2025–2035

Non-Communicable Diseases Prevention Framework:

Policy Framework for the Prevention of Non-Communicable Diseases and the Promotion of Wellbeing

consultation document

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Office of the Superintendence of Public Health
Superintendence of Public Health
Ministry for Health and Active Ageing

GOVERNMENT OF MALTA
MINISTRY FOR HEALTH
AND ACTIVE AGEING

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List of Abbreviations

AAA	Abdominal aortic aneurysm
BCI	Behavioural and Cultural Insights
COSI	Childhood Obesity Surveillance Initiative
CRC	Colorectal cancer
CVD	Cardiovascular disease
EC	European Commission
EEA	European Environment Agency
EHIS	European Health Interview Survey
END	Environmental Noise Directive
ESPAD	European School Survey Project on Alcohol and Other Drugs
FCTC	Framework Convention on Tobacco Control
FIT	Faecal immunochemical test
EU	European Union
HBSC	Health Behaviour in School-aged Children
HEPA	Health Enhancing Physical Activity
HPV	Human papillomavirus
IMC	Inter-Ministerial Committee
LGBTIQ+	Lesbian, Gay, Bisexual, Trans, Intersex and Queer and all other gender and sexual orientations
MI	Motivational Interviewing
NAO	National Audit Office
NCD	Non-communicable diseases
NCD GMF	Non-communicable diseases global monitoring framework
NGO	Non-governmental organisation
NHSS	National Health Systems Strategy
OECD	Organisation for Economic Co-operation and Development
OSPH	Office of the Superintendence of Public Health
SBI	Screening and Brief Intervention
SDG	Sustainable Development Goal
SILC	Statistics on Income and Living Conditions
SSB	Sugar sweetened beverage
UN	United Nations
WHA	World Health Assembly
WHO	World Health Organization

Foreword

Mr Jo-Etienne Abela
Minister for Health and Active Ageing

As we navigate the challenges posed by Non-Communicable Diseases (NCDs), it is imperative that we prioritise prevention as a cornerstone of our healthcare approach. NCDs, including cardiovascular diseases, mental health conditions, diabetes, obesity, cancer, and chronic lung diseases, significantly impact our population's well-being and strain our healthcare systems. Preventing NCDs is a critical aspect of overall health and wellbeing, requiring a proactive and comprehensive approach that transcends the boundaries of traditional healthcare. Every aspect of our daily lives influences our susceptibility to NCDs, underscoring the need for policies and actions across multiple sectors.

As a government, we are already committed to this endeavour by fostering employment, alleviating poverty, and modernising education. However, our efforts must extend further. This policy framework outlines our roadmap for promoting NCD prevention. This policy framework will inform our investments and reforms, placing NCD prevention at the forefront of our national health policy agenda.

Yet, we cannot achieve this alone. I invite all stakeholders to join us in our efforts to enhance NCD prevention, shift towards community-based healthcare services, ensure parity in healthcare provision, and create a supportive environment for both patients and professionals. Together, we can make significant strides in safeguarding public health and wellbeing against the threat of NCDs.

I am grateful for the invaluable feedback received from individuals and organisations during the initial consultation process. I would also like to acknowledge the valuable support received from the WHO Regional Office for Europe through the WHO-Malta Country Cooperation Strategy 2022-2026.

Introduction

Prof Charmaine Gauci
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The burden of Non-Communicable Diseases (NCDs) is enormous, leading to significant morbidity and mortality. Furthermore, they pose a significant economic burden, with high direct medical costs and indirect costs due to loss of productivity. However, NCDs are largely preventable through effective interventions that address shared risk factors, namely tobacco use, unhealthy diet, physical inactivity, and harmful use of alcohol. Recognising the urgent need for action, we have developed this comprehensive NCD framework. The Framework aligns with the WHO's Global Action Plan and Malta's commitment to fostering a healthier future and harmonises with the objectives outlined in the United Nations Sustainable Development Goal 3. Specifically, it aligns with Target 3.4, which aims to reduce premature mortality from NCDs by one third through preventive measures, treatment, and the promotion of mental health and wellbeing. The NCD Prevention Framework will function as a foundational horizontal backbone from which specific vertical strategies will emerge, creating a unified and impactful approach to addressing NCDs in Malta & Gozo. The policy framework outlines six enablers and eight priority areas.

Enablers of NCD prevention:

1. Governance and accountability;
2. Data into action;
3. Addressing determinants of health and health equities;
4. Re-orienting health systems for prevention;
5. Health literacy;
6. Emergency preparedness.

Priority Areas for NCD prevention:

1. Reduce tobacco use;
2. Reduce the use of alcohol;
3. Reduce overweight and obesity;
4. Improve access to a healthy diet;
5. Increase physical activity, and reduce physical inactivity and sedentary time;
6. Early diagnosis;
7. Promote mental health and wellbeing;
8. Promote environmental health.

The NCD Prevention Framework is expected to significantly reduce NCD prevalence in Malta & Gozo and will play a crucial role in promoting a healthier society. We believe that with concerted effort and collaboration, we can reduce the burden of NCDs and ensure a healthier future for all.

Executive Summary

1.0 Setting the Scene

The Policy Framework for the Prevention of Non-Communicable Diseases (NCD) and the Promotion of Wellbeing emerges in response to the growing challenge of NCDs in Malta & Gozo. The most significant NCDs affecting the Maltese population with considerable impact on morbidity, disability, and mortality are cardiovascular diseases, cancers, chronic respiratory diseases, diabetes, obesity, mental health disorders and environmental health challenges.

