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Optimising the response to the epidemic of chronic diseases

European Chronic Disease Alliance input to the Reflection Process on chronic diseases

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Executive Summary

Chronic, non-communicable diseases are a challenge of epidemic proportions. At a global scale, non-communicable diseases are estimated to cost \$47 trillion by 2030. Europe currently has the highest number of deaths and disability in the world due to these diseases.¹

This paper represents the European Chronic Disease Alliance's (ECDA) collective input to policy makers in the frame of the European Union's reflection process on chronic disease, specifically called for in the Council conclusions of 7 December 2010 on "Innovative approaches for chronic diseases in public health and health care systems".² The ECDA would like to urge the European Commission and the Member States to include the recommendations provided herewith in any forthcoming strategy on chronic diseases.

For the purpose of this paper, the ECDA definition for "chronic diseases" is: *Chronic non-communicable disease or conditions that are of long duration and generally slow progression, linked by common risk factors such as tobacco, physical inactivity, nutrition, alcohol, environment, and are largely preventable.*

On the basis of these Council conclusions, this paper recommends a number of concrete measures that can be taken by the European Commission and Member States to tackle chronic diseases effectively. First and foremost the ECDA calls for a coordinated EU-led strategy to tackle the enormous challenge to societies posed by chronic diseases.

Health promotion and disease prevention:

- The Member States and the European Commission need to be proactive in preparing for a progress review to be presented at the next UN Summit in 2014. Europe, with the highest burden of non-communicable diseases (NCDs), needs to be the leader.
- The ECDA urges the European Commission and EU Member States to allocate more funding to preventive measures. In the current financial turmoil, many European countries have adopted drastic measures that have seriously affected access to care for chronic non-communicable disease patients. Yet, the economic crisis should be used as an opportunity to explore new and innovative ways of tackling chronic diseases.
- The EU should build on its expertise and utilise the tools at its disposal to develop an environment that promotes health and encourages citizens to make healthy choices, and pushes for a reform of existing structures. The "ex-smokers are unstoppable" campaign of the European Commission is innovative and should be commended. The "school fruit scheme" is also to be commended for its great potential to increase fruit and vegetable intake across Europe.
- The EU can use legislative tools such as advertising restrictions on unhealthy products, regulating salt and fat content etc to promote health and behavioural change in practice,.

¹ Gaining Health – The European Strategy for Prevention and Control of Non-communicable diseases. WHO, 2006.
http://www.euro.who.int/_data/assets/pdf_file/0008/76526/E89306.pdf

² http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/lsa/118282.pdf

- Several Council Conclusions address health inequalities.^{3,4} Member States should now implement them. Simple steps include improved access to good quality air, water, food, sporting, recreational and cultural facilities and green space. They all contribute to reducing inequalities as well as helping to create sustainable communities. Improvements in housing conditions have been shown to have a number of positive impacts on health, including lower rates of mortality. Adequate heating systems improve asthma symptoms and reduce the number of days off school.⁵ The European Commission can aid this process by facilitating exchange of best practice.
- Investing in the early years is key to preventing ill health later in life. An increased investment in public health promotion is important to increasing efficiency in the health service. A small shift in resource towards public health promotion activity would offer significant short, medium and long term savings to health care services and to the taxpayer. Effective and evidence-based health promotion programmes should be implemented. The European Commission is in a unique position to promote such activities and to take on a long-term and visionary approach.
- We need to measure, monitor and report on action taken in the Member States on chronic diseases. To facilitate monitoring and reporting of progress, a number of targets could be set e.g. 25% reduction in mortality by 2025. Much more must be done to tackle the causes of ill health rather than cure its consequences. It is time to recognise health promotion as an investment with significant economic and welfare gains.
- The EU has legal competence to respond to many of the calls in the UN political declaration on NCDs.

Health in all policies

- The EU must put greater emphasis on ensuring the implementation of *health in all policies*. In accordance with the Lisbon Treaty, the EU must ensure that policies that have an influence on the health of EU citizens must promote health and healthier lifestyles. Any balanced and sensible government policies must aim to influence not only the fields of health and research, but also areas such as agriculture, transport and communication, environment, regional development and finance. Moreover, the European Union financial instruments including Structural Funds, European Agricultural Fund for Rural Development and EU-funded research should contribute to creating healthier European societies. These possibilities for health promotion must be explored further and implemented.
- Government policies should also aim to devolve more power at the local level and thereby empower individuals and communities to define the problems and develop community solutions. The Committee of the Regions / Eurocities and other relevant actors should be engaged in such actions.

³ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lsa/114994.pdf

⁴ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lsa/126524.pdf

⁵ Howden-Chapman P, Pierse N, Nicholls S et al. (2008) Effects of improved home heating on asthma in community dwelling children: Randomised controlled trial. *BMJ* 337: a1411.

Early detection

- Early detection and diagnosis, greater international collaboration, implementation of population-based quality assured screening programmes, evaluation of social inequalities and development of novel tools to detect chronic disease in at-risk populations are all measures that should be encouraged at Member State level.

Tobacco

- We need to step up efforts to ensure that the recommendations of the Council on smoke-free are implemented if we are to be serious about protecting Europe's citizens from chronic diseases caused by tobacco smoking.
- The European Commission has a unique legislative opportunity to bridge this gap in effective communication through a robust and strong revision of the Tobacco Products Directive. Introducing large mandatory pictorial warnings (front and back), and standardised packaging, would substantially increase the provision of information to European citizens on the disastrous consequences of tobacco use. We fully endorse the position of the European Parliament which has emphasised the need for an immediate, effective revision of the Tobacco Products Directive.

Nutrition

- The European Commission has immediate opportunities for facilitating better food choices by merely allowing health claims that are easy to understand and relevant to public health and proposing a nutrient profiling system to allow claims only on healthier options.
- We need to improve the availability of, and access to, healthier food choices among low-income groups. This would involve population-wide interventions such as reducing salt and saturated fat in products.

Alcohol

- Across the EU there is a need to increase awareness of the effects of harmful consumption of alcohol.
- Steps should be taken to ensure the implementation of the WHO Global Strategy to Reduce the Harmful Use of Alcohol.
- Liver disease recognition and treatment of alcohol misuse in primary care should be promoted.

Physical Activity

- There is a need to create and develop healthy and sustainable places and communities with a role and action from both central and local governments.
- It will be important to promote physical activity also as a normal part of health care, and actions should be taken to include guidance on how to translate general public health

recommendations on physical activity into levels that correspond to the capacity of a patient. Physical activity not only delays onset of chronic diseases but is also important for reducing severity of disease.

Health care

- Specific efforts are needed at Member State level for the deployment of existing, cost effective e-health solutions and other innovative measures applicable to chronic diseases e.g. phone-based SOPHIA project that supports people living with diabetes in France and that has proven to have a very positive effect on health outcomes. There is also a strong need for more research and evidence, including large scale clinical trials, economic analyses, models for preventive and predictive care. DG Information Society needs to strengthen current efforts in e-health solution deployment and research.
- The importance of prevention must be emphasised. Having a simple screening tool, adapted to the primary care setting, that would detect diseases in early stages would reduce the number of patient referrals. This would result in fewer later stage cases of disease and consequently, better quality of life for patients, and result in savings for the health care burden
- The use of managed clinical networks, multidisciplinary teams and collaborative efforts across the lines of health care should be stimulated and funded by the Member States. These are crucial for the optimal management of complex conditions, and will need to be further developed across Europe.
- Reimbursement rarely covers prevention and health promotion and this is an area where Member States should continue to exchange information.
- Member States should also share best practices in empowering health personnel to deliver health. For example, educating and training staff in health promotion on topics such as the importance of smoking cessation, nutrition and physical activity, would help them provide practical advice to patients during routine checks. Health personnel can also help identify high-risk groups for chronic diseases by using validated risk-assessment tools.
- The management of co-morbidities is a major challenge often overlooked by evidence-based diagnosis and treatment using disease-specific clinical guidelines. A proper guideline programme leads to optimal management of chronic disease, with improved outcomes and a reduction in health inequalities across Europe and globally. An important goal for the future will be the production of truly multidisciplinary guidelines, which is particularly important in patients (especially the elderly) with multiple chronic conditions.
- A top priority for the Europe 2020 strategy is to emphasise that a major effort will be needed to combat poverty and social exclusion, and to reduce health inequalities (which includes the access to and affordability of health care) to ensure that everybody can benefit from growth.

Research

- With regard to European biomedical research, it is crucial that the funding strategy and priorities are defined together with the biomedical community. Today at EU level however health and research are separate policy areas. Only if experts are actively involved in the development of the research strategy and the identification of research needs can it truly address the challenges faced by science and society.
- To overcome the existing fragmentation and duplication of research in Europe in the health field, human health must be at the core. There is a major gap in translational research in Europe and better care delivery will only be possible if sustainable networks across Europe join together and share their resources to tackle the scientific challenges.
- More research is still needed on e.g. the 'health in all policies' approach to health and health promotion. More case studies are needed about the factors that influence individual behaviour and social norms. The search for common solutions must build on strong research cooperation across Member States. The Council of the European Union should also introduce regular meetings between health and research ministries.

European data and improved cooperation at European level

- ECDA recommends expanding the mandate of the European Centre for Disease Prevention and Control (ECDC) to include the monitoring and surveillance of major NCDs.
- It is important for decision makers to understand the direct and indirect costs of preventable disease and benefits of health promotion to society. Comparable data at EU level on incidence, prevalence, risk factors and outcomes, is urgently needed. EU registries are clearly missing.
- There is an urgent need to promote the adoption of common health data standards collected across Europe by different stakeholders, whether health institutions, health care organisations, public health entities, health professionals or health care industry.
- Cooperation with WHO in view of the Action Plan for a strategy on NCDs⁶ and OECD and medical/scientific societies should be strengthened.⁷

What gets measured gets done

- We need to measure, monitor and report on action taken in the Member States and targets need to be set to facilitate monitoring and reporting of progress in this field.

⁶ 2008-2013 Action plan for the global strategy for the prevention and control of non-communicable diseases <http://www.who.int/nmh/publications/9789241597418/en/index.html>

⁷ Busse R, Blumel M, Scheller-Kreinsen D, Zentner A. Tackling chronic disease in Europe. World Health Organization on behalf of European Observatory on Health Systems and Policies (2010). Available from: http://www.euro.who.int/_data/assets/pdf_file/0008/96632/E93736.pdf

1. Introduction

“Chronic diseases are by far the leading cause of mortality in the world, representing 60% of all deaths worldwide and impose an enormous burden on the daily lives of patients and their relatives and on society as a whole.” – Council Conclusions, 7th December 2010.

Chronic non-communicable diseases account for 86% of deaths in the WHO European Region.⁸ They include cardiovascular disease, cancer, respiratory diseases, diabetes, kidney and liver diseases. Four major health determinants – tobacco, poor diet, alcohol and lack of physical activity – account for most of chronic illness and death in Europe. According to OECD on average only 3% of total health expenditure in OECD countries goes towards population wide public prevention. 97% of health expenses are presently spent on treatment.⁹ For more details on the above-listed four major health determinants, see **Annex 1**.

Health is the result of the accumulation of influences to which an individual is exposed since conception, and of the interactions of such exposures with individual biological characteristics. Lifestyle and behavioural factors largely contribute to the rise of chronic diseases. Tobacco use among women and girls is increasing in Europe, especially in Eastern Europe. Alcohol consumption is rising in this region as well. The prevalence of obesity and overweight is rising alarmingly among both adults and children. In Europe exposure to particulate matter reduces every person’s life expectancy by an estimated average of almost one year, mostly because of an increased risk of cardiovascular and respiratory diseases as well as lung cancer.

