health Organization; 2016 (<http://apps.who.int/iris/bitstream/10665/250040/1/9789241511285-eng.pdf?ua=1>), accessed 8 July 2017).
121. Ferrant G, Pesando LM, Nowacka K. Unpaid care work: the missing link in the analysis of gender gaps in labour outcomes. Paris: Organisation for Economic Co-operation and Development; 2014 (Issues Paper).
122. The gender employment gap: challenges and solutions. Luxembourg: European Foundation for the Improvement of Living and Working Conditions; 2016.
123. Progress of the world's women 2015–2016: transforming economies, realizing rights. New York: UN Women; 2015.

- 
124. 10 facts on healthy ageing in Europe. Geneva: World Health Organization; 2017 (<http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing/data-and-statistics/10-facts-on-healthy-ageing-in-europe>, accessed 8 July 2017).
 125. Risk factors of ill health among older people. Geneva: World Health Organization; 2017 (<http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing/data-and-statistics/risk-factors-of-ill-health-among-older-people>, accessed 8 July 2017).
 126. New OECD data and analysis revealing the wide gap in pension benefits between men and women. Paris: Organisation for Economic Co-operation and Development; 2015 (<http://www.oecd.org/gender/data/newoecdandaanalysisrevealingthewidegapinpensionbenefitsbetweenmenandwomen.htm>, accessed 8 July 2017).
 127. Active ageing: good health adds life to years – policies and priority interventions for healthy ageing. Copenhagen: WHO Regional Office for Europe; 2012.
 128. EU Expert Group on Social Determinants and Health Inequalities. Health inequalities in the context of housing conditions and homelessness. Brussels: European Union; 2016.
 129. The G20 [website]. Toronto: G20 Information Centre, University of Toronto; 2010 (<http://www.g20.utoronto.ca/g20whatisit.html>, accessed 8 July 2017).
 130. Inadequate housing in Europe: costs and consequences. Luxembourg: European Foundation for the Improvement of Living and Working Conditions; 2016.
 131. Social and gender inequalities in environment and health. Copenhagen: WHO Regional Office for Europe; 2010 (Fifth Ministerial Conference on Environment and Health “Protecting children’s health in a changing environment”; http://www.euro.who.int/_data/assets/pdf_file/0010/76519/Parma_EH_Conf_pb1.pdf, accessed 8 July 2017).
 132. World health report: health systems financing – the path to universal coverage. Geneva: World Health Organization; 2010.
 133. Mexico City political declaration on universal health coverage: sustaining universal health coverage: sharing experiences and promoting progress. Geneva: World Health Organization; 2012 (<http://www.who.int/healthsystems/topics/financing/MexicoCityPoliticalDeclarationUniversalHealthCoverage.pdf?ua=1>, accessed 8 July 2017).
 134. Bangkok statement on priority-setting for universal health coverage. Bangkok: Prince Mahidol Award Conference; 2016 (http://www.pmaconference.mahidol.ac.th/index.php?option=com_content&view=article&id=758&Itemid, accessed 8 July 2017).
 135. Tunis declaration on value for money, sustainability and accountability in the health sector. Tunis: Ministers of Finance and Ministers of Health of Africa; 2012 ([https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Tunis%20declaration%20english%20july%2016%20\(2\).pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Tunis%20declaration%20english%20july%2016%20(2).pdf), accessed 8 July 2017).
 136. Rollins NC, Bhandari N, Hajeebhoy N, Horton S, Lutter CK, Martines JC et al. Why invest, and what it will take to improve breastfeeding practices? Lancet. 2016;387(10017):491–504.
 137. Key indicators of the labour market, 9th edition. Geneva: International Labour Office; 2015.