Faced with significant socio-economic challenges and pressures on the healthcare system, this framework outlines a strategic approach to reduce the impact of NCDs through prevention, early diagnosis, effective treatment and care management, and wellbeing promotion. It aligns with the WHO's Global Action Plan for the Prevention and Control of NCDs and Malta's commitment to fostering a healthier lifestyle.

Malta faces significant health burdens characterised by high prevalence rates of NCD risk factors such as obesity, tobacco use, alcohol consumption, unhealthy diets, and physical inactivity. The country's healthcare system, despite advancements, grapples with challenges in preventive care, necessitating a shift towards a more holistic and integrated approach to health promotion and NCD prevention. The document underscores disparities in health outcomes influenced by socio-economic factors, necessitating focused interventions to address inequities.

2.0 Situational Analysis

NCDs significantly impact healthcare costs, productivity, and quality of life. Socio-economic determinants including education, income, and employment influence health outcomes and disparities in NCD prevalence. The current situational analysis calls for a multi-sectoral strategy focusing on health behaviours, socio-economic and political determinants of health, and environmental influences that can mitigate the impact of NCDs through policy reforms, health system enhancements, and community engagement.

3.0 Strategic Vision and Goals

The NCD Prevention Framework aims for a robust and coordinated approach to significantly reduce morbidity, disability, and mortality rates by 2035, focusing on health promotion, disease prevention, and ensuring health equity. It proposes reorienting health services towards prevention, creating healthy environments, and boosting health literacy and emergency preparedness. The framework identifies critical enablers essential for successful implementation of policies, including supportive environments for NCD prevention and wellbeing promotion, making its strategic objectives both attainable and sustainable.

4.0 Enablers for the NCD Prevention Framework

4.1 Governance and Accountability

Establishment of Inter-Ministerial Committees: To ensure the effective coordination and implementation of the policy framework the establishment of inter-ministerial committees is recommended. These committees would oversee the integration of NCD prevention and wellbeing promotion across different sectors and ministries whilst ensuring a coherent and unified approach that will ensure implementation of actions.

Strengthening National Coordinating Mechanisms: Enhancing existing national coordinating mechanisms to include a wider range of stakeholders, such as non-governmental organisations, patient groups, and the private sector, where broader engagement and collaboration will be facilitated.

4.2 Translating Data into Action

Enhanced Surveillance Systems: The development of robust surveillance systems to monitor NCD trends, risk factors, and the effectiveness of interventions is crucial. This data-driven approach enables timely adjustments to strategies and policies, whilst ensuring that they remain relevant and effective.

Utilisation of Health Equity Indicators: Incorporating health equity indicators into data collection efforts is vital for identifying and addressing disparities in health outcomes and access to care. This ensures that interventions are targeted effectively to reach identified vulnerable sector of the population.

4.3 Addressing the Determinants of Health

Multi-sectoral Partnerships: Recognising that the determinants of health extend beyond the healthcare sector, the framework emphasises the importance of multi-sectoral partnerships. Collaboration with sectors such as education, housing, agriculture, finance, and urban planning is essential to address the social, economic, and environmental factors influencing NCD prevalence.

Health in All Policies Approach: Implementing a "Health in All Policies" approach ensures that health considerations are integrated into policymaking across all sectors and ministries, creating synergies that promote health and wellbeing.

4.4 Re-orienting Health Systems

Integration of Preventive Services: Re-orienting health systems to emphasise prevention includes integrating preventive services into primary care settings, developing national guidelines for NCD prevention and management, and ensuring that the health system is responsive to the changing health needs of the population.

Strengthening Primary Health Care: Strengthening primary health care as the foundation of the health system supports the delivery of comprehensive, accessible, and coordinated care, emphasising disease prevention and health behaviour improvements.

4.5 Health Literacy

Promoting Health Literacy: Increasing health literacy among the population empowers individuals to make informed health decisions, engage in lifestyle changes, and navigate the health system effectively. This involves educational campaigns, community programs, and the incorporation of health education into school curricula.

4.6 Emergency Preparedness

Incorporating NCDs into Emergency Preparedness Plans: Ensuring that NCD prevention and management are integrated into emergency preparedness and response plans is crucial. This includes continued access to essential medications and services for people with NCDs during emergencies and natural disasters.

5.0 Priority Areas

The NCD Prevention Framework emphasises a strategic, integrated approach to NCD prevention, focusing on priority areas such as (i) reduction of tobacco use (ii) alcohol use reduction through adjustments in taxation, advertising public consumption bans, alongside supportive quitting measures; (iii) improved access to nutritious foods, limiting unhealthy options, and (iv) enhancing physical activity; through lifestyle changes, infrastructure development and encouragement of daily routines, (v) obesity prevention and management via tiered care guidelines and socio-economic supportive programs, (vi) early diagnosis of NCDs, (vii) mental health service enhancement and stigma reduction, and (viii) tackling environmental health challenges. These recommendations are designed to combat NCDs through evidence-based, multifaceted interventions.

6.0 Implementation and Evaluation

The framework advocates for a whole-of-government and whole-of-society approach, engaging diverse stakeholders in the implementation process. It emphasises the importance of data-driven decision-making, robust monitoring and evaluation mechanisms, and adaptive strategies to ensure effectiveness and sustainability. Public consultations, stakeholder engagement, and international cooperation form critical components of the strategy, aimed at fostering collective action and shared responsibility for NCD prevention and wellbeing promotion.

7.0 Conclusion

This policy framework represents a forward-looking approach to tackling NCDs in Malta & Gozo, underpinned by a commitment to health promotion, disease prevention, and wellbeing enhancement. Furthermore, by addressing the multifaceted determinants of health, fostering collaborative partnerships, and prioritising equitable access to care, it lays the groundwork for a healthier, more resilient society poised to overcome the challenges posed by NCDs.