Migration into and within Europe is increasing. Migrants are typically younger, have lower income, have greater health needs, experience greater exposure to non-communicable disease risk factors and have less access to social protection and health care. Social inequity within and between countries is increasing with proven negative effects on the health and well-being of children and adolescents. In addition, demographic change, rise in chronic disease and higher consumer expectations are some of the factors driving up health care demand and spending. At the same time, Member States face budget constraints which affect public services. These pressures can only be met by adapting health systems in Europe and the way we view health.

All these factors require changes at policy and organisational levels as well as at the level of the community and individual. At the core of the challenge is implementation. Health promotion and disease prevention offers excellent opportunities for equitable improvement of health and longevity. Yet, despite this knowledge and significant evidence many governments have not responded with a Whole of Government or Whole of Society level approach.

The ECDA urges the European Commission and EU Member States to allocate more funding to preventive measures. In the current financial turmoil, many European countries have adopted drastic measures that have seriously affected access to care for chronic non-communicable disease patients. Yet, the economic crisis should be used as an opportunity to explore new and innovative ways of tackling chronic diseases.

⁸ Gaining Health – The European Strategy for Prevention and Control of Non-communicable diseases. WHO, EUR/RC56/8+EUR/RC56/Conf.doc/3 30th June 2006

⁹ Together for Health: A Strategic Approach for the EU 2008-2013, White paper, European Commission, COM(2007) 630 final

Health equals wealth. Investing in health means investing in people and ultimately, in the European economy, with big improvements happening in short time scales. Addressing chronic diseases will allow Europeans to live longer and healthier lives, staying longer in the workforce and contributing to productive growth of the economy.¹⁰ Health represents a strong economic sector, source of employment for professionals, and is a driver of innovation and research. A healthy population will contribute to the success of the EU2020. Currently, however, the expected healthy life years of Europeans is lower than the projected pension age, and Europeans will not be healthy enough to work longer. Policies need to change to tackle chronic diseases.

2. Implementing the UN political declaration on non-communicable diseases (NCDs) in the EU

Until recently, NCDs have not gained the attention of global policy-makers. In New York, world leaders unanimously adopted on 20 September the Political Declaration on Non-Communicable Diseases (NCDs), agreeing that “the global burden and threat of NCDs constitutes one of the major challenges for development in the twenty-first century, which undermines social and economic development throughout the world”. It was the second time in history that the UN has convened on the topic of health.

Governments must now deliver on their commitments in addressing the rising threat of cancer, cardiovascular disease, chronic respiratory disease and diabetes, and they should moreover include kidney and liver diseases in this process.

In the opening session of the plenary of the General Assembly, UN Secretary-General Ban Ki Moon said about the Political Declaration, “if this is only a set of words, we will have failed, but if it is followed by actions, we will honour our responsibilities”. The UN political declaration recognises that NCDs are a “challenge of epidemic proportions”. EU governments must live up to their commitments and honour their responsibilities. In view of this, ECDA recommends the following important measures to be taken:

1. The political declaration calls for an accelerated implementation of the FCTC. In the EU two measures can be taken to assist this goal:
 - (i) Member States can support Art(s). 11 and 13 of the FCTC during the revision of the Tobacco Products Directive and the introduction of mandatory large pictorial warnings (back and front of the pack) and plain/standardised packaging;
 - (ii) ECDA agrees with the statement adopted by 193 governments of the General Assembly that “*price and tax measures are an effective and important means of reducing tobacco consumption*” and urges finance ministers of the EU to increase the use of price and tax measures on tobacco.
2. The political declaration calls for an advanced implementation of the WHO Global Strategy on Diet, Physical Activity and Health. In the EU several measures can be taken to assist this goal:

¹⁰ 2009 Ageing report: Economic and budgetary projections for the EU-27 Member States (2008-2060), European Commission Directorate General for Economic and Financial Affairs, 2009

- (i) Ensure that all EU policies and programmes, including the Common Agricultural Policy (CAP) and Structural Funds undergo a health impact assessment to ascertain that they at the very least do not obstruct availability of and access to nutritious food and environments that are conducive to everyday physical activity;
 - (ii) Adopt legislation that minimises the level of industrially produced trans-fatty acids that can be present in foodstuffs to maximum 2 g per 100 g of oil or fat;
 - (iii) Allow only health claims that are understandable by consumers and relevant to public health;
 - (iv) Adopt, as a matter of urgency, a nutrient profile scheme that will ensure that health and nutrition claims can only be put on foods that are healthier;
 - (v) Consider harmonising, at an EU level, a nutrition labelling scheme that help consumers understand the nutrition values. ECDA recommends the traffic light scheme which has been tested in several countries and found to be helpful and useful to people.
3. The political declaration calls for promotion of the implementation of the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children, including foods which are in saturate fats, trans-fatty acids, free sugars or salt.
 - The EU can specifically assist this goal with the upcoming review of the Audio Visual Media Services Directive. Revision should ensure, as a proportionate measure, that audiovisual commercial communications for foods and drinks that do not respect specific nutrient profiles may not be broadcast between 06:00 am and 09:00 pm.
4. The political declaration makes a call for encouraging policies that support the production and manufacture of, and facilitate access to, foods that contribute to a healthy diet. In the EU, the review of the CAP offers a superb opportunity to assist this goal:
 - An integrated European Food and Agriculture Policy which works towards improving European diets in a sustainable way should be developed; it should provide for, inter alia, an increased supply of and access to affordable fresh fruit and vegetables.
5. The EU must cooperate with the WHO in the global target setting for prevention and control of NCDs reduction and in the set-up of a “comprehensive global monitoring framework” as laid out in the Political Declaration, and additional resources in partnership with the WHO has been mandated to lead this process by the end of 2012. Target setting requires high quality data against which progress may be measured.
 - The EU should co-operate with the WHO to establish, accurate and comparable data on the impact of chronic diseases, European and national policy makers do not have a clear picture of the scope of the problem and cannot therefore begin to tackle these diseases effectively. Funding should be allocated to support population-based surveys as well as the creation and maintenance of national and European disease registers.

6. The EU needs to work with WHO to promote the implementation of the WHO Global Strategy to Reduce the Harmful Use of Alcohol, and raise awareness of the problems caused by the harmful consumption of alcohol, particularly among young people. The “best buys” interventions of tax increases, restricted access to retail alcohol and bans on alcohol advertising all need to be encouraged at Member State level.
7. The Member States and the European Commission need to be proactive in preparing for a progress review to be presented at the next UN Summit in 2014. Europe with the highest burden of NCDs needs to be the global leader, as with climate change.

3. Prevention of chronic diseases

Many of the modern-day health problems and the complex nature of chronic diseases require “a systems perspective” which includes an understanding of the overall interdependencies and all stakeholder groups as well as of the social nature of risk, its equity dimensions and of individual motivations.

The risk of a person developing diseases depends on interaction between the individual, his or her personal susceptibility and the wider environment. Many diseases, such as diabetes and asthma, have a complex pattern of inheritance. It is becoming increasingly clear that antenatal and early life events are important factors in the risk of developing diseases such as cardiovascular, type2 diabetes and Chronic Obstructive Pulmonary Disease (COPD) in adulthood.

The evidence on the role of behavioural, social and environmental determinants of chronic diseases is growing. For example, indoor and outdoor air pollution increases the risk of asthma and other respiratory diseases, and fine particulate matter in the air increases the risk of cardiovascular disease and lung cancer significantly affecting life expectancy. Declining cardiovascular mortality after smoking is banned in public places is an example of rapid benefits for health of successful actions addressing the environmental determinants of health.

3.1 Health in all policies

A recent study by the Institute of Medicine (IOM)¹¹ suggests that Health in All Policies can be “seen as a manifestation of the precautionary principle: first do no harm to health through policies or laws enacted in other sectors of government.” It cites California’s Clean Air Act as an embodiment of this principle. We need not only see the precautionary principle evoked for environmental initiatives but also for health initiatives.

Turning the tide of diseases that have reached epidemic proportions requires fundamental changes in the social norms that regulate individual and collective behaviours. Such changes can only be triggered by wide ranging prevention strategies addressing multiple determinants of health. Tackling major risk factors for chronic diseases linked to behaviours that are highly prevalent in a population, requires multiple preventive interventions, which are both effective and broadly based. The *2010 WHO Global*

¹¹ Institute of Medicine of the National Academies. For the Public’s Health: Revitalizing Law and Policy to Meet New Challenges (2011). The National Academies Press. Available from : <http://www.iom.edu/Reports/2011/For-the-Publics-Health-Revitalizing-Law-and-Policy-to-Meet-New-Challenges.aspx>

Status Report on non-communicable diseases list best buys as an intervention that is not only highly cost-effective but also cheap, feasible and culturally acceptable to implement, see **Annex 2**.

Instead of seeing major diseases as a challenge to the health sector only, *health in all policies* highlights the fact that the risk factors of major diseases are modified by measures that are often managed by other government sectors as well as by other actors in society.¹² Education, employment and the environment influence the distribution of risk factors among population groups, thereby resulting in health inequalities. Focusing on *health in all policies* may shift the emphasis from primarily individual lifestyles and single diseases to societal factors and actions that shape our everyday living environments. It does not, however, imply that any other public health approaches, for example health education or disease prevention are undermined or treated as less important.

The EU must put greater emphasis on ensuring the implementation of *health in all policies*. In accordance with the Lisbon Treaty, the EU must ensure that policies that have an influence on the health of EU citizens must promote health and healthier lifestyles. Any balanced and sensible government policies must aim to influence not only the fields of health and research, but also areas such as agriculture, transport and communication, environment, regional development and finance. Moreover, the European Union financial instruments including Structural Funds, European Agricultural Fund for Rural Development and EU-funded research should contribute to creating healthier European societies. These possibilities for health promotion must be explored further and implemented.

Examples of successful “Health in all policies” strategies:

- The EU public health project *TobTaxy* – bringing the health case to raise tobacco tax to the finance departments see: www.smokefreepartnership.eu
- European Public Health and Agriculture Consortium (EPHAC) – for a healthier more sustainable agriculture policy: <http://www.healthyagriculture.eu/>

Government policies should also aim to devolve more power at the local level and thereby empower individuals and communities to define the problems and develop community solutions. The Committee of the Regions / Eurocities and other relevant actors should be engaged in such actions.

3.2 Reducing health inequalities

People with higher socioeconomic position in society have a greater array of life chances and more opportunities to lead a flourishing life. They also have better health. The two are linked: the more favoured people are, socially and economically, the better their health.¹³ Research on the factors influencing health is revealing the importance of health inequalities in determining the outcomes and distribution of health burden.¹⁴ Health inequalities result from social inequalities. Action on health inequalities requires action across all the social determinants of health and will benefit society in many

¹² http://ec.europa.eu/health/archive/ph_information/documents/health_in_all_policies.pdf

¹³ Marmot M. Fair Society, Healthy Lives. The Marmot Review. Strategic Review of Health Inequalities in England post-2010 (2010). Available from: <http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>

¹⁴ Marmot M. Fair Society, Healthy Lives. The Marmot Review. Strategic Review of Health Inequalities in England post-2010 (2010). Available from: <http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>

ways. It will have economic benefits in reducing losses from illness associated with health inequalities. These currently account for productivity losses, reduced tax revenue, higher welfare payments and increased treatment costs.¹⁵

There are major health inequalities within and between countries in Europe. A top priority for the Europe 2020 strategy is to emphasise that a major effort will be needed to combat poverty and social exclusion, and reduce health inequalities to ensure that everybody can benefit from growth. Health ministries have a vital role to play both in ensuring the contribution of the health system and in advocating for health equity in the development plans, policies and actions of players in other sectors. However, the health system alone cannot reduce health inequalities.