138. GBD 2015 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet*. 2016;388(10053):1545–602.
139. Policies and priority interventions for healthy ageing. Copenhagen: WHO Regional Office for Europe; 2012.
140. European report on preventing elder maltreatment. Copenhagen: WHO Regional Office for Europe; 2011.
141. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva: World Health Organization; 2013.
142. Jourová V. Istanbul convention: combatting violence against women. Brussels: European Commission; 2016 (Fact Sheet).
143. UCL Institute of Health Equity. Review of social determinants and the health divide in the WHO European Region: final report. Copenhagen: WHO Regional Office for Europe; 2014.
144. Action plan for the prevention and control of noncommunicable diseases in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016.
145. Rowley J, Toskin I, Ndowa F. Global incidence and prevalence of selected curable sexually transmitted infections 2008. Geneva: Department of Reproductive Health and Research, World Health Organization; 2008.
146. Global Health Observatory data: HIV/AIDS. Geneva: World Health Organization; 2015 (<http://www.who.int/gho/hiv/en/>, accessed 8 July 2017).
147. Media centre. HIV/AIDS fact sheet. Geneva: World Health Organization; 2016 (<http://www.who.int/mediacentre/factsheets/fs360/en/>, accessed 8 July 2017).
148. Health topics: communicable diseases – HIV/AIDS. Geneva: World Health Organization; 2016 (<http://www.euro.who.int/en/health-topics/communicable-diseases/hiv/aids>, accessed 8 July 2017).
149. Tuberculosis surveillance and monitoring in Europe. Copenhagen: WHO Regional Office for Europe; 2017.
150. TB/HIV co-infections up 40% across Europe over the last five years. Geneva: World Health Organization; 2017 (<http://www.euro.who.int/en/media-centre/sections/press-releases/2017/tbhiv-co-infections-up-40-across-europe-over-the-last-five-years>, accessed 8 July 2017).
151. Preparation for the Third High-level Meeting of the General Assembly on the prevention and control of non-communicable diseases, to be held in 2018. Report by the Director-General (2017). Copenhagen: WHO Regional Office for Europe; 2017.
152. WHO Framework Convention on Tobacco Control (FCTC). Geneva: World Health Organization; 2017 (<http://www.who.int/fctc/en/>, accessed 8 July 2017).

- 
153. Measles and rubella. Copenhagen: WHO Regional Office for Europe; 2015 (<http://www.euro.who.int/en/health-topics/communicable-diseases/measles-and-rubella/measles-and-rubella>, accessed 8 July 2017).
 154. Republic of Tajikistan. Modelling an optimized investment approach for Tajikistan: sustainable financing of national HIV responses. Dushanbe: Ministry of Health; 2014.
 155. Republic of Uzbekistan. Modelling an optimized investment approach for Uzbekistan: sustainable financing of national HIV responses. Tashkent: Ministry of Health; 2015.
 156. Global health expenditure [online database]. Geneva: World Health Organization; 2017 (<http://apps.who.int/nha/database>, accessed 8 July 2017).
 157. UK Health Accounts, 2014. London: UK Office for National Statistics; 2014 (<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthcaresystem/bulletins/ukhealthaccounts/2014>, accessed 8 July 2017).
 158. Mladovsky P, Srivastava D, Cylus J, Karanikolos M, Evetovits T, Thomson S et al. Health policy responses to the financial crisis in Europe. Copenhagen: WHO Regional Office for Europe; 2012.
 159. Xu K, Evans DB, Carrin G, Aguilar-Rivera AM, Musgrove P, Evans T. Protecting households from catastrophic health spending. *Health Aff.* 2007;26(4):972–83.
 160. Tajikistan policy notes on public expenditures. Washington (DC): World Bank; 2013 (Policy Notes No 2: review of public expenditures on health).
 161. Liu JX, Goryakin Y, Maeda A, Bruckner T, Scheffler R. Global health workforce labor market projections for 2030. *Hum Resour Health.* 2017;15(1):18.
 162. Aitken M, Gorokhovich L. Advancing the responsible use of medicines: applying levers for change. Danbury (CT): IMS Institute for Healthcare Informatics; 2012 (<http://pharmanalyses.fr/wp-content/uploads/2012/10/Advancing-Responsible-Use-of-Meds-Report-01-10-12.pdf>, accessed 8 July 2017).
 163. Gender, women and primary health care renewal. Geneva: World Health Organization; 2010 (Discussion Paper).
 164. High-level Panel on the Global Response to Health Crises. Protecting humanity from future health crises: report. New York: United Nations; 2016.
 165. Health in the green economy: health co-benefits of climate change mitigation – housing sector. Geneva: World Health Organization; 2011.
 166. Health expenditure. Paris: Organisation for Economic Co-operation and Development; 2016 (<http://www.oecd.org/els/health-systems/health-expenditure.htm>, accessed 8 July 2017).
 167. GDP ranking. Washington (DC): World Bank; 2017 (<http://data.worldbank.org/data-catalog/GDP-ranking-table>, accessed 8 July 2017).

