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FOR ACTION AGAINST CANCER

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Cancer prevention in the 2020s

Work Package 5, task 5.3 Cancer prevention and health promotion: Conference report

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Abbreviations

EU	European Union
iPAAC	Innovative Partnership for Action Against Cancer
EPAAC	European Partnership for Action Against Cancer
CANCON	Cancer Control Joint Action
ECAC	European Code Against Cancer
IARC	International Agency for Research on Cancer
WP	Work Package
COVID-19	Coronavirus disease 2019
ECL	Association of European Cancer Leagues
EU4Health	The fourth EU Health programme 2021–2027
HiAP	Health in All Policies
WHO	World Health Organization
NCDs	Noncommunicable diseases
SDGs	Sustainable development goals
UN	United Nations
FCTC	Framework Convention on Tobacco Control
LMICs	Lower middle-income countries
HPV	Human Papillomavirus
MS	Member state
UHC	Universal healthcare
UK	United Kingdom
DG SANTE	The Directorate-General for Health and Food Safety
CSF	Cancer Society of Finland
GNV	Gender-neutral vaccination
HIA	Health Impact Assessment
GDPR	General Data Protection Regulation
NGO	Non-Governmental Organisation
HL	Health Literacy
CIS	Cancer Information Service
UV	Ultraviolet (radiation)
NNR	Nordic Nutrition Recommendations

Executive summary

European countries have a lot of potential to advance cancer prevention and health promotion. Prevention is the most cost-effective long-term strategy for cancer control. About 4 in 10 cancer cases can be preventable. Tobacco smoking is the most preventable cause of cancer. After tobacco, alcohol is one of the leading risk factors of premature mortality. In addition to alcohol, excessive body weight, lack of physical activity and unhealthy diet (low fibre, high processed meat) are important contributors to the cancer burden in Europe.

The European Union has emphasised cancer prevention in its launch and preparation for implementing Europe's Beating Cancer Plan and Cancer Mission 2020–2021. Prevention and health promotion should span the whole cancer control continuum. For instance, quitting smoking and physical exercise can improve the survival of cancer patients.

Here, we mainly report on the results of collaborative meetings to find common ground for future actions. The focus is on primary prevention. The two cross-cutting goals were equity and innovation. The results are based on co-creational events held in 2020–2021 with hundreds participants online.

We arranged two online rounds. The first meeting, held in April 2020, concentrated on the European Code Against Cancer (ECAC). One of the tasks of WP5 was to prepare the 5th edition of the Code. The second round was held in February 2021. Its agenda was broadly focused cancer prevention and health promotion. The results of these events are summarised in this report.

Health services work predominantly with individuals with high risk. Major public health potential lies in reducing cancer risks through policies and broad health promotion. These risks are common to all non-communicable diseases. Reducing these diseases is also important for environmental sustainability.

The main conclusions include creating strong supporting structures and public health policies for cancer prevention; urgent action for evidence-based interventions; cross-sectional, collaborative efforts and capacity building for working across sectors. We emphasise cancer research that includes the whole cancer control continuum. Systematic reporting to reduce inequalities among populations, regions and countries is necessary.

The most important message of this report is clear: Decisive collaborative actions without delays are crucial for public health and for a healthy Europe.

1 Introduction

Satu Lipponen, Pekka Jousilahti, Ahti Anttila, Kaarina Tamminiemi

This conference report Cancer prevention in the 2020s is the last of three reports initiated by the Joint Action Innovative Partnership for Action Against Cancer iPAAC (2014–2021), Work Package 5. iPAAC is co-funded by the European Commission from the Third Health Programme 2014–2020 building upon the outcomes of earlier two Joint Actions, EPAAC and CANCON.

In 2020, 2.7 million people in the European Union (EU) were diagnosed with the disease, and 1.3 million people lost their lives to cancer. Unless there is decisive action, lives lost to cancer in the EU are estimated to increase by a quarter by 2035, making it the leading cause of death in the EU. The overall economic impact of cancer in Europe is estimated to exceed €100 billion annually. Cancer prevention has an important role in comprehensive cancer control. It is estimated that in Europe 40% of cancers are preventable. This makes prevention the most cost-efficient long-term cancer control strategy[1].

The book Boosting Innovation and Cooperation in European Cancer Control[2] summarised the main findings of EPAAC. In the area of health promotion and cancer prevention it mentions the objective to engage European, national and local policymakers, cancer leagues and other dedicated partners in the joint effort to raise cancer prevention awareness and to reduce exposure to cancer risk factors. The centrepiece of this area of work was to relaunch the European Week Against Cancer and to convey the health promotion messages from the European Code Against Cancer, two well-known preventive outcomes from the first action plan of the Europe Against Cancer programme (1987–1989).

EPAAC also explored how national cancer control programmes should be planned and implemented. In this respect the European Guide for Quality Cancer Control Programmes[3] is interesting because it targeted policy-makers. At national level, at least, strategies tobacco and alcohol control and promotion of healthy diet and physical activity should exist. Community actions supporting health and effective health systems with indicators for monitoring implementation are included in the prevention chapter. The EPAAC joint action delivered media training, open forum conferences, e-prevention toolkits and youth competitions.

The Joint Action CANCON (2014–2017) introduced comprehensive recommendations of reducing inequalities in cancer control[4] and survivorship care plan with some aspects to secondary prevention[5]. La Sapienza university research group from Italy produced a policy paper on impact assessment of cancer prevention outcomes[6].

Prevention tasks in iPAAC

Overall, the Work Package 5 comprises three tasks: early detection, cancer screening and cancer prevention and health promotion. Innovation and reducing inequalities are transversal strategic tasks. The thematic conference reports[7] are published on the Joint Action's website www.ipaac.eu. The Work Package 5 is coordinated by Finland with the Finnish Institute of Health and Welfare and the Cancer Society of Finland as its the affiliated entity. The reports are results of a broad collaborative effort across Europe.

Task 5.3. prevention includes the objectives:

- to monitor and review the European Code Against Cancer (ECAC) 4th edition in the long-term perspective, focusing on policy tools and guidance given to general public
- to analyse how governmental policies in Member States foster successful cancer prevention
- make the contribution to the iPAAC deliverable, A Roadmap on Implementation and Sustainability of Cancer Control Actions

The scope of work includes both primary and secondary prevention with the **main focus on primary prevention**. During the Joint Action, the WP5 has introduced a plan for monitoring and developing the **ECAC implementation and future update needs**. The ECAC is an initiative of the European Commission. The Code's scientific justification is developed by the International Agency for Research on Cancer (IARC) of the World Health Organization WHO, a contracted partner of iPAAC WP5.

Methodology and strategic goals

The methodology of the work within WP5 is **co-creation** looking for innovations, thus improving cancer prevention and health promotion. Co-creation means facilitating discussion and dialogue, thus increasing engagement across participants. With using co-creation we have sought insights and looked for especially **social innovation.** It has been defined as everyday inventions[9].

During the task 5.3. our plans for co-creational events had to be changed due to COVID-19 pandemic that severely restricted meetings in Europe. The two-day meeting on the Cancer Code in Lyon in April 2020 had to be cancelled and changed into online sessions. The time for discussions was short and all contacts were virtual, which had an effect of group work of the conference. Instead of one conference we organised two meetings. The Lyon meeting concentrated entirely on the ECAC. Its results are presented in this report in chapters 3 and 4. The second online meeting 22 February 2021 did group reporting in 12 areas of prevention and health promotion, including modifiable risk factors, environment, implementation and research. The results are reported in chapter 5.

The Recommendations for the Sustainability and Monitoring of the European Code Against Cancer (ECAC) for the coming years are included in this report.

WP 5 has two strategic and transversal goals integrated into its work. The strategic transversal themes are described below:

Strategic transversal theme of cancer prevention and health promotion: innovation		
Definition or scope	Method	Outcome
Everyday inventions, focus on social innovations (Taipale 2013)	Co-creational meetings	Systematic, practical reporting

Strategic transversal theme of cancer prevention and health promotion: reducing inequalities		
Definition or scope	Method	Outcome
Social inequalities in cancer refer to health inequalities that span the full cancer continuum and involve social inequalities in the prevention, incidence, prevalence, detection and treatment, survival, mortality, and burden of cancer and other cancer-related health conditions and behaviours (CANCON Policy Paper)	Inequalities theme systemically reviewed in all WP5 tasks	Planning and recommendations to reduce inequality, for instance a model for European-wide contest to identify good practices from Member States

The iPAAC work has been a collaboration of 24 associated partners and with their affiliated entities, including then a total of 44 partners of iPAAC consortium, WP5 collaborating partners, International Agency for Research on Cancer IARC and Association of European Cancer Leagues ECL who has been central in organising co-creational meetings.

During iPAAC Joint Action the European Union has committed to beat cancer through the Europe's Beating Cancer Plan[11] and the Cancer Mission Europe[12]. These two documents and the policy development in the European Union are also reflected in the content of this report.

Europe urgently needs a renewed commitment to cancer prevention. Europe's Beating Cancer Plan is a key pillar of a stronger European Health Union and a more secure, better prepared and more resilient EU. Furthermore, the new, ambitious EU4Health programme and other EU instruments will provide substantial financial support with €4 billion to Member States in their efforts to make their health systems more robust and more able to address cancer.

The Cancer Plan is based on a Health in All Policies (HiAP) approach. Even though individual behaviour defines most of the cancer risk, the whole society support is needed to make the healthy choices easy and possible.

Cooperation will also be pursued internationally within the established cooperation framework with the World Health Organization (WHO) and the long-standing collaboration with its International Agency for Research on Cancer (IARC). The known cancer risk factors are often shared with other noncommunicable diseases (NCD). By preventing cancer, we prevent also other NCDs. The WHO has set an international target to reduce NCD mortality by 25% by 2025 from the 2010 level[13]. Furthermore, Sustainable Development Goals (SDG) indicates (indicator 3.4) one third reduction in premature NCD mortality by 2030. To achieve these goals, effective cancer prevention is essential.

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2 Sustainable development for global health

Pekka Puska

Global health has changed much during the last few decades. In spite of the recent COVID-19 pandemic and other pandemics that rightly draw public attention, global public health is increasingly dependent on a few major chronic noncommunicable diseases. Of these cardiovascular diseases and cancer are by far the most common and responsible for more than 2/3 of all deaths in the world. This concerns also Europe where cancer alone is annually responsible for some 1,9 million deaths and nearly four million new cases (Wild et al 2019).

Intensive medical research has identified many causal risk factors for cancer that give a firm basis for prevention. Although there are many different types of cancer with different risk factors, several of the behavioural risk factors are common, and also common with other non-communicable diseases. These findings have led to many national preventive programmes. Since it is a question of global epidemics with global determinants, international responses and collaboration are needed and also take place.

Since the adoption of its basic 2000 Global Strategy on Prevention and Control of Noncommunicable diseases, the WHO has developed global action plans with concrete targets (WHO 2013). These targets concern especially diet, tobacco, physical activity and alcohol. The United Nations has also produced political declarations to promote global action, since the noncommunicable disease burden does not harm only health of people, but also hampers social and economic development, especially in low and middle income countries.

As the strong scientific evidence on risk factors and on the potential of prevention has grown, also numerous national and international evidence-based guidelines and strategies have been launched, like the WHO strategies and action plans. Many of them have concerned specific diseases, like the European Code against Cancer (Schüz et al 2019). But with the understanding of common behavioural risk factors many of the guidelines and strategies deal more generally with integrated prevention of noncommunicable diseases.

While health services understandably work predominantly with individuals with high risk, the great public health potential lies in population-based prevention that promotes healthier risk reducing lifestyles in the population through policies and broad health promotion. This is clearly the most cost-effective way to promote public health. These efforts for healthier lifestyles also relate to the global goals for sustainable development, outlined in the UN declaration of 2015 for sustainable developments (UN 2015).

The work for desired goals calls for many supportive developments. Different versions of the so called Essential Public Health Functions identify the prerequisites of successful national work (WHO 2018). These include especially strong organisational infrastructure with skilled

workforce. Also, professional institutional support is needed to assess the health problems and to advice individuals, communities and governments (Koplan et al 2007). It should be noted that the control of both noncommunicable and communicable diseases has many common features and rest on strong public health infrastructure.

Since the prevention of noncommunicable diseases deals with influencing health related lifestyles and environment, the task of prevention goes far beyond health services. The required actions concern many sectors of the society and related to many social determinants. This means that we need a “whole of government” approach and “health in all policies” (Leppo et al 2013).

Commercial environments with increasingly global backgrounds and strong economic interests influence our lifestyles more and more. Thus international collaboration is needed for national health policies to counteract unhealthy commercial pressures.

Tobacco is a good example. For decades the global tobacco epidemic grew to millions of annual deaths, fueled by the very strong marketing and lobbying to the multinational tobacco industry. Only gradually the global counteraction grew, culminating in the WHO Framework Convention on Tobacco Control (FCTC) as a pioneering international legal instrument (FCTC 2003). This convention has now shown its power in starting to reverse the global tobacco use (WHO/FCTC 2016).

While the increasing number of evidence-based strategies and programmes identify better and better the needed actions, the main problem lies now in their implementation. In other words, the problem is not what to do but how to do it, i.e. the implementation gap. This gap is caused by many reasons: inertia in change, slow cultural change, economic and practical problems, individual addictions, commercial marketing and lobbying etc.

Within countries, the actions to overcome the implementation gap to strengthen prevention calls for better understanding of the world of political decision making. Health strategies, however good they are, do not alone do the work. Obviously clear, concise, and practical recommendations to both political decision makers and the private sector are needed and are useful. But the real support for the needed preventive decisions, in the complex world of politics and business, comes from public pressure, i.e. the intentions and changes among the population. Old wisdoms are that for the politicians “the voter is the boss” and for the private sector “the consumer is the king”, although wise politicians and industry may to certain extent lead the way. Thus the mobilisation of the population for support of preventive work and policies is crucial for success (Puska 2020).

In summary, the work to promote public health through prevention of cancer and other noncommunicable diseases can be based only on good science and on strategies and programmes that are based on this evidence and that link to broader actions in different sectors, to social determinants of health, to sustainable developments and to collaborative

international efforts. But it should be remembered that strategies on paper do not do the work. Their implementation calls for hard work and often difficult political decisions. The most effective preventive policies are often the hardest, but the public health community should remember the old saying “no struggle – no progress”.

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3 Reducing the cancer burden in Europe – what needs to be done now

Veronique Chajes, Isabelle Soerjomataram, Freddie Bray, Elisabete Weiderpass

3.1 Introduction

The most recent global cancer estimates from the International Agency for Research on Cancer (IARC) indicate that there were over 19 million new cases of cancer and almost 10 million cancer deaths globally in 2020 (https://gco.iarc.fr/). Among the most striking developments is that female breast cancer has now overtaken lung cancer as the leading cause of cancer morbidity worldwide, with the number of new cancer cases of breast cancer close to 2.3 million in 2020[1]. Breast cancer now accounts for 11.7% of all new cancer diagnoses in both sexes (one in 8 cancers globally are breast cancers), and 24.5% of all cancer cases in women (one in four cancers in women are breast cancers). In terms of cancer incidence worldwide, lung, colorectal, prostate, and stomach cancer ranked second to fifth. Lung cancer is the leading cause of cancer death globally (18.0% of the total cancer deaths), followed by colorectal cancer, liver cancer, and stomach cancer, with female breast cancer in fifth (Figure 1).

By 2040, the number of new cases of cancer is predicted to nearly double, with the greatest increases expected in low and middle-income countries (LMICs), where more than two-thirds of the world's cancers will occur. The situation is particularly alarming in Africa, where a 90% increase in the number of new cases and cancer deaths is expected by 2040 (Figure 2). The estimated cancer burden shown in Figure 2 accounts only for demographic changes, but in reality, the key risk factors for cancer and their changing prevalence will materially affect future cancer burden. Today the epidemiologic transition suggests a change in the pattern of cancers from those linked predominantly to infection towards those linked to behavioural and environmental factors. The importance of the latter factors is already highly important in transitioned countries i.e., those with high or very levels of the high development index.

Cancer is also a growing challenge for Europe. The number of new cancer cases in Europe will increase from 4.4 million new cancer cases in 2020 to 5.3 million by 2040, and the number of cancer-related premature deaths is predicted to rise from 1.95 to 2.52 million deaths by 2040. More than 100 million new cancer cases will be cumulatively diagnosed in Europe over the next 22 years. This is not a worst case scenario, rather it is a realistic and somewhat conservative projection.

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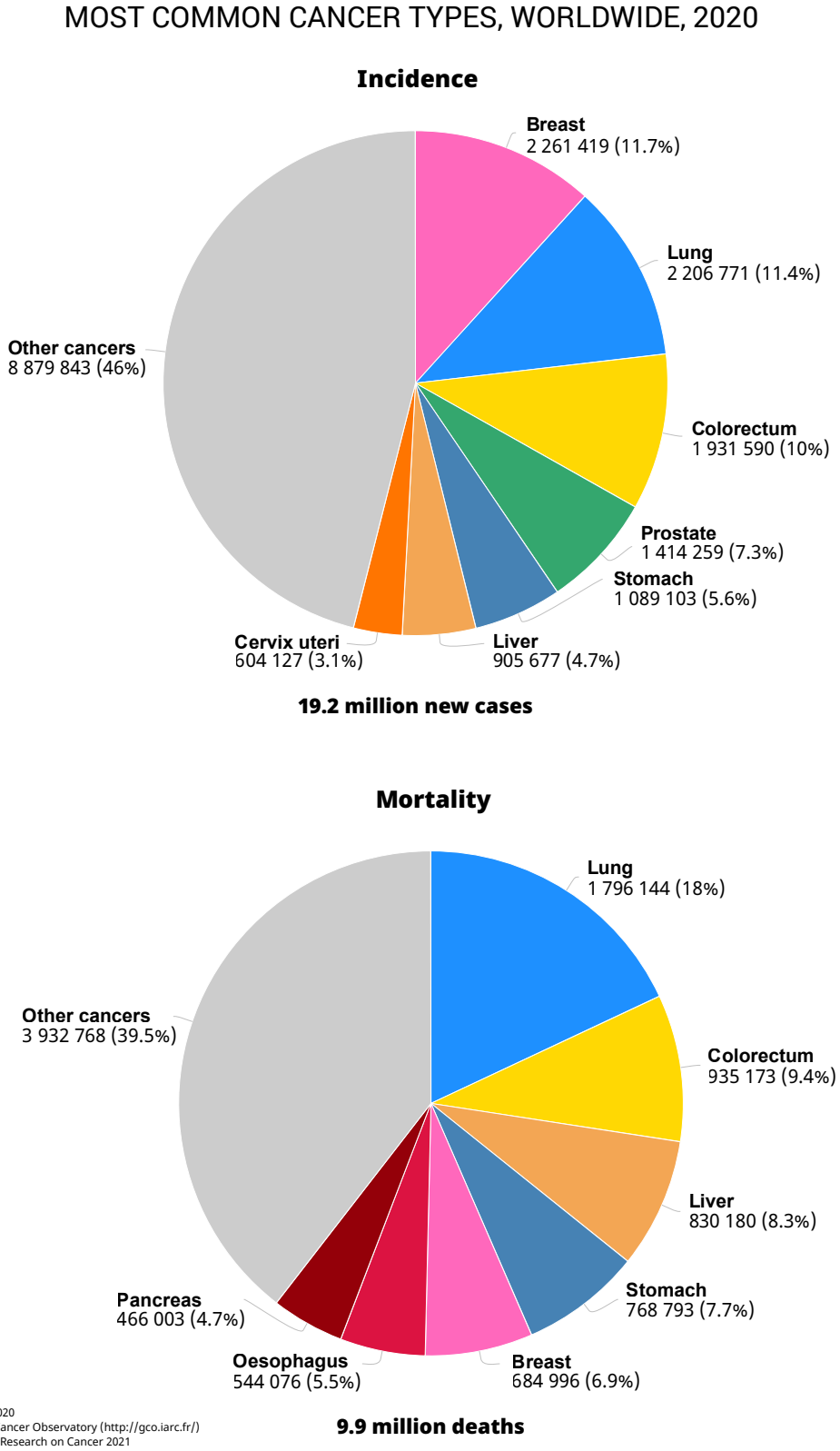
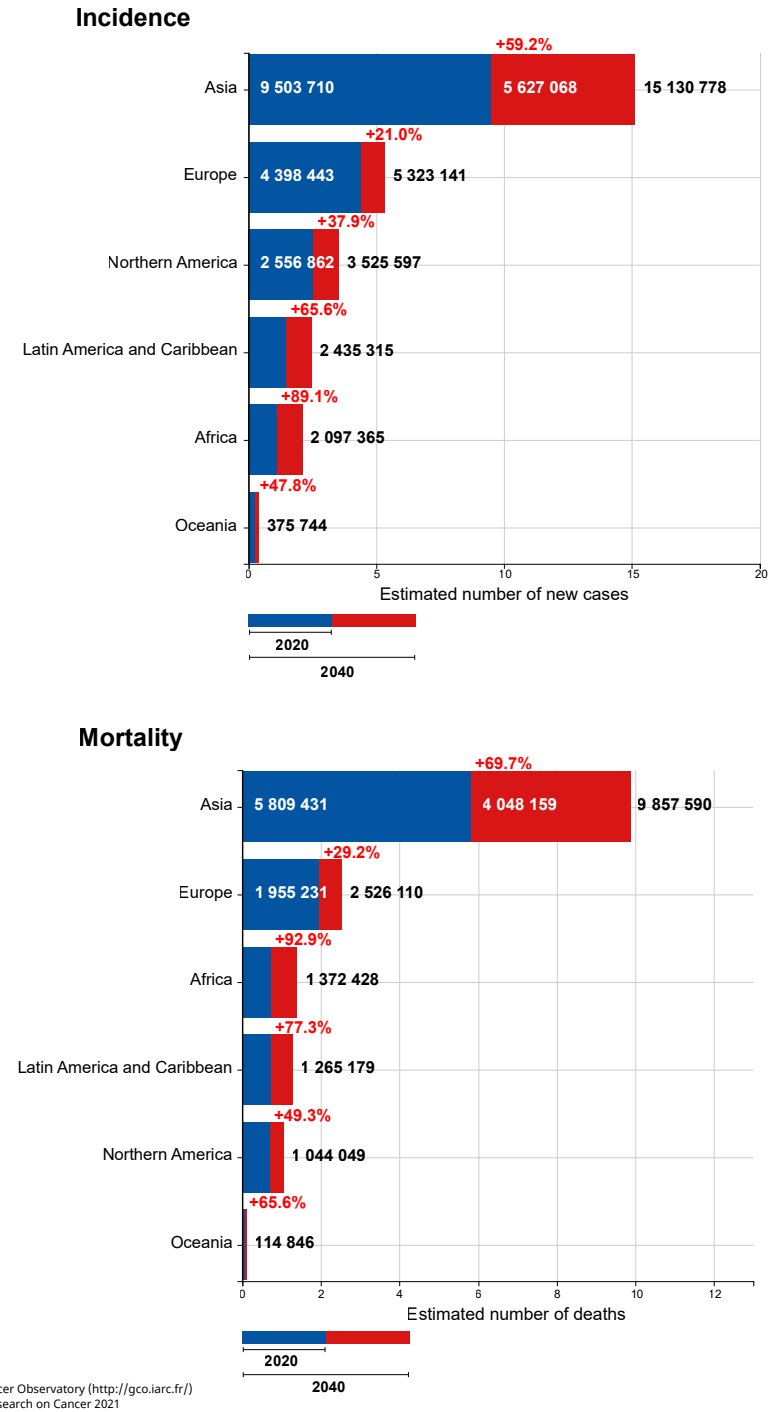


Figure 1: Most common cancer types in 2020, Incidence (up) and Mortality (below)

THE NEED FOR CANCER PREVENTION
TO AVERT THE PROJECTED CANCER BURDEN 2020–2040



Data source:GLOBOCAN 2020
Graph production: Global Cancer Observatory (http://gco.iarc.fr/)

Figure 2: Estimated cancer cases (left) and deaths (right) by world region in 2020 (blue) and in 2040 (red).

3.2 Role of primary prevention

Prevention is the most cost-effective long-term strategy for cancer control. Indeed, about 4 in 10 cancer cases are preventable. Behavioural factors, such as tobacco smoking, heavy alcohol consumption, unhealthy diets, and excess body weight, have long been recognised as important determinants of cancer risk, and their reduction or elimination, where applicable, can reduce the risks of many types of common cancer. Cancers related to viral infections such as the hepatitis B virus and human papilloma virus (HPV) can be prevented by vaccination of neonates and HPV-naïve girls, respectively.

IARC research has shown that 41% of all new cancers diagnosed in France in 2015 (or 142,000 new cancer cases out of 346,000) could be attributed to smoking (20%), alcohol consumption (8%), diet (5%) and excess weight (5%). Infections and occupational exposures each contributed to an additional 4% of the new cancer cases in 2015 (Figure 3).[2] Studies from other high income countries such as the United Kingdom, Germany, Canada and Australia have shown that a similar proportion of cancers are entirely preventable [3,4].

Tobacco smoking remains the most preventable cause of cancer. Yet, although effective interventions exist through the WHO Framework Convention of Tobacco Control, the implementation of these policies in countries varied widely. A recent IARC study has shown that an estimated 1.7 million lung cancer cases (21.2%) could

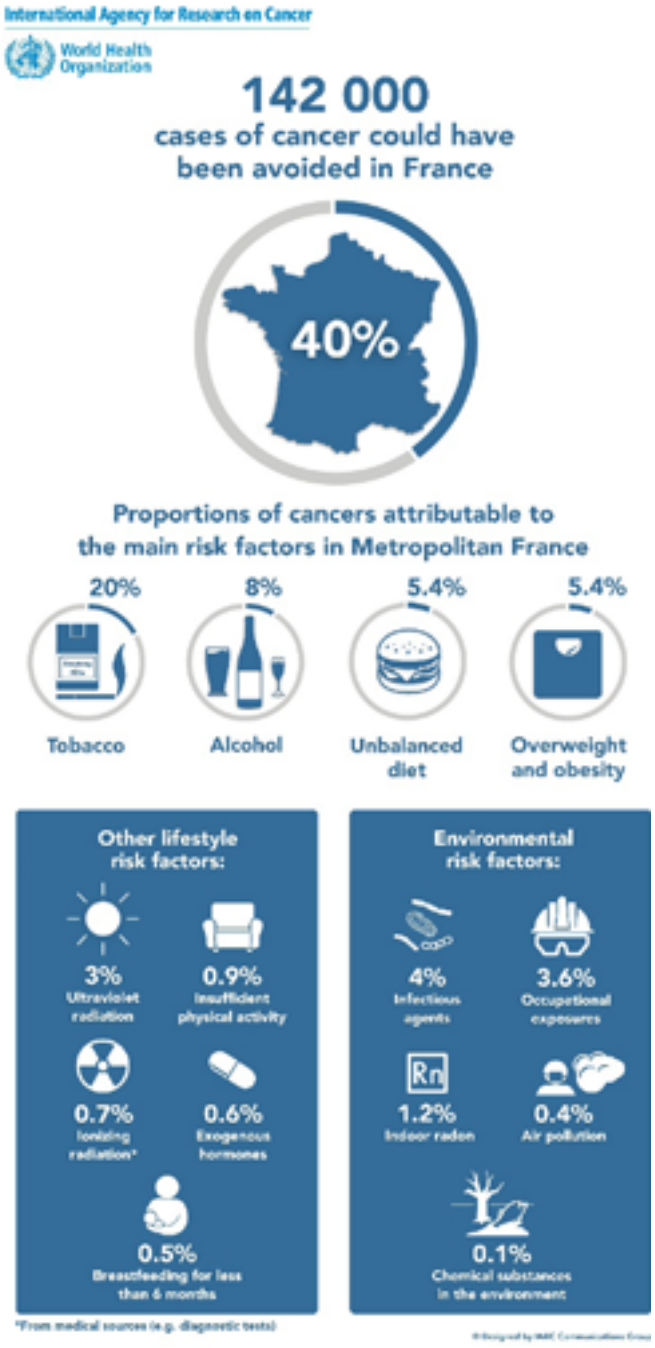


Figure 3: Proportions of cancers attributable to lifestyle and environmental risk factors in France in 2015.

be prevented in Europe over a 20-year period if the highest-level implementation of evidence-based tobacco control policies were to be implemented in countries.[5]

After tobacco, alcohol drinking is a leading risk factor of premature mortality, globally, and particularly in the WHO European region, where about 180 000 new cancer cases and almost 92 000 cancer deaths were caused by alcohol in 2018 (WHO/Europe factsheet – Alcohol and cancer in the WHO region, Figure 4).[6] In spite of this, awareness of alcohol as a risk factor for cancer is generally low. These findings point to the importance of reducing the consumption of alcohol as a key priority in Europe, including the scale-up of the development and implementation of actions in the field of consumer information, taxation and health warnings. In addition to alcohol, high body weight, lack of physical activity and unhealthy eating (low fibre, high processed meat) are important contributors to the burden of cancer especially in Europe. A comprehensive package of upstream and downstream interventions is needed to reduce their prevalence across different population subgroups.