Several Council Conclusions address health inequalities.^{16,17} Member States should now implement them. Simple steps include improved access to good quality air, water, food, sporting, recreational and cultural facilities and green space. They all contribute to reducing inequalities as well as helping to create sustainable communities. Improvements in housing conditions have been shown to have a number of positive impacts on health, including lower rates of mortality. Adequate heating systems improve asthma symptoms and reduce the number of days off school.¹⁸ The European Commission can aid this process by facilitating exchange of best practice.

The health of a baby is crucially affected by the health and well-being of their mother. Maternal health, including stress, diet, drug, alcohol and tobacco use during pregnancy, has significant influence on fetal and early brain development. Low birth weight in particular is associated with poorer long-term health and educational outcomes. Socially graded inequalities are present prenatally and increase in early childhood. The biological effects of birth weight on brain development interact with other influences associated with social position to influence cognitive development. Member States need to recognise the issue of maternal, newborn care and aftercare as a public health priority, particularly the health of preterm infants and infants with illnesses. Member States should develop educational programmes specifically targeting mothers in deprived situations to address health inequalities in maternal and newborn care within all EU Member States.¹⁹

3.3 Facilitating healthy choices

There are many reasons why Member States should intervene to facilitate healthy choices for all citizens. Some of these reasons are:

- (1) Information failures, which may contribute to the adoption of unhealthy behaviours and lifestyles through an inadequate knowledge or understanding of the long-term consequences of such behaviours;

¹⁵ Ibid

¹⁶ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lisa/114994.pdf

¹⁷ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lisa/126524.pdf

¹⁸ Howden-Chapman P, Piers N, Nicholls S et al. (2008) Effects of improved home heating on asthma in community dwelling children: Randomised controlled trial. *BMJ* 337: a1411.

¹⁹ Caring for tomorrow, The EFCNI White Paper on Maternal and Newborn Health and Aftercare services, 2011. Available from: <http://www.efcni.org/index.php?id=1888>

(2) External factors, resulting in the social costs and benefits of certain forms of consumption not being fully reflected in their private costs and benefits to individual consumers e.g. negative external factors in the case of addictive substances or unhealthy foods;

(3) Failures of rationality, which prevent individuals from making choices in their own best interest.

Information is critical to enable citizens to make rational and efficient choices. People have to be fully informed about the characteristics and quality of the products they consume, the benefits they will derive from consumption, but also the costs they will incur.

In the case of health-related consumption behaviours, information is often lacking on the nature and the magnitude of the associated health risks. Information may be lacking because it does not exist; because it is concealed or communicated in ways that are confusing people by parties that have a vested interest e.g. misleading or irrelevant health claims used by the food industry; or because it is complex and not easily accessible to the lay person e.g. information on the health risks involved in the consumption of different types of fats.

The importance of information in forming health-related beliefs is shown, for instance, in a study of the determinants of higher smoking rates in Europe compared to the USA²⁰. The authors reach the conclusion that beliefs were changed in the US when substantial information about the harms of smoking was made available to the public. The same information appears to have been communicated less effectively in Europe.

Much more discussion at EU and national level is needed about cost-effective ways to influence behaviour.

The European Commission has a unique legislative opportunity to bridge this gap in effective communication through a robust and strong revision of the Tobacco Products Directive. Introducing large mandatory pictorial warnings (front and back), and standardised packaging, would substantially increase the provision of information to European citizens on the disastrous consequences of tobacco use. We fully endorse the position of the European Parliament which has emphasised the need for an immediate, effective revision of the Tobacco Products Directive.²¹

Equally, the European Commission has immediate opportunities for facilitating better food choices by merely allowing health claims that are easy to understand and relevant to public health and proposing a nutrient profiling system to allow claims only on healthier options.

Member States also have an obligation to address the information failure and provide more default healthy options. We provide many suggestions of such options throughout this paper.

3.4 Health promotion and communication

The Ottawa Charter for Health Promotion defines health promotion as the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and

²⁰ Cutler D, Glaeser E. Why do Europeans smoke more than Americans? National Bureau of Economic Research. Working Paper 12124. 2006 Available from: <http://www.nber.org/papers/w12124.pdf>

²¹ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

social wellbeing, an individual or group must be able to identify and to realise aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasising social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to wellbeing.

Investing in the early years is key to preventing ill health later in life. An increased investment in public health promotion is important to increasing efficiency in the health service. A small shift in resource towards public health promotion activity would offer significant short, medium and long term savings to the service and to the taxpayer. Effective and evidence-based health promotion programmes should be implemented. The European Commission is in a unique position to promote such activities and to take on a long-term and visionary approach.

Public health campaigns when well-orchestrated have been proven to change the level of knowledge and awareness. They are particularly useful where awareness is the main goal, wide exposure is achieved, long-term follow up is possible, and when the behavioral goal is simple.

The “ex-smokers are unstoppable” campaign of the European Commission is innovative and should be commended. The “school fruit scheme” is also to be commended for its great potential to increase fruit and vegetable intake across Europe.

The importance of prevention and health promotion is recognised at EU-level in the Lisbon Treaty, in the EU Health Strategy and the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA). Article 168 of the Treaty recognises their importance and encourages sharing of best practice and benchmarking between Member States.

To promote health and behavioural change in practice, the EU can use legislative tools such as advertising restrictions on unhealthy products, regulating salt and fat content etc.

3.5 Health in education

[The European Parliament] emphasises the need to step up the provision of education about healthy dietary and physical-activity habits in schools; notes that, globally, adequate resources should be made available for such educational work; European Parliament resolution on NCDs 15 September 2011²²

Education deserves special consideration because of the evidence of an important causal link with health and lifestyles. Individuals who have poor education are significantly more likely to adopt unhealthy lifestyles and to be in poor health.

DG Education and Culture could be involved in identifying measures to improve health education and health literacy in the EU, e.g. health promoting schools.

More educated individuals are able to obtain greater health outputs from given amounts of inputs, but they are also able to select more appropriate mixes of inputs, for instance by making healthier

²² <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

consumption choices. Years of formal schooling completed have a strong effect on health outcomes, whether these are measured in terms of mortality, self-reported health status and physiological indicators of health.

3.6 Scope for early detection

[The European Parliament] emphasises the importance of the early identification of individuals who are at high risk of contracting or dying from these diseases or are suffering from pre-existing dispositions, chronic and severe illnesses and risk factors that aggravate NCDs - European Parliament resolution on NCDs, 15 September 2011²³

It cannot be over-emphasised that early detection and diagnosis, greater international collaboration, implementation of population-based quality assured screening programmes, evaluation of social inequalities and development of novel tools to detect chronic disease in at-risk populations are all measures that should be encouraged at Member State level.

The scope for efficacious and reliable early detection and screening varies depending on the specific disease in question. For disease specific recommendations, please see **Annex 3** on early detection, and **Annex 4** on screening and early interventions.

4. Health care

4.1 Self-management – role of home care and telemedicine.

Home care services can have very positive effects for patients with chronic diseases especially paediatric and geriatric patients. Telemedicine can be considered as an extension of home care as it allows the patient to stay at home while remaining connected with health care professionals to ensure adequate monitoring of their condition. Telemedicine has shown some promising effects for monitoring COPD and asthma patients, or in cardiology, for heart failure patients and, of course, diabetes patients.

In the next decade there is a potential to increase and improve the use of home care and telemedicine to form a part of the disease management process. When introducing new technologies, appropriate training for health care workers is necessary. This has been recognised by the Council of the European Union under the Hungarian presidency and the conference declaration on European Cooperation on e-health adopted 15/03/2010.

Specialist consultation clinics should be considered in order to improve both the self-management of chronic conditions and the communication between the health professional and the empowered patient. These models will include increased patient involvement in directing treatment, greater use of patient-reported outcomes, and evaluations of efficacy of treatment by patient reports via internet, mobile phones etc.

²³ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

Specific efforts are needed at Member State level for the deployment of existing, cost effective e-health solutions and other innovative measures applicable to chronic diseases e.g. phone-based SOPHIA project that supports people living with diabetes in France and that has proven to have a very positive effect on health outcomes. There is also a strong need for more research and evidence, including large scale clinical trials, economic analyses, models for preventive and predictive care. DG Information Society needs to strengthen current efforts in e-health solution deployment and research.

4.2 Effective prevention in the health care system

The gains from prevention cannot be overestimated – a few simple steps to improve early diagnosis, detection and screening will go a long way to addressing our NCD crisis. The ECDA outlines steps that can be taken for the specific diseases in detail in **Annex 3 and 4**.

The EU must help Member States transform their health systems to make prevention and health promotion an integral part of health services. Even if health policy and provision of health care is a Member State responsibility, the EU should take an active role to aid this transformation. Member States share similar challenges, from demographic change to increasing health care costs, and common solutions are needed.

The economic crisis in particular has given European health policy a new push. Member States have agreed on a new EU-level economic governance, ‘European Semester’, which helps coordinate their macroeconomic, budgetary and structural reform policies. This coordination started with a Commission Communication on the Annual Growth Survey (AGS) and recommendations to the Member States. The macroeconomic report which accompanied the Communication, noted that “Health care systems need to be rigorously monitored and, where needed, reformed to ensure greater cost-efficiency and sustainability, especially in regard to demographic ageing”²⁴. Such cost-efficiency can be brought about by implementing the recommendations outlined in this paper.

In addition, reimbursement rarely covers prevention and health promotion and this is an area where Member States should continue to exchange information.

Member States should also share best practices in empowering health personnel to deliver health. For example, educating and training staff in health promotion on topics such as the importance of smoking cessation, nutrition, and physical activity, would help them provide practical advice to patients during routine checks. Health personnel can also help identify high-risk groups for chronic diseases by using validated risk assessment tools.

4.3 The importance of innovative chronic care models in managing disease

In the broadest sense, integrated care is a concept bringing together inputs, delivery, management and organisation of services related to diagnosis, care, rehabilitation and health promotion.²⁵ Moreover,

²⁴ European Commission, Annual Growth Survey, Annex 2, Macro-economic Report, COM 2011(11) final, Annex 2. Available from: http://ec.europa.eu/economy_finance/articles/eu_economic_situation/pdf/2011/com2011_11_annex2_en.pdf

²⁵ Lloyd J, Wait S. Integrated Care: a Guide for Policymakers. London, Alliance for Health and the Future, 2005.

management of co-morbidities is a major challenge often overlooked by evidence-based diagnosis and treatment using disease-specific clinical guidelines.²⁶

The use of managed clinical networks, multidisciplinary teams and collaborative efforts across the lines of health care should be stimulated and funded by the Member States. These are crucial for the optimal management of complex conditions, and will need to be further developed across Europe.

The focus of chronic care models needs to be shifted toward addressing people in the early stages of chronic disorders. The ultimate aim should not be solely to manage disease, but to improve prognosis of chronic disorders.

4.3.1 The multidisciplinary team as a crucial component in patient care

The major innovation for further improving care will be the implementation of a coordinated and strategic cooperation between team members and among different units in the development of diagnostic and clinical management strategies. Further development of multidisciplinary care teams is crucial.

The care of many chronic diseases is increasingly complex. It not only relies on the talents of highly coordinated multidisciplinary teams but requires shared responsibilities across a continuum of longitudinal care involving numerous specialties and departments. A better integration between primary care physicians and other health care specialists is crucial in the care of chronic disease patients.