168. Suhrcke M, McKee M, Sauto Arce R, Tsovala S, Mortensen J. The contribution of health to the economy in the European Union. Luxembourg: Office for Official Publications of the European Communities; 2005.
169. Summers LH. Economists' declaration on universal health coverage. *Lancet*. 2015;386(10008):2112–13.
170. Delivering the power of parity: how advancing women's equality can add \$12 trillion to global growth. London: McKinsey Global Institute; 2015 (<http://www.mckinsey.com/global-themes/employment-and-growth/how-advancing-womens-equality-can-add-12-trillion-to-global-growth>, accessed 8 July 2017).
171. Dhéret C, Franssen L. Social investment first! A precondition for a modern social Europe. Brussels: European Policy Centre; 2017.
172. Henke K. The economic and the health dividend of the health care system [presentation]. Vilnius: Health Forum; 2013.
173. Carbon footprint of UNDP administered Global Fund HIV/AIDS and tuberculosis grants in Montenegro and Tajikistan: project summary. New York: United Nations Development Programme; 2013.
174. Rapid assessment: environmental safeguarding and healthcare waste management of Global Fund HIV, TB and malaria projects. New York: United Nations Development Programme; 2015.
175. Burt E, Orris P, Buchanan S. Scientific evidence of health effects from coal use in energy generation. Chicago (IL): Healthcare Research Collaborative; 2013.
176. Burden of disease from environmental noise: quantification of healthy life years lost in Europe. Copenhagen: WHO Regional Office for Europe and European Commission; 2011.
177. Berry B. Economic evaluation of the health impacts of environmental noise: summary of available information. Shepperton: Berry Environmental; 2015 (Technical Report).
178. Kameda T, Takahashi K, Kim R, Jiang Y, Movahed M, Park EK et al. Asbestos: use, bans and disease burden in Europe. *Bull World Health Organ*. 2014;92(11):790–7.
179. What is social prescribing? London: King's Fund; 2017 (<https://www.kingsfund.org.uk/topics/primary-and-community-care/social-prescribing>, accessed 8 July 2017).
180. Rocco L. Trust me, you will be in better health. *Health Policy*. 2014;116(1):123–32.
181. Rocco L, Fumagalli E, Suhrcke M. From social capital to health: and back. *Health Econ*. 2014;23(5):586–605.
182. Pokhrel S. Return on investment (ROI) modelling in public health: strengths and limitations. *Eur J Public Health*. 2015;25(6):908–9.
183. Krlev G, Münscher R, Mülbart K. Social return on investment (SROI): state-of-the-art and perspectives – a meta-analysis of practice in social return on investment (SROI) studies published 2002–2012. Heidelberg: CSI Advisory Services; 2013 (https://www.csi.uni-heidelberg.de/downloads/CSI_SROI_Meta_Analysis_2013.pdf, accessed 8 July 2017).