1.0 Setting the Scene

1.1 Introduction

Non-Communicable Diseases (NCDs) stand as the main cause of morbidity, disability, and mortality in Malta and at the global level. Dealing with these chronic health issues and their root causes represents the most substantial challenge confronting the Maltese healthcare system. In addition to an ageing population, and the increasing variety and costs of investigations, innovations, interventions, medications and treatments, the continuously growing prevalence of chronic diseases places ever increasing pressure on individuals, families, communities, and the healthcare system.

NCDs necessitate a focus on prevention, early diagnosis, and well-coordinated long-term management. NCDs were traditionally considered a problem of older age however, they are increasingly becoming prevalent in younger generations. This has led to a higher proportion of the population living longer with complex care needs, and consequently requiring a broader range of services over a longer timeframe. To ensure the sustainability of the healthcare system, significant changes are imperative to respond more effectively to NCDs.

Prioritising the promotion of wellbeing can substantially delay the development of NCDs and reduce their frequency and severity, ultimately resulting in a healthier population, long-term cost savings and improved health outcomes. Equally essential are strategies for effective early diagnosis to prevent propagation of disease, and management of diagnosed chronic conditions to minimise multimorbidity, related complications, and associated disabilities, while enhancing the quality of life.

By mitigating the impact of chronic diseases, the benefits extend beyond establishing an economically viable and sustainable healthcare system. Reducing the physical, psychological, social, and financial consequences of NCDs will elevate the quality of life and health outcomes for individuals, families, and communities. Furthermore, it is essential to acknowledge the disproportionate burden of NCDs and the higher prevalence of risk factors within priority populations and ensure adequate and focused support.

The rising prevalence of NCDs is a global challenge that impacts most countries. The World Health Organization's (WHO) Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020 that was published in 2013 and later extended to 2030 aimed to address this challenge by nine global targets and 25 indicators (1). Malta has committed to the cause, with this Policy Framework for the Prevention of Non-Communicable Disease and the Promotion of Wellbeing building on work already carried out over the past years, while supporting Malta's international commitments and offering national guidance for a coordinated, multisectoral response for the prevention of NCDs and the promotion of wellbeing.

The framework addresses cross-cutting enablers and barriers for NCD prevention including governance and accountability, translating data into action, addressing the determinants of health and health equity, re-orienting health systems for prevention and wellbeing, health literacy, and emergency preparedness.

Eight priority areas for NCD prevention were identified:

- reduce tobacco use;
- reduce the use of alcohol;
- reduce overweight and obesity rates;
- improve access to a healthy diet;
- increase physical activity, and reduce physical inactivity and sedentary time;
- early diagnosis;
- promote mental health and wellbeing; and
- promote environmental health.

The framework proposes a non-exhaustive list of policy recommendations, highlighting those deemed to be of higher priority.

1.2 Non-Communicable Diseases Defined

NCDs, also known as chronic diseases, tend to be diseases of long duration, not infectious, and are the result of a combination of genetic, physiological, environmental, and behavioural factors. The main types of NCDs are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma), diabetes, obesity, and mental health disorders (2,3).

1.3 Purpose

This Framework supersedes the *Strategy for the Prevention and Control of Non-Communicable Disease in Malta* as the overarching backbone for targeted policies for the prevention of chronic conditions in Malta (4). It provides guidance for the promotion of wellbeing, prevention and early diagnosis of disease, and the development and coordinated implementation of policies, strategies, and actions that address chronic conditions and improve health outcomes.

While the health sector must take a leadership role to foster advocacy, engagement and partnering with other ministries and sectors outside health to achieve its vision, continued commitment from many relevant critical stakeholders is needed through a whole-of-government and whole-of-society approach that deals effectively with the myriad of challenges whose resolution falls outside health responsibilities.

1.4 Timeframe

This overarching horizontal policy framework is intended to direct national efforts till the year 2035. Specific, updated, and detailed vertical policies and strategies will emanate from this framework ensuring coherence and concordance of initiatives and recommendations across policy areas. This approach maximises resource utilisation, builds synergy, and ensures a more holistic approach that addresses the varied needs of individuals, families, communities, and society.

2.0 Situational Analysis

2.1 Malta's Report Card

Snapshot

» 10.2% probability of dying between 30-70 years from any of cardiovascular diseases, cancer, diabetes or chronic respiratory disease (5).

» 31.1% have a longstanding illness or health problem (2022) (6).

» 25.1% of persons aged 15+ years are currently tobacco smokers (2019) (5).

» 9% of 15-year-old boys and 10% of 15-year-old girls are currently cigarette smokers (2022) (7).

» 15% of 15-year-old boys and 23% of 15-year-old girls are currently e-cigarette smokers (2022) (7).

» Persons aged 15+ years consume 8.3 litres of pure alcohol per year (2019) (5).

» 15.5% of persons aged 15+ years engage in binge drinking at least once a month (2019) (8).

» 14% of 15-year-old boys and 17% of 15-year-old girls were drunk during the previous 30 days (2022) (7).

» 88.5% of persons aged 15+ years consume less than 5 portions of fruit and vegetables per day (2019) (9).

» 71.6% of persons aged 15+ years did not spend any time on health-enhancing aerobic physical activity (2019) (10).

» 63.8% of persons aged 15+ years are overweight while 28.1% are obese (2019) (11).

» 31% of 15-year-old boys and 32% of 15-year-old girls are overweight (2022) (12).