4.4 Affordability and accessibility of health care

There is increasing inequality in access to health care in Europe resulting from factors such as service design, accessibility, acceptability, affordability and financing mechanisms. As inequalities in health care have been associated with inequality in health within high-income countries it may well also contribute to inequalities in health within countries in central and Eastern Europe. Unless urgent action is taken now, these gaps between and within countries will increase.

Care for chronic diseases will necessitate new modes of approach such as integrated care, multidisciplinary care, clinical pathways, self-management, teleconsulting, telemonitoring and rehabilitation. For the latter four modalities, there is evidence of an effect on outcomes, but access to these services remains dismal. It is estimated that less than 5% of the eligible patients actually have access to rehabilitation.²⁷ Member States must endeavour to improve accessibility for all.

4.5 Rehabilitation as a way to reduce hospitalisation

4.5.1 Pulmonary rehabilitation

Pulmonary rehabilitation has become recognised as central to the comprehensive management of patients disabled by chronic respiratory disease, including children who survive with respiratory

²⁶ van Weel C, Schellevis FG. Comorbidity and guidelines: conflicting interests. *Lancet* 2006; 367: 550–555.

²⁷ Brooks D, Sottana R, Bell B, et al. Characterization of pulmonary rehabilitation programs in Canada in 2005. *Can Respir J* 2007; 14: 87–92.

impairment. A European Respiratory Society/American Thoracic Society Statement on Pulmonary Rehabilitation and the changes induced by this process in individuals with chronic respiratory disease has been published in 2005.²⁸ Furthermore, such programmes can reduce health care costs as a result of a reduction in the number of hospital admissions and the length of hospital stay. However, pulmonary rehabilitation as a practice in Europe is very inhomogeneous and even within single countries there are great variations in its use. Comprehensive rehabilitation in the primary care setting should be a priority, since it can manage large numbers of symptomatic “moderate” COPD patients. A strong recommendation for the future is to establish accessible pulmonary rehabilitation programmes, in order to deliver remote support to patients with chronic respiratory disease in an affordable way. There is a need to optimise the availability and quality of pulmonary rehabilitation in Europe, especially since rehabilitation is acknowledged as cost-effective for these patients *i.e.* those with moderate advanced COPD. Concerted efforts are needed to encourage health care delivery systems to provide this therapy and make it affordable.

4.5.2 Cardiac and stroke rehabilitation

Cardiac and stroke rehabilitation is recommended with the highest level of scientific evidence-class I by international scientific societies.^{29,30} Guidelines exist on the components of rehabilitation programmes and the health care team needed to carry them out effectively.^{31,32} Most countries³³ offer basic rehabilitation services for eligible cardiac and stroke patients. However, longer-term maintenance is rarely offered to the patients.

Rehabilitation is effective as well as cost-effective. A systematic review of randomised controlled trials of 8 940 patients found that cardiac rehabilitation reduced the risk of dying from coronary heart disease by 26%, increased level of physical activity in 1 patient out of 5 and reduced the number of smokers by 5%.³⁴ Stroke rehabilitation has proven to be effective in reducing death (4% in 6-month case fatality)³⁵ and time spent in hospitals (length of stays on average 8 days shorter).^{36,37} Numerous analyses prove that rehabilitation programmes are cost-effective.^{38,39}

Considering the significant benefits that rehabilitation bestow on patients as well as the wider society, every eligible cardiac patient and patients who have suffered a stroke should have access to quality

²⁸ Nici L, Donner C, Wouters E, et al. American Thoracic Society/European Respiratory Society statement on pulmonary rehabilitation. *Am J Respir Crit Care Med* 2006; 173: 1390–1413. <http://www.ers-education.org/pages/default.aspx?id=2005>

²⁹ Piepoli et al, Secondary prevention through cardiac rehabilitation: from knowledge to implementation. A position paper from the Cardiac Rehabilitation Section of the European Association of Cardiovascular Prevention and Rehabilitation, *European Journal of Cardiovascular Prevention and Rehabilitation* 2010, 17:1–17

³⁰ Guidelines for Management of Ischaemic Stroke and Transient Ischaemic Attack 2008, the European Stroke Organisation, 2009

³¹ Wood DA, et al., on behalf of EUROACTION Study Group. Nurse-coordinated multidisciplinary, family-based cardiovascular disease prevention programme (EUROACTION) for patients with coronary heart disease and asymptomatic

³² Northern Ireland Chest Heart and Stroke, *Stroke Advice*, 2010

³³ The European Cardiac Rehabilitation Inventory Survey (ECRIS), Prof Birna Bjarnason-Wehrens, German Sport University Cologne, on behalf of the European Association of Cardiovascular Prevention and Rehabilitation, 2010

³⁴ Taylor RS, Brown A, Ebrahim S et al. 2004. Exercise-based rehabilitation for patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. *American Journal of Medicine*; 116: 628-692

³⁵ Foley et al, The Efficacy of Stroke Rehabilitation, The Evidence-Based Review of Stroke Rehabilitation, August 2011, www.ebrsr.com.

³⁶ Langhorne et al, Estimating the impact of stroke unit care in a whole population: an epidemiological study using routine data, *J Neurol Neurosurg Psychiatry* 2010;81,1301-1305 doi:10.1136/jnnp.2009.195131, 2010.

³⁷ Langhorne P, et al: Early supported discharge services for stroke patients: a meta-analysis of individual patients' data. *Lancet* 2005;365:501-506.

³⁸ Cheuk-Man Yu et al, A short course of cardiac rehabilitation program is highly cost effective in improving long-term quality of life in patients with recent myocardial infarction or percutaneous coronary intervention, 2004, doi:10.1016/j.apmr.2004.05.010

³⁹ Saka et al, Cost-Effectiveness of Stroke Unit Care Followed by Early Supported Discharge, 2009, doi: 10.1161/STROKEAHA.108.518043

cardiac and stroke rehabilitation services. Services must be available where the patients live and suited to patients' individual agendas.

4.6 Standards of care and the role of guidelines

[The European Parliament] calls for clear protocols and evidence-based guidelines to be established for the most common NCDs in order to ensure appropriate patient management and treatment across health care professions, including specialists, primary-care physicians and specialist nurses;

European Parliament resolution on NCDs, 15 September 2011⁴⁰

Guidelines are an important tool for clinical management that should be subjected to a comprehensive evidence-based approach. A proper guideline programme leads to optimal management of chronic disease, with improved outcomes and a reduction in health inequalities across Europe and globally. An important goal for the future will be the production of truly multidisciplinary guidelines, which is particularly important in patients (especially the elderly) with multiple chronic conditions. Guidelines need to be inclusive and produced in collaboration with the relevant stakeholders, such as patients and their organisations. In view of the growing complexity of guidelines it is crucial to, in future guidelines, include sections with summaries for lay people, discuss the role of new technology, and ensure guidelines answer clinicians' questions.

Periodically reviewed and adapted guidelines are an essential part of the treatment strategy and progress of clinical, especially medical oncology, where systemic treatment possibilities constantly evolve and change with the ongoing development of drug research by pharmaceutical companies and cancer research trial groups. In almost all European countries national guidelines, increasingly evidence based for most cancers, have been developed and are constantly amenable for adaptation.

4.7 Palliative care

The development of palliative care as a specialty in its own right has led to great improvements in the care of patients with end-stage disease. A great inequality in access to services currently exists between patients dying with malignant and non-malignant respiratory disease. This is in part due to lack of resources, which constrains the wider availability of palliative care programmes in the health care system. A study by Gore *et al.* showed that COPD patients were generally better provided for in terms of aids and appliances, but very few had received counseling and none had received help from specialist palliative care services.⁴¹

Across Europe and the developed world, most people with chronic respiratory disease die in hospital although it is known that few would make this choice. There is a need to change our practice to allow both curative care and palliative care to run side by side, and for patients with non-malignant disease to be referred to specialist palliative care services at a time when specialist palliative care teams can still be of help.

⁴⁰ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

⁴¹ Gore JM, Brophy CJ, Greenstone MA. How well do we care for patients with end stage chronic obstructive pulmonary disease (COPD)? A comparison of palliative care and quality of life in COPD and lung cancer. *Thorax* 2000; 55: 1000–1006.

Besides palliative efforts in patients with chronic pulmonary diseases, the palliative care approach is probably most developed in adult oncology, where the majority of patients, once their disease has spread and becomes treatment-resistant, will need some form of palliative symptom control (pain, digestive troubles, depressive symptoms, neurological impairment, etc.). The development of somatic and spiritual palliative care in oncology across Europe, having started and greatly been promoted by pilot centres in the UK some decades ago, is probably one of the most rewarding and useful patient-oriented developments in modern clinical medicine, represented today by the European Society of Palliative Care and its very active research and educational programme.

Adequate measures should be taken and promoted across the health continuum to improve access to end-of-life care. Greater support for specialist nurses and specialist palliative care teams is required.

5. Research into chronic diseases

“[Invites the Commission to] integrate, where possible, chronic diseases as a priority in current and future European research and action programmes and take into account the outcome of the reflection process into the implementation of the EU 2020 initiative – Council conclusions, 7th December 2010.

Research makes a direct contribution to the prevention and treatment of chronic diseases and leads to dramatic increases in the quality of life for European citizens. Success in biomedical research requires a long-term investment as well as sustainable infrastructures. It is estimated that three-quarters of its return on investment of medical research come from its “spill over” effects and value creation to the broader economy.⁴² The cumulative economic benefit comes from the increased contributions of a healthy population as well as the wealth generated by the health care sector. Furthermore, the Innovation Union Strategy 2020 identified “health and ageing” as one of the major societal challenges of the 21st century.⁴³

There is a crucial need to boost biomedical research with appropriate resourcing at the EU level for dedicated European funding for European-wide studies – many of the biomedical challenges will only be better understood through highly multidisciplinary and large-scale / multinational research. For this to happen, common European-wide strategic planning of biomedical research is essential. Tackling the enormous medical costs and loss of labour in the forthcoming decades requires action now. The return on investment in medical research is significant, and can be up to 39% according to the analysis presented for cardiovascular diseases in the UK.⁴⁴

With regard to European biomedical research, it is crucial that the funding strategy and priorities are defined together with the biomedical community. Only if experts are actively involved in the development of the research strategy and the identification of research needs can it truly address the challenges faced by science and society.

Today at EU level however health and research are separate policy areas. To overcome the existing fragmentation and duplication of research in Europe in the health field, human health must be at the

⁴² <http://www.nature.com/news/2010/100609/pdf/465682a.pdf>

⁴³ http://ec.europa.eu/health/ph_overview/Documents/health_economy_en.pdf

⁴⁴ http://www.wellcome.ac.uk/stellent/groups/corporatesite/@sitestudioobjects/documents/web_document/wtx052110.pdf

core. There is a major gap in translational research in Europe and better care delivery will only be possible if sustainable networks across Europe join together and share their resources to tackle the scientific challenges.

In addition more research is needed on e.g. the 'health in all policies' approach to health and health promotion. More case studies are needed about the factors that influence individual behaviour and social norms. The search for common solutions must build on strong research cooperation across Member States. The Council of the European Union should also introduce regular meetings between health and research ministries.

6. Data at European Level

[The European Parliament] emphasises the need to establish priorities for centralised data collection with a view to obtaining comparable data that will make better planning and recommendations possible across the EU - European Parliament resolution on NCDs, 15 September 2011⁴⁵

6.1 Collection of comparable data on chronic diseases in Europe

It is important for decision makers to understand the direct and indirect costs of preventable disease and benefits of health promotion to society. Comparable data at European level on incidence, prevalence, risk factors and outcomes, is urgently needed. There is a need for developing more unified, robust, cost-effective methods at EU-level. Registries at European level are clearly missing and the way information is collected differs widely. Many projects are ongoing, but all using different methodologies, which again renders the data incomparable.