- 
184. Jamison D, Yamey G, Beyeler N, Wadge H. Investing in health: the economic case. Doha: WISH Investing in Health Forum; 2016.
 185. Action plan to strengthen the use of evidence, information and research for policy-making in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/12).
 186. Health impact assessment: main concepts and suggested approach (Gothenburg consensus). Brussels: European Centre for Health Policy; 1999.
 187. Environmental impact assessment. Wexford: Environmental Protection Agency; 2017 (<http://www.epa.ie/monitoringassessment/assessment/eia/>, accessed 8 July 2017).
 188. Gender mainstreaming for health managers: a practical approach. Facilitators' guide. Participant's notes. Geneva: World Health Organization; 2011.
 189. Paris high-level conference: working together for better health and well-being, December 2016. Copenhagen: WHO Regional Office for Europe; 2016 (<http://www.euro.who.int/en/media-centre/events/events/2016/12/paris-high-level-conference>, accessed 8 July 2017).
 190. Draft declaration: partnerships for the health and well-being of our young and future generations and draft regional action framework. Copenhagen: WHO Regional Office for Europe; 2016.
 191. Declaration of the Sixth Ministerial Conference on Environment and Health (the Ostrava declaration). Copenhagen: WHO Regional Office for Europe; 2017 (<http://www.euro.who.int/en/media-centre/events/events/2017/06/sixth-ministerial-conference-on-environment-and-health/documentation/declaration-of-the-sixth-ministerial-conference-on-environment-and-health>, accessed 15 July 2017).
 192. Boutilier Z, Kickbusch I, Mehdi A, Sangiorgio M, Told M, Taylor P. SDGs and health: a vision for public policy [website]. G20-insights.org; 2017 (http://www.g20-insights.org/policy_briefs/sdgs-health-vision-public-policy/, accessed 8 July 2017).
 193. Berlin declaration of the G20 Health Ministers: together today for a healthy tomorrow. Berlin: G20 Germany; 2017.
 194. Raworth K. A doughnut for the Anthropocene: humanity's compass in the 21st century. *Lancet Planet Health*. 2017;1:e48-e49.
 195. Geissdoerfer M, Savaget P, Bocken N, Hultink EJ. The circular economy: a new sustainability paradigm? *J Clean Prod*. 2017;143:757-68.
 196. Towards a green economy: pathways to sustainable development and poverty eradication. Nairobi: United Nations Environment Programme; 2011.

ANNEX 1. SEARCH STRATEGY

Databases and websites

Searches were performed in February–March 2017 with additional documents received from the contributors or peer reviewers and answering the inclusion/exclusion criteria added during March–May 2017. Documents were included if they were published in the period from 1 January 2007 to 1 January 2017. Academic peer-reviewed literature was searched using databases of MEDLINE/PubMed, SocINDEX, Cochrane Database of Systematic Reviews and PROSPERO. The Health Evidence Network Sources of Evidence, Health Systems Evidence, WHO Library (WHOLIS), United Nations General Assembly, European Observatory on Health Systems and Policies, EU institutions and OECD (iLibrary) databases were searched for additional evidence and grey literature. A further search was carried out using Google and Google Scholar. Additional records were identified through the contributors and snowball searching of reference lists in the included papers. All evidence identified through the search was screened by two independent reviewers for inclusion/exclusion by title and abstract and then by full text. Any differences in selection were resolved by discussion and consensus. The academic literature was limited to sources providing information in English with full text available.

Search terms

Screening was based on a target population of whole populations/governments with a focus on WHO European Region Member States (evidence from other countries was included if and where appropriate) and considered terms related to public health combined with terms related to policies, return on investment and reviews. The inclusion and exclusion criteria were as follows.

Study design:

inclusion: evidence from a high-level source (recognized organizations such as WHO, United Nations, national research institutes) and/or having robust/reliable methodology (e.g. systematic review performed according to internationally accepted standards); and

exclusion: evidence not from a high-level source, primary research, no full text available.