Infectious pathogens are important and modifiable causes of cancer, considering that 2·2 million infection-attributable cancer cases were diagnosed worldwide in 2018, representing 13% of all cancer cases. Primary causes were *Helicobacter pylori* (810 000 cases), HPV (690 000 cases), hepatitis B virus (360 000 cases) and hepatitis C virus (160 000 cases).[7] In Europe, the highest burden of infection-attributable cancer was principally driven by HPV in central and eastern Europe (age-standardised incidence rate 10.9 cases per 100 000 person-years), northern Europe (8.0 cases per 100 000 person-years) and Western Europe (7.2 cases per 100 000 person-years), and by *Helicobacter pylori* in central and eastern Europe (9.2 cases per 100 000 person-years) and southern Europe (6.2 cases per 100 000 person-years).

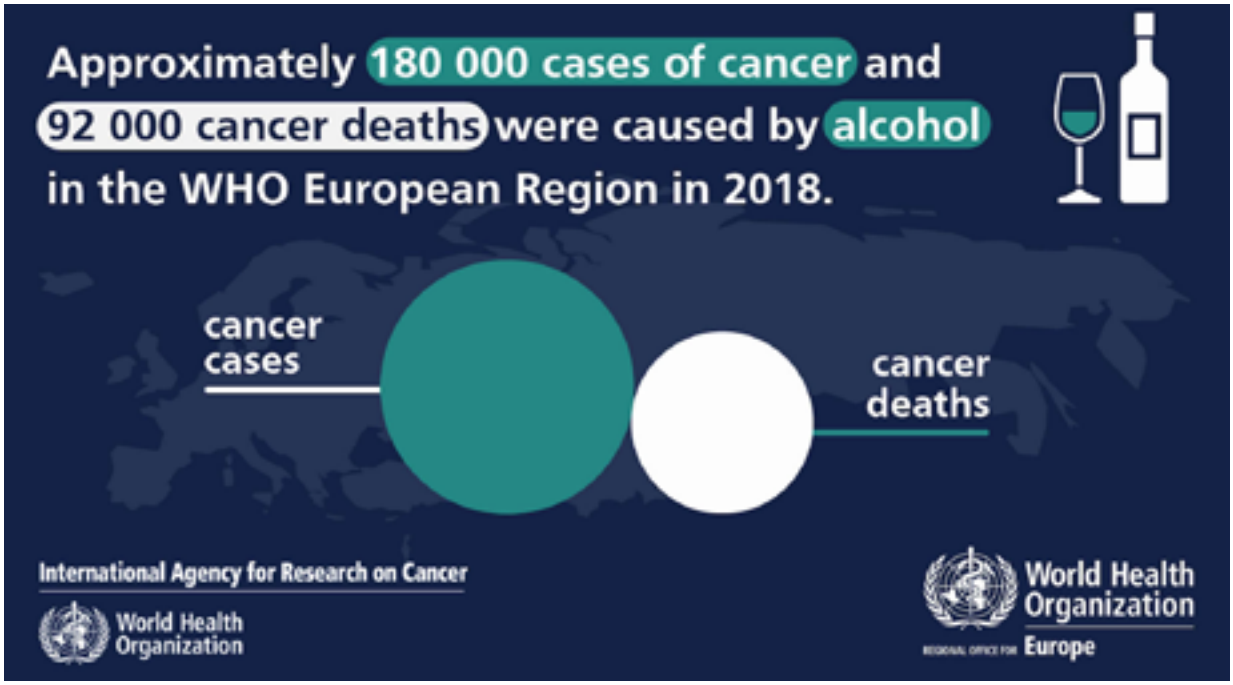


Figure 4: The contribution of alcohol drinking to the cancer burden in WHO EURO region, 2018

These findings highlight the need to extend routine vaccination against HPV to eliminate cervical cancer as a major public health problem, against hepatitis B, and to ensure needed access to treatments to prevent cancers associated with the Hepatitis C virus and *Helicobacter pylori* infections. A new IARC study has reported that three-quarters of all expected cervical cancer cases among women born between 2005 and 2014 worldwide would be prevented through HPV vaccination; 80% would be prevented in Europe.[8]

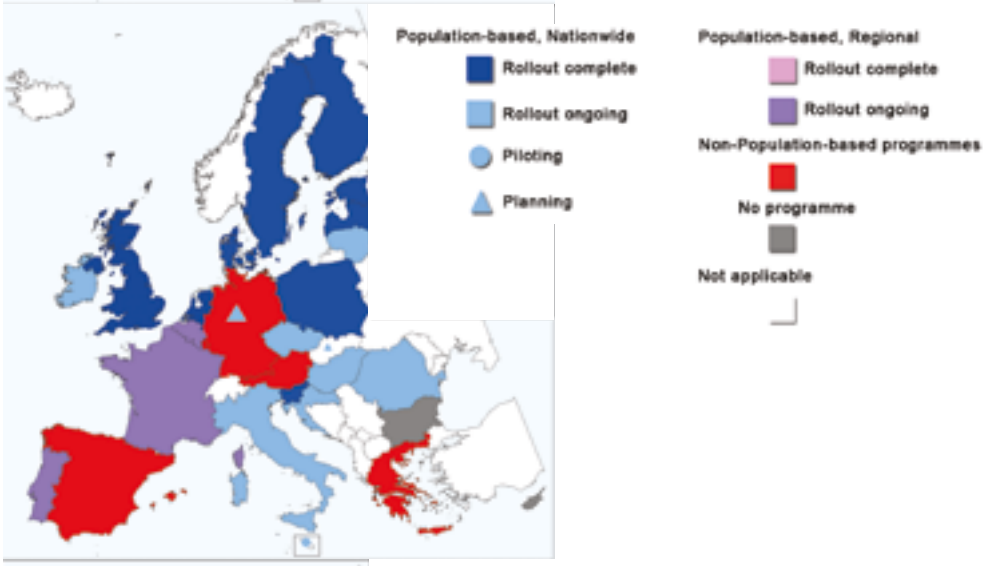
Finally, environmental factors within occupational settings, but also in daily living e.g. sun exposure or air pollution, continue to contribute to the burden of cancers. Although its reported contribution seems to be relatively moderate, policy plays an important role and is remarkably effective in reducing population-wide exposure to such carcinogens. There remain major gaps and research challenges in this area that need to be addressed, including the attainment of valid measurements of population exposure, the sparsity of etiological studies for certain risk factors, and quantifying the long latency time between exposure to cancer development.

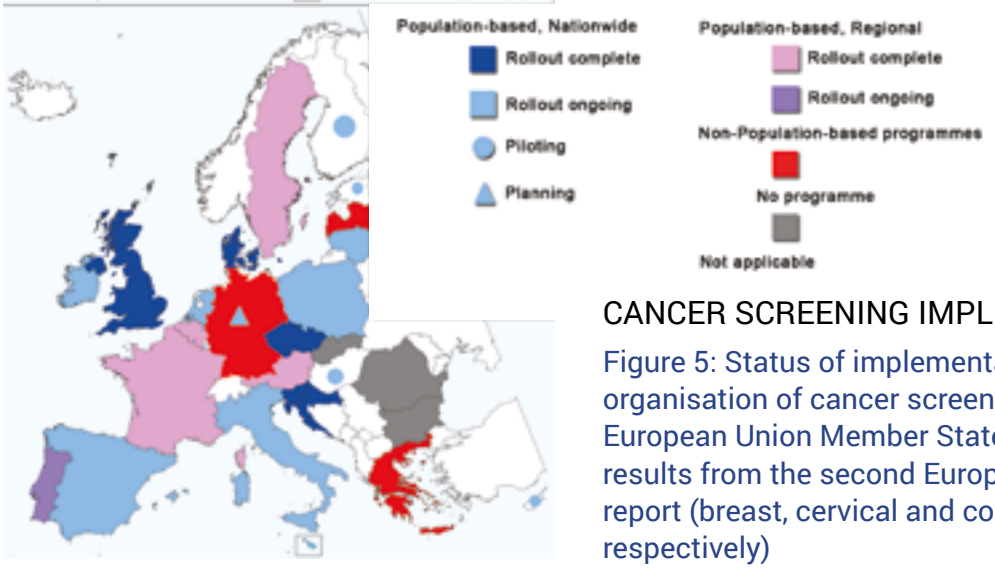
3.3 Role of early detection

Early detection of cancer greatly increases the chances of effective cancer treatment. The two components of early detection of cancer are early diagnosis and screening. Early diagnosis focuses on detecting symptomatic patients as early as possible, while screening consists of testing asymptomatic individuals to detect either pre-cancerous lesions, or cancers at an early stage. Deaths related to breast, colorectal, and cervical cancers could be averted by greater use of effective screening tests within established high quality programmes, where feasible.

In the second report on the implementation status of cancer screening in the European Union (EU) (2017, Figure 5), screening experts from EU Member States (MS) reported substantial improvements in population-based screening between 2007 and 2016.[9] For breast cancer screening, 95% of MS were implementing or planning to implement population-based breast cancer screening. For cervical cancer screening, this figure was 72.3% in 2016 (vs 51.3% in 2007) and for colorectal cancer screening roll-out was ongoing or completed in 17 MS by 2016 (vs 5 in 2007). Yet to reduce breast, cervical and colorectal cancer mortality, continued monitoring, regular feedback and periodic reporting to programme managers is needed.

To support these efforts, at IARC the CANSCREEN5 website provides a global repository on cancer screening programmes (htpps://canscreen.iarc.fr). It aims to uniformly collect, analyse, store, and disseminate information on the characteristics and performance of cancer screening in different countries. A web-based open access platform facilitates access to data, and the interpretation of data from the screening programmes, and enables the individual programmes to compare their performance over time.





CANCER SCREENING IMPLEMENTATION

Figure 5: Status of implementation and organisation of cancer screening in The European Union Member States — Summary results from the second European screening report (breast, cervical and colorectal, respectively)

3.4 Translating research findings into public health action

Cancer research on prevention can save lives; but to save as many lives as possible, new knowledge must be shared as widely as possible so that health authorities and other stakeholders can translate research findings into concrete public health actions that benefit all. Scientific evidence on primary and secondary cancer prevention has been compiled and translated into a set of public health recommendations within the European Code against Cancer (ECAC), summarising what individuals can do to reduce their cancer risk.[10]

Figure 6: The European Code against Cancer, 4th Edition

The ECAC is an initiative of the European Commission to inform people about action they can take for themselves or their families to reduce their risk of cancer. The current fourth edition consists of twelve recommendations that most people can follow without any special skills or advice. The ECAC will be updated within the Framework of the Europe's Beating Cancer Plan to take into account the latest scientific developments and will add new evidence-based recommendations. The Cancer Plan will aim to make at least 80% of the population aware of the Code by 2025. As a next step, the Code could be adapted to other regions of the world and could benefit particularly LMICs when developing their national cancer control plans.

The Sustainable Development Goal (SDG) 3.4 is the target for the control of non-communicable diseases (NCDs), including cancer, as part of the SDGs of the United Nations 2030 Agenda for Sustainable Development, which recognises the need for Universal Health Coverage (UHC), the importance of caring for children and the elderly, and the necessity for palliative care. Reducing the burden of cancer is a vital component of reducing premature deaths from NCDs. In 2015, the probability of premature death from NCDs was 7.5% in low-income countries and 6.8% in high-income countries. Substantial progress has been made in high-income countries[11] that can be directly attributed to advances in the implementation of cancer control strategies. However, progress in LMICs has been slow and insufficient and must be accelerated. At present, only 12 countries in the world are on track to achieve a one-third reduction in premature mortality from cancer by 2030. Reaching SDG 3.4 will require greater investment in tackling cancer and other NCDs.

Highly-effective interventions in primary and secondary prevention have reduced the cancer burden in countries where the measures are widely available and adopted at the population level. By focusing on a set of priority interventions and investing efficiently, more than 7 million lives could be saved by 2030, with major social and economic benefits. WHO's "best buys" are cost-effective and affordable interventions that countries can easily implement to reduce NCDs.[12] The best examples are tobacco control through taxation, and high coverage with vaccines to prevent infection with HPV and hepatitis B. As well as primary prevention, a key recommendation is to prioritize and invest in early diagnosis. These have been proven to be effective and feasible ways to prevent cancer. To translate this knowledge into effective prevention programmes, it is recommended to identify, at the national level, priorities that are feasible, evidence-based, comprehensive and inclusive.

3.5 Conclusion

Cancer represents a tremendous burden for patients, families, health systems and societal and economic values at large across the EU. The societal costs of cancer in Europe is tremendous, with the total cost of lost productivity due to premature cancer mortality in the Europe estimated at $75 billion in 2012, representing 0·58% of their combined gross domestic product.[13]

Considering that Europe has a quarter of all cancer cases and less than 10% of the world population, this is clearly a challenge. Europe urgently needs a strong commitment to cancer prevention, to better understand cancer risk factors and deliver the evidence-base that can deliver effective strategies for cancer control.

Cancer research can only be an instrument for change through strong international cooperation and collaboration. *Cancer research that matters* is the core mission of IARC and what makes the Cancer Agency of WHO unique in supporting the necessary developments. By strengthening EU-wide teamwork and opportunities for added value, more people would

live without cancer, more cancer patients would be diagnosed earlier, and cancer patients would suffer less and have a better quality of life after treatment. Cancer research saves lives.

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4 Strategies and their implementation

4.1 Health in All Policies in cancer prevention

Eeva Ollila

Health in all policies (HiAP) has been defined as

> an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies and avoids harmful health impacts in order to improve population health and health equity. It improves the accountability of policy-makers for health impacts at all levels of policy-making. It includes an emphasis on the consequences of public policies on health systems, determinants of health and well-being (Health in All Policies 2014).

In other words the aim is that whatever policies are decided and put in place, the implications of those policies for health, health equity and health systems should be considered and an effort be made to optimise health, health equity and health systems consequences, including mitigating any potential adverse effects.

Identifying the need for HiAP

Policy situations where Health in All Policies should be considered

Figure 1. Implementing a Health in All Policies approach requires health policy-makers to look outside the health sector both for problems and for solutions. (reference WHO Health in All Policies Training Manual, page 41)

1. Complex health, equity or health systems issues that need to be tackled intersectorally

Examples

- Addressing suicide prevention, obesity or cancer prevention in society requires addressing their main determinants through intersectoral policy solutions. The Beating Cancer Plan (European Commission 2021) has many elements of integrating cancer prevention in the EU's other policies.

2. High priority government goal that necessitates health sector contributions to be successful

Examples

- For addressing climate change and decreasing diversity of nature, health sector contributions are needed both for their prevention (for example highlighting issues around nutrition and tobacco, societal planning to enhance physical activity, or addressing toxic waste from the health sector) and for addressing their effects on human health (from for example changing spectrum of diseases or raising temperatures within health facilities) (see also Fox et al 2019, Pongsiri and Bassi 2021).
- Addressing unemployment requires health sector to address the health of the unemployed as health deteriorates due to unemployment and deficiencies in health is an important factor for not getting employed (Goodman 2015). The health sector and employment sector are both needed for developing employment possibilities for those with partial work capacity.

3. Policy proposal originating from another policy sector which potentially have implications for health, health equity or health systems functioning

Examples

- National level decisions on taxation affect the availability of products and services. Health based taxes can be mutually beneficial from the point of view of the Ministries of Finance and Health, as they increase revenue and bring health benefits. In Finland, the current government is committed to promoting health through taxation, with specific mention of tobacco and nicotine products, alcohol, soft drinks and sugar (Government of Finland 2019). Previously, a sugar tax was discontinued after pressure from the sugar industry (Sarlio-Lähteenkorva 2015).
- Renewal of the EU Directive 2011/64/EU, which defines the minimum level excise duties on tobacco and alcohol products, has been under consultation.
- As a result of intersectoral negotiations, the Audiovisual Media Services (AVMS) Directive takes health implications into account by among others banning advertising of cigarettes & tobacco, alcohol advertising aimed specifically to minors, limiting sponsorship and product replacements.

- International policies and agreements affect the framework of pharmaceuticals regulation and pricing as well as health sector provision and financing and need to be assessed and negotiated also from the health point of view (Koivusalo 2014).

In this chapter the emphasis is mostly on the first, i.e. cancer prevention as a complex health issue that should be addressed intersectorally and at various levels of governance. Taking the Cancer Code as a starting point for identified risk and protective factors for cancer, the aim is to reach living conditions in which the general socio-economic, cultural and environmental as well as the working conditions, social and community networks and individual life skills are conducive for cancer prevention (Figure 2). In such a situation it would be possible, easy and attractive for an individual to life a life in which the risk of cancer is small. A major task for cancer prevention is to facilitate changes in the living environment and conditions that make alinement with the cancer code possible, easy and attractive.

In addition to public sector actors, NGOs and social and community networks, private sector actors are important for amending the risk-factors for cancer. Industries linked to production and selling of tobacco, alcohol and food stuffs are obvious examples. Proper means for identifying and managing or avoiding conflicts-of interests are crucial.

Cancer prevention as an aim of HiAP

MAIN STRATEGIES FOR HEALTH PROMOTION

Figure 2. Various strategies to improve health are needed, as outline in the Ottawa Charter by the World Health Organization. Policies and environments that are conducive for making healthy choices possible, easy and attractive are crucial for the individual's healthy choices. (reference Dahlgren and Whitehead 1991)

The recent Beating Cancer Plan by the European Commission (2021) takes a HiAP approach to cancer prevention and policies on tobacco, alcohol, nutrition and physical activity, and environmental protection. Creating the Plan has involved negotiations between the various Directorates to agree on integrating health aspects into the various policies. The Plan provides important backing for preventing also other major noncommunicable diseases (NCDs) as its addresses determinants common to many NCDs. Some common aspects requiring structural measures are presented in Box 1.

Box 1. Common aspect of addressing important "life style" determinants through structural means, typically requiring intersectoral negotiations so as to include health aspects in the decisions

- availability
  - for tobacco restrictions on entering the market, restrictions on selling including sales licensing, restrictions on age, restrictions in places of use.
  - for nutrition availability of healthy foods in public catering
- price
  - higher taxation for harmful products (tobacco products, alcohol, sugar etc) and lower taxes/subsidies for healthy
- quality
  - regulations on ingredients, production and preservation
- information including marketing and labelling
  - for tobacco and nicotine products restrictions on marketing and advertisement, packaging, mandatory health warnings, visibility of products in shops
  - for alcohol mandatory information on the carcinogenic nature of alcohol, on energy contents and nutritional qualities, and restricting marketing.
  - for nutrition mandatory lists of ingredients, regulations on health claims, marketing ban on fast food for children, information to facilitate evaluating the nutritional value

Identifying and implementing policies for cancer prevention using HiAP approach

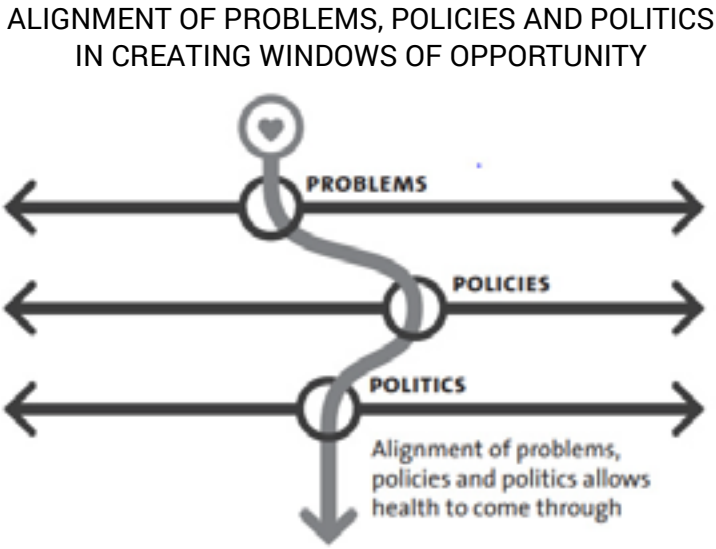

Figure 3. In order to be successful in HiAP, the recognised problem, a feasible solution and opportune political situation need to coexist. The problems and the policy need to get recognized by the policymaking actors in a timely manner, a situation often facilitated by proper communication strategies. The framework is adapted from Kingdon (2011). The figure from Ollila et al. (2013)

For policies to be successfully implemented three major components have been identified (see Figure 3) namely

1. What needs to be changed (problem)?
    - The problems are often identified by researchers, for example the components of cancer code have been identified be extensive review of epidemiological research. In addition to be identified by researcher, the problem needs to get recognised by policy-makers before it will be acted upon.
    - The problem (or opportunity for action) can also be identified from a policy proposal of other actors, necessitating amendments for optimal health, health equity or health systems outcomes
2. What are the solutions (policies)?
    - Effective evidence-based policies are also often identified by policy communities, including public health institutions and universities. Many times the solutions will be found from outside the health sector. To be successful the policy solutions have to be technically sound, economically feasible and ethically and culturally acceptable.
3. What is the dynamics of the political environment, the processes, structures? Who are the main actors that can make the change and what are their current agendas, aims and initiatives (politics)?
    - What is the political environment: the structure, actors, agendas, dynamics and timing of the policymaking?

- Intersectoral structures, processes and networks facilitate identifying and anticipating important opportunities and challenges.

4. Windows of opportunities open when the problem, policies and politics all exist at the same time
    - Practical windows of opportunities are provided by elections, government change, new plans or reforms,or an ongoing process for a policy change to which the desired public health aspect can be included - or which without public health based interventions threatened a public health aim.
    - It is helpful if the suggested policy also helps to achieve the aims of the "owner" of the politics process. This is, however, not always possible, policy-situations are not always win-win situations, at times they may even contradict.

WINDOWS OF OPPORTUNITY OPEN AND CLOSE

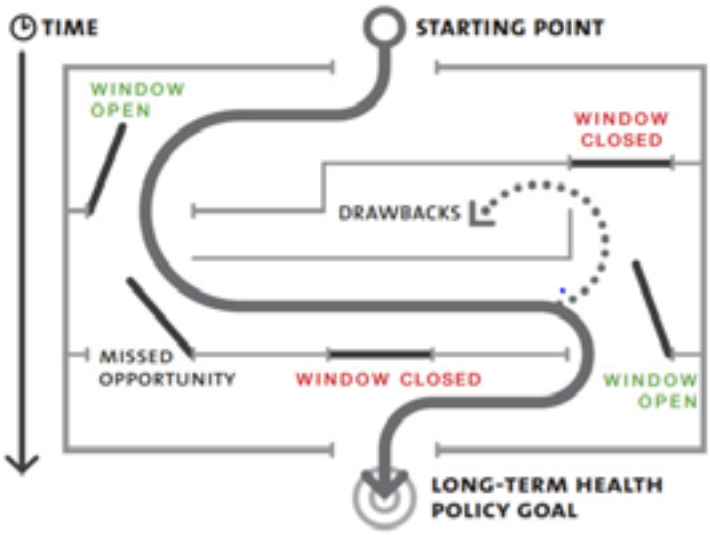

Figure 4. Timing of policy-making efforts in crucial for success when trying to impact policies beyond one's own. Success may also require perseverance and negotiation skills in addition to knowledge of the problem and a feasible solution and of the other sectors concerns, aims and language (reference Ollila et al 2013).

Windows of opportunity open and close as policy-making processes take place. If an opportunity is missed and the window will closes, a desired change will be more difficult until the next policy-making process takes place. (Figure 4) Understanding the policy processes and their timelines helps to anticipate the windows of opportunity, including for preparing in advance with evidence on the problems and the desired policies ready for the opportune moment in politics.