There is an urgent need to promote the adoption of common health data standards collected across Europe by different stakeholders, whether health institutions, health care organisations, public health entities, health professionals, health care industry.

One major obstacle at European level is the interoperability of data. Although efforts are being made, in particular with the implementation of the cross-border health care directive, much remains to be done for all health data to be easily transferred between different operators.

The introduction, at EU level, of a unique patient identification number would overcome many of the current obstacles to data transfer. It must comply with personal data protection provisions.

Stakeholders involved in health data collection tend to focus either on clinical data, on registries or on epidemiology data. In some cases, the information collected is duplicated. Bridging the types of information would not only avoid duplication but result in a real life vision of the health status, in particular in terms of prevalence and incidence of the diseases.

6.2 Development and strengthening of existing EU agencies

⁴⁵ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

The mandate of the European Centre for Disease Prevention and Control (ECDC) should be expanded to include the monitoring and surveillance of major NCDs.

Cooperation with WHO in view of the Action Plan for a strategy on NCDs⁴⁶ and OECD and medical/scientific societies should be strengthened.⁴⁷

7. What gets measured gets done

[The European Parliament] calls on the Commission to continuously monitor and report on progress across the EU as regards the Member States' implementation of their national NCD plans, particularly on the four most common NCDs, with a focus on progress made in terms of prevention, early detection, disease management and research – European Parliament resolution on NCDs, 15 September 2011⁴⁸

We need to measure, monitor and report on action taken in the Member States. To facilitate monitoring and reporting of progress a number of targets could be set. The ECDA proposed targets for chronic diseases are:

- 25% reduction in mortality by 2025
- Reducing tobacco use to less than 5% by 2040;
- Reducing salt intake to less than 5g per person per day by 2025;
- Reducing saturated fat intake to less than 10% energy per person per day by 2025;
- Eliminating the intake of industrial trans-fatty acids by 2025;
- Halving the intake of refined sugars in processed foods and beverages by 2025;
- Introduction of health warnings on all alcoholic beverages
- Reducing alcoholic liver disease and alcohol consumption and sales by 10% by 2025
- Providing affordable, safe, effective, quality-assured medicines (including for palliative care), vaccines and technologies to people with, and at high risk of, NCDs;
- By 2030, reduce the rate of increase in the prevalence of diabetes in adults from the predicted level of 9.5% to zero.

“What gets measured, gets done” – Margaret Chan, Director-General, World Health Organization, UN High-Level Meeting on NCDs, September 2011.

⁴⁶ 2008-2013 Action plan for the global strategy for the prevention and control of non-communicable diseases <http://www.who.int/nmh/publications/9789241597418/en/index.html>

⁴⁷ http://www.euro.who.int/_data/assets/pdf_file/0008/96632/E93736.pdf

⁴⁸ <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0390&language=EN>

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EUROPEAN
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ORGANISATION



fighting heart disease
and stroke
european heart network



Optimising the response to the epidemic of chronic diseases

European Chronic Disease Alliance input to the Reflection Process on chronic diseases

Annexes 1 – 4

The major health determinants in chronic disease

The ECDA published in 2010 a report entitled “A Unified Prevention Approach” which was presented to Health Commissioner John Dalli in June 2010. It proposed a number of key measures that could form the basis for a coordinated and common strategy for the prevention of chronic diseases in Europe. The report focused on the key major health determinants i.e. tobacco, nutrition, alcohol and physical inactivity. The summary of the ECDA recommendations are presented below.

Tobacco

The scientific evidence for the adverse health effects of smoking is overwhelming. There is a direct correlation between the number of cigarettes smoked and the risk of cancer, cardiovascular and chronic obstructive pulmonary diseases. Smoking, or exposure to smoke, causes up to 90% of lung cancers and is also proven to be an independent risk factor in diabetes. In general, about half of all continuing regular smokers will be killed by their smoking. Smokers who die in middle age as a result of their smoking lose about 22 years of life, with a larger proportion of that shortened life span being spent in ill health. However, stopping smoking before middle age largely eliminates this risk. Smoking increases the risk of cardiovascular disease five-fold in young and two-fold in older people. In addition, it is associated with both the onset and progression of Chronic Kidney Disease. It is estimated that approximately 650 000 EU citizens die prematurely every year because of tobacco consumption.

Young people who do not start smoking before the age of 20 will usually never smoke at all, which enormously increases the urgency of measures to protect young people from starting, such as the removal of vending machines and of cigarette packets from point of sale display as well as ensuring that tobacco is highly taxed.

Passive smoking poses a massive risk to public health. According to conservative estimates, approximately 80 000 adults, including almost 20 000 non-smokers, died in the EU-15 in 2002, because of diseases caused by exposure to tobacco smoke at home and in the workplace. The successful implementation of the measures proposed in the Framework Convention on Tobacco Control (FCTC), in particular those relating to smoking in the workplace, have already reduced the incidence of heart attacks by 17-19% in several countries. This success needs to be extended by the ratification and enforcement of the FCTC by all Member States. Implementing tobacco control strategies will require greater levels of investment across the EU, but economic evidence indicates that this is the second most cost-effective use of health funds after childhood immunisation. The European Commission has a clear role to play in coordinating and supporting these measures at a national level across all Member States.

Experiences within the European region, as well as worldwide, provide considerable knowledge on useful methods in controlling the use of tobacco. Immediate research priorities have been identified to clarify the true scale of the tobacco epidemic, mostly decreasing in males and increasing dramatically in females, especially in southern and central European countries: better understanding of the effects of tobacco on health and to best direct resources towards its control, improved surveillance data, standardised methodologies for research, particularly in the case of prevalence and mortality, and regular measurement of smoke exposure across all populations. It is essential that all regulation, research and advice, both at Member State and European level, be absolutely independent of all

influence from the tobacco industry. Article 5.3 guidelines of the FCTC on the protection of public health policies with respect to tobacco control from commercial and other vested interests of the tobacco industry should be transposed into national legislation and ministerial/public service codes of conducts of the Member States. They should also be strictly observed by the European Commission.

The tobacco industry is already required to disclose additives used in their products. This should extend to all chemical and design characteristics of these products, including the type of tobacco used, the way it is processed, the physical and chemical characteristics of its emissions, as well as the mode of use and behaviour of the user. Only in this way will it be possible to make comparisons between different tobacco manufacturers and establish a harmonised system for Member States to analyse, verify and finally report this information to the Commission.

Recommendations for reducing the use of tobacco

At EU level

- Ensure that taxation on tobacco is harmonised at a high level across the EU
- Cigarette packets should adopt a compulsory standardized packaging with all branding elements removed and 80% of the packet front and back devoted to pictorial health warnings
- Dealings with the tobacco industry, across the EU, should be absolutely transparent
- Internet sales of tobacco should be banned
- All regulatory, scientific and advisory capacity, at Member State and European level, to be independent of all tobacco industry influence - in line with FCTC Art 5.3 Guidelines
- Comprehensive disclosure of the physical, chemical and design characteristics of all tobacco products should be required and made public Ref. FCTC Arts 9 and 10 Guidelines
- Ensure accurate data about quantities of tar, nicotine and CO with qualitative information about hazardous content and 'stop smoking' help lines

At Member State level

- All EU Member States should fully implement the Framework Convention for Tobacco Control (FCTC)
- All EU Member States should implement comprehensive bans on tobacco advertising and promotion, including on displays at point of sale in line with the FCTC
- All EU Member States should introduce a comprehensive ban on smoking in all public and workplaces

- Apply annual increases in tobacco tax above inflation as the most effective way to control consumption
- Cigarettes vending machines, should be banned
- Further development of smoking cessation and treatment strategies across all Member States including training of health professionals, increased accessibility of nicotine replacement therapies and national networks of treatment services

Nutrition

There is a direct correlation between eating patterns and the prevalence of obesity, type 2 diabetes, cardiovascular disease, hypertension, emphysema, respiratory infections and certain types of cancer.

Low fruit and vegetable intake has been estimated to account for 4.4% of the burden of disease. Fruit and vegetables have a high content of vitamins, minerals, antioxidants and phytochemicals and play a positive role in preventing CVD, diabetes and specific cancer types. It is estimated that fruit and vegetable intake of 600 g per day could reduce the risk of coronary heart disease by up to 18% and stroke by 11%. This could prevent over 135 000 deaths from cardiovascular diseases each year.

A study published in NEJM warns that reductions in deaths resulting from cardiovascular disease could come to a halt as people get fatter. In contrast, a recently published WHO study suggests that deaths could be reduced by half by adopting a healthier diet and giving up smoking. Between 1970 and 1990 the death rate from cardiovascular disease fell by half, due to reductions in smoking, cholesterol levels and hypertension alongside an increase in physical activity. This trend has been halted since 1990 in young people due to the rise in obesity and increase in numbers of people with diabetes.

Much can be achieved by making relatively small changes across the broader population. These interventions target the risks faced by the entire population, from their social, economic and physical environments, and are also effective in reducing health inequalities. They include measures such as taxation on foods that are high in fat, salt and sugar, as well as reformulation measures (improving the composition of food to reduce the level of fat, saturated fat, salt and added sugar). Clear and easily understandable information on nutrition is crucial to the success of these interventions. Survey results consistently suggest that consumers like and understand a simple front of pack nutrition label, with traffic light colours, indicating whether the nutrient is present at a low, medium or high level. A simple traffic light system thus enables consumers to make informed choices.

The risks of a diet containing too many calories are shown in Europe and North America, where fast foods and soft drinks are increasingly popular. In countries such as Italy and Greece, where a traditional diet containing large amounts of fruit and vegetables has been replaced by foods high in carbohydrates and saturated fats, obesity, diabetes and coronary heart disease are on the increase.

Regulation is needed to control the use of trans fats, which have been officially identified by WHO as a “clear risk for human health” as they contribute significantly to an increased risk of coronary heart disease events. Examples of successful legislation against the use of trans fats are in existence in Denmark, Austria, Iceland and Switzerland.

The availability of fast and convenience foods should be reduced, in particular to younger people, for example through eliminating advertising and snack dispensers in schools. In Scotland restrictions have been introduced to limit the use of saturated fats in school meals, in particular through fried foods, but the effect of such measures is reduced by the availability of other outlets in the nearby locality.

High salt intake, coming mainly from processed foods, contributes to high blood pressure which in turn increases the risk of stroke, chronic kidney disease, coronary heart disease and diabetes. Some intervention studies show that a diet high in salt may increase the severity of disease in those with asthma, and that pulmonary function may improve in people with asthma who adopt a low salt diet. Several European countries have successfully reduced salt intake, through regulation and better labelling of processed foods. Such population wide interventions are likely to produce health benefits similar in magnitude to reductions in tobacco use, cholesterol levels and obesity. Measures are urgently needed to reduce the consumption of salt to less than five grams per day in all EU countries, as already successfully achieved in Finland.

Self-regulation by the industry on reducing salt is currently the policy makers' preferred option. It should be noted that voluntary measures for alcohol and tobacco have failed. Conversely, regulatory approaches have consistently proved to be the most effective, efficient and cost-effective way of achieving public health targets. This is what has been done in Finland, Japan and now Portugal. A law substantially reducing the amount of salt contained in bread was adopted in Portugal in March 2009.

Much has been done in recent years to improve nutritional health and try to reduce the prevalence of diabetes and cardiovascular disease as well as certain types of cancer. It is essential to maintain the political will to continue to take action. The introduction of a periodic report on nutritional health would help a great deal in maintaining momentum.