Interventions:

inclusion: focus on investment choices related to overall/general public health (disease prevention or health promotion) population-level policies; focus on Health 2020 strategic objectives; and

exclusion: evidence not providing information on public health policies that are multisectoral or from multiple actors, as defined in Health 2020; policies reviewed are not reproducible on a larger scale.

Target population:

inclusion: whole populations, governments, evidence from WHO European Region Member States or from other countries if appropriate; and

exclusion: not relevant to the WHO European Region Member States or context.

Outcomes:

inclusion: data or description provided on the health AND the economic OR social OR environmental benefits/return on investment to populations and governments of public health policies AND/OR an estimate of the costs of failing to address current public health challenges; and

exclusion: benefits/return on investment not reported or no data reported for more than one type of outcome (i.e. health, economic, environmental or social).

The following terms were used for the PubMed search strategy. The other search strategies used these with minor modifications.

Public health

1. “public health” [TIAB] OR “health promotion” [TIAB] OR “primary prevention” [TIAB] OR “health in all policies” [TIAB] OR “social welfare” [TIAB]

Policies

2. policy [TIAB] OR policies [TIAB] OR governance [TIAB] OR (inequal* [TIAB] OR equality [TIAB] OR equity [TIAB] OR leadership [TIAB] OR intersector* [TIAB] OR inter-sector* [TIAB] OR multiagency [TIAB] OR multi-agency [TIAB] OR multi-sector* [TIAB] OR multisector* [TIAB] OR multi-actor* [TIAB] OR multiactor* [TIAB] OR communit* [TIAB] OR empowerment [TIAB] OR participat* [TIAB] OR sustainab* [TIAB]) AND (program* [TIAB] OR strategy [TIAB] OR strategies [TIAB] OR intervention* [TIAB])

Return on investment

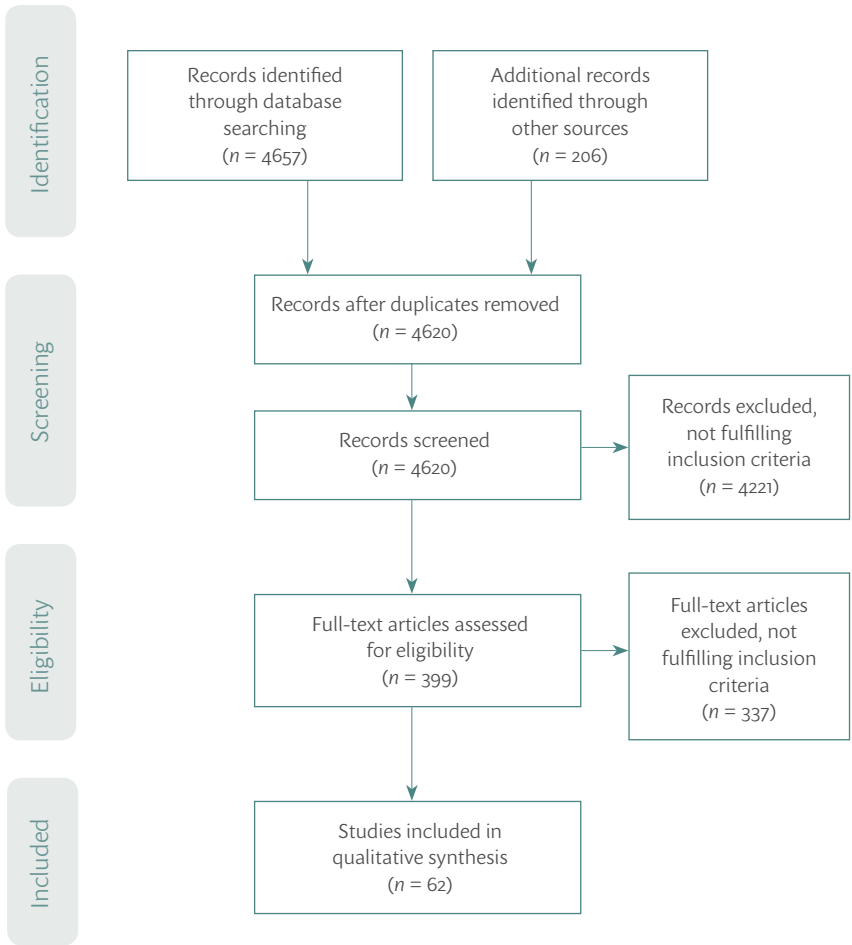
3. cost [TIAB] OR costs [TIAB] OR costing* [TIAB] OR econom* [TIAB] OR invest* [TIAB] OR financ* [TIAB] OR funding [TIAB] OR budget* [TIAB] OR “monetary resource*” [TIAB]
4. benefit* [TIAB] OR effect* [TIAB] OR outcome* [TIAB] OR utilit* [TIAB] OR consequenc* [TIAB] OR impact* [TIAB] OR evaluat* [TIAB] OR analy* [TIAB]
5. “return on investment” [TIAB] OR “win-win” [TIAB] OR “best buy*” [TIAB] OR “good buy*” [TIAB] OR “value for money” [TIAB] OR ROI [TIAB] OR SROI [TIAB]
6. #3 AND #4
7. #5 OR #6