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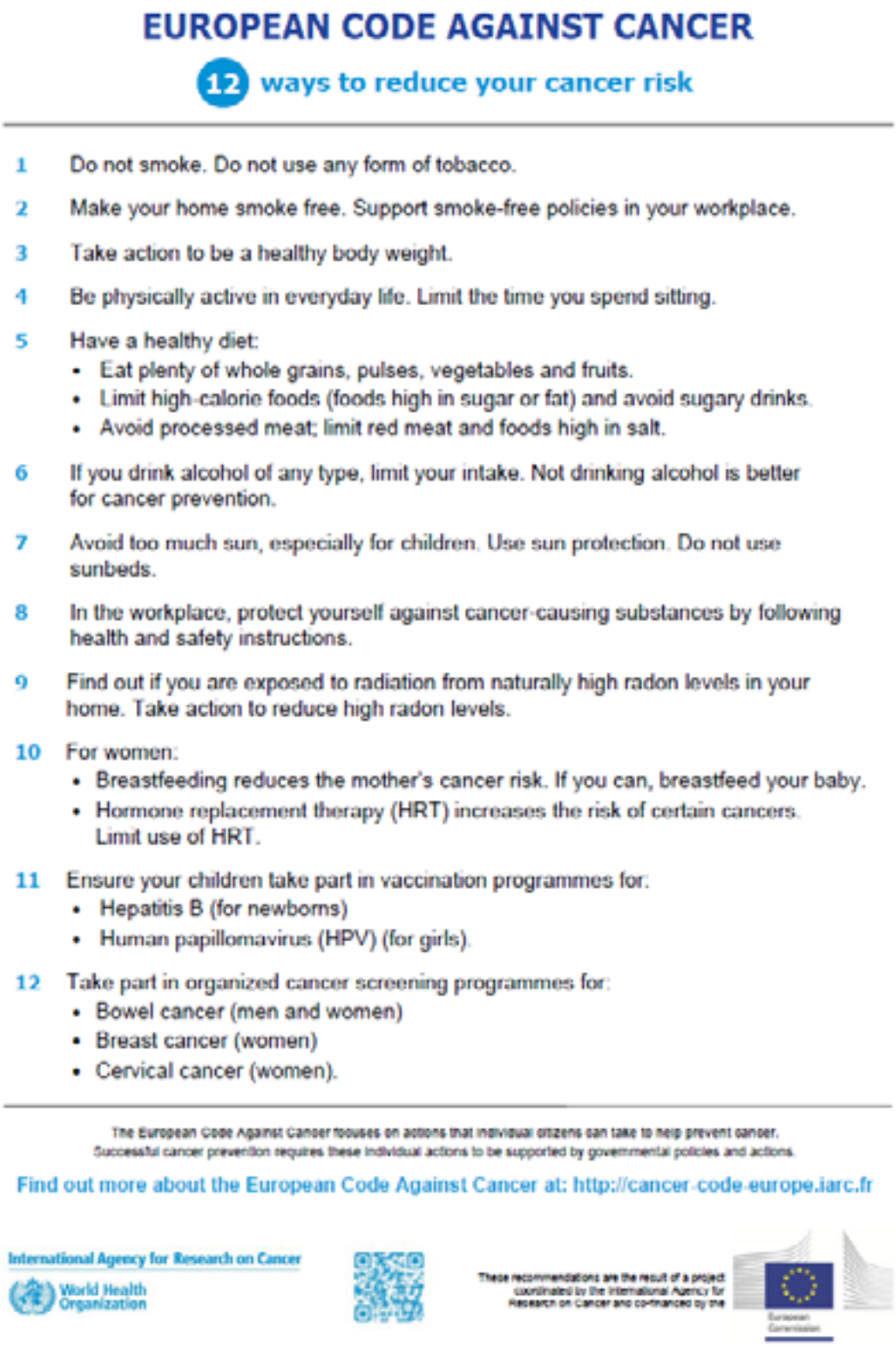
4.2 The European Code Against Cancer – towards the 5th edition

Carolina Espina and Joachim Schüz

The European Code Against Cancer (ECAC) is a valuable instrument for cancer prevention education. It is based on the established scientific evidence that about 40% of cancer cases can be prevented and cancer mortality can be reduced through practices and actions targeted at the individual and population levels.[1,2] The ECAC recommendations inform people about how to avoid or reduce exposures to established causes of cancers, to adopt behaviours to reduce cancer risk, and to participate in vaccination and screening programmes under the appropriate national guidelines.[3] The ECAC was first launched in 1987 on an initiative of the European Commission and has been updated on three separate occasions. Throughout the years, it has been used as a guide by stakeholders such as cancer leagues and as a framework to influence the formulation of programmes and policies, including European National Cancer Plans.[4,5] As an update of the 3rd edition of 2003, the 4th edition was released in 2014 consisting of three levels of information: (i) 12 recommendations on how to reduce your cancer risk (Figure 1), (ii) an online repository of more than 200 questions and answers (Q&As) related to each recommendation to assist putting them in context and aid in their interpretation, and (iii) the scientific justification for each recommendation published in 14 peer-reviewed articles in a special issue of the scientific journal *Cancer Epidemiology*. The ECAC, including the Q&As, have been translated into all 23 official EU language, and all materials are provided as open access content at https://cancer-code-europe.iarc.fr/index.php/en/ecac-12-ways. The International Agency for Research on Cancer (IARC/WHO) has been the coordinator of the 4th edition of the ECAC, in charge of conceptualising the design of the three levels of information and the IARC scientific methodology,[6] ensuring that all processes were aligned with the methodology to guarantee the quality standards of the final products, liaising with all the partners and experts groups and facilitating communication, guiding discussions and contributing to the scientific justification, and planning and preparing all meetings and related background materials. IARC has also collaborated very closely with the Association of European Cancer Leagues (ECL), providing scientific advice for the dissemination of the ECAC and the evaluation of its impact at European level. As health education and behaviour change-promoting tools, such as the ECAC, would need a wide reach and proper dissemination to have an impact on public health, overcoming lack of health literacy at individual but also at structural level should be a priorty. As yet, as reported by Ritchie *et al.,* the awareness of cancer prevention and the ECAC itself at the population level differs greatly across Europe, with the best awareness where well-reputed local players have taken on the role of raising awareness. For example, 21% of survey respondents in Hungary and Poland had previously heard about the ECAC, versus 2% in the UK; and 88% of respondents in Portugal had a positive attitude toward lifestyle changes for cancer prevention after rading the ECAC, versus 38% in the UK. In additon, gender differences were found as women were significantly more likely to make lifestyle changes to reduce their risk of cancer, independently of the ECAC or as a result of reading it (Figure 2).[4] Furthermore, the recently launched Europe's Beating



EUROPEAN CODE AGAINST CANCER

12 ways to reduce your cancer risk

1. Do not smoke. Do not use any form of tobacco.
2. Make your home smoke free. Support smoke-free policies in your workplace.
3. Take action to be a healthy body weight.
4. Be physically active in everyday life. Limit the time you spend sitting.
5. Have a healthy diet:
   - Eat plenty of whole grains, pulses, vegetables and fruits.
   - Limit high-calorie foods (foods high in sugar or fat) and avoid sugary drinks.
   - Avoid processed meat; limit red meat and foods high in salt.
6. If you drink alcohol of any type, limit your intake. Not drinking alcohol is better for cancer prevention.
7. Avoid too much sun, especially for children. Use sun protection. Do not use sunbeds.
8. In the workplace, protect yourself against cancer-causing substances by following health and safety instructions.
9. Find out if you are exposed to radiation from naturally high radon levels in your home. Take action to reduce high radon levels.
10. For women:
    - Breastfeeding reduces the mother's cancer risk. If you can, breastfeed your baby.
    - Hormone replacement therapy (HRT) increases the risk of certain cancers. Limit use of HRT.
11. Ensure your children take part in vaccination programmes for:
    - Hepatitis B (for newborns)
    - Human papillomavirus (HPV) (for girls).
12. Take part in organized cancer screening programmes for:
    - Bowel cancer (men and women)
    - Breast cancer (women)
    - Cervical cancer (women).

The European Code Against Cancer focuses on actions that individual citizens can take to help prevent cancer. Successful cancer prevention requires these individual actions to be supported by governmental policies and actions.

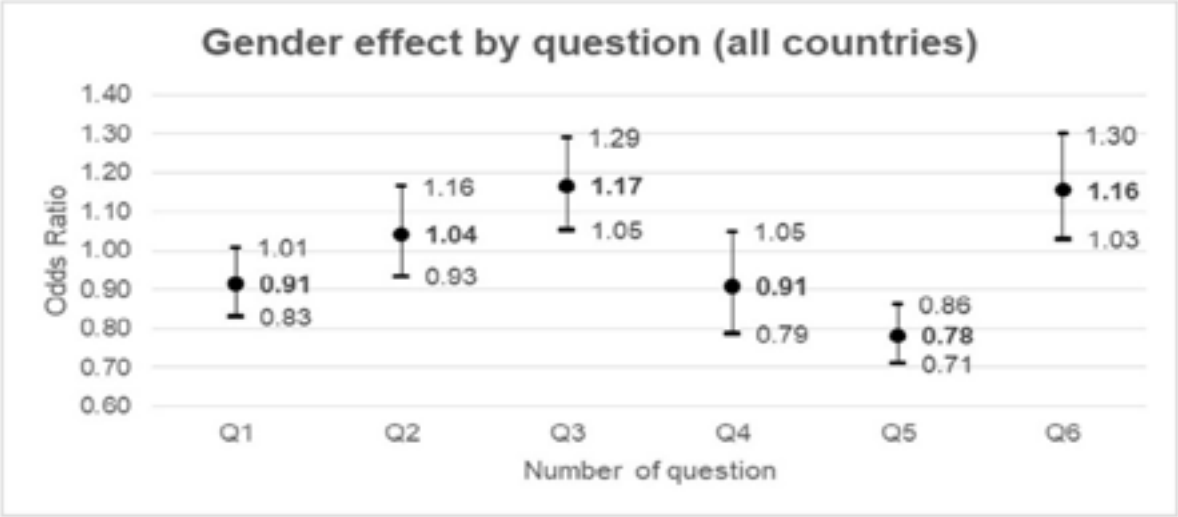
Find out more about the European Code Against Cancer at: http://cancer-code-europe.iarc.fr

International Agency for Research on Cancer
World Health Organization

These recommendations are the result of a project coordinated by the International Agency for Research on Cancer and co-financed by the European Commission

Figure 1. The 12 Recommendations of the 4th edition of the ECAC

Cancer Plan has announced that "The European Code against Cancer will be updated to take into account the latest scientific developments and will add new evidence-based recommendations to improve health literacy. The Cancer Plan will aim to make at least 80% of the population aware of the Code by 2025."[7] Therefore, in order to achieve this goal, efforts should be made to address the gap in knowledge about the impact of the ECAC by accompanying the next and future editions of the ECAC by a systematic evaluation across Europe to further elaborate the impact for society.



The graph shows the odds ratio and 95 % confidence intervals, adjusted for age group and country, for the effect of gender on six questions on awareness and attitudes toward cancer prevention and the ECAC (male as reference, all countries combined). The legend for the X axis refers to:

Q1: "I think <30 % or >50 % of all types of cancer can be prevented".
Q2: "I think people could reduce their risk of getting cancer in the future by making changes to their lifestyle".
Q3: "I will likely make changes to my lifestyle in order to reduce my risk of getting cancer".
Q4: "Before taking this survey, I had heard of the European Code Against Cancer".
Q5: "After reading the 12 recommendations from the European Code Against Cancer, I have learnt anything new about cancer prevention".
Q6: "I will likely make changes to my lifestyle as a result of reading the European Code Against Cancer".

Figure 2. Effect of gender on awareness and attitudes questions toward the ECAC (from Ritchie et al.[4])

The Innovative Partnership for Action Against Cancer (iPAAC) is the third European Commission's Joint Action on Cancer, in which Work Package 5 (WP5) focuses on cancer prevention. As part of WP5, IARC was commissioned to develop recommendations for the sustainability and monitoring of the ECAC, focusing particularly on the scope of a future 5th edition of the ECAC, including updating and maintaining the scientific evidence, and on strategies to further expand the dissemination of the ECAC across the European Union (EU).[8] The methodology followed for developing the recommendations included a co-creational consultation process, including formal and informal meetings, online exchanges, and a virtual workshop organised in April 2020, with stakeholders from the iPAAC WP5, the Directorate-General for Health and Food Safety (DG SANTE) of the European Commission (EC) and the consortium Cancer Prevention Europe.[9] IARC was responsible for bringing in the expert groups and providing the sustainability plan for iPAAC, ECL was responsible for organizing three conferences for iPAAC WP5, and the Cancer Society of Finland (CSF) has been the leader of WP5 of iPAAC. For the purpose of developing the recommendations, input from more than 100 participants from the fields of cancer prevention, public health, dissemination and communication was collected and discussed; in addition, the needs to pave the way for the future of the ECAC were assessed.

As a result, eight recommendations for the sustainability and monitoring of the ECAC were developed (Table 1).[8] Overwhelming support of the need for the ECAC and its continuous updating, optimization, and wider dissemination was expressed by all the stakeholders and EU authorities involved in the consultation process. The overarching recommendation calls for including cost-effective evidence-based cancer prevention measures at individual and population levels in future ECAC editions, as well as developing cancer-specific recommendations in synergy with non-communicable diseases (NCDs) preventive messages. Addressing the ECAC to the most suitable target groups, integrating the ECAC into the professional health structures (i.e. using of the "teachable moment" by health professionals), or engaging with communities, citizens' advocates and policy-makers early in the process, were recommended. A permanent government structure assessing the need for periodical updating was recommended, which could operate under the leadership of IARC for the scientific integrity of the ECAC. Embracing technological innovations and modern ways of communication, while acknowledging socio-political and structural contexts and collaborating with committed actors across society could improve dissemination.

Table 1. List of Recommendations for the sustainability and monitoring of the European Code Against Cancer.

Recommendations	
Recommendation #1	The 5th edition of the ECAC should include cost-effective evidence-based cancer prevention measures at the individual and population levels (including advice regarding strategies proven to be ineffective, not implementable, and potentially to be de-implemented), alongside an updating of the evidence on the causes of cancer.
Recommendation #2	Establish the appropriate framework for the 5th edition of the ECAC, including: (i) a mapping and prioritisation plan, (ii) a formal process to assess the evidence, to translate it into action, and to evaluate the impact, (iii) a governance structure, including an implementation and dissemination plan, and (iv) intersectoral collaborations and partnerships.
Recommendation #3	The 5th edition of the ECAC should follow a multidisciplinary approach to develop evidence-based cancer-specific recommendations in synergy with NCDs preventive messages, where applicable, allowing flexible use within unified NCDs- or cancer-targeted dissemination strategies, aligned with the social determinants of health, and with special attention to social inequalities.
Recommendation #4	Enhance the visibility of the ECAC as the unifying tool in cancer prevention (i.e. cancer prevention toolbox for the EU), in alignment with the EU Europe's Beating Cancer Plan and the Cancer Mission, while allowing adaption to the national context at the implementation and dissemination level.
Recommendation #5	The 5th edition of the ECAC should be developed to address messages to different target groups (especially health professionals and policy-makers), by including several levels of information based on the same evidence base, while maintaining the general public as the primary target group and fully acknowledging that it is a heterogeneous group influenced by social, economic, and environmental determinants of health.
Recommendation #6	The ECAC should be updated periodically, maintaining its high-quality process with a centralised governance of a permanent inter-institutional infrastructure.
Recommendation #7	Develop a Dissemination Action Plan including: (i) a description of the recommended strategies to tailor messages to the different target audiences, including risk communication strategies, and (ii) the implementation of novel, attractive, and modern distribution formats, channels and methods to reach the general public, making the ECAC adaptable to the local context and social differences, with a special focus on increasing health literacy and trust.
Recommendation #8	Engage in intersectoral partnerships to promote the ECAC.

Besides the eight recommendations, four additional research needs related to the sustainability and optimisation of the ECAC were identified (Table 2).[8] A clear governance structure for inclusion of implementation research in the policy agenda, and a monitoring and evaluation framework to measure the impact of the ECAC across Europe would be needed.

Table 2. List of Research needs for the sustainability and monitoring of the European Code Against Cancer.

Research needs	
Research Need #1	Research to successfully implement evidence-based primary and secondary prevention measures across Europe, and to evaluate novel preventive interventions and their implementation to optimise their impact on the health of individuals or different risk groups within populations.
Research Need #2	Future editions of the ECAC should be accompanied by a systematic evaluation of the ECAC as a cohesive set of guidelines, in the framework of dissemination research, to ensure that the ECAC reaches the target population(s) and to measure the impact of its use. This evaluation should be performed at three levels: the (i) structural, (ii) functional, and (iii) scaling-up levels.
Research Need #3	The creation and maintenance of a landmark European Evidence-based Cancer Prevention Centre, including an Evidence-based Prevention Portal and an e-Learning platform to: (i) promote rapid dissemination of best practices in cancer prevention, (ii) contribute to implementation research to optimise the implementation of known preventive strategies, (iii) identify unanswered questions that require research investment, and (iv) build capacity in cancer prevention for a variety of audiences.
Research Need #4	Strengthening research into the causes of cancer with targeted European research programmes.

Finally, putting the above recommendations in practice is essential and timely, ensuring that the ECAC remains a key cancer prevention instrument contributing to the success of the Europe's Beating Cancer Plan.[7]

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4.3 Improving awareness of the Code in Europe

David Ritchie, Wendy Yared

The European Code Against Cancer (ECAC) has already been highlighted in a previous chapter as existing since 1987. National and regional cancer leagues, who are usually the first and main source of cancer prevention information for European citizens, are the main disseminators of the ECAC.

European Week Against Cancer campaign – then and now

Since the first Europe Against Cancer Programme was in 1985, cancer leagues have been instrumental in disseminating the prevention messages of ECAC during the European Cancer Weeks, with the aim of improving public awareness that "everyone can reduce their own personal risk of contracting cancer, to encourage people to adopt a more balanced lifestyle and to draw attention to the benefits of early detection." (European Commission, 1997)[1]

The European Commission presented a positive evaluation on one of the European Cancer Weeks, in 1995, where they found that events and other efforts made by the cancer leagues significantly influenced Europeans' awareness that cancer was preventable. The Cancer

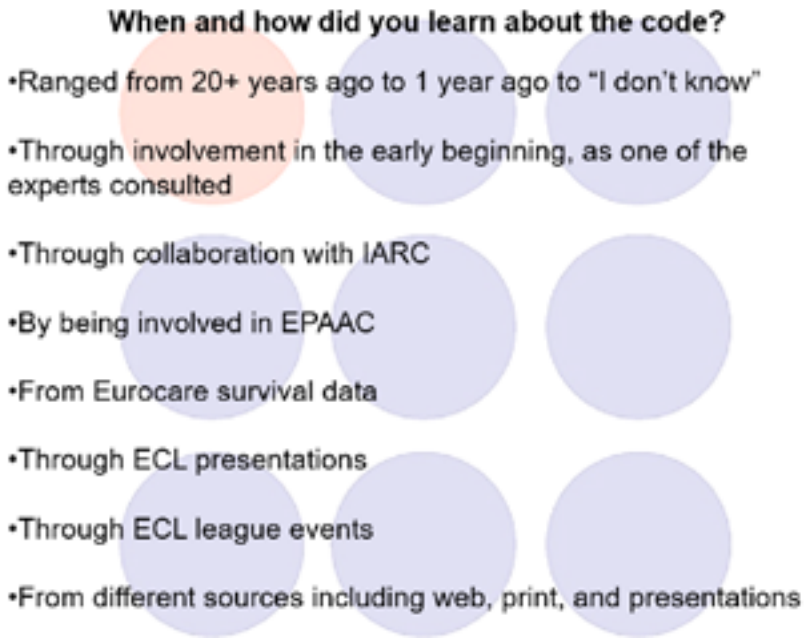

Figure 1. How EPAAC Joint Action Partners came to be aware of the ECAC (2012)[2]

Week campaign resulted in better knowledge of the risk factors outlined in the ECAC. It was also felt that the European Cancer Week 1995 "helped reinforce the profile of Community action in the public health field: 24% of Europeans said they had heard of European Cancer Week, while 12% (spontaneously) and 24% (with prompting) said they knew of the European Code against Cancer. (European Commission, 1997)[1]

The European Cancer Week campaigns slowly lost their momentum when the Europe Against Cancer Programme ended in the mid-90s. While cancer leagues continued to communicate the ECAC, they no longer had the powerful vehicle of the European Cancer Weeks to carry the message across Europe.

The launch of the European Partnership Action Against Cancer (EPAAC) in 2009 led to the first cancer Joint Action in 2011. The Association of European Cancer Leagues (ECL) was invited to lead on the work package on prevention. As part of this first EPAAC Joint Action, ECL agreed with the European Commission, Member States, and other stakeholders to revive the European Week Against Cancer, with the aim of raising awareness of the messages in the European Code Against Cancer, to pick up on the past success of the Week.

ECAC Awareness and dissemination modalities

A survey conducted in 2012 among the EPAAC Joint Action partners showed that cancer experts were aware of ECAC through several means, and confirmed that leagues continued to be the primary promoters of the ECAC.

In 2015, the Association of European Cancer Leagues (ECL) launched an online survey in 5 countries to assess the awareness of the ECAC. The purpose of this survey was to establish a baseline level that would be revisited after two years to measure the progress of efforts to disseminate ECAC. The survey found that the average level of awareness in the 5 countries surveyed (Finland, France, Poland, Spain, and the UK) was 10%. The variation between countries was large, ranging from 17% (Poland) to 1% (UK).[3]

The survey was performed again in October 2017[3] including additional countries: Hungary, Portugal, and the Republic of Ireland. In total, 8,171 people took part across the 8 countries. The survey reported that 13% of respondents had previously heard about the ECAC.
The levels of awareness vary according to country of residence, ranging from 2% (United Kingdom) to 21% (Hungary and Poland), and according to age, ranging from 18% (18–24 year olds) to 11% (45–54 year olds). Prior knowledge of the European Code against Cancer was associated with greater awareness that cancer can be prevented, and greater willingness to act to reduce one's cancer risk.

Overall, ECAC awareness levels have improved in most countries, and are encouragingly high amongst certain key demographics (e.g. 30% of 25–34 year olds in Poland are aware of

ECAC). Nevertheless, the awareness of the ECAC overall remains below expectations, particularly that which is set in the recently adopted Europe's Beating Cancer Plan, which aims for 80% of the population to be aware of the ECAC by 2025. Despite over three decades of promotion of the ECAC, a systematic evaluation has yet to be performed, which leaves gaps in knowledge to explain possible reasons for the degree of public awareness plus the more important question of its general impact.

To address this question, ECL conducted twenty-eight online interviews[3] with representatives from cancer leagues covering 25 countries. The majority of cancer leagues have been disseminating the ECAC and have done so as a complete set of recommendations. Six out of seven promoters in Central and Eastern Europe reported that they "always" disseminate the ECAC in its entirety, whilst none of the four promoters based in Northern Europe reported doing so.

Interviews with cancer leagues identified several internal and external contextual factors affecting the promotion and dissemination of ECAC, which provided insights to explain variation in the awareness of the ECAC across countries. Promoters confirmed that the ECAC has value beyond the direct dissemination to the general population, as it is used as an advocacy tool to inform cancer prevention and health promotion policies and programmes. Consequently, its impact cannot be limited to measuring the awareness and attitudes of the general population alone but must consider its real-world application as a basis for informing population-level actions.

The next and future editions of the ECAC should be accompanied by evaluation studies to further elaborate its impact. In addition, the development of the messages, including the phrasing and vocabulary used, should be performed in cooperation with cancer leagues and others who have been instrumental in disseminating the ECAC in different languages and cultural contexts.

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5 Developing innovations and finding solutions

This is a short summary from the reports and discussions of the 22 February 2021 online co-creational conference "Cancer prevention in 2020s" of the following topics: tobacco control, alcohol, physical activity, diet and nutrition, infections and vaccination, climate, environmental pollutants and exposures, how to implement, health in all policies, health literacy, health inequalities, research and influencing policy.

There were two breakout sessions in the programme. The first lasted 45 minutes and the second 50 minutes with these tasks:

- 'What will be the most effective cancer prevention and health promotion steps in the 2020s?'. Please create a list of 1-3 examples or suggestions (either at the regional, national or EU level) with your group. Please elaborate on the reasons for your group's choices.
- Encourage participants to discuss the 1-3 examples or suggestions listed – What should we do in order to make prevention and health promotion efforts sustainable in the 2020s? Include the perspective of policy making. Make at least one conclusion of the discussion.

5.1 Group discussion results

We present here a very condensed version of the discussions; more detailed versions are found at the end of this report. We received results from all groups except one: climate, environmental pollutants and exposures. However, we have covered the theme in part in this report under the section *Sustainable future*.

Tobacco control. Health professionals – in particular primary care professionals – have a role in smoking cessation. Several participants mentioned the need to educate professionals (primary care, nurses, oncology professionals, nursing home workers). *WHO Best Buys for NCD prevention and control* provides a useful policy template based on the Framework Convention on Tobacco Control FCTC. Priorities in tobacco control include implementing the Framework Convention on Tobacco Control. The European commission should encourage member states to commit to **national tobacco-free generation strategies** and to monitor their implementation. Secondly, tax tobacco. Tobacco taxation is the most effective tobacco control policy and it can strengthen other measures such as plain packaging, advertising bans, smoke-free policies, point of sale restrictions, which help denormalise tobacco use further.

Alcohol. The group felt that there is a need for a comprehensive strategy for alcohol prevention and treatment both at EU and country level. Secondly, to achieve alcohol-related goals of the Europe's Beating Cancer Plan, **the strategy should be urgently prepared and implemented.** Discussions covered the broader use of modern technologies for

strengthening communication, where major target groups are youngsters and young adults, internet and new technology providers, start-ups, researchers, therapists and health professionals. On research, the development of multidimensional databases on cancer and alcohol control is needed. Several economic tools and marketing priorities were mentioned, for instance digital marketing, new labelling policy and tax and price policies.

Physical activity and cancer prevention. The evidence supporting physical activity in preventing several cancer types is strong. Inter-sectoral collaboration and *Health in All Policies* approach should be implemented to increase physical activity among the whole population and cancer patients, and be included in every important programme both on national and European level. Physical activity should be available and encouraged for everyone – children in their (early) education, all socioeconomic groups, elderly, and everyone else. It is important to encourage people to be physically active in their **everyday life**, and to emphasize the difference between physical activity and exercise. Patient's organisations, medical doctors and screening programmes are potential channels to promote benefits of physical activity. Examples of recent interesting practices: WASABY Application as a useful educational tool – launched on February 4th 2021 and Breast Health Day – a prevention programme implemented by Europa Donna since 2008: https://prevention.europadonna.org/index.php

Conclusions, physical activity group

- Some physical activity is better than none – physical activity and exercise are very effective prevention practices
- Physical activity should be advertised in the media as a cancer prevention method supported by strong scientific evidence. Physical activity should be advised and promoted by all medical doctors and health professionals
- Physical activity and exercise should be available to everyone, based on one's individual needs and abilities, practiced safely and with guidance when needed, it should be regularly taught in school curriculums, advised to participants of cancer screening programs.
- Focus on bodily appearance should be minimised – physical activity and exercise should be individualised and progressive – the key is to find the right physical activity for each individual
- Physical activity should be integrated and implemented in all major policies (and "masterplans" like EU's Beating Cancer Plan); guidelines for physical activity should be adopted from European level, and then implemented on national levels through relevant ministries

Diet and nutrition. The group titled its report *Sustainable plant-based diets and the obesity epidemic* – Global warming and the obesity epidemic, two unprecedented challenges of today, are linked with cancer prevention. The two proposals from the group are sustainable plant-based diets and obesity and collaboration with the food industry. Increasing the consumption of plant-based foods (fruit, vegetables, legumes [*Leg4Life* project in Finland],

seeds, nuts, and whole grains [*WhoIEUGrain* project in EU]) should be accompanied by decreasing the consumption of energy-dense and highly processed foods. In general, obesity is not recognised as a well-known risk factor against cancer by the general population (e.g., Obesity and cancer campaign in Denmark – https://www.cancer.dk/letteresammen). Group participants proposed incentive/disincentive schemes for the food industry to contribute to the development of healthy foods at a reasonable, accessible-for-all price and a combination of methods when reporting the nutritional value of food products e.g., the Nutriscore – which could be further improved e.g., by including whole grain consumption and other country-specific modifications – and the NOVA classification. Climate health – EU's Farm to work Strategy, UN Sustainable Development Goals, Eat Lancet Planetary Health Diet – might be the most important driver for food consumption changes in younger individuals, so highlighting the climate-healthy aspects of the food groups linked to cancer prevention must be considered.