The 2007 Audiovisual Media Service Directive called upon governments and the European Commission to 'encourage media service providers to develop codes of conduct regarding inappropriate advertising of 'unhealthy' food and drinks in or accompanying children's programmes'. However, the code of conduct has not been taken up in all Member States, and it is recognized that, given the intense marketing of goods in the internal market, measures can only be effective if harmonised across the EU. Nor do the restrictions limit internet sales and promotion.

Recommendations for improved nutrition

At EU level

- Efforts to reduce the fat, sugar and salt content of mainstream food and drink products should be a key priority for Europe. The European Commission should set a firm agenda for progress in product reformulation. If the collaborative voluntary approach does not deliver results within that timescale, the Commission should introduce rules setting maximum levels of these nutrients/ingredients for different foodstuffs
- The European Commission should bring forward a proposal for an EU-wide ban on the addition of industrially produced trans fats in foodstuffs marketed in the EU

- Mandatory food labelling on front and back of pack should include traffic light colour coding to facilitate consumer education and understanding
- An integrated European Food and Agriculture Policy which works towards improving European diets in a sustainable way should be developed; it should provide for, inter alia, an increased supply of and access to affordable fresh fruit and vegetables
- EU-wide measure to prohibit all marketing of 'unhealthy' food to children through television and non-broadcast media
- Research into measures by which internet advertising can be discouraged

At Member State level

- Control the provision and sale of fatty snacks, confectionery and sweet drinks in public institutions, such as schools and hospitals
- Introduce subsidies on healthy foods to improve patterns of food consumption

Alcohol

The use of alcohol accounts for over 7% of all ill-health and premature deaths in the EU. The prime target for damage is the liver. Indeed excessive consumption of alcohol is a major cause of cirrhosis and liver failure and also cancer (e.g. breast, oral cavity, oesophagus, pharynx), cardiovascular diseases and brain damage. Studies show that up to 9% of cancer incidence in Europe is attributable to alcohol intake. Several cancers, namely cancers of the oral cavity pharynx, larynx and oesophagus as well as breast, liver and colorectal cancer are causally linked to excess alcohol consumption.

Alcohol is also an immune-suppressant, increasing the risk of communicable disease in particular respiratory infections. It is also a potent teratogen, harming the foetus, including low birth weight, cognitive deficiencies and foetal alcohol disorders. Alcohol is processed in the body very similarly to the way fat is processed and provides almost as many calories.

The majority of alcohol control programmes are cost saving and effective. Benefits are rapid, usually within months of implementing legislation to control alcohol availability and use.

Price is a key driver in determining alcohol consumption. This is directly affected by increased taxation. A rise in excise duty is always cost effective since taxation policies cost relatively little to implement and can reap substantial health, as well as financial, returns.

Legislation to reduce the legal level of alcohol in car driver's blood, combined with an increase in roadside breath testing, has been extremely effective in reducing the number of deaths through traffic

accidents. Public information programmes, and media focus, have put drink-driving on the public and political agendas and have done much to reduce the social acceptability of driving with alcohol in the bloodstream.

Advertising increases the likelihood that children and adolescents will start to use alcohol and will drink more if they are already using alcohol. Legislation is badly needed to offset the budget inequalities involved in alcohol promotion. Last year, in the UK alone, £600 million was spent by the industry on promotion, whilst a mere £18 million was spent on education designed to reduce the abuse of alcohol. One immediately effective way to offset this difference would be the imposition of a ban on all price-related alcohol promotion.

Labelling is also a potentially important information tool for communication between producers, public authorities and consumers. Labels could inform customers of the dangers and health risks associated to the consumption of alcohol.

Early recognition of an alcohol related disorder is vital. A brief but timely intervention by a health professional is an extremely cost-effective way of preventing further harm. There is a clear need for specific training for staff in primary care, in emergency rooms and in schools, to recognize the signs of alcohol-use disorders and to deliver effective, brief interventions.

School based education alone is largely ineffective in protecting young people from early alcohol consumption. Perhaps predictably, industry-funded education programmes actually tend to have the reverse effect.

Reduction of access to retail outlets, and implementation of a comprehensive advertising ban have the potential to be very effective, but only if they are fully enforced across all Member States. The economic arguments for doing this are compelling: every healthy year of life gained saves approximately €500.

Recommendations for the reduction of alcohol consumption

EU level

- Ban alcohol advertising, promotion and sponsorship of events via TV radio programmes and sports
- Introduction of uniform minimum EU tax rates for all alcoholic beverages and their increase in line with inflation
- Restrict the amount and content of advertising for alcohol products: in particular all elements that have proved to be appealing to young people
- Use of educational programmes to reinforce awareness of the problems created by alcohol and to prepare the ground for specific interventions

Member State level

- Reduce the availability of alcohol through restriction in the number of outlets for alcohol purchase
- Widespread help through primary-care agencies and intensive help for alcohol dependence
- Training for staff in primary care, in emergency rooms and in schools, to recognize the signs of alcohol-use disorders and to deliver effective, brief interventions
- Legal concentrations in the blood reduced eventually to 0.2 g/L, for all vehicle drivers, with stringent enforcement

Physical inactivity

As mechanisation has reduced the need for manual labour and exercise, resulting in more sedentary lifestyles, the prevalence of the diseases addressed by this Alliance has increased. The World Health Organisation (WHO) describes physical activity as ‘a fundamental means of improving the physical and mental health of individuals.’ Physical activity is key to reducing the risk of cardiovascular and respiratory diseases, cancer, obesity, type 2 diabetes as well as liver diseases.

Lack of physical activity during childhood increases overweight and obesity. The WHO estimates that within a decade this trend will affect 5 million children, with a further 15 million overweight. The majority will carry their obesity into adult life. Type 2 diabetes is now being reported in children and is directly linked to obesity. Evidence shows that between 3% (males) and 6% (females) of cancer cases in Europe may be attributed to lack of physical activity and these figures are likely to increase. Furthermore, a causal link has been established between excess body mass index (BMI) and increased risk of several cancer types. Indeed, it is understood that physical activity reduces the risk of colon cancer, probably reduces the risk of breast and endometrial cancers and possibly reduces the risk of prostate, lung and ovarian cancers.

As people get older, some types of physical activity become more difficult. However some activities are suitable, even for the aged such as walking and gardening & cycling. Therefore increasing physical activity is an important message, especially in an ageing population.

In some areas appropriate fitness facilities are scarce and accessible only to some communities. Better facilities for physical exercise as well as planning measures to encourage greater physical activity play a great part in combating these diseases. But with the shift to academic subjects a priority within the school curriculum, many schools have had to reduce, or even phase out, physical education through lack of time. This has been further exacerbated by the sale of playing fields for development, by many local authorities. With the responsibility for physical exercise now shifting to extra-curricular sports clubs, the questions of safety and public transport become increasingly important.

There are many other areas of urban planning where simple measures could be taken to encourage greater activity, such as the provision of more and safer cycle lanes and footpaths, and making stairs more visible and accessible than lifts and escalators in public buildings.

Lifestyle interventions involving consistent physical activity and regulated diet, significantly reduces the incidence of type 2 diabetes and reverses the glucose intolerance which precedes it. Just one half hour of moderately vigorous activity a day, over and above normal levels, will reduce weight by 1-2kg per year. With sufficient support and monitoring, these interventions can be successfully implemented by a wide range of professions, in a wide range of settings, for a wide range of ethnic and age groups.

It will be important to promote physical activity also as a normal part of healthcare, and actions should be taken to include guidance on how to translate general public health recommendations on physical activity into levels that correspond to the capacity of a patient. Physical activity not only delays onset of chronic diseases but is also important for reducing severity of disease.

Recommendations for increased physical activity

At EU level

- Intensify the collection, analysis and dissemination of information on effectiveness of interventions in the area of physical activity
- Monitor EU citizens' participation in physical activity through regular surveys

At Member State level

- Set urban planning standards prioritising non-motorised transport and for recreational areas encouraging physical activity
- Each school child to have access to periods of physical activity each day at school, and to be encouraged to after school physical activity
- Regular monitoring in all areas of child and adolescent growth and development e.g. height, weight, lung capacity etc.
- Improve facilities for physical activity in schools, and an end to the disposal of recreational land for development
- Encourage the implementation of the above recommendations at regional and local levels

Table 2. Health care interventions to tackle noncommunicable diseases: identifying 'best buys'

Disease (% global burden; DALYs ^a)	Interventions / actions (* core set of 'best buys')	Avoidable burden (DALYs averted, millions)	Cost-effectiveness ^b (US\$ per DALY prevented) [Very = < GDP per person; Quite = < 3* GDP per person Less = > 3* GDP per person]	Implementation cost (US\$ per capita) [Very low = < US\$ 0.50; Quite low = < US\$ 1 Higher = > US\$ 1]	Feasibility (health system constraints)
Cardiovascular disease (CVD) and diabetes (170 m DALYs; 11.3% global burden)	Counselling and multidrug therapy (including glycaemic control for diabetes mellitus) for people (≥30 years), with 10-year risk of fatal or nonfatal cardiovascular events ≥ 30% * ^c	60 m DALYs averted (35% CVD burden)	Very cost-effective	Quite low cost	Feasible (primary care)
	Aspirin therapy for acute myocardial infarction * Counselling and multidrug therapy (including glycaemic control for diabetes mellitus) for people (≥ 30 years), with a 10-year risk of fatal and nonfatal cardiovascular events ≥ 20%	4 m DALYs averted (2% CVD burden) 70 m DALYs averted (40% CVD burden)	Very cost-effective Quite cost-effective	Quite low cost Higher cost	
Cancer (78 m DALYs; 5.1% global burden)	Cervical cancer screening (VIA), and treatment of pre-cancerous lesions to prevent cervical cancer*	5 m DALYs averted (6% cancer burden)	Very cost-effective	Very low cost	Feasible (primary care) Treatment may require referral
	Breast cancer – treatment of stage I Breast cancer – early case-finding through biennial mammographic screening (50–70 years) and treatment of all stages Colorectal cancer-screening at age 50 and treatment Oral cancer – early detection and treatment	3 m DALYs averted (4% cancer burden) 15 m DALYs averted (19% cancer burden) 7 m DALYs averted (9% cancer burden) Not established globally	Quite cost-effective Quite cost-effective Quite cost-effective Not assessed globally	Higher cost Higher cost Quite low cost Not assessed	Not feasible in primary care
Respiratory disease (60 m DALYs; 3.9% global burden)	Treatment of persistent asthma with inhaled corticosteroids and beta-2 agonists	Not established globally (expected to be small)	Quite cost-effective	Very low cost	Feasible (primary care)

^a DALYs (or disability-adjusted life years) are widely used as a measure of premature mortality and ill-health - one DALY can be thought of as one lost year of healthy life.

^b Prevention and control of NCDs: priorities for investment. Discussion paper for the First Global Ministerial Conference on Healthy Lifestyles and Noncommunicable Disease Control. Geneva, World Health Organization, 2011.

^c Includes prevention of recurrent vascular events in people with established coronary heart disease and cerebrovascular disease.

Early detection of chronic disease

Early detection of chronic respiratory diseases

The earliest possible detection of disease and the best possible integrated and multi-disciplinary care are required when the disease is established and effective treatment exists. For example screening the general population for respiratory symptoms and lung function has been shown to be an effective method for detecting subjects with a mildly but persistently impaired lung function at an early undetected stage of the disease. When compared to other diseases, the cost per detected case is even relatively cheap, see table 1 below.