Reviews

8. review* [TIAB] OR “health technology assessment” [TIAB] OR overview* [TIAB] OR (article* [TIAB] OR publicat*[TIAB]) AND combin* [TIAB]) OR meta-analy* [TIAB] OR metaanaly* [TIAB] OR (report [TIAB] AND “research evidence” [TIAB]) OR (research [TIAB] OR evidence) AND synthes* [TIAB])
9. #1 AND #2 AND #7 AND #8

Fig. A1.1 illustrates the selection of studies based on the PRISMA statement.

Fig. A1.1 Selection of studies



ANNEX 2. GLOSSARY

Circular economy. Restorative and regenerative by design and looking beyond the current take, make and dispose extractive industrial model. It relies on system-wide innovations that redefine products and services to reduce waste and minimize negative impacts. The circular model builds economic, natural and social capital and is underpinned by a transition to renewable energy sources (1).

Cost–benefit analysis. Places monetary values on both costs and outcomes with the aim of answering the question “is the benefit worth the cost?” (single monetary value). Main outputs are the cost–benefit ratio, economic interval rate of return, net present value and break-even point.


Cost–consequence analysis. Collects, categorizes and lists the cost components of a chosen intervention in a disaggregated format, without making judgements of their relative importance. The aim is to create a balance sheet of outcomes that can be weighed against the costs.

Cost–effectiveness analysis. Compares the costs of alternative procedures, services or interventions with an intervention’s common therapeutic/health-related goal, expressed in terms of one main outcome measured in natural units. It aims to compare the costs and impact of alternatives within the same domain and avoids placing monetary values on health outcomes. Main outputs are the incremental cost–effectiveness ratio, DALYs, QALYs, life-years gained and health utility scores.

Cost-minimization analysis. A form of economic evaluation used when an intervention or service and its alternative (e.g. usual care or current practice) achieve outcomes that are the same. Under these circumstances, cost-minimization analysis aims to identify the least costly option.

Cost–utility analysis. An economic evaluation in which health benefits are usually measured in preference-based non-monetary units such as DALYs or QALYs. It aims to compare costs and impact of alternatives within the same domain and avoids placing monetary values on health outcomes. Main outputs are the incremental cost–effectiveness ratio, DALYs, QALYs, life-years gained and health utility scores.

Decent work/job. Work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal



development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives, and equality of opportunity and treatment for all (2).