Infections & vaccination. The group titled its report *Demand for coordinated actions in Europe to implement strategies targeting oncogenic infections for effective cancer control*. Common knowledge about infections and cancer is poor, for instance human papilloma virus (HPV) infections. Schools can be used as a platform for raising awareness about what HPV is and HPV-related risks. Awareness can be raised through involving different stakeholders for "story telling". In Italy, a beauty product producer (leg wax) was used to communicate information about HPV vaccination and conscientise young women. In Norway, the Cancer Society in partnership with the Cancer Registry of Norway have launched a #sjekkdeg (#checkyourself) campaign to raise awareness about cervical cancer screening. To improve HPV vaccination coverage, it is important to promote **gender-neutral vaccination** (GNV) programmes and perform multi-cohort vaccinations for both girls and boys. HPV vaccines should be free of charge in order to obtain expected coverage. There is also a need to develop sustainable public health strategies to prevent cancers caused by to other infections than oncogenic human papillomaviruses.

How to implement? Examples from Member States and regions. The group titled its report *Experiences and opportunities to improve implementation of cancer prevention.* Despite the serious crisis, such as COVID-19, it is extremely important to maintain prevention for all NCDs. There are obviously different challenges we are facing while talking about the primary cf. secondary prevention. Impact on lifestyles is expected to be significant; importantly, we should **look at specific population groups**. Many participants warned of the **so-called hijacked resources** – steered to COVID-19 related services thus suppressing the non-COVID issues. There is a special and important role for the civil society. We may see important shifting of resources, even in the future months and years. The group developed these tentative conclusions: *1)* Sticking to the evidence-proven interventions, both in primary and secondary prevention is the way forward 2) Agreeing on transferability, even in another region, transversal key process indicators. 3) Building on the awareness but going beyond by using demonstrable successful interventions and to promote them regionally, nationally and internationally.

Health in All Policies (HiAP). The group titled its report *Co-creational breakout session on Health in All Policies in cancer prevention*. Most effective steps, three prososals. Proposal #1: Developing and implementing Health Impact Assessment (HIA), to identify the sectors to be prioritised in the HiAP approach for making a sustainable change in the cancer field. Proposal #2: Tackle physical activity, obesity and healthy diet through urban planning, plans for transition to green economy, marketing regulation and education policies. Proposal #3: Integrate health promotion in formal education curricula

Sustainability, seven proposals. Proposal #1: Capacity building is essential to bring all sectors together to design and implement the HIA. Investment is needed for people to be able to work together across the boundaries of policies and sectors. Proposal #2: High political commitment to work on HiAP design and implementation, at country level as well as EU level. Proposal #3: Provide policy-makers with reliable and understandable information. Proposal #4: Synergies with professional associations to raise awareness and tackle misinformation. Proposal #5: Work together with NGOs: they may have an important role in making things visible and for keeping issues in the social debate. Proposal #6: Deprived groups should be paid special attention. Proposal #7: Whenever possible, a win-win approach should be envisaged, seeking benefits for stakeholders involved (public-private partnerships could be a solution).

Health Literacy. The group titled its report *Enhancement of health literacy as a major prerequisite in effective cancer prevention.* Several European states have developed national action plans to enhance health literacy in their populations. Besides activities improving people's skills to find, understand, assess and apply health-related information, more recent projects concentrate on creating environments that make it easier for people to adopt a healthy lifestyle. Effective steps include interventions tailored to the different target groups**,** creating an environment which facilitates a healthy lifestyle and developing alliances for evidence-based health information. Sustainability means most importantly that **it is necessary to scientifically evaluate all measures** taken for efficacy and effectivity, to **adopt novel insights** and technologies and to **adapt to changing frame conditions and to the changing role of stakeholders.**

Health inequalities. Tobacco prevention is one of the most widely used good examples of both an effective and sustainable effort for cancer prevention in the EU. It is also a good example of cost-effective health intervention, where clear positive economic outcomes are reported from cancer preventive or health-related interventions. Awareness of the preventive strategy is crucial and this can be achieved through educational interventions in schools including such knowledge as the part of studied subjects. The other requirement is the attainability of the healthy option, for example the availability of healthy food as compared to the unaffordable healthy food options. Conclusions:

- Tobacco control is a good example of equal and sustainable preventive intervention
- Health education is important in reducing the knowledge gaps of healthy choices,

however healthy choices should be made available to all populations through systematic population based interventions

- Governments should lead these interventions and should aim to reduce cancer burden by acting based on the best available evidence and also work on gathering that evidence with fostering of high quality research. All the sectors of government have to act with the constant idea of cancer prevention and health promotion hidden behind all policies.

Research. The discussion on research and prevention should consider entire cancer research continuum, including cancer surveillance, basic research, understanding the causes, studies on interventions and implementation research. The research agenda should comprise both **known** factors – how to implement effective measures to prevent them – and discovery of **new unknown risk factors**. Tobacco smoking is an important problem, and further activities need to be planned in order to achieve the goal of tobacco-free generations. Future activities should aim at implementation and evaluation of efficacious interventions. It usually takes a very long time to implement these measures. We should focus on tailored approaches, as general campaigns often do not reach people sufficiently. Unknown cancer causes should be investigated. Entire biopsychosocial perspective is important. Topics specifically mentioned within the discussion were, e.g., chemicals in the environment, unrestricted dietary supplements market, or use of antidepressants in young people, etc. **All research areas are important**, in order not to replace one harmful factor with another. *The quality of data and data analysis* requires systematic structured coding standards and contents, including data collected at individual level, to better measure impact of interventions at individual level. The research should not only focus on individual risk factors (e.g., smoking, alcohol, nutrition, sport, genome, …), but also on their **interactions**. International collaboration will be often needed to achieve sufficient sample sizes to identify weaker effect signals. Uncertainties may add up within mathematical modelling. An important tool is **good data governance**, including linkages between systematic population datasets, behaviour and lifestyle with outcome databases. Historical prevalence of tobacco smoking is important. This will enable to build better models. Unfortunately, the General Data Protection Regulation (GDPR), which was recently introduced, is not so useful and solutions have to be found how to utilise data more effectively. *Sustainability*: It is important to stabilise exchange between research actors (governments, NGOs funding research, academia) within and between countries. We need to understand what population-based measures are the most successful, therefore, central storage of knowledge, success and failures would be beneficial.

Influencing Policy (from science to policy). *Make Health in all policies (HiAP) a reality* and *include health impacts* in "European Commission's and national policy Impact Assessments". These currently consider economic, social or environmental impacts but not necessarily health. Plan and conduct the implementation with clear project goals and owners, and involvement of all relevant stakeholders from different professions and sectors, including scientists, policy makers, decision makers and citizens. To improve cross-sectorial collaboration: encourage public sector to collaborate and experiment. *Address commercial*

determinants of health: recognise all relevant supporting and opposing stakeholders early, **bring them all on board soon (share leadership)**, so policy makers will not back-up due to strong opposing stakeholders due to their commercial interests. Establish the environment that enables and endorses **co-creation (shared vision)** of health policies, strategies, goals. Encourage people to understand the basis for regulations and legislation and include them in the planning phase of any action. Support collaborative projects, joint efforts with the industry, knowledge institutes and government. *Participation:* create structures that allow for participatory democracies from the target population and honour their outcomes, however, respect the right not to engage and participate.

5.2 Conference evaluation

The programme of the online conference had one keynote presentation "Global cancer burden and research priorities for cancer prevention" and co-creational group work parts 1 & 2 with 12 breakout sessions. After the breakout sessions the programme continued with short plenary discussion and conclusions and next steps.

The meeting was attended by 154 participants (out of 199 registrants). 137 people participated in the group work part. After the conference participants received an evaluation survey, out of which 39 submitted it. The questionnaire consisted of 5 closed-ended questions and two open-ended questions (technical difficulties and additional comments and suggestions).

The participants were mostly satisfied with the conference and experience overall: 34 out of 39 (87,2 %) of the participants answered excellent or very good. In the open comments some people mentioned lack of time to discuss and main conclusions of the all breakout sessions were missing. 37 out of 39 (94,9 %) rate the plenaries excellent or very good. For the sessions, the participants' responses varied. To the question 'To what degree has the breakout session allowed you to share your knowledge and exchange ideas about the specific topic of your session?' some participants were satisfied and others felt that most of the discussion was led by only a few people. The question concerning administrative aspects (preparation materials in Google Drive, running of the event, information provided during the event, event speakers) the most common response was excellent or very good.

6 Specific perspectives

6.1 Tobacco and alcohol policies are cornerstones of cancer prevention

Anca Toma and Mariann Skar

Tobacco and alcohol are commercial determinants with global backgrounds and promoted by strong economic interests which have influenced their consumers' health for decades. Prevention of these risk factors, together with strategies to reduce and discourage consumption in their users, is the most cost-effective strategy for reducing cancer prevalence sustainably.

Given the global challenges, tobacco and alcohol control policies require regional and international collaboration to counteract unhealthy commercial pressures. The WHO Framework Convention on Tobacco Control (FCTC) is a pioneering international legal instrument that affirms its 182 Parties' determination to end the tobacco pandemic through the adoption and implementation of evidence based policies and through mutual assistance and cooperation. Alcohol is still missing such an instrument on the global level despite the existence of clear evidence on effective measures to reduce its toll.

Both tobacco and alcohol consumption have very strong relationships with health and socio-economic inequalities. With both risk factors, there is strong evidence and practice and their prevalence can be reduced through population-level, inequality-sensitive, multisectoral and globally integrated policy interventions to reduce uptake and promote quitting and through actions to prevent industry influence. These measures are necessary and urgent if policy makers want to reduce the societal burden of cancer and other noncommunicable diseases for generations to come. Now it is time for governments to act.

PREVENTION OF TOBACCO RELATED CANCERS AND OTHER NCDS

Tobacco use is the single most preventable risk factor for cancer and other non-communicable diseases including cardiovascular diseases, respiratory diseases, and diabetes. Despite progress in reducing tobacco consumption in the last decades, the EU and member states still have a long way to go towards tobacco-free societies. The EU Cancer Plan target of achieving a tobacco free generation and reducing tobacco use prevalence to less than 5% of the EU population by 2040 gives a strong political mandate to EU institutions to pursue comprehensive policies towards this goal.

There is strong consensus in the health policy and advocacy community about the measures needed to achieve a tobacco free generation in Europe.

1. **Strengthen the implementation of the FCTC at EU and at national level through all policy instruments available**

   FCTC obligations must be taken into account in policy design through a whole-of-government approach. In particular, EU legislation currently undergoing revision – the EU Tobacco Tax Directive (2011/64/EU) and the EU Tobacco Products Directive (2014/40/EU) – play a crucial role in the improvement of European public health in general and for cancer prevention in particular, and should be strengthened towards the highest possible levels of health protection. A review of the EU Tobacco Advertising Directive (2003/33/EU) should be carried out to strengthen the existing framework and facilitate its enforcement, so as to reduce the ability of the tobacco industry to market and promote its products to children and young people.

   Other policy processes such as the revision of the smoke-free recommendations (Council Recommendation of 30 November 2009), the strengthening of the safeguards against conflict of interests with the tobacco industry, and the implementation of the Illicit Trade Protocol will all contribute to the de-normalisation of the tobacco industry and its products at societal level.

2. **Invest in implementation and best practice exchange and learning.**

   Given the variety of experiences and success stories in reducing tobacco use, cooperation and exchange of best practices at European / regional and sub-regional levels is needed to identify, understand and use successful examples. There are existing networks of cancer knowledge centres, registries, cancer prevention, tobacco control, and health professionals that can support cooperation. There is a role for EU health and research funding in supporting the learning from best practices in tobacco control policy and practice. Civil society needs to be able to continue to raise awareness of tobacco control and tobacco industry interference tactics to subvert tobacco control policies with every new generation of policy-makers.

3. **Tax tobacco and the tobacco industry**

   Funding and capacity for tobacco control implementation is needed at EU and national level. Tobacco taxes can help fill the funding gap. Tobacco taxation is the most effective tobacco control policy and it can reinforce other measures such as plain packaging, advertising bans, smoke-free policies, point of sale restrictions, which help de-normalise tobacco use and which should be expanded. Tobacco taxation is proven to generate additional revenues for governments and health systems. Additional measures consist of the levies paid by the tobacco industry under the Single Use Plastics Directive to help offset the pollution caused by plastic filters.

   Governments at EU and national level should also explore the possibility of introducing specific levies on the tobacco industry, combatting corporate tax evasion, and liability measures to help compensate for the human harm caused by the tobacco industry.

PREVENTION OF ALCOHOL-RELATED CANCERS

Europe is the heaviest drinking region in the world with 9.8 litres of pure alcohol per person (15 + years), well-above the global average of 6.4 litres. Drinking alcohol is associated with a risk of developing more than 200 different types of diseases[1]. Every day in EU+ countries around 800 people die from alcohol attributable causes (291.000 per year).[2] The main cause of death due to alcohol in 2016 was cancer (29% of alcohol-attributable deaths)[3].

Alcohol is classified by the International Agency for Research on Cancer (IARC) as a Group 1 carcinogen. And we have known it for more than 30 years now. The overall awareness of that fact is worryingly low, everywhere. To date few countries held public awareness raising campaigns about alcohol and cancer, they were rarely state funded; mainly lead by dedicated organisations such as Belgian #TournéeMinérale initiative organised by Cancer organisations (Stichtingtegen Kanker and Fondation contre le Cancer) or Christmas videos by Danish Cancer Society (Kræftens Bekæmpelse). Since 2011 Eurocare together with ECL has hosted www.alcoholandcancer.eu website. There is an urgent need for allocation of resources into awareness raising efforts to increase citizen's knowledge about alcohol as a risk factor for cancer. It is high time the forgotten link between alcohol and cancer is brought to the attention of the public. As consumers we have the right to know about the effects alcohol consumption have on our health. There needs to be better public information, more awareness among health professionals and effective public health measures to highlight this link and to further promote action to reduce avoidable illnesses and deaths,

Europe's Beating Cancer Plan emphasises alcohol-related harm is a major public health concern in the EU. The target is to achieve a relative reduction of at least 10% in the harmful use of alcohol by 2025.

Effective public health prevention as listed below from the Europe Beating Cancer Plan can reduce the social and economic losses caused by harmful use of alcohol.

- Support to Member States and stakeholders for the implementation of best practice interventions and capacity building activities.
- The Commission will review the EU legislation relating to the taxation of alcohol and on cross border purchases of alcohol by private individuals.
- To reduce the exposure of young people to marketing of alcoholic beverages, the Commission will closely work with Member States to reduce online marketing and advertising of these products.
- The Commission will also review its promotion policy on alcoholic beverages in the EU promotion programme for agricultural products.
- Mandatory labelling of the list of ingredients and the nutrition declaration on alcoholic beverage labels before the end of 2022
- The inclusion of health information warnings on the labels of alcoholic beverages will be proposed before the end of 2023.
- Support will be provided to Member States in the implementation of evidence-based brief interventions on alcohol in primary health care, workplace and social services.

In the coming years we expect the population to better recognise that drinking alcohol is associated with a risk of developing cancer in the oropharynx, larynx, oesophagus, liver, colon, rectum, and breast. Even moderate alcohol intake has been shown to increase the risk of developing breast cancer. Prevention and reduction of alcohol-related harm is one of the most cost-effective cancer prevention activities.

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6.2 Enhancement of health literacy as a major prerequisite in effective cancer prevention

Susanne Weg-Remers

Background

Health literacy (HL) comprises people's knowledge, motivation, and competencies to access, understand, appraise, and apply health information. This is a prerequisite for making judgments and take decisions in everyday life concerning healthcare and health promotion. Limited HL impairs the chances of disease prevention and thus has a significant impact, particularly on cancer incidence and mortality.

Recent surveys in many European states have shown that HL is problematic or impaired in many citizens. E.g., in Germany, 59 % of people in all age groups have limited HL. Particularly, digital (66% inadequate) and navigational health literacy (68% inadequate) are very low. Of the different dimensions of HL, especially the appraisal of health-related information is compromised[1]. This has a strong impact on disease prevention and health promotion, which is of utmost importance for cancer prevention.

Several European states have developed national action plans to enhance HL in their populations. Besides activities and interventions improving people's skills to find, understand, assess and apply health-related information, more recent projects concentrate on creating living and working environments that make it easier for people to adopt a healthy lifestyle.

I. Enhancing health literacy through interventions tailored to the different target groups

To effectively enhance health literacy and to promote cancer prevention according to the European Code Against Cancer, it is necessary to clearly define and characterise the different target groups in the population. They need to be addressed with clear, actionable communication strategies and interventions tailored to their diversified abilities and levels of understanding. All communicative and behavioural interventions are to be based on up-to-date scientific knowledge and should be evaluated for their effectiveness and efficacy. Multiplicators are particularly relevant: health care professionals and teaching staff. Special attention has to be paid to children and adolescents and the most vulnerable groups, e.g., people with low educational level, low socio-economic status, and/or migration background.

> *Best practice: The German Cancer Information Service (CIS) (www.krebsinformationsdienst.de) has launched a new series of information material in "Simple Language". With these brochures, CIS pursued the ultimate goal to make cancer information easily accessible for everybody – also for people with dyslexia or learning disabilities. In near future, materials covering primary and secondary cancer prevention topics will be released. Particularly, brochures for cancer patients with*

hereditary breast or ovarian cancer and their relatives are currently generated jointly with the German Consortium for familial Breast and Ovarian Cancer. These materials will be available in German, and in English to facilitate their translation in other languages and their adaptation to health systems in different European countries.

II. Creating an environment which facilitates a healthy lifestyle

Lifestyle is to some extent determined by enviromental factors that may influence healthy behaviour. Thus, to facilitate adopting a cancer-preventive lifestyle, systematic modifications of daily living and working environments are required to make the healthy life choice the easiest choice and motivate people to engage in health-promoting behaviour[2]. Ultimately, cancer-preventive behaviour patterns have to become more popular, easier, and less costly than unhealthy ones. Structural preventive approaches thus bear a strong potential to significantly contribute to the prevention of frequent cancer types, influenced by environmental factors.

Best Practice: The Federal Office for Radiation Protection coordinates the interdisciplinary "UV Protection Alliance" in Germany. The Alliance is a cooperation of well-known societies, organisations and authorities from medicine, science and occupational safety who are committed to UV protection. The Alliance pursues the long-term goal to reduce adverse health effects caused by UV, particularly skin cancer incidence, by developing practicable UV protection measures and promoting their implementation. In 2017, the Alliance published the position paper "Prevention of health damage caused by the sun – Structural prevention in urban and rural areas". The position paper points out at several options to design the living and working environment of people in such a way that all those who are outdoors can avoid high UV exposure.

III. Developing inter- and intrasectoral alliances for evidence-based health information

Cancer prevention reduces risk for other major diseases. Thus, the development of key strategic inter- and intrasectoral partnerships could significantly enhance the impact of policies and interventions. These partnerships could also play a major role in gaining sufficient attention for evidence-based preventive information. They could act against fake information that is currently widely spread through the internet and social media.

Best Practice: The project "Fit in Health Issues" by the German Cancer Information Service (CIS) (www.krebsinformationsdienst.de) and the Diabetes Information Service (www.diabinfo.de) aims at the enhancement of health literacy in children and adolescents. Focused on two major common diseases – cancer and diabetes – the project targets secondary school students and their teachers as mediators. Evidence-based education materials on etiology, prevention, diagnosis and therapy of cancer and diabetes, on the structure of the health care system and on media skills are

developed in a collaboration of teaching staff, communication specialists and scientists. All materials, including e-learning and interactive modules, are adapted to current school curricula and tailored to age and educational level of students. Concomitantly, advanced-training workshops for teachers are designed and conducted in co-operation with teachers' academies. In these workshops, evidence-based knowledge on the prevention of cancer and diabetes and digital media skills are provided and education materials are introduced.

Sustainability of prevention and health promotion efforts

By building on existing structures and frameworks, policies, multi-channel and multi-disease interventions need to be developed to target individuals and their environments. By involving the different target groups and communities in the development, it is ensured that interventions meet their levels of understanding and their needs.

Most importantly, it is necessary to scientifically evaluate all measures taken for efficacy and effectivity, in order to adopt novel insights and technologies and to adapt to changing frame conditions and to the changing role of stakeholders.

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6.3 Primary prevention from an equity perspective

Ana Molina Barceló, Paula Romeo Cervera, Marta Hernandez-Garcia

Social inequalities in health refer to those differences that are produced socially in a systematic manner. These inequalities are unnecessary and avoidable, as well as unfair[1]. Social inequalities in health exist among countries and/or regions as well as among social groups within a country.

Equity in health, implies that every individual should achieve their full health potential without seeing each other with disadvantages or conditioned by their social status or other specific circumstances.

Social inequalities in cancer are referred to as being those which encompass the entire cancer continuum and implies inequalities on prevention, incidence, prevalence, detection, treatment, survivorship, mortality, cancer burden and other conditions and behaviours related to cancer[2]. In this chapter, we will be focus on social inequalities in cancer prevention.

To reduce these inequalities it is essential to provide equitable access to early cancer diagnosis to improve cancer detection. In this sense, the best evidence-based strategies are the population-based screening programmes that enjoy the greatest comprehensive quality assurance, as the entire population is eligible. This guarantees a greater level of equity in access to timely and quality diagnosis. But, despite being more equitable than the opportunistic programmes, they have also demonstrated inequalities in participation[3]. Furthermore, it is important to bear in mind that detection itself cannot correct the disparities that exist among social groups caused by the differences on risk factors and the access to information or to health services out of screening programmes. That is why it is a priority to focus not only on early detection, but also in cancer primary prevention with strong focus on the most vulnerable groups.

Scientific evidence supports the influence of social inequalities on health in the prevention of cancer. It has been noted that groups in the lowest socio-economic level exhibited behaviours that were more harmful to their health than other groups. As for gender, some investigations have proven that alcohol and tobacco consumption is the most common unhealthy behaviour in men, while physical inactivity is the unhealthy behaviour for women[4]. It has also been noted that women with low socio-economic level show the worst health indicators[5].

Therefore, and based on the existing evidence, it is crucial to pay attention to social factors in cancer to deal with primary prevention in an integrated manner, in order to reduce existing inequalities.

When it comes to talking about reducing inequalities in the primary prevention of cancer, a key factor is awareness. In cancer prevention dissemination activities are very important in order to be able to provide accessible information to all groups in a clear and straightforward way. This can be achieved by educational interventions in schools, where these interventions encourage healthy lifestyles and increase awareness in young children, which allow them to share the information they have learnt with their families.

Another decisive factor in prevention is diet. A healthy diet is fundamental to prevent the development of cancer, however, it is not always practiced because of some reasons like the lack of knowledge, economic resources or choosing the tastier option in less healthy food, etc. To promote and ease a healthy diet for all the population it is essential the governmental support to facilitate the healthy food procurement on those who are not healthy. It is also important public policies and taxes in alcohol sale, tobacco and sugar.

Finally, vaccination is an excellent tool for primary prevention of cancer (specifically cervical cancer). Effective vaccination must therefore be available to all groups, independently of gender, social or geographic differences.

As discussed previously, to carry out these strategies the government has a key role. They are the ones that should lead these interventions to reduce cancer incidence and to bet on the advancement in high quality investigation that can help to move forward and acquire more knowledge about cancer prevention. .

In order to cope with existing inequalities and serving as a guide to all European Union (EU) member states, it was designed the Policy Paper on Tackling Social Inequalities in Cancer Prevention and Control for the European Population. This policy paper is one of the deliverables of The Joint Action on Cancer Control (CanCon), an initiative of the European Commission with 17 countries as partnerships. The document offers recommendations and concrete actions designed to reduce social inequalities in cancer prevention and control. These recommendations capture expert analysis of the challenges face by the EU Member States.

The policy paper includes 13 general recommendations grouped in three areas: capacity building, primary and secondary prevention and cancer, treatment, survivorship, and rehabilitation. These actions and policies should be for the entirety of the population, but with an emphasis on vulnerable groups. In this document, recommendation 7 refers to primary prevention. It says: “Implement proportionate universalism policies to develop and maintain living environments favouring compliance with the European Code Against Cancer” and sub-recommendation 7.1: “Ensure that tobacco and alcohol control policies, as well as other interventions promoting healthy behaviours, are addressed to the whole population with additional emphasis on socially vulnerable groups.”

Many population health interventions focus on unhealthy behaviours that are key contributors to the cancer burden, but successful cancer prevention requires various levels of action (individual, legislative, etc.) supported by government policies[6]. Without targeted prevention programmes, intervention or communication campaigns can inadvertently contribute to widening inequalities via the so called “Inverse Prevention Law” under which more educated or affluent groups of society can more readily access or interpret messages about prevention or screening and are better able to act on them to change their behaviour and reduce their risk[7,8].

Another key point is the implementation of proportionate universalism policies to develop and maintain living environments that facilitate compliance with the European Code Against Cancer. The proportionate universalism approach is based on universal action but with a scale and intensity that are proportionate to the level of disadvantage[9].

In addition to the CanCon Joint Action policy paper and with the aim to identify success cases for reduction of inequalities in prevention of cancer, investigators conducted a contest of best practices. Contest of best practices tackling social inequalities in cancer prevention is an initiative emerged in the framework of Innovative Partnership for Action Against Cancer (iPAAC) Joint Action. https://www.ipaac.eu/res/file/20190513-contest/contest-best-practices-report.pdf This contest identifies interventions proven effective to reduce social inequalities in cancer prevention in European countries, with the aim of sharing lessons learned, inspiring solutions, and facilitating replication in other health systems and similar social settings.

The purpose of the contest was to identify and disseminate good practices to reduce social inequalities in cancer prevention and to contribute to focus on the importance of improving equity in the practice of healthy habits that reduce the risk of developing cancer, as well as in access to early detection programmes.

In relation to good practice of health promotion, the strategies identified are focused on favouring healthy attitudes to prevent cancer and reduce inequalities. For example, some of these best practices are: Nutri-Score which provides a colour-coded summary indicator of the overall nutritional quality of pre-packaged food products. This public health measure impacts the general population and has been shown to be effective in particular in vulnerable groups; the Opticourses programme which consists in participatory workshops involving playful activities about food purchasing practices and nutritional quality. Opticourses is a community-based health promotion programme, which was developed with and for socio-economically disadvantaged individuals to improve the nutritional quality of their household purchases without additional cost; or TABADO, TABADO is a programme carried out in vocational training centres which included a general information session for all students and small-group sessions plus individual counselling and nicotine therapy. The TABADO programme, was effective in producing a higher 12-month abstinence rate among all smokers.

These good practices also have been focused on the improvement of communication with the population and assistants of the programmes, either directly with the primary care professional or through peer groups like RIU. RIU is a peer education-based community health intervention to provide information and promote favourable attitudes towards cancer prevention and access to breast, bowel and cervical cancer screening programmes. The intervention is geared towards groups in highly vulnerable situations. These examples and many others are available on the contest page: https://www.ipaac.eu/en/contest-best-practices/

The experience shared and the work carried out has contributed to promoting new models of primary cancer prevention that reduce inequalities between all sectors of the population in the EU Member States, with special emphasis on the most vulnerable as it points the proportionate universalism approach. From this perspective, the focus should be on the social determinants of health. It is essential that these guide all interventions to ensure their effectiveness on health promotion in an equitable manner so that gender, place of birth or socio-economic status are no longer determinants of the health status of individuals.