Table 1

Cost per detected case in screening programmes¹

Disease	Cost per detected case
Hypertension	127
Abdominal aortic aneurysm	508
COPD/asthma	573
Hypercholesterolaemia	1117
Prostate cancer	4060–6598
Breast cancer	5786–23753
Glaucoma	13196
Down's syndrome	50755
Cystic fibrosis	63951–317219
HIV	125872

If every citizen had a regular lung health check, it would be possible to plan for those likely to require respiratory healthcare. This would enable us to anticipate respiratory health burdens of the future, and conveys a simple message about getting the public to understand the most basic function of their respiratory system, and preserve optimum lung capacity for each individual.

In asthma there is good evidence that early diagnosis resulting in early treatment with inhaled corticosteroids is effective, improves health outcomes and significantly reduces the socioeconomic burden of the disease, although medication continues to be the major component of the cost of asthma treatment. The Global Initiative for Asthma (GINA) published in 2011 the revised Guidelines on a Global Strategy for Asthma Management and Prevention with the most updated recommendations.² Furthermore, screening for nutritional status and weight is of particular relevance in respiratory

¹ Van Shayck CP, Chavannes N: Detection of asthma and chronic obstructive pulmonary disease in primary care. *Eur Respir J* 2003, 21: Suppl 39, 16s-22s. http://www.erj.ersjournals.com/content/21/39_suppl/16s.full.pdf+html

² Global Strategy for Asthma Management and Prevention 2011. http://www.ginasthma.org/uploads/users/files/GINA_Report_2011.pdf

conditions. Regular monitoring in all areas of child and adolescent growth and development e.g. height, weight and lung capacity should be initiated in the EU Member States.

COPD is a leading cause of morbidity and mortality worldwide, and results in an economic and social burden that is both substantial and increasing. The prevalence and morbidity data greatly underestimate the total burden of COPD because the disease is usually not diagnosed until it is clinically apparent and moderately advanced.^{3,4} Delayed diagnosis results in patients suffering symptoms and limitations that could otherwise be alleviated by treatment. Spirometry is the most reliable detection method for COPD. Tobacco smoke is by far the most important risk factor for COPD worldwide. Other important risk factors are occupational exposures, socio-economic status and genetic predisposition. The latest evidences in COPD have proven that early detection in stages 1 and especially in stage 2 achieve significant improvements in the natural history of the disease.^{5,6} The Global Initiative for Chronic Obstructive Lung disease (GOLD) have released updated 2011 Guidelines on a Global Strategy for Diagnosis, Management and Prevention of Chronic Obstructive Pulmonary Disease which based on multiple scientific and clinical achievements since 2001.⁷

Early detection of cancer

Cancer, comprising approximately 100 different types of malignant tumours of the body organs, is the second largest cause of death after CVD and the first cause of death at middle age, when mass screening programmes are offered for cervical, breast and colorectal cancer. Annually, there were about 3.2 million new cases and 1.7 million deaths in 2008. The most frequent cancers with each 13% of the total are colorectal, breast, prostate and lung cancer, whereas most deaths are due to lung (20%) and colorectal cancer (12%), breast cancer (7.5%) and stomach cancer (7%).

There is evidence for efficacy of screening in reduction of mortality in breast (by 25%), colorectal (20-25%) and cervical cancers (up to 80%) through mammography, FOB test and the Pap test/visual inspection respectively.

Early detection of cardiovascular diseases, including hypertension

Across the European Union, millions of people are at high risk of developing and dying prematurely from cardiovascular diseases (CVD). There is a significant amount of CVD morbidity and mortality that could be prevented through early detection and primary prevention of these diseases

The aim of CVD risk-assessment programmes is to detect people who are at high risk, and to reduce the risk factors of those vulnerable to developing these diseases.

³ Celli BR, MacNee W, ATS/ERS Task Force: Standards for the diagnosis and treatment of patients with COPD: a summary of the ATS/ERS position paper. *Eur Respir J* 2004, **23**(6):932-46.

⁴ Price D et al: Earlier Diagnosis and earlier treatment of COPD in primary care. *Prim Care Resp J* 2011 **20**(1):15-22

⁵ Stockley RA: Progression of chronic obstructive pulmonary disease: Impact of inflammation, comorbidities and therapeutic intervention. *Curr Resp Med Opin*, 2009, **25**(5):1235-45

⁶ Averame G et al "Alliance Project" Study Group: Office spirometry can improve the diagnosis of obstructive airway disease in primary care setting. *Respir Med* 2009, **103**(6):866-72.

⁷ Global Strategy for the Diagnosis, management, and prevention of chronic obstructive pulmonary disease.
http://www.goldcopd.org/uploads/users/files/GOLD_Report_2011_Jan21.pdf

Importantly, these programmes will not only identify those at risk but will also ensure that the individuals are helped to reduce their risks, and avoid the onset of disease, through early primary prevention interventions e.g. smoking cessation, weight management, exercise interventions and use of medication in accordance with the European Guidelines on Prevention of Cardiovascular Diseases in Clinical Practice.⁸

CVD risk-assessment programmes should target people aged 30-65 who are not currently on a disease register or diagnosed with cardiovascular diseases.

Assessing risk of CVD requires the use of a validated risk-score tool which integrates multiple risk factors. Several risk-score tools are available and validated. About five basic elements are sufficient for assessing CVD risk: sex, age, tobacco use, blood cholesterol and blood pressure. These are included in all validated risk-score tools. In addition, the assessment could include taking the pulse which would allow identifying asymptomatic atrial fibrillation. Other elements are full lipid profiles (LDL, HDL cholesterol and triglycerides), family history of premature CVD, diabetes, body mass index, waist circumference and lifestyle factors other than smoking (e.g. exercise, intake of fruit and vegetables) as well as social deprivation. The measurement of all elements are straight forward, non-invasive and relatively cheap.

Where very high levels of individual risk factors are found, the assessment should be expanded to include family members. In particular, where very high level of blood cholesterol is found cascade-screening should take place. In deprived communities, the rate of high-risk individuals is known to be significantly higher than in other areas⁹. It is, therefore, critical to establish structures that enable the inclusion of hard-to-reach groups and to perform opportunistic risk-assessment.

It is preferable that life-time risk is assessed since age is a predominant risk factor. Lifetime risk assessment avoids underestimation in younger individuals. However, it should be noted that even well-validated risk-score tools assessing lifetime risk may underestimate risk in some ethnic groups, for whom not enough data are available, and overestimate risk in higher socio-economic groups.

CVD risk assessment should be repeated with a five-year interval for those not found at high risk or diagnosed with cardiovascular disease.

Early detection in chronic kidney disease

Kidney diseases (both chronic and acute) have recently been identified in the global non-communicable disease (NCD) action plan, recently adopted in the UN political declaration. There is indeed compelling evidence that kidney disease is a key determinant of the poor health outcomes of diabetes and cardiovascular disease (including hypertension), and prevention of kidney disease requires attention within national NCD programs particularly at the primary-care level as recommended by the WHO.

CKD is associated with an eight- to tenfold increase in cardiovascular mortality and is a risk multiplier in patients with diabetes and hypertension. Milder CKD (often due to diabetes and hypertension) may affect up to 10% of the population and is more common in developing countries and disadvantaged and

⁸ European Guidelines on Cardiovascular Disease Prevention in Clinical Practice, European Journal of Cardiovascular Prevention and Rehabilitation, 2007, <http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/guidelines-CVD-prevention-ES-FT.pdf>

⁹ Cardiovascular diseases inequalities: causes and consequences. Capewell, S. <http://www.slideshare.net/sanidadyconsumo/cardiovascular-disease-inequalities-causes-and-consequences>

minority populations, also in developed countries. As with many NCDs, awareness of CKD is low, generally less than 20%, even at more advanced stages and in developed nations.

Early detection and treatment of CKD using readily available, inexpensive therapies can slow or prevent progression to end-stage renal disease (ESRD) and will be associated with a reduction in premature cardiovascular disease.

Also in European countries early detection of CKD has been facilitated by the implementation of routine reporting of estimated glomerular filtration rates (eGFRs) by simple serum creatinine measurement and by education of primary care physicians on the implications of detecting a decreased eGFR with respect to patient safety as well as to cardiovascular and renal outcomes.

Even a mild reduction in estimated glomerular filtration rate (eGFR) is associated with adverse clinical outcomes, as is increased urinary protein excretion. Among subjects with normal kidney function, proteinuria is associated in a continuous fashion with an increased risk of these adverse outcomes, which is further amplified in the setting of reduced eGFR.

Although the incidence of ESRD shows signs of levelling off in most countries in the EU, perhaps in part because of increased awareness of CKD, ESRD is a major cost driver for health-care systems. Interventions targeting CKD, particularly to reduce urine protein excretion, are efficacious, cost-effective methods of improving cardiovascular and renal outcomes, especially when applied to high-risk groups (diabetics, elderly, hypertensives and presence of familial kidney diseases). Integration of these approaches within NCD programs could minimize the need for costly renal replacement therapy in the form of dialysis or transplantation. Early detection and treatment of CKD can be implemented at minimal cost and will reduce the burden of ESRD, improve outcomes of diabetes and cardiovascular disease (including hypertension), and substantially reduce morbidity and mortality from other non-communicable diseases. Prevention of CKD should thus be considered in planning and implementation of European and national NCD policy.

Early detection for diabetes

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Type 2 diabetes, the most prevalent form of the disease, is often asymptomatic in its early stages and can remain undiagnosed for many years.

The chronic hyperglycemia of diabetes is associated with long-term dysfunction, damage, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Often the patients experience a diagnose-free interval with hyperglycaemia which can last more than 10 years were the lesion for the diabetes associated complications progress.

Individuals with undiagnosed type 2 diabetes are also at significantly higher risk for stroke, coronary heart disease, and peripheral vascular disease than the nondiabetic population. They also have a greater likelihood of having dyslipidemia, hypertension, and obesity. Because early detection and prompt treatment may reduce the burden of diabetes and its complications, screening for diabetes may be appropriate under certain circumstances. Recent studies indicate that the early detection of diabetes symptoms and treatment can decrease the chance of developing the complications of diabetes.

The onset of type 1 diabetes is usually sudden and dramatic while the symptoms can often be mild or absent in people with type 2 diabetes, making this type of diabetes gradual in onset and hard to detect.

At present, type 1 diabetes cannot be prevented. The environmental triggers that are thought to generate the process that results in the destruction of the body's insulin-producing cells are still under investigation. Type 2 diabetes, however, can be prevented in many cases by maintaining a healthy weight and being physically active. Studies in China, Finland and the United States have confirmed this.

According to the latest figures released by the 3rd edition of the Policy Puzzle, 52,8 million people in Europe have diabetes (representing 8.1% of the adult population) and these figures are expected further rise to 64 million (i.e. 9.5% of the adult population by 2030). The risk of developing type 2 diabetes increases with age, obesity, and lack of physical activity. Type 2 diabetes is more common in individuals with a family history of the disease and in members of certain racial/ethnic groups. It occurs more frequently in women with prior gestational diabetes (GDM) or polycystic ovary syndrome and in individuals with hypertension, dyslipidemia, impaired glucose tolerance (IGT), or impaired fasting glucose (IFG).

The International Diabetes Federation (IDF) recommends that all people at high risk of developing type 2 diabetes be identified through opportunistic self-screening. Such high risk groups can be easily identified through a simple questionnaire to assess risk factors such as age, waist circumference, family history, cardiovascular history and gestational history.

Once identified, people at high risk of diabetes should have their plasma glucose levels measured by a health professional to detect Impaired Fasting Glucose or Impaired Glucose Tolerance, both of which indicate an increased risk of type 2 diabetes. Prevention efforts should target those at risk in order to delay or avoid the onset of type 2 diabetes.