Efficiency (technical, productive and allocative). Technical efficiency addresses the issue of using given resources to maximum advantage. A technically efficient position is achieved when the maximum possible improvement in outcome is obtained from a set of resource (capital and labour) inputs. Productive efficiency addresses the issue of choosing different combinations of resources to achieve the maximum benefit for a given cost; it directly compares alternative interventions, where one intervention produces the same (or better) health outcome with less (or more) of one resource and more of another. Where different combinations of inputs are being used, the choice between interventions is based on the relative costs of these different inputs. Allocative efficiency addresses the issue of achieving the right mixture of health care programmes to maximize the health of society. Resource allocation decisions in this broader context uses a global measure of efficiency taking into account not only productive efficiency but also the efficiency with which these outcomes are distributed among the community (3).

Green economy. An economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one that is low carbon, resource efficient and socially inclusive (4).

Health, equity (and well-being) impact assessment. A combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health (and well-being) of a population and the distribution of those effects within the population. Health impact assessment identifies appropriate actions to manage those effects (5).

Health inequalities/inequities. Health inequalities are defined as differences in health status or in the distribution of health determinants between different population groups, whereas health inequities are avoidable inequalities in health between groups of people within or between countries (e.g. from social or economic conditions). While some health inequalities are attributable to biological variations or free choice, others are attributable to external environment and conditions mainly outside the control of the individual and may be unnecessary and avoidable, as well as unjust and unfair, thus leading to inequity in health (6).

Inclusive and sustainable economic growth. Inclusive economic growth creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society. The OECD approach to inclusive growth is multidimensional, going beyond income, and considers that the proceeds of economic growth must be shared (7). Sustainable economic growth will require societies to create conditions that allow people to have quality jobs that stimulate the economy while not harming the environment. Job opportunities and decent working conditions are also required for the whole working age population (8).

Resilience. The dynamic process of adapting well and responding individually or collectively in the face of challenging circumstances, crisis or stress. It can be described as an ability to prevent, withstand, cope with or recover from the effects of such circumstances and the process of identifying assets and enabling factors (9).

Social capital. The degree of social cohesion that exists in communities. It refers to the processes between people that establish networks, norms and social trust, and which facilitate coordination and cooperation for mutual benefits (10).

Social prescribing. Sometimes referred to as community referral, this is a means of enabling general practitioners, nurses and other primary care professionals to refer people to a range of local, non-clinical services. Recognizing that people's health is determined primarily by a range of social, economic and environmental factors, social prescribing seeks to address people's needs in a holistic way. It also aims to support individuals to take greater control of their own health. Social prescribing schemes can involve a variety of activities that are typically provided by voluntary and community sector organizations (e.g. volunteering, group learning, befriending, healthy eating advice and sports). Social prescribing is designed to support people with a wide range of social, emotional or practical needs, and many schemes are focused on improving mental health and physical well-being (11).

References

1. What is a circular economy? Cowes: Ellen MacArthur Foundation; 2017 (<https://www.ellenmacarthurfoundation.org/circular-economy>, accessed 15 July 2017).
2. Decent work. Geneva: International Labour Organization; 2017 (<http://www.ilo.org/global/topics/decent-work/lang-en/index.htm>, accessed 8 July 2017).
3. Palmer S, Torgerson DJ. Economic notes: definitions of efficiency. *BMJ Clin Res.* 1999;318(7191):1136.

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4. What is an “inclusive green economy”? New York: United Nations Development Programme; 2017 (<https://www.unep.org/greeneconomy/what-inclusive-green-economy>, accessed 15 July 2017).
 5. Action plan to strengthen the use of evidence, information and research for policy-making in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/12).
 6. Health impact assessment: glossary of terms used. Geneva: World Health Organization; 2017 (<http://www.who.int/hia/about/glos/en/index1.html>, accessed 8 July 2017).
 7. Inclusive growth. Paris: Organisation for Economic Co-operation and Development; 2017 (<http://www.oecd.org/inclusive-growth/>, accessed 8 July 2017).
 8. Goal 8: promote inclusive and sustainable economic growth, employment and decent work for all. New York: United Nations; 2017 (<http://www.un.org/sustainabledevelopment/economic-growth/>, accessed 8 July 2017).
 9. Health 2020: a European policy framework and strategy for the 21st century. Copenhagen: WHO Regional Office for Europe; 2013.
 10. Health promotion glossary. Geneva: World Health Organization; 1998.
 11. What is social prescribing? London: King’s Fund; 2017 (<https://www.kingsfund.org.uk/topics/primary-and-community-care/social-prescribing>, accessed 8 July 2017).