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6.4 Research

Joachim Schüz, Carolina Espina

Primary cancer prevention was identified in Europe's Beating Cancer Plan and the European Cancer Mission as one of the main areas to focus on with the goal to reverse the trend of an increasing cancer burden in Europe. At present, despite modest successes in some areas of primary cancer prevention, numbers increase all over Europe, due to the demographic development, in particular the increase in life expectancy and therefore aging of the European population. It is estimated that with our current knowledge of the causes of cancer development we have established approximately half of the causes of the European cancer burden, of which the vast majority, beyond 40%, would be preventable if this knowledge on cancer aetiology was implemented as rigorous primary cancer prevention strategies[1]. However, for some preventive actions we have not yet established the most successful interventions and some of those interventions require the adaption to the local cultural, socio-economical and health care infrastructure context. In addition, for half of the cancer burden we have not yet identified the causes. Furthermore, outcomes research monitors the success of primary prevention, first but not exclusively through close surveillance of cancer incidence and mortality time trends and their geographical variation. Population-attributable fractions help to quantify the contribution of individual risks to the total cancer burden and also vary over time and geographically. In conclusion, this shows that applying prevention and research need to continue in parallel.

A research agenda of four major research needs was proposed in the context of developing the sustainability and monitoring roadmap of the European Code against Cancer (ECAC)[2], launched in its 4th edition in 2014[3]. The agenda lists research on implementation and dissemination, etiological research, complemented with gathering, assessment, evaluation of impact and transfer of the knowledge. First, research to successfully implement evidence-based primary and secondary prevention measures across Europe, and to evaluate novel preventive interventions and their implementation to optimise their impact on the health of individuals or different risk groups within populations is needed. To date, research has mainly focused on developing new interventions rather than on optimising the delivery of existing successful ones by investigating major social, behavioural or economic barriers that impede effective implementation within the wide range of existing health systems (i.e. smoking as the most striking example, as it still causes half of all preventable cancer cases in Europe (1)). In addition, dissemination research aims to understand the best ways to spread knowledge and the associated evidence-based interventions to communities and practice settings. Hence, second, a systematic evaluation of the ECAC as a cohesive set of guidelines, in the framework of dissemination research, to ensure that the ECAC reaches the target population(s) and to measure the impact of its use is merited. Health education and behaviour change-promoting tools, such as the ECAC, would need a wide reach and proper dissemination to have an impact on public health, overcoming lack of health literacy at individual but also at structural level. Third, the creation and maintenance of a European Evidence based Cancer Prevention Centre, including an Evidence-based Prevention Portal

and an e-Learning platform are to be developed, to promote rapid dissemination of best practices in cancer prevention, to contribute to implementation research to optimize the implementation of known preventive strategies, to identify unanswered questions that require research investment, and to build capacity in cancer prevention for a variety of audiences. Fourth, strengthening research into the causes of cancer with targeted European research programmes remains a high priority. This is in particular so for environmental factors, as it may be that such effects are currently underestimated. For example, whereas more than 120 agents have been classified as carcinogenic to humans by the IARC Monographs Programme with many of them through epidemiological studies of occupation-related cancers[4, 5], studies have shown no or very little effect at low doses as occurring in the environment, or the dose-response relationship is not known. Environmental factors including air pollution encompass a huge number of distinct chemicals and even more combinations of those. So, for example investigating “pesticides and cancer”, seemingly sounding like one hypothesis, in reality stands for hundreds of distinct scientific hypothesis as pesticides is a diverse group of various active ingredients or formulations, and cancer comprises more than hundred potentially aetiologically distinct cancer types.

Research needs were also discussed at the iPAAC WP5 Meeting on Cancer Prevention on 22 February 2021, with some important conclusions. First, research must be comprehensive, including unknown risk factors (discover the new ones) and known risk factors (discover ways how to implement the interventions effectively and timely). Second, tailored approaches are needed to fit the needs of particular target groups of prevention efforts, to deliver the interventions effectively. Third, networking and sharing of data and knowledge, experience, and good practices are needed to obtain more comprehensive research data and knowledge of what works and what does not work.

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7 Sustainable future

7.1 Strategic foresight, desirable futures

Satu Lipponen

Since launching the Europe Against Cancer Programme in 1987 cancer prevention in the European Union has been gaining ground. Policies regulating for health are no longer perceived only as limitations to personal freedom of choices but rational policy actions towards improved health of individuals, communities and environment.

As the future is not clear, foresight has given ideas what desirable futures may entail. Foresight is the discipline of exploring, anticipating and shaping the future to help building and using collective intelligence in a structured, systematic and systemic way to anticipate developments. Strategic foresight, on the other hand, seeks to embed foresight into European Union policy-making.[1]

The European Commission published its first strategic foresight report in 2020. The central concept is resiliency. This means dealing with complex problems and going through transitions with sustainable, fair and democratic manner. The Commission concludes that resilience is necessary in all policy areas to undergo the green and digital transitions[2, executive summary].

Pandemics like COVID-19 can potentially impact on megatrends, major drivers of change that have been identified.

The effects of the COVID-19 pandemic are under research. Their influence on preventive policies is not yet known. There are observations that vulnerable groups were particularly hard hit because of the pandemic. Recent foresight report warns in its conclusions that public health versus economy is a false dichotomy.[3]

Cancer prevention is a very rational policy action for future Europe. Despite legislative restrictions, European Union has been successful in tobacco control and regulating the product and its marketing. Tobacco control is also a good example of barriers to prevention; behavioural changes are not enough, public policy and systematic programmes are needed in supporting or even nudging individuals toward health lifestyles. These policies go across different scientific fields.

However, making the case for cancer prevention on European level is not enough, even if it could be prerequisite for action in EU member states. Member states are key to implementing public health policies in all age-groups. Cancer is a disease of old age but we need still specific action among young people, especially in prevention.

Industries have a key role in building up successful preventive policies. Public-private partnerships and win-win negotiations might offer solutions but are in some cases impossible or problematic. New forms of collaboration also emerge, for instance the New European Bauhaus initiative of the European Commission looking into sustainable urban living.

What about our food system? Solutions for how to deal with waste are becoming popular. Extreme droughts in western and central Europe in 2018, 2019 and 2020 caused considerable damage. This means the sustainable (re-)use of water, soil management and vegetation cover, drought resistant crops, vertical farming, or even land use planning and restoration of damaged areas[4].

Cancer-specific prevention has synergies with other non-communicable diseases. Action that takes into account of systemic changes in our environment are already on the global and EU research agenda. In the future this will need good public health policy and implementation models.

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7.2 Health promotion 2.0: ecological approach

Kaarina Tamminiemi

Generally, health has improved in the past century, but the continuation of this trend is threatened by population growth, urbanisation, environmental change, poverty, inequity, war, existing communicable and chronic diseases, and possible new ones. Many global health threats are linked to climate change. The WHO has released a list of urgent health challenges the world will face over next decade, which highlights a range of issues including climate change (WHO 2020).

Climate change leads to shifts in weather patterns, increasing ambient temperatures and the occurrence of extreme weather events. These threaten the economies, livelihoods, health and wellbeing of people globally. Changing climate conditions and increasing temperatures will cause direct and indirect pathways to NCD's as heat stress, higher ground-level ozone and other air pollutants, impaired agriculture, reduced food yields, nutrition insecurity (Public Health 2010). Many varied links have been identified between climate and mental health which are highly socially and culturally mediated (Lancet 2019). Climate change has the potential to change the risk of UV-related health outcomes, including cancers. Both indoor and outdoor air pollution significantly increase the risk of lung cancer (WHO 2014).

Climate change affects different populations in different ways. Across the world, children are among the worst affected by climate change. They are among the most susceptible to diarrheal disease. On the other hand, populations aged 65 years and older, are particularly vulnerable to the health effects especially to extremes of heat. (Lancet 2019.)

Environmental determinants of health are directly influenced by social and economic interests that lead to overexploitation of natural resources and pollution. They also threaten the planet's capacity to cope with severe alterations to the ecological systems on which the very existence of human life depends. Health is particularly associated with changes in the natural environment that are man-made; many potential synergies for health and environment protection arise from focusing on the root causes of health and environmental degradation. (Dora, Pfeiffer & Racioppi 2013, 256.)

The nature of the threat posed by climate change is different from other threats and cannot be prevented though the traditional health promotion but requires a change a mindset.

Ecological approach has been involved in health promoting policies since 1986

WHO World Conferences on Health Promotion and the documents they produce have played an important role in the development of the field. Of particular importance was the first conference in Ottawa, Canada, in 1986. Current health promotion policies are largely based

on the Ottawa document (WHO 1986). The Ottawa document introduced the concept of health promotion. The document defined health promotion and five health promotion policies.

1) The development of a healthy social policy is based on the fact that health promotion takes place mainly outside the health care system. Environmental factors affecting health were recognized by legislation, tax and price policy and income and social security policy.
2) *Creating a healthier environment means an ecological approach and emphasizes community responsibility and the importance of conserving natural resources.*
3) Underlying the strengthening of community action is the idea of everyday arenas in which health issues are decided.
4) Developing personal skills is important for yourself and the environment health care. Skills can be developed by increasing knowledge and health education.
5) Reforming the health care system is significant from the point of view of health promotion. The health care system was expected to be increasingly oriented beyond clinical and therapeutic services.

The importance of the environment is emphasised in these health promotion policies. External health determinants (health social policy, healthy environment, community functioning and health care system) are related to the environment. Only one the policy highlights the promotion of individual health. The starting point is to develop skills, not just increase knowledge.

The ecological approach has been involved in health promotion policies since Ottawa. The perspective has emerged in different decades in different ways. In practice health promotion has focused on social determinants of health (Hancock 2019). At times, it has been almost forgotten, but in recent years the importance of perspective has been emphasised (IUHPE 2019).

Trevor Hancock has underlined that the well-being of ecosystems has now and always been the most important determinants of health, and that this aspect has been left out in the development of health promotion since the Ottawa Declaration. (Hancock 2019.)

There is no health without planetary health

In 2015, the UN General Assembly adopted the new development agenda “Transforming our world: the 2030 agenda for sustainable development”. The 17 Sustainable Development Goals (SDGs) integrate economic, social and environmental development around the themes of people, planet, prosperity, peace and partnership. In doing so, they provide an action plan for the global community.

The need for countries to act on climate change is enshrined in one of the UN's Sustainable Development Goals, which calls on countries "to take urgent action to combat climate change and its impact". However, the need for action on climate change is intrinsic to almost all SDGs, not least those addressing health. (UN 2015.)

Climate change is a global problem that needs a global solution. The concept of planetary health recognizes that these disturbances in planetary systems pose threats to human civilisations and to our survival. We must create new global approaches that govern the behavior of governments and corporations, including reshaping our economies and systems of governance to place human well-being and planetary sustainability at the center of decision-making. At the local level, we must create "One Planet Communities"- settlements that have an ecological footprint per person equivalent to one planet's worth of biocapacity and resources while maintaining a high quality of life and good health for all. (Hancock 2020)

The Lancet Commission on planetary health identified poor governance (defined as implementation failures) as an issue that must be addressed if we are to maintain or improve human health in the face of harmful environmental change. The aim of the 2015 Paris talks – encouraging countries to agree to reduce emissions to the extent that global temperatures increase by no more than 2°C – needs all countries to accept responsibility without self-interest: our health, and that of future generations, depends on it. (Lancet Commission 2015.)

The Economy of wellbeing emphasise investments in wellbeing

Promoting the health of the population is considered one of the key tasks of the welfare state, but it sees well-being largely through material wealth. The necessity of economic growth is justified as the cohesive ideology of the welfare state, even though our consumption has exceeded the ecological limits of the planet. There is a lot of talk about the effects of climate change on people. There is less talk about what is the role of man as the cause of problems. This perspective has begun to be challenged. As big questions arise about the survival of the entire human race or the planet, identity is increasingly being built globally. Especially in the younger age groups.

The Economy of wellbeing rose to the political agenda of the European Union during Finland's EU Presidency. The October 2019 European Council conclusions stated that the economy of wellbeing is "a political and governance model that seeks to put people and their well-being at the heart of policy and decision-making"(Council of Europe 2019b). The Economy of wellbeing is a useful framework within which health promotion strategies can be anchored in order to increase their visibility and strengthen the promotion of common goals.

The Economy of wellbeing emphasises investments in wellbeing as underlying a sustainable, stable and equal economy and society. Wellbeing investments are social inputs which either

produce wellbeing directly or create structures that support the prospects of wellbeing and good life in the long run. Wellbeing investments may be made in many sectors and on many levels of the society. They may be monetary or non-monetary but a common trait is that their attainment is primarily evaluated through wellbeing benefits. (Ahokas & Rouvinen-Wilenius 2019.)

Climate change mitigation and biodiversity protection are also welfare investments. Many climate change mitigation measures have health-promoting side effects for instance increase in the share of cycling and walking promotes health.

Environmental problems will hopefully lead to the awakening of critical thinking and an increase in planetary awareness at various levels of society. Choices at both the individual and societal levels matter.

Planetary awareness should be raised in health promotion education, research, policy and practice. Schools have an important role to play in providing education on sustainable development and ecosocial issues, which can bring about changes in people's attitudes and values, as well as in how they perceive the environment. Public health and health policy play a key role. Ecology and sociality are a natural part of the experience of a good life.

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7.3 Healthy sustainable diet in the prevention of cancers

Heli Kuusipalo, Sirpa Sarlio, Suvi Virtanen

What we eat varies a lot between countries, local cultures, socioeconomic status, gender, etc. But in too many places, from rural to urban, food systems are failing to provide diets that promote nutrition, health, and sustainable development. Three billion people cannot access a healthy diet[1]. Poor diet is related to 6 of the top 10 risk factors for the glob al burden of disease[2]. Hunger kills millions of children every year. Evidence shows that health, nutrition, climate and biodiversity targets will not be achieved without major changes in global food systems.

6 of the Top 10 Risk Factors
for the Global Burden of Disease are Diet Related (**in red**)

FEMALES IN 2019

1. **Child and Maternal Malnutrion**
2. **High Systolic Blood Pressure**
3. Air Pollution
4. **High fasting plasma glucose**
5. **High body mass index**
6. **Dietary Risks**
7. Tobacco
8. Unsafe WASH
9. **High LDL Cholesterol**
10. Unsafe Sex

MALES IN 2019

1. Tobacco
2. **Child and Maternal Malnutrion**
3. **High Systolic Blood Pressure**
4. Air Pollution
5. **Dietary Risks**
6. **High fasting plasma glucose**
7. **High body mass index**
8. Alcohol use
9. **High LDL Cholesterol**
10. Occupational risks

Lancet: Global Attributable Disability Adjusted Life Years (DALYs): Top 10 Risk Factors
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30752-2/fulltext

By definition, sustainable food systems aim at achieving food and nutrition security and healthy diets while limiting harmful environmental impacts. Sustainable food systems protect biodiversity and ecosystems, as well as human well-being and social equity.
As such they provide culturally acceptable, economically fair, affordable, nutritionally adequate, safe and healthy foods in a way that balances agro-ecosystem integrity and social welfare. Current food systems are responsible for a third of global GHG emissions.

Yet there are tremendous opportunities for food systems to help people, wherever they are, whatever their circumstances, to eat diets that are “health-promoting and disease-preventing, diets which provide adequacy without excess of nutrients and health-promoting substances from nutritious foods, while avoiding the consumption of health-harming substances”[3].
In the United Nation’s coordinated sustainable food system dialogue the aim is to ensure systems that support health nature, gender equity, decent work, resilience, and is rooted

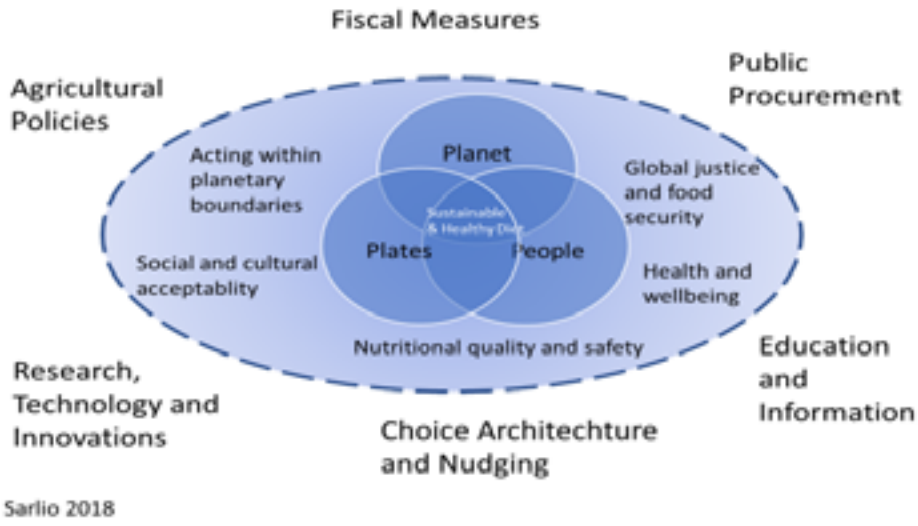
in local cultures. Healthy diets from sustainable food systems tackle the scourge of undernutrition (stunting, wasting, micronutrient deficiencies); overweight/obesity and diet-related and non-communicable diseases.

In 2019, the EAT Lancet Commission presented the suggestion for planetary diet which would provide health and food security on a sustainable manner for 10 billion people by the year 2050. Healthy planetary diet is based on vegetables, whole-grains, fruits, pulses, nuts, seeds, vegetable oils, and as additional protein sources contains modest amounts of milk, fish, and white meat. Refined grain products, sugar, and red meat should be consumed rarely.

A plant-based diet, avoiding excessive amounts of salt, sugar and red meat, together with avoiding obesity are most important nutrition-related factors in cancer prevention. Evidence that red meat, particularly processed meat and salt intake play a role in the development of bowel and stomach cancers, respectively, is convincing. There is increasing but not yet convincing evidence that n-3 long-chain fatty acids may prevent cancer and sugary drinks cause it. Plant foods are recommended to decrease the risk of cancers of the digestive system. Alcohol drinking is a risk factor for several cancers[4]. Nutritional guidelines for prevention of cancer are very well in line with recommendations for preventing other chronic diseases such as cardiovascular diseases and type 2 diabetes, and have been considered e.g., in Nordic Nutrition Recommendations. The NNR2012 recommendations took already into account the environmental sustainability, but as they are currently revised and will be published in 2022[5], the research-based environmental sustainability aspect will be stronger.

Finland has been ranked first in an international comparison assessing countries' progress on implementing the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDG) by the UN and the Bertelsmann Foundation. According to the ranking, Finland's greatest challenges are related to the fight against climate change, the need for more sustainable consumption and production patterns and halting biodiversity loss. As stated in Finland's Sustainable Development Report[6], the COVID-19 pandemic is a setback for sustainable development everywhere. For the first time since the adoption of the SDGs in 2015, the global average SDG Index score for 2020 has decreased from the previous year: a decline driven to a large extent by increased poverty rates and unemployment following the outbreak of the COVID-19 pandemic. The pandemic has impacted all three dimensions of sustainable development: economic, social, and environmental. The highest priority of every government must remain the suppression of the pandemic, through non-pharmaceutical interventions and global access to vaccines.

There are several policy options to promote both the health of people and the planet[7].



Picture. Perspectives and policy options to promote the health of people and the health.

Nutrition policies in Finland have a legal base as public health promotion is included in the Constitution. The National Nutrition Council of Finland[8] has already since 1954 monitored the nutrition and health of Finnish people and issued nutritional recommendations aimed at improving their status. In the recent decades the major challenge has changed into reducing health problems caused rather by the overabundant consumption of food or food of the wrong type. The greatest challenges in national health are associated with the prevalence of overweight and type 2 diabetes in both adults and children of ever younger age. The prevention of cardiovascular diseases through nutritional means is also still one of the most important objectives The public food services in Finland reach daily the young generations through education system starting from day care services up to university students. The nutrition criteria for bidding catering services is setting the healthy basis for all. Also, the voluntary Nutrition commitment system[9] has enabled industry in the reformulation for healthier products.

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4 WHO International Agency for Research on Cancer https://cancer-code-europe.iarc.fr/index.php/en/ecac-12-ways/diet-recommendation
5 Nordic Nutrition Recommendations, https://www.norden.org/fi/node/7832
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7 Sarlio Sirpa, Towards Healthy and Sustainable Diets, https://www.springer.com/gp/book/9783319742038
8 National Nutrition Council, https://www.ruokavirasto.fi/en/themes/healthy-diet/national-nutrition-council/
9 Nutrition Commitment, https://www.ruokavirasto.fi/en/themes/healthy-diet/nutrition-commitment/

8 Conclusions

In the European Union we are working in a global health context. This is the case with the Framework Convention on Tobacco Control, Sustainable Development Goals and global efforts to reduce the burden of noncommunicable diseases.

The most effective ways to prevent cancer in Europe are to change tobacco and alcohol use. There are already signs that obesity, too energy-dense foods, and lack of physical exercise are causing more cancerous diseases than before. Much of public information about cancer risk is focusing on individual. There is a push to move towards more comprehensive societal or systemic approaches, as the iPAAC recommendations of the European Code Against Cancer demonstrate.

If cancer prevention is high on the agenda, it needs support to every level of governance and in every phase of cancer control. It also needs health policy structures, such as alliances, working across sectors and capacity building.

There is consensus to stick to the evidence-proven interventions. It is important to agree on transferability and to build on the awareness of successful interventions. Prevention research should cover the entire cancer research continuum, including cancer surveillance, basic research, understanding the mechanisms and causes, and interventions and implementation research at the societal or population levels. The research agenda should comprise both known factors – how to implement effective measures to prevent them – and discovery of new unknown risk factors. There has been concerns of so-called hijacked resources in the light of COVID-19 pandemic which could steer focus away from preventive actions.

The main findings of the iPAAC task 5.3. are:

- The potential to tackle cancer prevention and noncommunicable diseases rest on strong public health infrastructure. The governments are in a key position. Applying health policies with supporting structures is one way to advance cancer prevention on European level. The working group discussing implementation noted that prevention often has no ownership. Structural support can mean approach across policy sectors like Health in All Policies (HiAP), health investment plans, or legal frameworks regulating risk factors, such as Tobacco Products Directive, Framework Convention on Tobacco Control or tax policies.
- Tobacco control is a good example of equal and sustainable preventive action. Tobacco control has proven the importance of comprehensive policies. The most effective tools have been tested in research setting and they require long term planning. Governments should commit to national tobacco-free generation strategies and develop evaluation and monitoring their implementation accordingly. Denormalising tobacco use with tax policies and plain packaging are helpful.

Learnings from tobacco control are useful for other risk factors of cancer. Tobacco industry should not be involved in any policymaking as stipulated in the Framework Convention of Tobacco Control and its guidelines of the Article 5.3.

- Consumers need to be better aware of carcinogenicity of alcohol. To achieve alcohol-related goals of the Europe's Beating Cancer Plan, comprehensive European-level strategy for reducing alcohol-related cancer burden should be urgently prepared and implemented using modern technologies in communication.
- Physical education has benefits in all levels of cancer prevention. It should be included in every important cancer prevention programme, both on national and European level. Physical activity should be available and encouraged for everyone through creating favourable environments.
- Sustainability of ecosystems require profound changes for planetary health. The group of diet and nutrition retitled its work as sustainable plant-based diets and the obesity epidemic, with recommendation of plant-based diet and decreasing the consumption of energy-dense and highly processed foods. Food industry was seen an important collaborator in this process and in making the sustainable choices available for the consumers. Consumers need better information for nutritional content of their food products. With Health in All Policies approach obesity should be tackled through urban planning, preparing a transition to green economy, regulating marketing and working through education policies.
- Capacity building and alliances are essential to bring all sectors together. Investment is needed for people to be able to work together across the boundaries of policies and sectors.
- Vaccinations are needed for targeting oncogenic infections for effective cancer control. Especially HPV vaccination programmes and calls for eradication of cervical cancer should be implemented with promoting gender-neutral vaccination programmes and for increasing coverage to an acceptable level throughout the Member States.
- Make Health in all policies (HiAP) a reality and build up similar supportive EU-level structures for Member States. These structures can be alliances and partnerships, recommendations, guidelines, regulations or shared strategies.
- Plan and conduct the policy implementation with clear project goals and owners, and involvement of all relevant stakeholders from different professions and sectors, including scientists, policy makers, decision makers, citizens, civil society and the commercial sector. If the commercial sector would be brought on board, then policy goals will not face as strong opposing stakeholders in their countries because of commercial interests. However, this is not always possible due to conflicts of interests as the decades of tobacco control has demonstrated.
- Informing people with tailored approaches can be boosted in many ways. Strengthening health literacy in every level brings lasting results. Encouraging people to understand the basis for regulations and legislation and including them in the planning phase of any action reduces tensions. Support collaborative projects and joint efforts should be encouraged, when possible.

- The European union has committed to strengthening cancer prevention. Priority should be given to actions that reduce inequalities among different population groups, regions and countries.

To conclude:

1. Preventing cancer and other noncommunicable diseases require urgent action. Interventions should be evidence-based, transferable and promoted across borders and sectors. Cancer prevention should be applied in the whole cancer control continuum from early healthy lifestyle choices and environments supporting these choices to patient advocacy, survivorship, and quality of life.
2. European cancer prevention requires EU-level structures that support governments, so that they can enact according to a shared vision. In Europe, regional differences and vulnerable groups pose a challenge. Tobacco control is a good example of both equal and sustainable prevention. Commercial determinants should be noted when planning effective health policies.
3. Consumers need to be informed systematically of healthy choices. Awareness of carcinogenicity of common alcohol products is necessary. People need to find, understand, assess, and apply health-related information.
4. Enhancing health literacy of individuals is not enough; there is a need to create sustainable environments and public health policies that support and steer towards healthy life-style choices and environmental safety, including keeping down carcinogenic exposures.