To obtain the best glycaemic control and minimise the risks of the secondary complications, it is crucial that people with diabetes receive individualised education in all aspects of their care, from diet, medication and appropriate self-monitoring of blood glucose to life style and physical activity. Diabetes educators, doctors, trained diabetes nurses and other health care professionals all have an important role in supporting individualised therapeutic self management and education sustained throughout the lifetime of the individual.

There is substantial evidence that achieving a healthy body weight and moderate physical activity can help prevent the development of type 2 diabetes. In primary prevention there is an important role for the interdisciplinary diabetes team to help people understand their individual risks and set realistic goals to improve and maintain health. IDF recommends a goal of at least 30 minutes of daily exercise, such as brisk walking, swimming, cycling or dancing – which has been shown to reduce the risk of type 2 diabetes by 35-40%.

Based on available data, the cost burden of diabetes and its complications in Europe is significant and growing. In many countries, diabetes is responsible for more than 10% of total healthcare spending. Current estimates of the cost of diabetes are, however, considered to be underestimates – especially due to the lack of consideration for both direct and indirect costs associated with the disease and its extremely expensive complications, such as stroke, myocardial infarction, amputation, blindness and end-stage kidney disease.

The absence of reliable data remains a barrier to assessing the true cost burden of diabetes on individuals, healthcare systems and economies in Europe. It also prevents governments from assessing the impact and effectiveness of national diabetes policies and programmes.

Early detection of liver disease

Depending on the stage at which it is diagnosed, liver disease covers

- Fatty liver - a range of conditions where there is a build-up of fat in the liver cells. It is caused by certain chemical compounds (particularly alcohol) and by nutritional and endocrine disorders.
- Hepatitis - the most common liver disease which causes inflammation of the liver. It can occur in both viral (e.g. Hepatitis A, B, C, D, E) and non-viral forms (e.g. alcoholic and autoimmune hepatitis) and may result in an acute or chronic condition.
- Cirrhosis – the excessive development of scar tissue within the liver which can lead to complete liver failure. This is the result of long-term, continuous damage to the organ.
- Liver cancer - may occur as both primary (cancer that starts in the liver) and secondary (cancer that first develops elsewhere in the body and then spreads to the liver)
- Genetic diseases – includes conditions such as Haemochromatosis, Wilson’s Disease and Glibert’s Syndrome. These diseases are rare (with a prevalence of less than 50 per 100,000 people).

In addition to viral hepatitis, obesity, diabetes and excessive alcohol intake are the main causes for liver disease. Regardless of the cause liver disease is estimated to affect 6% of the EU's population (approx. 29 million people) and is reported to be the EU's 5th biggest killer, accounting for at least one in six deaths. Despite such alarming statistics, liver disease is still widely neglected by the EU.

Severe diseases, such as liver cirrhosis, are growing at an alarming rate and strike younger people than in the past. For instance, in England there has been a tenfold increase among women aged 35-44 dying from this disease over the last 30 years. (Institute of Alcohol Studies UK ‘Alcohol Consumption and Harm in the UK and EU’).

A national study carried out in Portugal showed that 3.8% of deaths were attributable to alcohol. Considering the sum of deaths and disability, liver disease represented the main source of the burden attributable to alcohol. The cost of illness incurred amounted to €95.1 millions are attributable to alcohol-related disease admissions (liver diseases, cancer, traffic accidents, and external causes) while the ambulatory costs of alcohol-related diseases were estimated in €95.9 million, totalling €191.0 million direct costs, representing 0.13% of Gross Domestic Product and 1.25% of total national health expenditures. (The Burden of Disease and the Cost of Illness Attributable to Alcohol Drinking—Results of a National Study, Helena Cortez-Pinto, Miguel Gouveia, Luís Dos Santos Pinheiro, João Costa, Margarida Borges, António Vaz Carneiro, 2010).

Screening and early interventions in chronic diseases

Cancer screening

From the point of view of public health, the following cancer prevention programmes would qualify as examples of successful secondary prevention measures:

- 1) Breast cancer: Screening mammography:
 - a. Bi-annual mammography screening programmes for the early detection and raising of cure rates for breast cancer in women between 50-70 years of age
 - b. Tailor-made screening for women at familial cancer risk
- 2) Mass Screening for Cervical Cancer and HPV in sexually active young females (>25 years) for the early detection of and raising cure rates in cervical cancer.
- 3) Large bowel cancer:
 - a. Mass Screening with iFOB-Testing for the early detection and raising of cure-rates
 - b. Screening in high risk families: guidelines for active surveillance have been developed; patients with a potential family history are nowadays identified by special search of histological specimens (MSI?)
 - c. Active surveillance of patients with colo-rectal cancer.

Spirometry

Spirometry is the most reproducible and objective measurement of airflow limitation available. Spirometry enables the primary care health professional to make an objective measurement of airflow limitation and the degree to which it is reversible, and is an important tool for accurate diagnosis and effective management of chronic respiratory diseases including asthma and COPD. However, spirometry remains underused in primary care. Barriers to performing spirometry in community settings include lack of access to calibrated spirometers, inadequate training in performing spirometry, price of conventional spirometers, lack of quality-control systems to ensure accurate results, and inadequate interpretation skills among health professionals performing the test. Despite these barriers, early detection of COPD appears to be feasible through offering spirometry to adults with tobacco/occupational exposure and at least 1 respiratory symptom.¹

Having a simple screening tool adapted to the primary care setting that would detect diseases in early stages would reduce the number of patient referrals. This would result in fewer later stage cases of disease and consequently, better quality of life for patients, and help savings for the healthcare burden.

¹ Ulrik CS et al. Early detection of COPD in general practice. [Int J Chron Obstruct Pulmon Dis](#). 2011;6:123-7.

Smoking cessation

Smoking cessation is one of the one of the most important ways to improve the prognosis of patients with respiratory disease.² More effort should be put into cessation programmes if there is any prospect of preventing the predicted rise in chronic respiratory disease.³ These programmes are cheap and highly cost-effective especially in the context of chronic respiratory diseases.⁴ The recent Conference of the Parties (COP4) to the WHO FCTC decided to issue excellent guidelines on how the parties could encourage smoking cessation, ranging from making the recording of tobacco use in medical notes mandatory to the development and dissemination of comprehensive guidelines and addressing tobacco use by healthcare workers and others involved in smoking cessation.

As a result of the very large number of patients that will be suffering from chronic respiratory diseases such as COPD, more diagnosis and management is needed in general practice and among general physicians. An internal “leadership” survey was conducted by the European Respiratory Society (ERS) in 2009–2010 among its members⁵. An overwhelming majority of those interviewed (93%) believe it is their responsibility to advise their patients about smoking cessation, yet just 39% have had formal training on smoking cessation approaches. Gaps such as these will need to be addressed in future also at the level of post-graduate medical education.

Early diagnosis of diabetes

An early diagnosis of hyperglycemia and diabetes mellitus is the key for optimal chronic care management and crucial for the prevention of diabetes associated complications. Patients with diabetes mellitus experience diagnose free intervals from sometimes more than 10 years and during this period the lesions for the late complications are generated. An early diagnosis can reduce these diagnose-free intervals and by this the most effective procedure for the prevention of late complications. An adequate diabetes diagnosis can be performed in fasting conditions, by measuring fasting glycaemia as basis and optimal measuring also 2-h glucose value with an oral glucose tolerance test or postmeal glucose.

Due to the high number of people with undiagnosed diabetes, a high number of diabetes diagnosis is missed if the focus is only onto clinical diagnosis. Therefore screening procedures by using population adjusted risk scores are recommended and in those, where an increased diabetes risk is identified as a second step, a clinical test should be performed. Furthermore, American guidelines as well as a growing number of guidelines worldwide recommend using the HbA1c for diagnosis, which presents some advantages, but cannot replace the quality of a clinical diagnosis.

Due to the fast growing number of patients with diabetes mellitus and the number of undiagnosed patients, actions for adequate screening and early diagnosis of diabetes are needed. They can be an efficient tool to reduce the burden of associated complications. Structured and standardised screening programs by using a 2-step-procedure and including a patient self assessment by risk scores followed by

²Tønnesen P et al. Smoking cessation in patients with respiratory diseases: a high priority, integral component of therapy. *Eur Respir J* 2007, 29(2):390-417.

³Oberg M, Jaakkola MS, Woodward A, et al. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *Lancet* 2011; **377**: 139–146.

⁴Hoogendoorn M, Feenstra TL, Hoogenveen RT, et al. Long-term effectiveness and cost-effectiveness of smoking cessation interventions in patients with COPD. *Thorax* 2010; 65: 711–718.

⁵Z. Kabir, B. Ward and L. Clancy on behalf of the Tobacco Control Committee of the European Respiratory Society Attitudes, training and smoking profile of European Respiratory Society members, *ERJ*, volume 38, pg-225-227

a clinical test in high risk subjects are recommended. Criteria for the definition of diabetes diagnosis have to be clearly communicated. The use of oral glucose tolerance test is a gold standard, but can be replaced to increase efficiency and efficacy of the screening by the measurement of postmeal glucose, HbA1c and fasting glycaemia. Programs for screening of undiagnosed diabetes should be implemented in regular clinical and ambulatory care and should be offered to persons above the age of 35 years, if additional risk factors are present and above 45 years of age continuously.

Early diagnosis of Liver Disease

With the increasing prevalence of liver cirrhosis and liver cancer in Europe, caused by excessive and chronic alcohol consumption it is important to put forward evidence-based solutions that will contribute to tackling the problem. Harmful alcohol consumption is now recognised as the 3rd largest cause of early death and illness in the EU, just behind tobacco and high blood pressure.⁶

The following suggested interventions to ensure a reduction in harmful alcohol and, as a result, in liver disease, are recommended:

- Active and effective surveillance system to monitor the prevalence of alcohol-related liver disease and mortality.
- High profile, sustained health information and education campaigns to convey the importance of a healthy liver and the dangers of excessive alcohol consumption, particularly in school and university environments.
- Professional education and training campaigns targeted at primary and secondary care medical, nursing and associated professionals, as well as social workers and teachers to promote the early recognition of alcohol misuse.
- Introduction of health warnings on all alcoholic beverages, as is already the case in some Member States
- Brief interventions to assess the extent of alcohol consumption and, if cause for concern, the monitoring and follow up as well as

Sedentary lifestyles and diets high in fat and sugar are leading to a high prevalence of obesity, which in turn increases the risk of developing a form of liver disease called 'Non-alcoholic fatty liver disease' (NAFLD).

NAFLD, which is estimated to affect 10-24% of the world's population, includes a range of liver diseases from the most common, 'fatty liver' (accumulation of fat in the liver), to 'Non-alcoholic steatohepatitis' (NASH, fat in the liver causing liver inflammation), to 'cirrhosis' (irreversible, advanced scarring of the liver as a result of chronic inflammation of the liver).

Doctors and public health officials project that obesity-related liver diseases (NAFLD, cirrhosis and liver cancer) will become the leading cause of liver failure and liver transplantation in the near future.

⁶ http://ec.europa.eu/health/ph_determinants/life_style/alcohol_factsheet_en.pdf

The European Association for the Study of the Liver (EASL) recommends that the EU:

- Recognise obesity as a leading cause of chronic liver disease.
- Promote data gathering through the monitoring, reporting and surveillance of obesity trends as well as its correlation to liver disease incidence in order to improve our knowledge on these subjects
- Strengthen policy initiatives in major chronic diseases which are linked to obesity.
- Further develop soft-law measures and tools that are capable of translating the ambitions stated by the institutions and the Obesity Platform into monitored and measurable results at the EU and national level.
- Raise public awareness on the correlation between ill-nutrition, obesity and liver disease amongst European citizens. In this respect, it should avoid ad hoc events and ensure proper follow-up and coherent coordination of campaigns at national level.