- 35.8% of children 6-9 years of age (3rd grade students) are overweight (17.2% are obese) (2022) (13).
- 18.1% of persons aged 15+ years self-reported having high blood pressure (2019) (14).
- 7.5% of persons aged 15+ years self-reported having diabetes (2019) (14).
- 68.6% of persons aged 15+ years have had their blood pressure checked within 1 year (2019) (15).
- 55.9% of persons aged 15+ years have had their blood sugar checked within 1 year (2019) (15).
- 12.0% of women between 50-69 years have never had a mammogram (2019) (16).
- 17.0% of women between 20-69 years have never had a cervical smear (2019) (17).
- 81.0% of girls aged 15 years old received the recommended doses of human papillomavirus (HPV) vaccines(2019) (5).
- 57.3% of persons between 50-74 years have never had colorectal cancer screening (2019) (18).
- 13.9% of persons aged 15+ years have poor mental wellbeing (2019) (19).
- Mortality rate of 20.2 deaths per 100,000 population (age-standardised) are attributable to ambient air pollution (2016) (5).
- 45.8% have limited health literacy (2014) (20).
- Only 1.5% of healthcare expenditure is on preventive care (2020) (21).

2.2 Current Status and Impact of Non-Communicable Diseases

In 2019, most deaths in Malta (90.9%) were attributed to NCDs (22). These NCDs also account for 88% of the years of healthy life lost due to disability. Within the NCD-related deaths, a significant portion, specifically 85%, were linked to conditions such as cardiovascular disease, cancer, chronic respiratory disease, and diabetes. Data tabled in the Maltese Parliament shows that deaths from suicide have been stable with an average of 2 to 3 deaths per month for the last 10 years (23). However, data on morbidity stemming from poor mental wellbeing is limited. The latest data suggests that around 15.4% of the population aged 18+ years are living with a diagnosed mental disorder with the prevalence of anxiety at 7.5% and depression at 6% (24), once again being confirmed, reflecting from former findings (25), and estimates (26).

Whilst the overall prevalence of NCDs is difficult to quantify, current evidence from 2019 shows that:

- NCDs accounted for 90.9% of all deaths (22).
- Almost 1 in 6 European Health Interview Survey (EHIS) respondents in Malta (16.3%) rated their self-perceived health status as fair, bad, or very bad (25).
- Just over half of EHIS respondents in Malta (51.1%) reported having a long-standing illness or health problem (25).
- 1 in 5 EHIS respondents in Malta (19.1%) reported having activity limitation due to health problems in the previous 6 months (25).
- 1 in 12 (8.6%) of EHIS respondents in Malta were identified as having depressive symptoms based on their combined score, with 1.5% falling into the category of experiencing major depressive symptoms (25).
- Malta had much lower levels of overall preventable mortality (age-standardised mortality rate of 111 deaths per 100,000 population) when compared to the EU-27 average (age-standardised mortality rate of 160 deaths per 100,000 population). This is mostly attributed to lower mortality rates for accidents, chronic lower respiratory diseases, and alcohol-related diseases. However, the mortality rates from diabetes and ischaemic heart disease remain high (27).
- Malta had a comparable level of treatable mortality (age-standardised mortality rate of 92 deaths per 100,000 population) when compared to the EU27 average (age-standardised mortality rate of 92 deaths per 100,000 population). This is mostly attributed to high treatable mortality rates from ischaemic heart disease (27).

NCDs are primarily influenced by the top five contributing risk factors - tobacco use, alcohol consumption, an unhealthy diet, lack of physical activity, and exposure to air pollution. Individuals living with NCDs or those having these risk factors are more vulnerable to and may experience more severe outcomes when facing other health issues, including infectious disease (28,29).

Malta is on track to achieve the NCD global monitoring framework (NCD GMF) target of a 25% reduction in premature mortality from the four of the main NCDs (cardiovascular

diseases, cancer, chronic respiratory disease and diabetes) in the population aged 30-70 years by 2025 from the base levels of 2010 (30). This positive achievement is mostly a result of a decrease in mortality from cardiovascular diseases (which represent the highest burden) through better treatment options and the medical control of metabolic risk factors, and reductions in mortality due to cancer, again through earlier diagnoses and better treatment options. The prevalence of diabetes-related deaths remains elevated in Malta, in part due to the high occurrence of obesity in the country.

While a significant portion of the population reports being in good health, notable disparities in health status persist, particularly in relation to income. In 2019, three-quarters (74%) of Malta's population reported being in good health, a percentage that exceeds the European Union (EU) average of 69%. It is worth noting that a higher proportion of men (76%) claimed good health compared to women (72%). Additionally, there were substantial disparities based on income, with 89% of individuals in the highest income bracket in Malta reporting good health, in contrast to only 58% of those in the lowest income bracket. Notably, these income-related disparities were more pronounced in Malta than the EU average (27).

Slightly more than one-third of all deaths in Malta in 2019 were linked to behavioural risk factors, similar to the EU average. Dietary factors such as insufficient fruit and vegetable intake and high consumption of sugar and salt contributed to 18% of the total deaths, while deaths related to tobacco use, including both direct smoking and exposure to second-hand smoke contributed to 16% of deaths. In both cases, the figures for Malta were close to the EU average. On the other hand, low levels of physical activity contributed to 5% of all deaths, which is significantly higher than the EU average of 2%. On a positive note, deaths attributed to alcohol consumption in Malta stood at 3%, which is much lower than the EU average of 6%. Fine particulate matter (PM2.5) and ozone exposure, considered forms of air pollution, accounted for approximately 4% of all deaths in 2019 in both Malta and the EU average (27).