Annexes

1. Conference report contributors
2. Contributors from the iPAAC working groups task 5.3
3. Agenda, iPAAC WP5 Final Conference 22.2.2021
4. Participants as registered, Cancer Prevention in the 2020s
5. Keynote presentation, Dr. Elisabete Weiderpass, Director, IARC
6. Instructions to the facilitators and rapporteurs
7. Breakout session reports
8. Links to background papers and dissemination

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3. Agenda, iPAAC WP5 Final Conference 22.2.2021

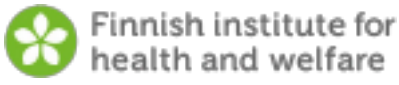
Cancer prevention in the 2020s - finding sustainable solutions

WP5 final conference

Monday 22 February 2021 | 12:30 – 15:30 CET | Online (Zoom)

Programme

12:15 - 12:30	*Virtual space open*
12:30 - 13:15	**Plenary session #1**
12:30 – 12:40	**Opening remarks** *Satu Lipponen, Cancer Society of Finland & Rui Medeiros, Association of European Cancer Leagues*
12:40 – 12:50	**Purpose & objectives** *Dr Sakari Karjalainen, Cancer Society of Finland*
12:50 – 13:15	**Keynote presentation: Global cancer burden and research priorities for cancer prevention** *Dr Elisabete Weiderpass, International Agency for Research on Cancer*
13:15 – 14:00	**Breakout session #1 – Effective instruments in cancer prevention** A. Tobacco control B. Alcohol C. Physical activity D. Diet and nutrition E. Infections and vaccination F. Climate, environmental pollutants and exposures G. How to implement? Examples from Member States and regions H. Health in All policies (concepts and applications) I. Health literacy J. Health inequalities K. Research L. Influencing Policy (from science to policy)
14:00 – 14:10	*Short break*
14:10 – 15:00	**Breakout session #2 – Implementation and sustainability in cancer prevention** Session topics as in Session #1.
15:00 – 16:00	**Plenary session # 2**
15:00 – 15:20	**Priorities & sustainable solutions** *Dr Sakari Karjalainen, Cancer Society of Finland & Tit Albrecht, iPAAC Scientific Coordinator*
15:20 – 15:30	**Conclusions & next steps** *Kaarina Tamminiemi, Cancer Society of Finland & Dr Pekka Jousilahti, Finnish Institute for Health Welfare*
15:30 – 16:00	**Networking**



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5. Keynote presentation

Dr. Elisabete Weiderpass, Director, IARC

Global cancer burden and research priorities for cancer prevention

Dr Elisabete Weiderpass, Director

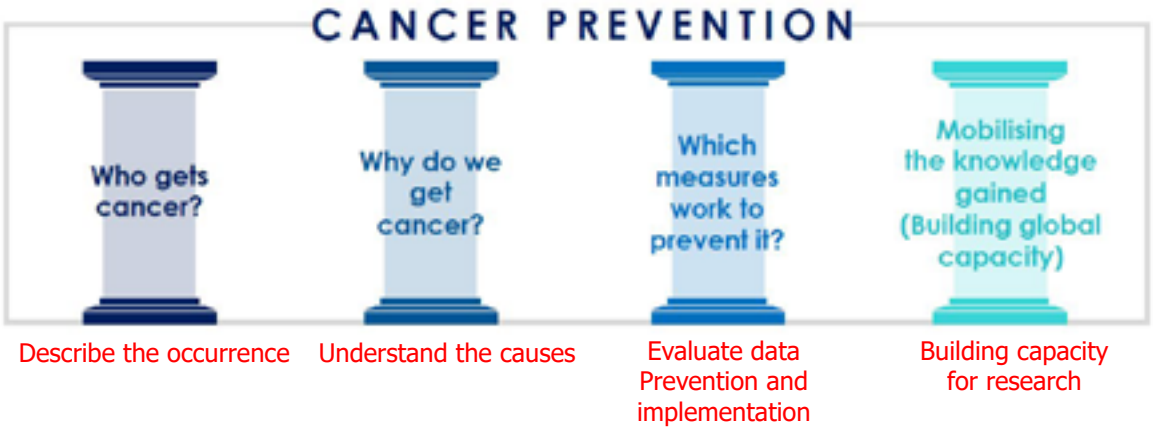
International Agency for Research on Cancer
Lyon, France

International Agency for Research on Cancer
World Health Organization

WP5 Final Conference – February 22nd 2021 - remotely

IARC - an international effort to combat cancer

International answers to national questions



International Agency for Research on Cancer
World Health Organization

GLOBOCAN estimates 2020

CANCER TODAY

GLOBAL CANCER OBSERVATORY

CANCER TOMORROW

- 19.1 million new cancer cases (incl. NMSC) worldwide in 2020
- Breast has surpassed lung cancer as leading cause of cancer incidence

- 28 million predicted cancer cases by 2040

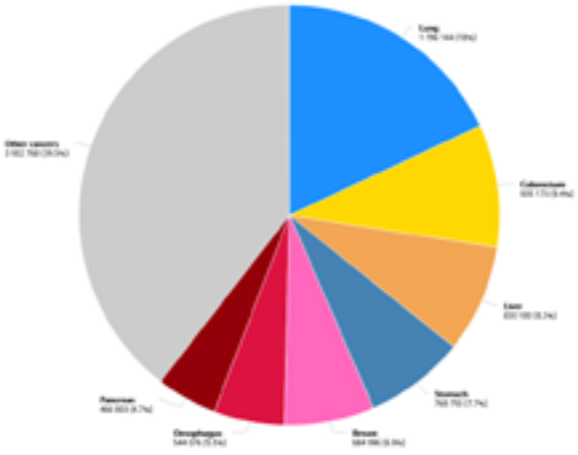
13

Top-5 cancers worldwide, 2020

Incidence

19.2 million new cases

Mortality

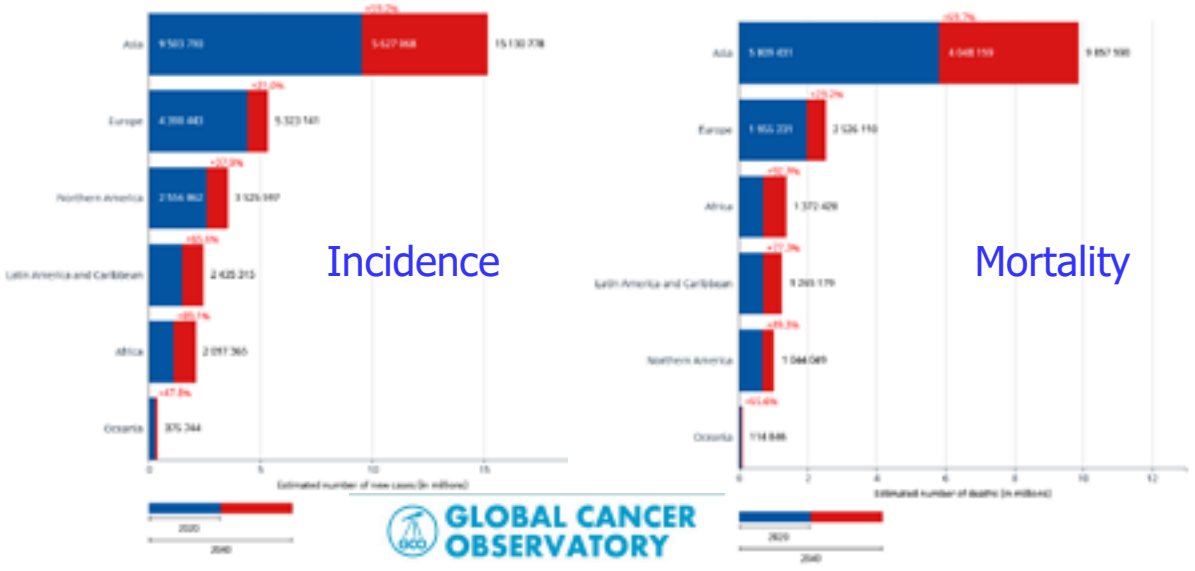


9.9 million deaths

International Agency for Research on Cancer
World Health Organization

GLOBAL CANCER OBSERVATORY

The need for cancer prevention facing the projected cancer burden 2020-2040

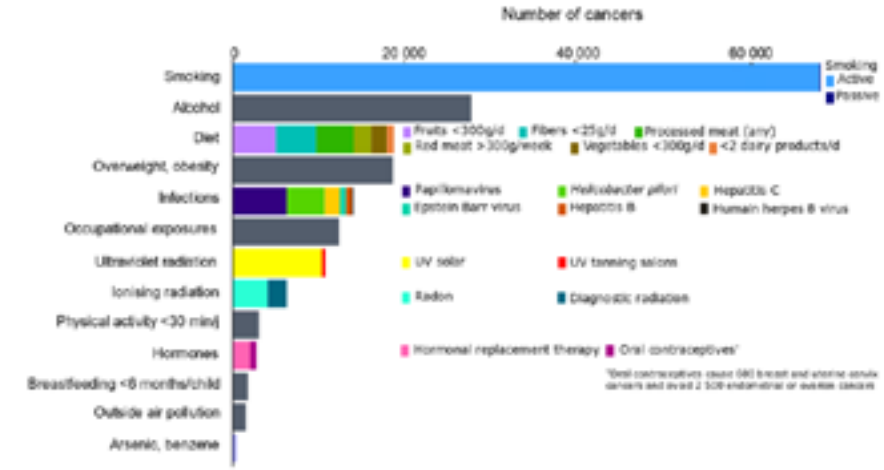


Cancer is a preventable disease that requires major lifestyle changes

30-50% of cancers are preventable

International Agency for Research on Cancer
World Health Organization

Potential for primary prevention: illustration of PAFs in France

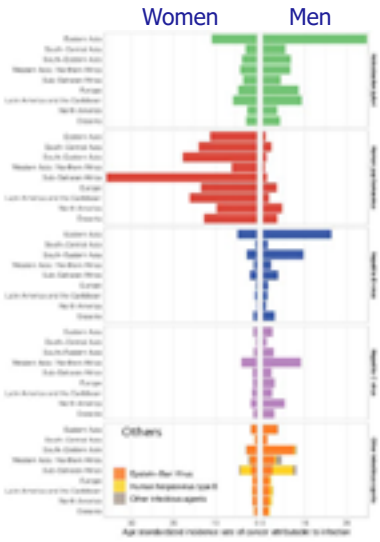


41% of all new cancer cases attributed to smoking, alcohol, unhealthy diets and excess weight

International Agency for Research on Cancer
World Health Organization

Global burden of cancer attributable to infections, 2018

2.2 million infection-attributable cancer cases worldwide (13% of all cancers)



***H. Pylori* 810,000**
(42% in China alone)

HPV 690,000
(ASIR greatest in SSA)

HBV 360,000
(70% in China alone)

HCV 160,000
(patchy distribution)

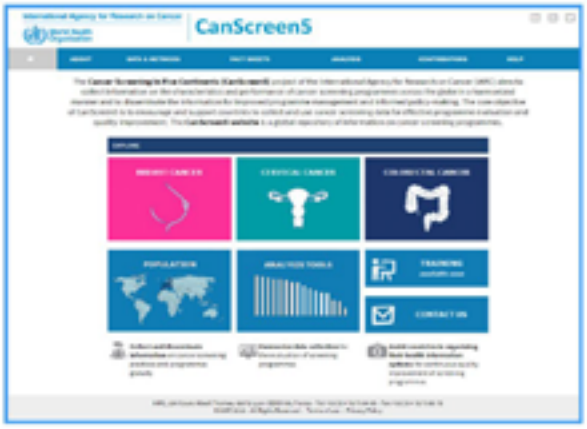
Others 210,000
(EBV underestimated; HHV-8 mostly in SSA)

HIV ?

International Agency for Research on Cancer
World Health Organization

De Martel et al., Lancet Global Health, 2020

Cancer Screening in five continents



Collect and disseminate information on cancer screening practices and programmes globally

Harmonize data collection for the evaluation of screening programmes

Assist countries in organizing their health information systems for continuous quality improvement of screening programmes

Funding

- IARC
- National Cancer Institute (NCI/USA)
- American Cancer Society
- Norway Research Council

EU data available on CanScreen5 for breast, cervical and colorectal programmes

International Agency for Research on Cancer
World Health Organization

https://canscreen5.iarc.fr
canscreen5@iarc.fr
#CanScreen5

Putting the evaluation in context: The 4th Edition of the IARC/European Code Against Cancer

http://cancer-code-europe.iarc.fr

International Agency for Research on Cancer
World Health Organization

The World Code Against Cancer

- ✓Set of cancer prevention recommendations
- ✓Suited to the regional epidemiological, economic, social, and cultural conditions
- ✓Adapted to different audiences and dissemination channels

International Agency for Research on Cancer
World Health Organization

OUTCOMES

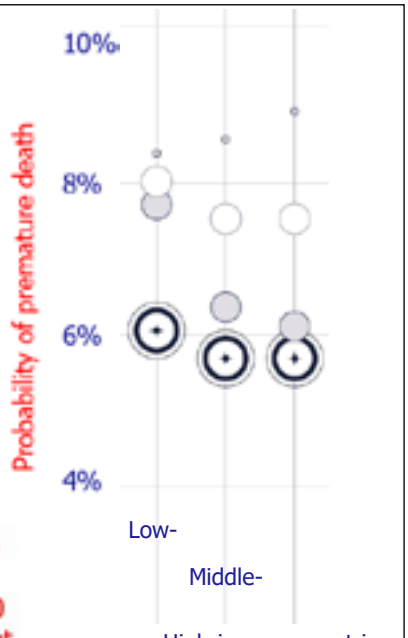
1) Effective ***communication*** of latest evidence
2) Empowering communities while offering good ***framework*** for prevention program
3) Strong ***evidence*** base and regional data
4) Ownership and political impact
5) United voice to call for cancer prevention

Progress towards SDG target 3.4

Only 12 countries globally are on track to achieve a one-third reduction in premature mortality from NCDs by 2030

Reaching SDG target 3.4 will require greater investment in cancer and other NCDs

I. Soerjomataram, F. Bray, WCR and WHO reports, 2020



International Agency for Research on Cancer
World Health Organization

Focus on a set of priority interventions and invest efficiently

WHO "Best buys": Very Cost-effective & Affordable Interventions*

Prioritize and invest in early diagnosis

CANCER

- **Prevent cervical cancer** by:
  - vaccinating girls aged 9-13 years against human papillomavirus
  - screening women aged 30-49 years, with the Pap smear, or human papillomavirus test, or visual inspection with acetic acid
- Provide **breast cancer screening** for women aged 50-69 years, with mammography linked to timely diagnosis and treatment
- Provide **surgery, chemotherapy and radiotherapy** treatment for cancer
- Provide home-based and hospital-based **palliative care** services

**Interventions with an average cost-effectiveness ratio of ≤I$100/DALY averted in LMICs*

REDUCE TOBACCO USE

- Increase excise **taxes and prices** on tobacco products
- Implement **plain packaging** and/or large graphic health warnings on tobacco packages
- **Ban tobacco advertising, promotion and sponsorship**
- **Ban smoking** in all indoor workplaces, public places, and on public transport
- **Warn about the harms** of smoking/tobacco use and second hand smoke through mass media campaigns
- Provide tobacco **cessation programs**

REDUCE HARMFUL USE OF ALCOHOL

- Increase excise **taxes** on alcoholic beverages
- **Ban or restrict alcohol advertising**
- **Restrict the physical availability** of retailed alcohol
- Enact and enforce **drink-driving laws** and blood alcohol concentration limits
- Provide **psychosocial intervention** for persons with hazardous and harmful alcohol use

PROMOTE HEALTHY DIET

- **Reduce salt intake** by:
  - product reformulation and setting targets for the amount of salt in foods and meals
  - providing lower sodium options in public institutions
  - promoting behavior change through mass media campaigns
  - implementing front-of-pack labeling
- **Ban trans-fats** in the food chain
- Raise **taxes on sugar-sweetened beverages** to reduce sugar consumption

PROMOTE PHYSICAL ACTIVITY

- **Promote physical activity** with mass media campaigns and other community based education, motivational and environmental programs
- Provide **physical activity counselling** and referral as part of routine primary health care

International Agency for Research on Cancer
World Health Organization

Set national priorities that are:

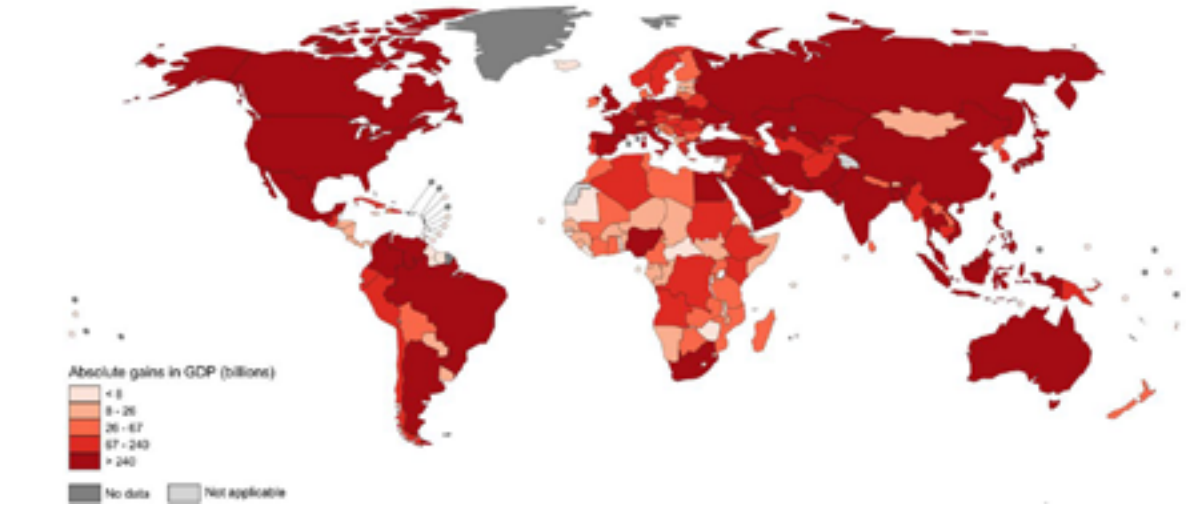
FEASIBLE **EVIDENCE-BASED** **COMPREHENSIVE AND INCLUSIVE**

- **Strengthen tobacco control to reduce cancer deaths by 25%**
- **Vaccinate against HPV and hepatitis B, reaching >90% coverage**
- **Screen for cervical cancer with >70% participation**
- **Focus on early diagnosis and treatment for curable cancers. For example, childhood cancer to save 1 million lives by 2030**
- **Scale-up capacity to manage 200 million cancer cases in next decade**
- **Provide palliative care for all**

International Agency for Research on Cancer
World Health Organization

WHO report 2020

An economic argument: $ gain if SDG target met



International Agency for Research on Cancer
World Health Organization

Cao et al, in preparation

Conclusion

- The cancer burden is significant and increasing. We must act now.
- **30-50% of all cancers are preventable**
- There is a need to implement existing evidence-based and cost-effective interventions in all countries in the world
- With WHO "best buys" as a guide, identify national priorities that are feasible, evidence-based and can be financed:

✓ **Control of risk factors:** tobacco control, unhealthy diet, physical inactivity, alcohol consumption, overweight and obesity, other risk factors

✓ **Screening for cervical, breast and colorectal cancers**

✓ **Hepatitis B and HPV vaccination**

✓ **Global inequalities** in cancer control planning and outcomes

International Agency for Research on Cancer
World Health Organization

6. Instructions to the facilitators and rapporteurs

WP5 iPAAC Online Meetings: Cancer Prevention in the 2020s - finding sustainable solutions

Hosted by Cancer Society of Finland, THL, ECL & IARC

22 February 2021, 12:30-15:30pm CEST

Online (Zoom)

FINAL AGENDA HERE

Instructions for Facilitators

- Connect to the online platform Zoom at least 15 minutes before the start of the conference to ensure you are able to connect smoothly and your video and audio functionalities work properly.

- If you have any technical questions/issues or you would like to book a test on Zoom prior to the event, please contact ECL through Gina**: Gina@europeancancerleagues.org**

- You are in charge of facilitating the group discussion during the 2 breakout sessions on 22 February from 13:15 – 14:00 and from 14:10 – 14:50.

- You are in charge of collaborating with a Rapporteur, who has been appointed to write the breakout sessions' outcomes and conclusions.

- The facilitator and the rapporteur work as a team - both have the right to participate in the discussion. ECL will email you, your Rapporteur and all your group members ahead of the event with technical information. It is recommended, if the time allows, that you contact the group and the rapporteur prior to the event to provide any background documents.

- The aim of the first breakout session (13.15 – 14.00) is to reflect the following question: '**What will be the most effective cancer prevention and health promotion steps in the 2020s?**'. Please **create a list of 1-3 examples or suggestions** (either at the regional, national or EU level) with your group. Please elaborate on the reasons for your group's choices. Then, remind the Rapporteur to rewrite your group's examples and conclusions on Padlet: https://padlet.com/eclcommpr/ipaac_conf_22Feb_2021

- Please allow for a short 10 minutes comfort break for the participants to stretch their legs between between 14.00 - 14.10

- During the second breakout session (14.10 - 14.50) you should encourage participants to discuss the 1-3 examples or suggestions listed - **What should we do in order to make prevention and health promotion efforts sustainable in the 2020s?** Include the perspective of policy making. Make at least one conclusion of the discussion.

- Please note that transferring group participants from the virtual plenary room to the breakout rooms and vice versa might take some time.

- If you have any technical questions or you would like to book a test on Zoom prior to the event, please contact ECL through Gina: **Gina@europeancancerleagues.org**

Facilitating the breakout sessions means:

- Start by briefly introducing yourself and getting introductions done: name and country.

- Ensuring that the group discussion ends on time.

- Please ensure each participant has time to share their thoughts and get involved at least once.

- Wrap up the group sessions, having reached 1-3 main conclusions for each breakout session.

- Ensuring the Rapporteur fills in your group's **Padlet** with the main conclusions from the breakout sessions before the closing plenary.

- Collaborating with the Rapporteur after the conference to fill in the **Breakout Session Report Template**.It is recommended that you share the minutes with the whole group and get feedback before the Rapporteur shares it with Kaarina.

- Contributing to the conference's report (timetable provided for March-May 2021 after the conference).

Instructions for Rapporteurs

- Connect to the online platform Zoom at least 15 minutes before the start of the conference to ensure you are able to connect smoothly and your video and audio functionalities work properly.

- If you have any technical questions/issues or you would like to book a test on Zoom prior to the event, please contact ECL through Gina: **Gina@europeancancerleagues.org**

- You are in charge of recording your breakout sessions (read more on how to record on Zoom here or you can use your mobile phone)

- You are in charge of taking notes and recording comments coming in from the chat box throughout the breakout sessions. Please use the **Report Template** available in the Google folder to take notes.

- You are in charge of helping the Facilitator ensuring the meeting runs on time.

- You will add the key points (max 1-3 conclusion statements) for each breakout session on Padlet during the conference and before the closing panel session : **https://padlet.com/eclcommpr/ipaac_conf_22Feb_2021**

- You will share your report with the Facilitator and all group members after the conference and give them an opportunity to add to/make changes to the notes before sharing it with Kaarina.

- Email the final report to: **Kaarina.Tamminiemi@cancer.fi** by Monday 1 March 2021

- You will contribute to the conference's report (timetable provided for March-May 2021 after the conference)

7. Breakout session reports

WP5 iPAAC Online Meetings: Cancer Prevention in the 2020s - finding sustainable solutions

Hosted by Cancer Society of Finland, THL, ECL & IARC

22 February 2021, 12:30-15/30pm CEST

Online (Zoom)

FINAL AGENDA HERE

CO-CREATIONAL BREAKOUT SESSIONS REPORT

Topic of your session: Tobacco control

Facilitator: Esteve Fernandez, ICO, Spain

Rapporteur: Anca Toma, SmokeFree Partnership, Belgium

Participants:

1. Esteve Fernandez, ICO, Spain (Facilitator)
2. Anca Toma, SmokeFree Partnership, Belgium (Rapporteur)
3. Kristin Byrkje, Norwegian Cancer Society, Norway
4. Marina Kafourou-Cosma, Cyprus Association of Cancer Patients and Friends, Cyprus
5. Ainhoa Maya, Spanish Association Against Cancer, Spain
6. Helen Stjerna, A Non Smoking Generation, Sweden
7. Anne-Sophie Versweyvelt, Stand Up to Cancer Flanders, Belgium
8. William Dello, Interel, Belgium
9. Mervi Hara, ASH Finland, Finland
10. Eleonora Varntoumian, EONS,

Meeting recorded? YES

Title: Tobacco Control for Cancer Prevention

Background:

Tobacco use is the single most preventable risk factor for cancer and other non-communicable diseases. Despite progress in reducing tobacco consumption in the last decades, the EU and member states still have a long way to go towards tobacco-free societies. The EU Cancer Plan target of reducing tobacco prevalence is an ambitious target which, if implemented, can bring health benefits for all generations to come. The breakout group discussed the challenges and possible solutions along two main questions: 1. What are the biggest gaps in tobacco control that have evidence-based solutions? and 2. What sustainable interventions will help achieve the EU's 2040 target of a smoking prevalence of to 5% ?

Conclusions

1. **Implement the Framework Convention.** The EU Cancer Plan and the EU initiatives should be used by **member states to adopt and implement comprehensive tobacco control strategies** based on the WHO FCTC towards tobacco-free targets along the continuum of cancer (and NCDs) care.

   The European commission should encourage member states to commit to national tobacco-free generation strategies and to monitor their implementation. Measures should range from primary prevention to supporting education and cessation for patients undergoing treatment and to helping improve the quality of life for survivors.

2. **Focus on implementation.** Given the variety in experiences and success stories in reducing tobacco use, **cooperation and exchange of best practices** at European / regional and sub-regional levels is needed to identify, understand and use successful examples.

   There are existing successful networks of cancer knowledge centers, registries, cancer prevention, tobacco control, health professionals that can support cooperation. There is a role for EU research funding in supporting the learning from best practices in tobacco control policy and practice. Civil society needs to continue to raise awareness of tobacco control and tobacco industry interference tactics to subvert tobacco control policies with every new generation of policy-makers. Tobacco industry interference remains an obstacle to implementation

3. **Tax tobacco. Funding and capacity for tobacco control implementation** is needed at EU and national level - tobacco taxes can help fill the funding gap.

Tobacco taxation is the most effective tobacco control policy and it can strengthen other measures such as plain packaging, advertising bans, smoke-free policies, point of sale restrictions, which help de-normalise tobacco use and which should be expanded. Tobacco taxation is proven to generate additional revenues for governments and health systems. Other funding sources could include specific levies on the tobacco industry (such as for pollution cleaning).

References

WHO **Framework Convention on Tobacco Control**
WHO **Tackling NCDs: 'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases**
WHO **MPOWER Strategy**
WHO EURO, **Tobacco Control**
European Commission, **Tobacco policy overview**
SFP **Briefing paper on tobacco control for cancer and NCD prevention**
SFP **Briefing paper on tobacco control research**
ENSP Briefing on **Ending tobacco, beating cancer**

AOB

Health professionals – in particular primary care professionals- have a role in smoking cessation, several participants mentioned the need to educate professionals (primary care, nurses, oncology professionals, nursing home workers)

In a different group the WHO Best Buys for NCD prevention and control were mentioned, they indeed provide a useful policy template based on the FCTC

iPAAC
INNOVATIVE PARTNERSHIP
FOR ACTION AGAINST CANCER

WP5 iPAAC Online Meetings: Cancer Prevention in the 2020s - finding sustainable solutions

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22 February 2021, 12:30-15/30pm CEST

Online (Zoom)

CO-CREATIONAL BREAKOUT SESSIONS REPORT TEMPLATE

Topic of your session: Alcohol

Facilitator: Mariann Skar, Secretary General, EUROCARE, Brussels, Belgium, Mariann.Skar@eurocare.org

Rapporteur: Krzysztof Przewozniak, Senior Researcher, Maria Sklodowska-Curie National Research Institute of Oncology, Warsaw, Poland, krzysztof.przewozniak@wp.pl, krzysztof.przewozniak@coi.pl

Participants:

- Carina Alm, Norwegian Cancer Society, Norway
- Emil Juslin, IOGT-NTO, Belgium
- Manca Kozlovič, Youth Network No Excuse Slovenia, Slovenia
- Catharina Östman, Regional Cancer Centre Mellansverige, Sweden
- Richard Price, European Cancer Organization, Belgium
- Ignacio Sanchez Recarte, European Committee of Wine Enterprises, Belgium
- Ana Sarasa Renedo, European Commission, Italy
- Mindaugas Stelemekas, Lithuanian University of Health Sciences, Lithuania
- FMirela Strandzheva, National Center of Public Health and Analyses, Bulgaria
- Zaza Tsereteli, Ministry of Health, Norway
- Filippo Valentini, European Committee of Wine Enterprises, Belgium
- Gregor Zwirn, Consultant, Austria

Meeting recorded? YES/ NO

Title: Cancer prevention through prevention and treatment of alcohol drinking – what has to be done in the 2020s?