ANNEX 3. PRACTICAL EXAMPLES OF APPLYING EVIDENCE FOR ADVOCACY

Infographics can be used to communicate a message to a target audience such as doctors, policy-makers or the public. Two examples are given (Figs A3.1 and A3.2).

Fig. A3.1 Policies to reduce health inequalities

Note: Where possible, the figures used were the latest available for Wales in 2016. Where data are unavailable, figures for Wales were estimated from the latest United Kingdom/England/other data on an unadjusted per capita basis.

Source: Dyakova M, Knight T, Price S. Making a difference: investing in sustainable health and well-being for the people of Wales. Cardiff: Public Health Wales NHS Trust; 2016.



The Solutions

Addressing Health Inequalities in Wales

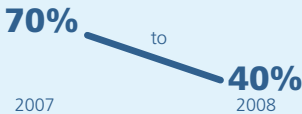


Preventing ill health across the population is generally more effective at **reducing health inequalities** than a focus on clinical interventions



Legislation

Wales 2007 Smoke free legislation resulted in fall in the reported exposure to second hand smoke in adults from



Taxation

Smoking is one of the major causes of health inequalities



Minimum unit pricing (MUP) for alcohol

Alcohol causes the greatest harm to the most disadvantaged



MUP reduces harmful alcohol consumption in those with the lowest income by **6%**



MUP reduces deaths among heavy drinkers in routine/manual occupations by **8%**



Tackling the **causes of social and economic inequalities** that drive inequalities in health are likely to be most effective



Ensure a living wage

A living wage is associated with living longer and dying less, better mental health and drinking less



Reduce unemployment

Almost a quarter (20–25%) of the deaths among unemployed people over 10 years could be prevented if these were employed



Improve physical environment

The traffic congestion charge in London resulted in a 9% reduction in hospitalizations for a lung condition

Addressing cold and damp housing could save the Welsh NHS £35 million



Invest in early years

Targeted interventions + universal childcare and paid parental leave could address £72 billion costs of social problems due to crime, mental ill health, family breakdown, drug abuse and obesity



Universal services

Providing accessible services to all whilst investing in additional support for the vulnerable groups

Fig. A3.2 Leaving no child behind

Source: Presented at the Paris high-level conference, Working together for better health and well-being, December 2016. Copenhagen: WHO Regional Office for Europe; 2016 (<http://www.euro.who.int/en/media-centre/events/events/2016/12/paris-high-level-conference/multimedia/infographic-working-together-to-ensure-health-and-well-being-for-all-children-and-adolescents>, accessed 17 July 2017).

Working together to ensure health and well-being for all children and adolescents



Health and well-being start before birth. Every child deserves a good start in life.



Policies and decisions affect everyone's health and well-being.

Adopt policies and interventions across sectors to ensure:



health and well-being in schools & preschools

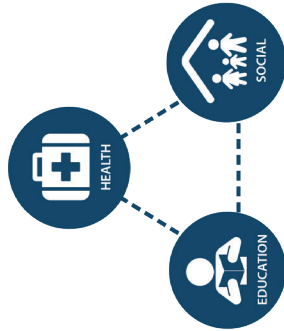


universal social protection floors



good governance for health and well-being

When sectors work together, inequities are reduced and health improves for everyone.



A 2% increase in current spending on early childhood development could pay back up to **9 times** in economic and social benefits.

Prevent vulnerable children from falling through the gaps by tackling inequities together –



#together4health

12/2016

Start early. Work together. Act on time.





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