Malta has good access to health care; however insufficient investment in prevention, gaps in the workforce, and low hospital bed capacity, render the sustainability of reducing the overall NCD burden in jeopardy. Commitments to enhance the use of digital health, ongoing reforms to primary care and investment in physical infrastructure and the health workforce will help to build a more resilient health care system (27). The adoption of cost-effective and evidence-based policy solutions that address prevention and management of the top risk factors associated with NCDs, classically referred to by WHO as “Best Buys” can further secure Malta’s commitment to address NCDs when contextualised to our local situation (31,32). Over 50% of the NCD burden is preventable through the evidence-based control of the leading risk factors.

Malta is not on track to achieve the NCD GMF targets related to all these risk factors with increasing overweight and obesity rates, increasing physical inactivity, increasing total alcohol consumption per capita, insufficient reductions in tobacco consumption, and increasing consumption of e-cigarettes especially in young people.

Another important modifiable risk factor that is increasing in Malta is psychoactive substance misuse (33).

2.3 The Cost of Non-Communicable Diseases

NCDs have a significant economic impact arising from a combination of factors that include healthcare-related expenditures related to disease management and which are exacerbated by the early onset of disease and inadequate disease management, along with the loss of productivity. Individuals with chronic illnesses often have reduced capacity to work and contribute economically to society. Nonetheless, a substantial portion of the health, social, and economic damage can be prevented. It has been estimated that the global cost of insufficient investment in the prevention and management of NCDs amounts to a staggering US$ 47 trillion in lost gross domestic product worldwide from 2011 to 2025. Remarkably, the interventions required to avert this loss and achieve a 28.5% reduction in projected NCD mortality by 2030 have been shown to be fairly straightforward and highly cost-effective, and to yield savings of US$ 9 for every US$ 1 invested (34).

There is limited information regarding the economic repercussions of NCDs in Malta. A conservative estimate of the expenses associated with obesity for the year 2016 based on data from the 2015 EHIS, indicates expenses amounting to €36.3 million. Among these, 66% of the expenditures are considered direct costs, and include expenses related to pharmaceuticals, hospital care, and primary care (35).

2.4 Investment in Non-Communicable Disease Prevention

Malta's healthcare system has traditionally emphasised the treatment of diseases rather than their prevention. In 2020, Malta spent only 1.5% of its total health expenditure on preventive healthcare. Comparatively, this represents less than half of the EU average (3.4%) of the total healthcare expenditure, placing Malta as the second from bottom (21).

Enhancing the focus towards preventive measures, alongside maintaining effective management of chronic conditions will lead to improved health, social wellbeing, and economic prosperity for the entire Maltese population. Importantly, investment in prevention of NCDs is crucial to ease the pressure on the health system.

2.5 Policy Context

2.5.1 National context

The overall goal of the NCD strategy in 2010 was to develop a multifactorial approach to NCD prevention through tackling common risk factors, targeting both the whole population and high-risk groups. The strategic aims addressed the major chronic diseases, oral disease, the four lifestyle-related factors (diet, physical activity, tobacco, and alcohol), and the four biological risk factors (obesity, hypertension, hyperlipidaemia, and carbohydrate abnormalities) (4). Other subsequent strategic documents included: A Healthy Weight for Life: A National Strategy for Malta 2012-2020 (36); The Food and Nutrition Policy and Action Plan 2015-2020 (37); The National Breastfeeding Policy and Action Plan 2015-2020 (38); A National Strategy for Diabetes 2016-2020 (39); and The National Cancer Plan for the Maltese Islands of 2011-2015 and 2017-2021 (40,41). At the time of writing, the process to update the latter two strategies is ongoing.

In a joint effort, the ministries responsible for education and health published The Whole School Approach to Healthy Lifestyle: Healthy Eating and Physical Activity Policy 2015 to promote healthy living among school-aged children and adolescents (42). This was superseded in 2022 by Annex IV: A Whole School Approach to Healthy Living: Healthy Eating & Physical Activity Policy within A Policy on Inclusive Education in Schools: Route to Quality Inclusion (43).

In December 2022, the Ministry for Health launched the National Health Systems Strategy (NHSS) for Malta 2023-2030 (44). This policy document sets the strategic direction being pursued by the Maltese Government to ensure that health features as a key priority across all national policies and sectors, with the core objectives being to improve population health and wellbeing, improve the individual patient care experience, improve value in healthcare, and to strengthen and support the health workforce. An additional priority area in this strategy relates to incorporating digital health into innovation, technology, and research for better health. The Mental Health Strategy for Malta 2020-2030 launched in July 2019 is one of the vertical strategies emanating from the NHSS (26). This strategy focuses on promoting mental health and wellbeing of the population using a life course approach, reconfiguring the mental health service framework, supporting patients, their families, and carers, and strengthening the mental health workforce. This Policy Framework for Non-Communicable Disease Prevention and the Promotion of Wellbeing also stems from the NHSS.

Other important national strategic policy documents include the following:

- The National Strategy for Sport and Physical Activity "Aiming Higher" published in 2019, recognises the value and contribution of sport and physical activity towards a healthier, inclusive, economically-productive, ecologically educated and balanced society (45).
- The National Strategy for the Environment 2050 is built on eight key pillars including strategic goals prioritising clean air for wellbeing, and a quality environment for liveable towns and villages (46).
- A Social Vision for Vision 2035: Shaping the Future of Our Society: is built around eleven thematic areas namely: poverty and social exclusion; families; children; youth; ageing; addiction to substances; re-integration of ex-offenders; persons with disability; persons identifying as Lesbian, Gay, Bisexual, Trans, Intersex and Queer and all other gender and sexual orientations (LGBTIQ+); violence, abuse, and exploitation; and migration (47).
- National Strategic Policy for Poverty Reduction and For Social Inclusion Malta 2014-2024 promotes wellbeing and improves the quality of life for all, particularly for persons at risk of poverty or social exclusion, based on values of solidarity, equality, dignity and respect for fundamental human rights and social justice (48). At the time of writing a revised national strategy was being developed.
- National Children's Policy 2017 offers a comprehensive framework for the integration of children's concerns into various sectors, including the promotion of breastfeeding and healthy lifestyles, addressing childhood obesity, increasing psychosocial support, prevention, early detection, support and care of addictive behaviours, and improvement

of public environments (49). At the time of writing a revised Policy Framework was launched for public consultation.