Background:

There is strong evidence that alcohol drinking is one the major causes of premature mortality and contributes to tens of acute and chronic diseases, including at least seven types of

cancer. Alcohol may have epigenetic consequences, weaken immune system and reduce the effectiveness of cancer therapy.

Europe belongs to those WHO regions where alcohol consumption remains at the highest level with an average of 9,8 litres of pure alcohol per person (15 + years)(over 18 litres in men and almost 5 litres in women), well-above the global average of 6.4 litres.

In the European Union, alcohol drinking is responsible for 800 deaths per day. Most of the burden of alcohol-attributable mortality is from liver cirrhosis, cancer, cardiovascular diseases and injuries. In cancer, 29% of deaths are attributable to alcohol. Although experts have known since the end of 1980s that alcohol can cause cancer, this knowledge is still limited or ignored both by the public opinion and policy makers.

Recent scientific studies prove that there is no safe way of alcohol drinking and safe type or dose of alcohol, however, there is no doubt that the higher is alcohol consumption, the higher is alcohol-related health risk. None of the dose-response risk curves for the types of cancer causally associated with alcohol consumption shows protective effects at any level of use, and the cancer risk increases with increasing levels of consumption. As the European Code Against Cancer recommends, the best way to avoid or reduce cancer risk is not to drink or, if it is difficult to make, limits its daily intake as much as possible.

Psychoneurological and behavioral studies show that alcohol is strong psychoactive substance and may contribute to long-term alcohol dependence. Alcohol drinking can be a gate to or concurrent with the use of other toxic and carcinogenic substances such as tobacco. Results of sociological and economic studies indicate on serious family and social problems and huge economic cost of alcohol drinking both for individual household and public health budget.

Alcohol prevention and treatment belongs to one of the most cost-effective cancer prevention activities. The Europe's Beating Cancer Plan assumes reduction of harmful alcohol consumption at least 10% by 2025 and substantial reduction of exposure to alcohol marketing by young people. The World Health Organization proposes the best buys and recommended interventions for alcohol prevention and control as the Global Action Plan for the Prevention and Control of Non-communicable Diseases, including cancer, for 2013-2020. The comprehensive strategy of alcohol prevention that may contribute to this goal include information is well justified and known, however, it is not broadly, comprehensively and effectively implemented both at European and country level. Moreover, there are big, also culturally derived, differences in implementing such strategy between countries and social groups that contribute to growth in health inequalities and make harder to work on effective cancer prevention programmes. Finally, there is also a need to adapt alcohol prevention and treatment to new challenges that result from fast social, economic and technological changes.

Proposals:

Task Package 1: Develop comprehensive research, information and education strategy for alcohol control that includes fund raising, broader and open access to databases, analysis of global alcohol marketing strategy, organizing population-based and target-tailored public awareness media and social campaigns, implementing programmes on alcohol prevention and treatment into school and medical curricula, introducing new standardised health warnings on alcohol toxicity, carcinogenicity and dependence on all alcohol products, their packages and advertisements.

Major targets: Professionals from government research and alcohol control agencies, scientists and researchers from health institutes and medical universities, teachers and health educators, medical students and health professionals, journalists.

Priorities:

- Creating the effective and multidimensional system for monitoring the prevalence of alcohol drinking, patterns and trends in alcohol consumption, beliefs and attitudes toward alcohol, its health and socio-economic consequences and implementation of alcohol control policies.

- Allocation of sufficient funds for research and national and European target-tailored campaigns on alcohol and cancer.
- Creating the strategy for educating the public, adolescents, medical students and health professionals, journalists and policy makers on alcohol and cancer and on the most effective programs and policies for alcohol control based on evidence based approach and country best practice.

Task Package 2: Develop comprehensive economic and marketing strategy for alcohol control that includes progressive and harmonized (to pure alcohol) taxes and prices for various alcohol products and other economic and administrative instruments for limiting of alcohol availability and affordability such as further standarization of alcohol products and limiting number of alcohol points of sale, banning of alcohol advertising and promotion, limiting digital marketing and sale, increasing new age and time limits for alcohol sale, control of cross-border and illicit alcohol trade, controlling flavours and other additives to alcohol products.

Major targets: People with lower socio-economic status, children and youth, economists, journalists, alcohol control advocates, alcohol industry

Priorities:

- Implementation of alcohol tax policies that would contribute to substantial increase of alcohol products.
- Enforce legislative measures that restrict exposure to alcohol advertisement and promotion, with special focus on digital marketing.
- Implement new labelling policy to alcoholic beverages (toxicants and carcinogens, ingredient listing, nutritional information, health warnings).
- Further restrictions on availability and sale of retailed alcohol.

Task Package 3: Broader use of modern technologies, that includes Internet, social media, smart-phones and other mobile applications, for strengthening communication with alcohol drinkers, their families, supporters and therapists, for data collection (Big Data, cloud storage), management and analysis (artificial intelligence algorithms) and for the support of alcohol treatment.

Major targets: youngsters and young adults, Internet and new technology providers, start-ups, researchers, therapists and health professionals

Priorities:

- Systematic review of current studies and conducting new ones on safety and effectiveness of mobile applications as a supportive tool in alcohol prevention and treatment.
- Funding research and development projects within the public-private partnership on the use of mobile applications and other tools based on modern technologies into alcohol prevention and treatment.
- Creating big, multidimensional databases on cancer and alcohol control and new models and methods of research analysis and prediction.
- Ensure safe data collection, storage and management.

Conclusions

1. Cancer prevention requires more effective implementation and management of the comprehensive strategy for alcohol prevention and treatment both at EU and country level.

2. The new strategy should focus on current and future challenges, be better and smarter financed, refer to major priorities in alcohol control, take into account regional and country needs and upcoming social, economic and technological changes, and have target-tailored approach.

3. To achieve alcohol-related goals of the Europe's Beating Cancer Plan, the strategy should be urgently prepared and implemented and include all abovementioned alcohol control activities.

References

1. Alcohol and Cancer in the WHO European Region. An Appeal for Better Prevention. WHO, Geneva 2020; https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2020/alcohol-and-cancer-in-the-who-european-region-an-appeal-for-better-prevention-2020
2. World Cancer Report: Cancer Research for Cancer Prevention. Chapter 2.3. IARC, Lyon 2020.
3. Alcohol Use and Cancer in the European Union (2021). Rehm, J and Shield, KD. European Addiction Research. https://www.karger.com/Article/FullText/507017
4. European action plan to reduce the harmful use of alcohol 2012-2020 https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2012/european-action-plan-to-reduce-the-harmful-use-of-alcohol-20122021
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Physical activity and cancer prevention

Facilitator: Dimitrios Mavroudis, Professor of Medical Oncology, University of Crete, University Hospital of Heraklion, mavroudis@uoc.gr

Rapporteur: Karmen Korda, Junior Researcher/Health Associate, Croatian Institute of Public Health, karmen.korda@hzjz.hr

Participants:

- Barbara Klein, EUROPA DONNA - The European Breast Cancer Coalition, Italy
- Sam Orange, Newcastle University, UK
- Pasqualina Buono, University Parthenope Naples, Italy
- Kaarina Tamminiemi, Cancer Society of Finland, Finland
- Pekka Jousilahti, The Finnish Institute of Health and Welfare, Finland
- Sandar Tin Tin, The University of Oxford, UK
- Fotini Kiagiadaki, University Hospital of Heraklion, Greece

Meeting recorded? YES

Background:

Physical activity (PA) and exercise are recommended for healthy people because they improve physical function, aerobic fitness and enhance quality of life. The World Health Organization (WHO) 2020 guidelines on PA and sedentary behaviour recommend that all adults should undertake 150-300 min of moderate intensity, or 75-150 min of vigorous intensity PA, or some equivalent combination of both per week for significant health benefits and mitigation of health risks including cancer (1), and the American Cancer Society 2020 guidelines on diet and PA for cancer prevention offer the same recommendations (2).
Cancer survivors face an increased risk of cancer recurrence and all-cause mortality compared to people without cancer, and they should avoid inactivity in general. An international multidisciplinary panel of experts issued exercise guidelines for cancer survivors and they concluded that specific doses of aerobic exercise, combined aerobic plus resistance training, and/or resistance training could improve cancer-related health outcomes (3).

Studies show the correlation between physical activity and lower cancer risk:

- PA affects contributors to carcinogenesis (such as insulin/glucose metabolism, inflammation, oxidative stress, cellular proliferation and apoptosis, angiogenesis, immune function and genomic instability). PA regulates not only machinery of normal cells, but also machinery of the cancer cells (4).
- Moderate intensity exercise appears to prevent tumour spread around the body by normalizing angiogenesis, destroying circulating tumour cells and decreasing endothelial cell permeability (5).
- PA may also prevent weight gain and it has been associated with a lower risk of obesity which is another major risk factor for cancer development (6).
- Research on 750,000 adults followed for 10 years - engagement in recommended amounts of leisure-time PA 2.5-5.0 hours/week of moderate

intensity activity (e.g., brisk walking) was associated with significantly lower risk for breast, colon (men only), endometrial, kidney, myeloma, and liver cancer and non-Hodgkin lymphoma (women only) (7).

- Research on 1340 patients with high-risk breast cancer - a significant reduction in the hazards of disease recurrence (HR=0.59) and mortality (HR=0.51) was found for patients meeting the recommended minimum guidelines for PA both before diagnosis and after treatment (8).
- 26 studies of breast, colorectal and prostate cancer patients - 37% risk reduction in the risk of cancer-specific mortality, comparing the most versus the least active patients (9).

Despite the above strong evidence that PA has multiple benefits in the prevention and treatment of cancer, the majority of people living with and beyond cancer are not regularly physically active. To change this pattern, different stakeholders should be involved: oncology clinicians, policy makers, researchers, clinical educators, physical therapists (10).

Discussion

The evidence supporting PA in preventing several cancer types is strong. Inter-sectoral collaboration and “Health in All Policies/HiAP” approach should be implemented to increase PA among the whole population and cancer patients, and include in every important program, policy, and/or plan, both on national and European level.

PA should be available and encouraged for everyone – children in their (early) education, all socioeconomic groups, elderly, and everyone else. It should not depend on one’s social status or age.

It is important to encourage people to be physically active in their everyday life, and to emphasize the difference between PA and exercise. PA includes also housework, gardening, transportation, etc. Everyone should be encouraged to engage in some type of PA that is tailored to one’s individual needs and capabilities and that is safe. Safety is very important since injuries have a negative effect and usually discourage people from further engagement in PA. Also, in this pandemic time, it is necessary that PA is adjusted and organised in a safe environment, i.e., online, outside, with limited number of participants.

Patient organisations play a crucial role in communicating the importance of being physically active to reduce one’s cancer risk. There are examples of good practice regarding prevention programmes or campaigns implemented by various patient and other non-governmental organizations.

PA is crucial for cancer patients as well, not only for healthy people. Medical doctors working with cancer patients need to learn more about PA benefits, and start promoting it. It is also important to be aware that many cancer patients were physically active but still got cancer. This is a sensitive issue that should be approached carefully not to make patients believe that it’s their fault they got cancer because they were not active enough.

Screening programmes have a potential to take a more active role in promoting modifiable lifestyle change, including increased physical activity, and harness the potentially “teachable moment” of cancer screening.
Funding of prevention programs and PA promotion is also an important issue. For each prevention activity there should be a sufficient amount of funds available. It can be provided from national budget, different programs, collaboration schemes, or other relevant sources.

Conclusions

Conclusions 1st part:

1. Some PA is better than none – PA and exercise are very effective prevention practices
2. PA should be advertised in media as a cancer prevention method supported by strong scientific evidence
3. PA should be advised and promoted by all medical doctors and health professionals

Conclusions 2nd part:

1. PA and exercise should be available to everyone, based on one’s individual needs and abilities, practiced safely and with guidance when needed, and adjusted to the epidemiological situation (web-based programs, outdoor activities…); it should be regularly taught in school curriculums, advised to participants of cancer screening programs, etc.
2. Focus on body appearance should be minimized – PA and exercise should be individualised and progressive - the key is to find the right PA for each individual
3. PA should be integrated and implemented in all major policies (and “masterplans” like EU’s Beating Cancer Plan); guidelines for PA should be adopted from European level, and then implemented on national levels through relevant ministries (such as the Ministry of Health)

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AOB

WASABY Application as a useful educational tool – launched on February 4th 2021

Breast Health Day – a prevention programme implemented by Europa Donna since 2008: https://prevention.europadonna.org/index.php - good practice example

Topic of your session: Diet and Nutrition

Facilitator: Satu Männistö/ Finnish Institute for Health and Welfare/ satu.mannisto@thl.fi

Rapporteur: Nena Karavasiloglou/ ECL Youth Ambassador/ nkaravasiloglou@outlook.com

Participants:

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- Alba Gil/ EuroFIR/ Belgium
- Alice Stanton / Royal College of Surgeons/ Ireland
- Anastasia Kanellou/ University of West Attica/ Greece
- Anestis Dougkas/ Institut Paul Bocuse Research Centre/ France
- Anne-Maria Pajari/ University of Helsinki/ Finland
- Cecilie Kyrø / Danish Cancer Society Research Center/ Denmark
- Gitte Laub Hansen/ Danish Cancer Society/ Denmark
- Magdalena Stepien/ Joint Research Centre/ Italy
- Mariella Borg Buontempo/ Ministry of Health/ Malta
- Marjetka Jelenic/ Slovenian National Institute of Public Health/ Slovenia
- Nadia Andersson / The Swedish Association of clinical Dietitians/ Sweden
- Sophie Bruno/ Interel/ Belgium
- Susanne Wolff/ Nestle/ Denmark

Meeting recorded? YES

Title: Sustainable plant-based diets and the obesity epidemic –
Global warming and the obesity epidemic, two unprecedented challenges of today, are linked with cancer prevention

Background

The initial discussion of the participants in the Diet and Nutrition session revolved around efficient dietary means or strategies for cancer prevention. The discussion was based on the cancer prevention dietary recommendations (e.g., WCRF 2018, European Code Against Cancer). Furthermore, the group was also aware that up to 40% of cancer cases could be prevented by adopting a healthy diet, healthy weight, healthy active lifestyle as well as tobacco and alcohol avoidance (Europe's Beating Cancer Plan 2021). The fact is that prevention is the most cost-effective long-term cancer control strategy.

The group considered various means and strategies, including the need for research on local foods and traditional dietary patterns to the need for a sustainable food system, regulations/reformulation of the new plant-based food products entering the food markets (including also their contents: e.g., salt and fat quality), nutritional labels on food products, personalized dietary advice reaching those most in need (e.g., www.eurofir.org/persfo), digital tools, and multi-sectoral collaborations on policy-level actions. Ultimately, the group decided to focus on and discuss at length the following two proposals:

Sustainable plant-based diets

The group urged an increase in the consumption of plant-based foods (fruit, vegetables, legumes [Leg4Life project in Finland], seeds, nuts, and whole grains [WholEUGrain project in EU]). This increase should incorporate local/regional dietary practices and be adapted to fit the consumption patterns of different countries (e.g., north vs. south of Europe). Focusing on increasing the consumption of healthy foods should also be accompanied by decreasing the consumption of energy-dense and highly processed foods (Appleton et al. 2016).

The group recognized that framing the increase in consumption of healthy foods (fruit, vegetables, legumes, seed, nuts, and whole grains) in the context of climate change and planetary health might be extremely beneficial, since, e.g., young people might be more motivated to change their consumption in response to climate health compared to their own health. We also highlighted the need for evidence-based dietary recommendations for different population groups, considering the special nutrition requirements and potential challenges of different populations (e.g., children, women, elderly). Furthermore, the targeted dietary advice can reduce the health inequalities, e.g., between sexes or population groups with different literacy levels.

Obesity and collaboration with the food industry

Throughout the discussion, obesity was highlighted as an important risk factor contributing not only to cancer risk but also to other non-communicable diseases. Different approaches were discussed, including education and awareness-raising around healthy diets. In general, obesity is not recognized as a well-known risk factor against cancer by the general population (e.g., Obesity and cancer campaign in Denmark – https://www.cancer.dk/letteresammen).

Group participants urged collaboration with the food industry at various levels (e.g., https://fuldkorn.dk). Group participants proposed incentive/disincentive schemes for the food industry to contribute to the development of healthy foods at a reasonable, accessible-for-all price and a combination of methods when reporting the nutritional value of food products [e.g., the Nutriscore (which could be further improved e.g., by including whole grain consumption/other country-specific modifications) and the NOVA classification].

Other actions included the establishment of national food partnerships with the food industry, as already in place in some countries (e.g., Denmark and Finland). It was reported, though, that it might be difficult to create good goals that the food industry will try to meet and to ensure its commitment. Additionally, collaborations with the food industry regarding portion sizes were discussed (e.g., https://raadetforsundmad.dk/ jataklidtmindre), as well as targeting chefs as potential facilitators of change to help drive the inclusion of healthy food groups (e.g., legumes) in ready-to-eat, grab-as-you-go, takeaway, restaurant, or public catering meals. Furthermore, consumers will need tasty and easy recipes to familiarize themselves and incorporate in their diets new plant-based food products.

The group agreed that a combination of individual choice and policy actions [e.g., sugar/sugar-sweetened beverage taxes, health promotion taxes, nutritional labels, advertising of unhealthy food – especially to children (e.g., EU's Audiovisual Media Services Directive, EU Joint action BestReMaP), fruit and vegetable subsidies/price reduction] is needed when it comes to making healthier food choices, tackling the obesity epidemic, and preventing cancer and other non-communicable diseases at the same time.

Conclusions

Overall, the group discussion highlighted the need for multi-sectoral approaches and actions to see progress in both proposals for prevention. Synergies on the regulation of the nutrient content of food products, labeling, and portion sizes, but also with other potential facilitators of change (e.g., chefs) seem important when tackling cancer prevention through a healthy diet in the 2020s. Climate health (e.g., EU's Farm to work Strategy, UN Sustainable Development Goals, Eat Lancet Planetary Health Diet) might be the most important driver for food consumption changes in younger individuals, so highlighting the climate-healthy aspects of the food groups linked to cancer prevention must be considered.

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AOB

The following were deemed important and discussed by the group, but did not end up being included in the proposals:

Personalized dietary advice as an effective strategy for cancer prevention, maybe in the form of an online platform or app (including video chatting or messaging dietitians or having a very good algorithm) that promotes healthy food consumption (e.g., fruit and vegetables). The group noted as possible challenges or room for growth that the app needs to be tailored to the needs and preferences of the individual and validated by dietitians. Some group members questioned the financial sustainability and feasibility of such an endeavor (economic considerations and different dietary recommendations by country). Main challenge is how to motivate those people not so interested in healthy diet.

Investment in health promotion and highlighting the role nutrition plays in cancer (or disease in general) prevention. The group highlighted the work needed to educate health care professionals other than dietitians on the importance of healthy, balanced diet and the need to make dietary advice by trained professionals accessible to all. The amount of misinformation online (people with no/questionable qualifications promoting products, diets, dietary patterns) that gets adopted by people who lack access to trained dietitians/are in a vulnerable situation (e.g., cancer patients, cancer survivors, family of cancer patients) makes the access to trained dietitians even more important.

Topic of your session: **Infections & vaccination**

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Rapporteur: Isabel Portillo, Basque Health Service, Basque Ministry of Health
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Participants:

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- Vladimir Bella, Oncology Institute S. Elisabeth, Slovakia
- Daniela Giangreco, Italian League Against Cancer , - Milan
- Anna Mayer, ECL Youth Ambassador, Austria
- Klara Feldes, German Cancer Society, Germany
- Kinga Matanina, ISG, UK
- Sonja Tomšič, Institute of Oncology Ljubljana, Slovenia
- Lill Thorsen, Norwegian Cancer Society, Norway
- David Ritchie, Association of European Cancer Leagues

Meeting recorded? YES (note: facilitator and fapporteur had no access to the recording while preparing this report)

Title:

Demand for coordinated actions in Europe to implement strategies targeting oncogenic infections for effective cancer control.

Background: The prevention and treatment of cancers caused by infectious agents have recently made substantial progress. However, there persists an inequality in both disease burden and cancer prevention interventions implemented across the European region. Thanks to revolutionary advancements in available technology, such as human papillomavirus (HPV) based screening and effective HPV vaccines, it is possible to plan health policies that can effectively decrease the burden of cervical cancer. In 2018, the WHO called for eradication of cervical cancer as a public health problem by reducing annual incidence to below <4/100,000 women. To achieve this goal it is imperative to achieve full HPV vaccination of 90% of girls at the age of 15 years by 2030, 70% of women screened using high risk (hr)HPV screening tests and 90% of women diagnosed with cervical disease appropriately treated[1]. As of June 2020, 77% of European countries have introduced HPV vaccination programs. However, the coverage in countries with established HPV vaccination in Europe is only 33% for one dose and as low as 24% for

complete immunization schedule. We also observe that HPV vaccination rates are higher in high-income countries.[2]
Concerns were raised about how to achieve target HPV vaccination coverage (90%). Apparently, common knowledge about HPV is poor. Large parts of the population currently lacks basic knowledge about HPV and the associated risks, such as “What HPV is”, “How HPV infections are transmitted” and “How HPV infections can lead to cancer”. The long time lag between onset of a HPV infection and cancer development is specifically challenging to communicate, as young people do not consider cervical cancer a relevant health threat. Campaigns raising HPV awareness are much needed and should be directed towards both youths and their parents. Public health providers, however, struggle to find a suitable strategy for the awareness campaigns. There appears to be a lack of research on how to encourage the public to make choices that improves their health. Limited understanding of how information is best communicated to and received by people, hinder public health providers in communicating information effectively. [3]

Identification of interventions to reduce barriers to HPV vaccination. The aim is to improve vaccination acceptance and coverage among young people, through the participation of youth, teachers and parents. (Subtitle 1)

- Schools can be utilized as a platform for raising awareness about what HPV is and HPV-related risks.

- Relevant platforms for communication should be identified and different approaches for communication should be utilized for reaching the young and their parents. For example, Instagram, Snapchat and TikTok are more popular among young while FaceBook and TV can be used to reach the parents. Information distributed through printouts, brochures and posters are typically ignored by the younger generation. Communication through films, videos and the use of pictograms are preferred, while written texts should be avoided.

- Awareness can be raised through involving different stakeholders for “story telling”. In Italy, a beauty product producer (leg wax) was used to communicate information about HPV vaccination and sensibilize young women. In Norway, Cancer Society in partnership with the Cancer Registry of Norway have launched a #sjekkdeg (# check yourself) campaign to raise awareness about cervical cancer screening. #sjekkdeg is an annually occurring event, involving different stakeholders. For example, a chain of coffee shops are providing free coffee during the campaign period for those who “promise” that they will go and take a cervical screening test. Bik Bok, an international fashion company popular by young women, launched a special collection in 2018 to promote #sjekkdeg https://kvadrat.no/bik-bok/bik-bok-lanserer-sjekkdeg-kolleksjon/.

- Systematic efforts should be made in engaging pediatricians, and other relevant health care providers in providing accurate and good information for girls and their parents.

- National HPV vaccination and cervical cancer prevention strategies should be adapted in local cultural context. An example from Poland described the impact of church views on the life-style choices of the citizens.

- Several countries, Italy, Poland and Slovenia reported issues related to vaccine hesitancy. Vaccine hesitancy has been identified by WHO as one of the top ten health threats in the world. Awareness campaigns will most likely mitigate the voices of anti-vaccinees.

Increasing availability and access to HPV vaccines (Subtitle 2)

- Many countries have established a school nurse position and administer HPV vaccinations in the schools. These countries have reached the WHO target of 90% HPV vaccination coverage. Other countries should consider adopting the same strategy for vaccine administration.

- To improve HPV vaccination coverage, it is important to promote gender-neutral vaccination (GNV) programs and perform multi-cohort vaccinations for both girls and boys. GNV will mitigate the effect of low coverage rates of HPV vaccination among girls and in addition provide individual protection of men. A multicohort vaccination strategy at implementation phase of new vaccination program, will advance the effect of vaccine on HPV-related diseases with at least a decade[4].

- Concerns were raised regarding vaccine supplies and fair distribution of the HPV vaccines globally. Therefore, age-appropriate vaccination schedules should be used, with (one) two dose vaccination policies for the pre-adolescent population and three doses for the older population whenever possible, to mitigate shortages in supply and assure equal access to HPV vaccines globally.

- HPV vaccines should be free of charge in order to obtain expected coverage.

Impact of the pandemic caused by severe acute respiratory syndrome coronavirus (SARS-CoV) on efforts related to HPV vaccination and HPV screening. Achieving optimal HPV vaccination coverage (Subtitle 3)

- As a result of the SARS-CoV pandemic and restrictions related to social distancing, we might expect a decrease in the attendance to HPV screening[5]. Based on recent research reports, advocating home-based smear taking or self-sampling for screening tests instead of attending to appointments with a health care provider for pelvic examination seems to be a very valid option[6].

- The challenges are associated with choosing the optimal clinical actions for those who have a self-sampling test that is HPV positive. There is an urgent need to develop optimal follow-up strategies through research, which can be implemented in the context of nationwide screening programs.

Need to develop sustainable public health strategies to prevent cancers caused by to other infections than oncogenic human papillomaviruses (Subtitle 4)

- Prevention of other oncogenic infections, such as infections with Helicobacter pylori (gastric cancer) and hepatitis B and C, (hepatic cancer) were discussed.
- There is an urgent need for establishing a pan-European evidence base for developing sustainable strategies for gastric cancer prevention.
- We also suggest more research to *decrease the incidence and prevalence of oncogenic infections other than HPV.*

Conclusions

To eliminate suffering and premature death caused by preventable cancers should be of high priority for all European countries. Countries should set clear targets for HPV vaccination and screening program coverage and allocate necessary resources.

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AOB

A broad range of stakeholders summoned during 2020 by The European Cancer Organisation to discuss how to reach the HPV cancer elimination goal.
https://www.europeancancer.org/resources/161:new-report-urges-action-to-eliminate-87-000-cancer-cases-caused-each-year-by-hpv-in-europe-in-women-and-men.html

Topic of your session: How to implement cancer prevention?