- National Action Plan for a Child Guarantee 2022-2030 stems from the Council Recommendation for a European Child Guarantee, that outlines action measures targeting vulnerable children such as initiatives for social protection, enabling access to education and healthcare, ensuring healthy nutrition, and prioritisation for social housing (50).
- National Youth Policy 2021-2030 actively promotes and empowers young individuals in realising their potential and dreams, while addressing their specific requirements and worries (51).
- Freedom to Live: Malta's 2021-2030 National Strategy on the Rights of Disabled Persons provides a roadmap for the Maltese disability sector over the next years, leading up to 2030, the target year for achievement of the UN's Sustainable Development Goals (SDG) (52).
- The National Strategic Policy for Active Ageing 2023-2030 aims to mainstream ageing, and to protect the human rights of older people through actions in three key areas: social inclusion; healthy ageing; and addressing diversity and inequality (53). Healthy ageing action areas include nutrition, physical activity and physical safety, mental wellbeing, and health screening.
- The National Alcohol Policy 2018-2023 addresses the issue of underage drinking, mitigating the adverse effects of drunk driving, and promoting responsible alcohol consumption among individuals who partake in drinking (54). At the time of writing, the second National Alcohol Policy was being developed.
- The National Drug Policy 2023-2033 aims to minimise drug usage and the associated negative consequences among all individuals, but especially among vulnerable groups (55). The strategic areas include actions related to the legal and judicial framework, and various measures to reduce supply and demand.

The National Audit Office (NAO) carried out *A review of the implementation of Sustainable Development Goal 2: Addressing pre-obesity and obesity* (56). The NAO's overall evaluation of the progress toward the targets outlined in the Healthy Weight for Life Strategy revealed that only one out of the four set targets, specifically related to adolescent obesity, was achieved. Stakeholders highlighted deficiencies in funding, human resources, and service provision, as well as issues related to the lack of coherence in policies. The NAO advocated for more legislative changes, stronger political commitment, identifying and addressing systematic disadvantages faced by vulnerable groups, the Advisory Council expanding its' consultative processes and establishing a more robust monitoring and implementation framework, and enhancing communication, coordination and cooperation within Government and actors external to Government.

2.5.2 International context

The SDGs and the NCD GMF set out a number of global NCD indicators. The introduction of the 2030 Agenda for Sustainable Development in September 2015 marked a significant milestone for those concerned with NCDs by incorporating NCDs into a worldwide development framework (57). SDG Target 3.4 sets out to reduce premature mortality from NCDs by one third through prevention and treatment while promoting mental health and wellbeing. Other SDGs contribute towards addressing the determinants of health. The NCD GMF consisted of nine worldwide objectives and 25 measures. The nine voluntary global targets are designed to address global mortality caused by the four primary NCDs, expedite efforts against the leading risk factors associated with NCDs, and fortify national healthcare system responses (58).

In 2023, WHO led several initiatives emphasising the promotion of health and overall wellbeing. During the 76th WHA, Member States reached a consensus to embrace the "Global framework for integrating wellbeing into public health using a health promotion approach." This framework aims to empower individuals to thrive and attain their complete physical and mental health capabilities throughout their lifetimes and across successive generations (59). During the same WHA, delegates endorsed and expanded the list of the 'Best Buys' to help prevent and control NCDs (31). The Luxembourg Statement, endorsed during the 9th High-level Meeting of WHO/Europe's Small Countries Initiative, outlined a roadmap for progress in particular areas including access to medications, mental health, digital healthcare tools, the healthcare workforce, and the prevention and management of non-communicable diseases (60). Furthermore, the Zagreb declaration endorsed by the spouses of European leaders acknowledged the importance of obesity and listed a set of policy recommendations to improve access to healthier diets and physical activity. The Budapest declaration, which was embraced during 7th Ministerial Conference on Environment and Health in Hungary, places paramount importance on immediate and comprehensive efforts to address health issues associated with climate change, environmental pollution, loss of biodiversity, and land degradation, all within the broader context of recovering from the COVID-19 pandemic (61).

2.6 The Approach

This policy framework delineates a comprehensive and long-term approach to NCD prevention within the Maltese context with the goal of securing optimal outcomes for the entire population.

This policy framework has been developed using the best available evidence from a range of sources including:

- National and international evidence about what works.
- Targeted consultations, which provided the opportunity to hear from experts in different fields of prevention, the views of patient advocates, academia, etc.

- The lessons learnt from past activities.
- Relevant national strategies, action plans and frameworks to ensure the Policy Framework aligns with, and builds upon, current action in prevention.
- The next step is public consultations on the draft policy.

A technical working group from WHO/Europe, in close collaboration with the Strategy Development and Implementation Unit within the Office of the Superintendence of Public Health (OSPH) in Malta, conducted a public health review. This review assessed the current status of the NCD risk factors including a health equity perspective, examined trends in related outcomes over the past 10-12 years, explored connections to health determinants, and evaluated the extent of implementation of public policies and national actions.

During the review relevant policy documents were examined, including those aligned with various national and international targets. These documents encompassed the National Strategy for Prevention and Control of NCDs 2010-2020, which had goals based on the National Health Vision 2000. Additionally, the review considered Malta's voluntary commitment to report progress towards meeting the NCD GMF targets prior to the United Nations (UN) High-Level Meeting in 2025 and in alignment with the SDGs. An ensuing analysis assessed the advancements made in line with these specified targets.

Information was gathered from multiple sources, including the WHO Global Health Observatory, Eurostat database, Childhood Obesity Surveillance Initiative (COSI), European School Survey Project on Alcohol and Other Drugs (ESPAD), Health Behaviour of School-Aged Children Survey (HBSC), EHIS, national health registries such as the Cancer and Mortality Registers, and various other national-level sources spanning a decade. To assess the status of policy implementation, policy documents, reviews, and comprehensive reports were examined and analysed. The issue of health inequity in Malta was described by utilising national data sourced from the WHO Health Equity Data Set. An analysis of national health equity policies was conducted to discover methods for enhancing the structure and focus of both health-specific policies and those that span multiple sectors, with the goal of amplifying their effectiveness.

Based on the findings from these analyses and the proposals which ensued from Ministry for Health and wider stakeholder engagement exercises, WHO gave recommendations and policy options based on existing evidence and guidance, such as the NCD 'Best Buys (32); MPOWER for tobacco control (62); the European Framework for Action on Alcohol 2022-2025 (63); the European Food and Nutrition Action Plan 2015-2020 (64); the Physical Activity Strategy for the WHO European Region 2016-2025 (65); the International Code for Marketing of Breastmilk Substitutes (66); the Baby Friendly Hospital Initiative (67); Tobacco, Alcohol, Sugar Sweetened Beverage Taxation Manuals (68–70); and the Alcohol and Tobacco Control Playbooks (71,72).

The stakeholder meetings were conducted online from February to April 2023, with nearly 100 stakeholders from within the Ministry for Health, and other government ministries and entities, including: Ministry for Finance and Employment; Ministry of Social Policy and

Children's Rights; Foundation for Social Welfare Services; Environment Resource Authority; Ministry for the Environment, Energy and Enterprise; Housing Authority; Infrastructure Malta; Jobsplus; Sports Malta; Ministry of Education, Sport, Youth, Research and Innovation; Minister for Inclusion, Voluntary Organisations and Consumer Rights; Ministry for Senior Citizens and Active Ageing; Ministry for Home Affairs, Security, Reforms and Equality; University of Malta; Malta Health Network; and the Youth Agency.

After initial drafts of the report's technical segments and recommendations were created, teams from WHO/Europe visited Malta in June 2023 for in-person discussions with these various stakeholders. These discussions aimed to review the findings and assess their implications. Throughout these engagements, the teams examined the present status of key policy implementation and investigated the obstacles and potential avenues for future implementation of the "Best Buy" policies and other related measures.

3.0 The Framework

3.1 Vision

This Policy Framework for the Prevention of Non-Communicable Disease and Promotion of Wellbeing stems from the first core mission objective of the NHSS framework:

To improve population health and wellbeing for all.

3.2 Mission

To prevent NCDs thereby reducing morbidity and mortality from NCDs.

3.3 Principles and Values

There are several guiding principles to the NCD prevention framework.

Understanding NCD prevention

There are five levels of prevention:

- Primordial prevention focuses on addressing the root causes of diseases by promoting healthy behaviours and reducing risk factors at the population level.
- Primary prevention aims to prevent the onset of diseases through interventions such as vaccinations, and lifestyle modifications.
- Secondary prevention involves early detection and treatment of diseases to halt their progression and reduce complications.
- Tertiary prevention focuses on managing and rehabilitating individuals with established diseases to prevent further complications and disabilities.
- Quaternary prevention aims to protect patients from unnecessary interventions and overmedicalisation by promoting appropriate and ethical healthcare practices.

This policy framework primarily focuses on primordial, primary, and secondary prevention.

Multisectoral engagement

A whole of government and whole of society approach needs to be embraced to address the prevention of NCDs in an integrated and effective approach. Joined-up action between sectors can bring not only health gains but also benefits to the objectives of other sectors which may help to ensure commitment and sustainability of measures.

Ensure health equity

Prevention of NCDs needs to be based on equity, leaving no one behind. Health literacy and the social determinants of health need to be taken into consideration and any barriers to health need to be addressed. It is important to have systems in place to measure variations in health status, health determinants and utilisation of health services to readily identify health inequalities and take necessary action.

Enabling environments

Enabling environments are vital for health as they create supportive conditions for individuals to make healthy choices. By ensuring access to and affordability of nutritious food, clean water, safe housing, education, healthcare, and social support, these environments empower individuals to lead healthier lives, preventing disease and promoting overall physical and mental wellbeing.

Use population-based and individual-based approaches

Population-based approaches are required to improve living conditions, reduce risk factors, creating an enabling environment and strengthen protective factors. This can be achieved using a life course and settings approach taking a temporal and spatial perspective at levels of intervention. Additional considerations need to be taken for specific population groups such as vulnerable children, people of lower socio-economic status, people with mental health disorders, and migrants, while individual-based approaches are required for people with an increased risk of becoming ill and for those who are already ill. A behavioural and cultural insights (BCI) approach should be used to understand the contextual and individual factors that affect healthy behaviours and practices (73). This includes social prescribing such as art-based interventions and the use of blue and green spaces to foster wellbeing practices (74).

4.0 Enablers of NCD prevention

4.1 Governance and accountability

4.1.1 Governance Structures

Most of the Maltese national health and social policy documents recognise the need for intersectoral action and have identified the key stakeholders and their respective responsibilities. The main accountability mechanism is the establishment of an Inter-Ministerial Committee (IMC) for each of these initiatives, to which focal points from each Ministry reports.