Facilitator: Saverio Caini, MD, PhD, epidemiologist at the Institute for Cancer Prevention of Research, Florence, Italy, e-mail: s.caini@ispro.toscana.it

Rapporteur: Tit Albreht, MD, PhD, senior researcher at the National Institute for Public Health of Slovenia, Ljubljana, Slovenia, e-mail: tit.albreht@nijz.si

Participants:

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- Tit Albreht, National Institute of Public Health, Ljubljana, Slovenia
- Matti Aapro, president of ECCO, Grenolier Hospital, Switzerland
- Luciana Neamtiu, JRC, European Commission, Ispra, Italy
- Anne Drochon, National Cancer Institute, Luxembourg
- Sebastian del Busto, Spanish Association Against Cancer, Spain
- Annika Nowak, European Commission, Belgium
- Marie Delnord, Sciensano, Belgium
- Dragana Cetojevic Simin, Oncology Institute of Vojvodina, Serbia

Meeting recorded? YES/ NO

Instructions for the final report: 500 words, background, 1-3 proposals and conclusions. Please use subtitles to separate your proposals, your reasoning and sustainability discussion. Then add conclusions and references.

Title: Experiences and opportunities to improve implementation of cancer prevention

Background:

Experiences on the effectiveness of prevention

In the first part of the breakout group work we discussed the effectiveness of prevention. The first focus was the availability of information and awareness raising. The example from Switzerland was pointing out to the following important topics:

- Division in federalism – relevant also to other federally structured European countries
- There are definitely successful pilots and examples of successful interventions
- It is important to adapt to the specifics of the population in question
- Additionally, one has to keep in mind that a limited number of interventions is needed, not too many at the same. If too many are launched, then there may be dissipation of attention and lack of resources.

The experience of the JRC, which has developed a special quality assurance team for breast cancer centres related to the ECIBC proved to be a good method of evaluation of effectiveness.
There is also the need to provide additional information with respect to nutrition and physical activity.
Different types of prevention activities are needed, tailored to the specific problem related to health determinants, such as tobacco or nutrition

Additional challenge, which was identified was in finding the right level of granularity, evidencing. It is also extremely important to define the duration of a specific intervention. Managing expectations is also one of the tasks that often does not receive the right level of attention. Good choice of timing plays an important role as well as the level of observation.

Another challenge is to identify the potential owners of the prevention activities outside of the health sector.

Experiences from other countries are always welcome, but it is important again to defined what we are looking for and what kind of expectations we have. Another issue with experience from another country lies in the transferability problems, sometimes this is present with the same country, looking at cross-regional experiences.

It is very important to develop transversal key process indicators, which should be process and outcome indicators, while learning from those who have succeeded.

Implementation of prevention

COVID-19 presented multiple challenges to the implementation and sustainability of prevention activities. There were a lot of inadequate reactions, unpreparedness for the suddenly arising situation and crisis. In the preparation for the second wave, the response was generally better coordinated. There were too many halts to screening campaigns and those related to alcohol consumption, although this is most commonly expected to worsen in crisis situations.

JRC surveyed cancer registries on the completion and fulfilment of cancer screening programmes in the EU Member States and will produce a report.

In spite of the serious crisis, it is extremely important to maintain prevention for all NCDs. There are obviously different challenges we are facing while talking about the primary cf. secondary prevention. COVID-19 caused a great number of excess deaths, but NCDs are causing them in continuation. Impact on lifestyles is expected to be significant; importantly, we should look at specific population groups. Many participants warned of the so-called hijacked resources – steered to COVID-19 related serviced thus suppressing the non-covid issues. There is a special and important role for the civil society.

We may see important shifting of resources, even in the future months and years.

Conclusions

The main good strong point of the crisis: Health is the first topic now through the experience of the crisis.

We developed three tentative conclusions, which prevailed in the discussion and are also presented in the padlet:

1. Sticking to the evidence-proven interventions, both in primary and secondary prevention is the way forward.
2. Agreeing on transferability, even in another region, transversal key process indicators.
3. Building on the awareness but going beyond by using demonstrable successful interventions and to promote them regionally, nationally and internationally.

Topic of your session: Health in All Policies (HiAP).

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Rapporteur: Marta Hernández-García, Fisabio Research Foundation (Spain), hernandez_margarb@gva.es

Participants:

1) Josep A. Espinàs Piñol, Catalan Cancer Plan (Spain).
2) Daniela Timus, Council of European Dentists (Belgium).
3) Dorota Sienkiewicz, EuroHealthNet (Belgium). She attended the first breakout session.
4) Dragana Mitrović, Slovenian Coalition for Public Health, Environment and Tobacco Control (Slovenia).
5) Bagdoniene Sigita, Lithuanian Science Council (Lithuania).
6) Darina Sedlakova, Slovak League Against Cancer (Slovakia).
7) Brigitta Boonen (Belgium). She was not included in the original HiAP group list. She left the session at some point after the beginning of the first breakout session.

Meeting recorded? YES

Title: Co-creational breakout session on Health in All Policies in cancer prevention.

Background: As stated in article 168 of the Treaty on the Functioning of the European Union EU[i], "a high level of human **health protection** shall be ensured **in the definition and implementation of all Union policies** and activities". Thus, EU institutions should make sure that policies are reviewed for including HiAP approach. Revising agendas and policies at EU level represents an open window for this purpose (ex.: farming environment, tobacco taxation, transport, sustainability, among others).

Subtitle: What will be the most effective cancer prevention and health promotion steps in the 2020s?

Proposal #1: Developing and implementing **Health Impact Assessment** (HIA) to identify the sectors to be prioritised in the HiAP approach, for making a sustainable change in the cancer field.

Conducting HIA will provide knowledge and evidence on how other sectors impact on health in general, and on cancer prevention specifically. However, HIA does not currently have rigorous rules. Legislating and better positioning HIA in the EU agenda and policies will allow for further development and clear guidance for performing HIA, including mandatory topics to be included.

HIA should be promoted from the EU institutions and implementation should be envisioned at all lower levels. Building multidisciplinary teams at local institutions, conforming "councils for health", could improve our understanding on how different sectors influence health. These groups should include representatives from as many areas as possible.

Proposal #2: Tackle physical activity, obesity and healthy diet through urban planning, plans for transition to green economy, marketing regulation and education policies.

In order to effectively deal with these issues, interventions should be integrated in:

- Urban planning and plans for transition to green and sustainable economy (city transportation systems creating a friendly environment and providing opportunities and spaces for physical activity).

- Marketing regulation on non-healthy drinks/food products (ruling advertising campaigns, taxation and restrictions).

Proposal #3: Integrate health promotion in formal education curricula (focusing on the above mentioned risk factors as well as other), fostering healthy individual choices.

Subtitle: What should we do in order to make prevention and health promotion efforts sustainable in the 2020s?

Proposal #1: **Capacity building** is essential to bring all sectors together to design and implement the HIA. Investment is needed for people to be able to work together across the boundaries of policies and sectors.

Proposal #2: **High political commitment** to work on HiAP design and implementation, at country level as well as EU level. Health should be put higher in the EU agenda since EU policies are needed to foster HiAP at country-level.

Proposal #3: Provide policy-makers with **reliable and understandable information.** Also **create a critical mass and increase knowledge** among population (since voters' interests eventually lead to interest of politicians). Improve health literacy and raise awareness through systematic, early and continuous health education. Wide public dissemination and awareness campaigns should be launched. Applications on mobile phones or other channels could be used to outreach as much people as possible.

Proposal #4: **Synergies with professional associations** to raise awareness and tackle misinformation: a multidisciplinary approach is more effective to bring to the agenda relevant issues for health.

Proposal #5: **Work together with NGOs**, they may have an important role for making things visible and for keeping issues in the social debate, since they are not politically engaged and not influenced by industry lobby.

Proposal #6: **Deprived groups should be paid special attention**. They should be systematically involved throughout the process. Health inequalities should be taken into account by designing and implementing targeted interventions. Messages should be tailored in a friendly manner for minorities (one size does not fit all).

Proposal #7: Whenever possible, a **win-win approach** should be envisaged, seeking benefits for stakeholders involved (public-private partnerships could be a solution).

Conclusions: HiAP is definitely a powerful tool to improve and protect health. Further development is needed in order to integrate this approach at EU level, as well as at country and local levels. Systematic Health Impact Assessment could help prioritise sectors. Urban planning, education, transition to green economy, marketing regulation and food industry are some examples of areas having a relevant impact on health. In order to implement and sustain HiAP, different mechanisms should be put in place and

articulated: political commitment and investment, information and awareness campaigns, synergies between stakeholders, with a scope on health inequalities.

References:

[i] Consolidated version of the Treaty on the Functioning of the European Union - PART THREE: UNION POLICIES AND INTERNAL ACTIONS - TITLE XIV: PUBLIC HEALTH - Article 168 (ex Article 152 TEC)
http://data.europa.eu/eli/treaty/tfeu_2008/art_168/oj

Topic of session: Health Literacy

Facilitator: Susanne Weg-Remers, MD, head of German Cancer Information Service, Deutsches Krebsforschungszentrum, s.weg-remers@dkfz.de

Rapporteur: Edit Marosi, Department Head, International Relations Department, National Institute of Oncology, Hungary, marosi.edit@oncol.hu

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- Carolina Espina / International Agency for Research on Cancer /IARC) / France
- Jennifer Deane / Newcastle University / UK
- Linda Sharp / Newcastle University / UK
- Sarah Collen / European Association of Urology / Belgium
- Lalit Mohan Sharma / Bhagwan Mahaveer Cancer Hospital and Research Centre / India
- Florian Herbolsheimer / German Cancer Research Center / Germany
- Julian Mamo / L-Università ta' Malta (UM) / Malta

Meeting recorded? YES

Title: Enhancement of health literacy as a major prerequisite in effective cancer prevention

Background:
Health literacy (HL) comprises people's knowledge, motivation, and competencies to access, understand, appraise, and apply health information. This is a prerequisite to make judgments and take decisions in everyday life concerning healthcare and health promotion. Limited HL impairs the chances of disease prevention and thus has a significant impact, particularly on cancer incidence and mortality.

Recent surveys in many European states have shown that HL is problematic or impaired in many citizens. E.g., in Germany, 59 % of people in all age groups have limited HL*. Particularly, digital (66% inadequate) and navigational health literacy (68% inadequate) are very low*. Of the different dimensions of HL, especially the appraisal of health-related information is compromised*. This has a strong impact on disease prevention and health promotion, which is of utmost importance for cancer prevention.

Several European states have developed national action plans to enhance HL in their populations. Besides activities improving people’s skills to find, understand, assess and apply health-related information, more recent projects concentrate on creating environments that make it easier for people to adopt a healthy lifestyle.

What will be the most effective cancer prevention and health promotion steps in the 2020s?

I. Enhancing health literacy through interventions tailored to the different target groups

To effectively enhance health literacy and to promote cancer prevention according to the European Code Against Cancer, it is necessary to clearly define and characterize the different target groups in the population. They will be addressed with clear, actionable communication strategies and interventions tailored to their diversified abilities and levels of understanding. All communicative and behavioural interventions are to be based on up-to-date scientific knowledge and should be evaluated for their effectiveness and efficacy. Multiplicators are particularly relevant: health care professionals and teaching staff. Special attention has to be paid to children and adolescents and the most vulnerable groups, e.g., people with low educational level, low socio-economic status, and/or migration background.

II. Creating an environment which facilitates a healthy lifestyle

To facilitate adopting a cancer-preventive lifestyle, systematic modifications of the environment are required to make the healthy life choice the easiest choice and motivate people to engage in health-promoting behaviour. Ultimately, cancer-preventive

behaviour patterns have to become more popular, easier, and less costly than unhealthy ones

III. ***Developing inter- and intrasectoral alliances for evidence-based health information***

Cancer prevention is also reducing the risk for other major diseases. Thus, the development of key strategic inter- and intrasectoral partnerships could significantly enhance the impact of policies and interventions. These partnerships could also play a major role in gaining sufficient attention for evidence-based preventive information. They could act against fake information that is currently widely spread through the internet and social media.

What should we do in order to make prevention and health promotion efforts sustainable in the 2020s?

By building on existing structures and frameworks, policies, multi-channel and multi-disease interventions need to be developed to target individuals and their environments. By involving the different target groups and communities in the development, it is ensured that interventions meet their levels of understanding and their needs.

Most importantly, it is necessary to scientifically evaluate all measures taken for efficacy and effectivity, in order to adopt novel insights and technologies and to adapt to changing frame conditions and to the changing role of stakeholders.

References

*Schaeffer D et al (2021) Health Literacy of the Population in Germany before and during the COVID-19 Pandemic. Results of the Second Health Literacy Survey Germany (HLS-GER 2). https://doi.org/10.4119/unibi/2951271

Topic of your session: HEALTH INEQUALITIES Effective instruments in cancer prevention

Facilitator: Ana Molina-Barceló Fisabio Research Foundation
Rapporteur: Tomas Poskus Vilnius University, Vilnius, Lithuania

Participants:

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- Anna Jörnvi The Swedish Association of Clinical Dietitians

Meeting recorded? YES

Title: HEALTH INEQUALITIES

Background: There are significant differences in cancer incidence, severity and outcomes based on multiple factors. Some of these factors are related to social and economical issues, some are related to sex, some are related to geographical issues.

Tobacco prevention is one of the most widely used good examples of both effective and sustainable effort of cancer prevention in the EU, where the EU directive results is unanimous and sustainable prophylactic intervention, which is not changed by changes in the political situation in one or the other country. It is imperative that more countries join the action on the prevention of tobacco use and thus reduce the burden, created by this addiction. It is also a good example of cost-effective health intervention, where clear positive economic outcomes are reported from cancer preventive or health-related interventions.

There are a few requirements for effective prevention: the knowledge about the preventive strategy is crucial and this can be achieved through educational interventions in schools including such knowledge as the part of studied subjects. Such knowledge could include the parents of the students, so the knowledge would be practically used and shared in the families and could be made into routine practice of the population.

The other requirement is the attainability of the healthy option, for example the availability of healthy food as compared to the unaffordable healthy food options. Knowing that something is healthy and not being able to afford it is probably even more detrimental, than not knowing. State support with alcohol, tobacco and sugar sales policies and taxes are the interventions that should be helpful in attaining the desired mode of action of the population.

Diet is a routine example of healthy living choice; and it is not practiced routinely for several reasons: lack of knowledge, unaffordability, tastier choice in less healthy foods etc. Simple health education interventions would not be sufficient to change the eating habits of the society.

Physical activity can be achieved with adequate social infrastructures in towns, for example bicycle infrastructure can increase physical activity in the population with possible positive preventive influence in cancers. It should be easy and affordable to make the healthy choice.

Important primary cancer prevention tool is vaccination, and effective vaccination should be made available to all groups at risk, irrespective of social, geographical or sex differences.

There are differences in survival, cancer prevention results and differences between men and women. It seems that cancer statistics are worse in men and it seems that male population issues should be addressed at the early stages in education and health promotion as well as specific interventions directed at men.

Health determinants should guide the effective interventions, and governments should lead these interventions and should aim to reduce cancer burden by acting based on the best available evidence and also work on gathering that evidence with fostering of high quality research. All the sectors of government have to act with the constant idea of cancer prevention and health promotion hidden behind all policies.

Conclusions

1. **Tobacco control is a good example of equal and sustainable preventive intervention**
2. **Health education is important in reducing the knowledge gaps of healthy choices, however healthy choices should be made available to all populations through systematic population based interventions**
3. **Governments should governments should lead these interventions and should aim to reduce cancer burden by acting based on the best available evidence and also work on gathering that evidence with fostering of high quality research. All the sectors of government have to act with the constant idea of cancer prevention and health promotion hidden behind all policies**

WP5 iPAAC Online Meetings: Cancer Prevention in the 2020s - finding sustainable solutions

Hosted by Cancer Society of Finland, THL, ECL & IARC

22 February 2021, 12:30-15:30pm CEST

Online (Zoom)

Topic of your session: GROUP K - Research

Facilitator: Joachim Schüz, International Agency for Research on Cancer, France, schuzj@iarc.fr

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- Laura Williams, Cancer Research UK, UK
- Carmen Martos, Joint Research Centre, Italy
- Ahti Anttila, Mass Screening / Finnish Cancer Registry, Finland
- Jens Jäger, Helmholtz Association of German Research Centres, Germany
- Fiona Malcomson, Newcastle University, UK
- Helena Jernström, Lund University, Sweden
- Marcis Leja, University of Latvia, Latvia
- Martin Bergö,Karolinska Institute, Sweden
- Ulrike Helbig, German Cancer Aid, Germany
- Régine Kiasuwa Mbengi, Sciensano, Belgium

Meeting recorded? Yes

Title: Research

Background:

Comprehensiveness of approach to cancer research

The discussion around research and prevention should **consider entire cancer research continuum**, including cancer surveillance, basic research, understanding the causes, studies on interventions and implementation research.

Strategic approach to research and implementation is very important. As an example, German national decade against cancer, an approach to research and implementation in the area of prevention, was mentioned. The research agenda should comprise both **known** factors – how to implement effective measures to prevent them – and discovery of **new unknown risk factors**.

Tobacco smoking is an important problem, and further activities need to be planned in order to achieve the goal of tobacco-free generations. Future activities should aim at implementation and evaluation of efficacious interventions. It usually takes very long time to implement these measures. We should **focus on tailored approaches**, as general campaigns often don't reach people sufficiently.

Unknown cancer causes should be investigated. Entire biopsychosocial perspective is important. Topics specifically mentioned within the discussion were, e.g., chemicals in environment, unrestricted dietary supplements market, or use of antidepressants in young people, etc. **All research areas are important**, in order not to replace one harmful factor with another.

Important topic is **funding of the research**, not only by governments, but often also by NGOs. The funding needs to be systematic, coordinated and sustained, which may be more challenging in times during and after COVID-19 pandemic. It is important to consider that effects of risk factor exposition may be substantially delayed, maybe decades. Therefore, evidence of impact may be difficult to provide within usual policy timing.

Quality of data and data analysis

Systematic structured coding standards and contents, including data collected at individual level, are needed to better measure impact of interventions at individual level. The research should not only focus on individual risk factors (e.g., smoking, alcohol, nutrition, sport, genome, …), but also on their **interactions**. **International collaboration** will be often needed to achieve sufficient sample sizes to identify weaker effect signals. Uncertainties may add up within mathematical modelling.

Important tool is **good data governance**, including linkages between systematic population datasets, behaviour and lifestyle with outcome databases. Historical prevalence of tobacco smoking is important. This will enable to build better models. Unfortunately, the general data

protection regulation (GDPR), which was recently introduced, is not so useful and solutions have to be found how to utilise data more effectively.

Sustainability

It is important to stabilise exchange between research actors (governments, NGOs funding research, academia) within and between countries. **We need to understand what population-based measures are the most successful, therefore, central storage of knowledge, success and failures would be beneficial.** Joint actions including iPAAC are important tool to achieve this goal, considering also involvement of policy makers. As an example, pooling of data on screening programmes, including harmonised indicators, internationally could provide important source of information on policies and quality/effectiveness. Networking is generally good source of innovations; expertise needs to be coordinated.

Conclusions

COMPREHENSIVE

Research must be comprehensive: include unknown risk factors (discover the new ones) and known risk factors (discover ways how to implement the interventions effectively and timely). Entire cancer research continuum and biopsychosocial perspectives are needed.

NO ONE-SIZE-FITS-ALL

Tailor approaches to fit the particular target groups of prevention efforts, to deliver the interventions effectively.

NETWORKING AND SHARING

Networking and sharing of data and knowledge/experience/good practices are needed to obtain more comprehensive research data (more comprehensive modelling, better tailoring) and knowledge of what works and what does not work

References

- Paper on the experience of standardised tobacco packaging in the UK https://www.cancerresearchuk.org/sites/default/files/cruk_summary_paper_-_market_and_industry_response_to_standard_tobacco_packaging_uk_-_december_2020.pdf
- Other Cancer Research UK policy and implementation research papers: https://www.cancerresearchuk.org/about-us/we-develop-policy/our-policy-on-preventing-cancer/the-cancer-policy-research-centre-cprc#CPRC_prevention1

Topic of your session: Influencing Policy

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- Simon Holmesson, Swedish Cancer Society, Sweden
- Tifenn Piolot-Doco, EPHA, Belgium

Meeting recorded? YES

Title: Cancer Prevention in the 2020s - finding sustainable solutions: Influencing Policy

Background:

1. Make Health in all policies (HiAP) a reality

Background: HiAP is well-recognized policy for insuring the successful implementation and sustainability of cancer prevention strategies in local, national and international context, however the policy itself is difficult to implement due its multisectorial complexity and broad range of cancer prevention related interventions, health determinants and outcomes. Often HiAPs lack owners (who is responsible for what) and clear action plans with clear and achievable goals, timeline and other important determinants of implementation success.

Proposals how to implement HiAP:

- To include consistently health impacts into "**European Commission's and national policy Impact Assessments"**[1]. These currently consider economic, social or environmental impacts but not necessarily health. Policies in areas such as housing, transportation, agriculture, education and many others can all have important consequences for population's health. For example, agriculture policies and incentives can shape food environments and their nutrition and health impacts.
- To plan and conduct the implementation research/project, with clear project goals and owners and involvement of all relevant stakeholders from different professions and sectors, including scientists, policy makers, decision makers and citizens. Example of an interesting pilot implementation research would be to make a national health strategy the "**state support structure**", through which state budget has to go through to check it proposed actions support the state health goals.
- To improve cross-sectorial collaboration: encourage public sector to collaborate and experiment. In Finland informal networks like "**change makers"** from the ministries have met regularly. Also the development towards anticipatory government policies and ideas of Design for Government try to include deliberation and engagement in public policies. Governmental steering has diverse instruments available.
  Examples from Finland: Table 4, pages 49-51[2] and Styles for government interventions[3].

[1] https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en
[2] https://julkaisut.valtioneuvosto.fi/handle/10024/162934
[3] https://openpolicy.blog.gov.uk/2017/09/22/designing-policy/

2. Address commercial determinants of health

Background: Commercial determinants of health can be supportive, opposing or neutral. However, they are rarely taken into consideration and studied before the implementation of new health policy or intervention. Neglecting commercial determinants of health could contribute to less successful/more resource consuming implementation or can even prevent the implementation of evidence-based health improving intervention or policy.

Proposals how to overcome the problems related to commercial determinants of health:

- Recognise all relevant supporting and opposing stakeholders early, **bring them all on board soon (share leadership)**, so policy makers will not back-up due to strong opposing stakeholders due to their commercial interests.
- Establish the environment that enables and endorse **co-creation (shared vision)** of health policies, strategies, goals. Encourage people to understand the basis for regulations and legislation and include them in the planning phase of any action. There are several tools for co-creation. Invest in communication, deep undrstanding and health literacy. Co-creational practices should not be barriers of regulations advancing the right to health (for example the exclusion of tobacco industry in the WHO Framework Convention on Tobacco Control art. 5.3.).
- Support collaborative projects, joint efforts with the industry, knowledge institutes and government. Example: **SEAFOODTOMORROW**[4] (EU H2020 funded project) develops products and technologies that contribute to social, economic and environmental sustainability and human health

3. Create structures that allow for participatory democracies and honour their outcomes

Background: Even best evidence-based and most successful health interventions endorsed and supported by policy-makers, professionals and all relevant stakeholders sometimes do not gain desired and anticipated results in practices since they are not accepted and implemented by individuals from the target population.

Proposals how to increase the acceptance and the use of evidence-based health interventions:

[4] https://seafoodtomorrow.eu/

- Endorse bottom-up deliberative democracies (citizens engagement, public opinion) when implementing a new health intervention or policy – on local, regional country and EU level.
  Example from Ireland: "**UK climate citizens assembly[5]"**, in Ireland a series of assemblies.
  Example from Australia: **"Citizens jury on obesity"[6]**, 75 % of jury members have to vote for a proposal in order to pass.People do want to help and they understand.
  Example from Belgium: "**Gent en Garde**"[7], joint efforts with citizens, companies, knowledge institutions and civil society organisations to promote and support heathy and sustainable consumption.
  Example: "**European Bauhaus"** co-design approach allows for a lot of participation and bottom-up engagement[8];
- Engage peers and endorse peer-leadership to perform research about public demand, consumer behaviour, and vulnerable groups' needs and to co-create decisions that meet the needs and preferences on the public side. Let citizens feel that they have the power and responsibility to participate in public decisions. Coordination for co-creation initiatives helps, central funding for research on citizens' and consumers' needs helps.
  Example: **Europa Donna** convey messages from public, citizens, consumers to other stakeholders and translates the information back. As an example, in September 2020, Europa Donna ran a survey across its 47 member organisations throughout Europe in order to assess the patient advocate/patient assessment of a number of health services, from primary prevention campaigns, to screening programmes, to accessibility to comprehensive cancer care centers, allocation of costs and out of pocket expenses, availability of genomic tests, aftercare and followup and palliative care. This resulted in a report which is published on our website[9].
  Example: **EATWELL[10]** (EU FP7 funded project) assessed consumer acceptance of policies.
  Example: **PROMISS[11]** (EU H2020 funded project) took into account consumer health needs, behaviours and preferences for tailored dietary and physical activity strategies.
- Respect decision of citizens that do not want to participate – **"the right not to engage and participate"**.

[5] https://www.climateassembly.uk/
[6] https://www.vichealth.vic.gov.au/programs-and-projects/victorias-citizens-jury-on-obesity
[7] https://stad.gent/sites/default/files/page/documents/20160913_PU_Gent%20en%20garde_operationele%20doelstellingen_Engels_web.pdf
[8] https://europa.eu/new-european-bauhaus/about/about-initiative_en and https://europa.eu/new-european-bauhaus/co-design/co-designing-new-european-bauhaus_en
[9] https://www.europadonna.org/wp-content/uploads/Europa-Donna-BC-Survey-september-2020.pdf
[10] http://eatwellproject.eu/
[11] https://www.promiss-vu.eu/

Conclusions

For the sustainable cancer prevention in 2020s, successful and sustainable implementation of health in all policies (HiAP) on local, national and European level should be endorsed.

When discussing important health policy or intervention, bring on board all the relevant supporting and opposing stakeholders early, to co-lead and co-create the final decision to prevent the failure of the implementation due to strong commercial interests.

When planning the implementation of a new health policy and intervention create structures that allow for participatory democracies from the target population and honor their outcomes. However, respect the right not to engage and participate.

References

In footnotes.

AOB

Literacy and heath literacy are prerequisites for the deep understanding and empowerment of individuals for engaging and participating in co-creation of heal policies and interventions as well as in adopting the health interventions in everyday life, like lifestyle changes and healthy choices. Invest in communication, deep understanding and health literacy.

8. Links to background papers and dissemination

Recommendations for the sustainability and monitoring of the European Code Against Cancer
https://www.ipaac.eu/res/file/outputs/wp5/recommendations-monitoringsustainability-european-code-againts-cancer.pdf

Sustainability and monitoring of the European Code Against Cancer: Recommendations
https://www.sciencedirect.com/science/article/pii/S1877782121000503?via%3Dihub

Health in All Policies in Cancer Prevention Eeva Ollila
https://www.ipaac.eu/res/file/20210222-screening-in-2020s/20210222-background-paper.pdf

Physical activity and cancer prevention Dimitrios Mavroudis
https://www.ipaac.eu/en/work-packages/wp5/