Presently, the effectiveness of different cross-sectoral mechanisms appears to hinge more on the abilities and skills of individuals within the Councils, Committees, and Boards, rather than robust and organised processes. With defined roles and linkages, each sector could benefit from complementarity in tackling health equity. There are few specific actions, outcomes, or deadlines that evaluate how things are progressing from an inter-sectoral perspective.

Overall, ineffective inter-sectoral coordination hinders a timely response to emerging health challenges, as well as accountability of all partners with clearly defined actions, deliverables, and timelines. Ultimately, the absence of senior partner accountability and dedicated funding undermine rather than support these efforts.

Close collaboration with relevant international organisations can help improve health outcomes through developing and enhancing knowledge, skills, abilities, and resources to effectively address various challenges and achieve their goals. More collaboration with WHO and the European Commission (EC) is needed particularly in areas where Malta is lagging.

Policy recommendations

- Strengthened political will to prioritise and address NCD prevention at a national level, coherent commitment of funds and resources across government and consistency across related policies.
- Establish or enhance established National Coordinating Mechanisms with executive authority such as the Advisory Council on Healthy Lifestyles, the Smoking and Health Committee, the National Addiction Advisory Board, and other IMCs with clear roles, remits, and responsibilities for specific policy development, implementation, and monitoring.
- Widen consultative processes to include more stakeholders including patient representatives when drafting legislation, policy formulation and service design, delivery, and evaluation.
- Ensure that the health sector is consulted and represented in policy development, implementation, and monitoring of all policies that directly or indirectly impact health.
- Consider the inclusion of permanent representatives from the health and education sectors on the Malta's Council for Economic and Social Development.
- Strengthen collaboration with the EC, WHO and other relevant international organisations such as the Organisation for Economic Co-operation and Development (OECD) to make the best use of the available technical tools and guidance across all relevant themes.

4.1.2 Conflicts of interest

Conflicts of interest hold significant importance in the realm of public health policy. These conflicts, arising from financial, personal, or institutional ties, have the potential to influence policy decisions, potentially compromising the fundamental goal of safeguarding and promoting the wellbeing of the population. Declaring, understanding and addressing conflicts of interest in public health policy is essential to ensure that policies are driven by evidence, transparency, and the best interests of the public rather than being swayed by external factors that may prioritise profit or other interests. In this context, managing and mitigating conflicts of interest becomes a crucial aspect of maintaining the integrity and effectiveness of public health initiatives.

Conflict of interest must be managed across all levels of governance (75). WHO has taken various initiatives to address commercial interest that undermine health. For example, Article 5.3 of the WHO Framework Convention on Tobacco Control (FCTC) obliges Parties to safeguard public health policy formulation and implementation from the influence of commercial and other vested interests associated with the tobacco industry. Both the initial guidelines and subsequent directives from the UN General Assembly in 2011 have unequivocally underscored the inherent conflict between the tobacco industry's interests and those of public health policy (76,77). In Malta, there are presently no explicit measures in place to prevent the tobacco industry from interfering with public health policies, policymakers, or the public. Other areas of concern with regards to the commercial interests that may undermine health policy are related to alcohol, cannabis, food, and sugar-sweetened and

caffeinated beverages. In addition to these, environmental areas of concern impacted by commercial interests include over-construction and over-development associated with policies favouring over-population and high-density living environments.

Policy recommendations:

- Implement laws and regulations to manage conflict of interest with industry.
- Conduct awareness raising campaigns and regular training initiatives on the arguments commonly brought by the industry to debunk these with supportive evidence and address the SCARE tactics (Smuggling and illicit trade, Court and legal challenges, Anti poor rhetoric, Revenue reduction, Employment impact) used by the industry.
- Maintain transparency of interactions with industry by formally recording these interactions and disclosing them to the public.
- Discourage corporate social responsibility activities sponsored by industries whose products are harmful to health with the direct and indirect aims of marketing their products.

4.2 Data into action

Surveillance, monitoring, evaluation, and research provide data and insights essential for evidence-based policymaking, enabling informed decisions and effective public health strategies.

4.2.1 Surveillance

Established surveillance programmes that inform policy in Malta include the EHIS, the European Statistics on Income and Living Conditions (SILC), the COSI, the HBSC, and the ESPAD surveys. These provide a rich and comprehensive understanding of the situation at population level that can be used for policy monitoring and evaluation. There are however significant challenges in accessing data and disaggregation by age, gender, and geographical location, both within the health sector and outside health. Furthermore, surveys originating within the country targeting the specific needs of country may be lacking. An important one-off survey was the National Food Consumption Survey carried out in 2015-2016.

Indicators of wellbeing, including self-assessed health, the presence of health-limiting conditions, and mental health status, serve as measures to gauge whether an individual is prospering or merely enduring and at an elevated risk of lagging behind. These metrics are valuable markers for policymakers, helping to identify when and how to step in and address inequalities before the associated human and societal consequences become deeply ingrained and increasingly challenging to rectify.

Policy recommendations:

- Ensure the collection of relevant demographic information in all surveillance initiatives to enable determinants of health assessments.
- Establish new and strengthen existing surveillance initiatives to collect key data that is deemed useful to support policy decisions, such as:
    - breastfeeding and infant feeding practices;
    - data on NCD screening;
    - data on vaccination uptake;
    - anthropometric data for children less than 5 years of age to address SDGs 2.2.1 and 2.2.2 (i) and 2.2.2 (ii);
    - sleep practices;
    - population and organisational health literacy;

- population level burden of diabetes and hypertension;
- national food consumption surveys
- the routine inclusion of equity indicators considering the large migrant population in Malta; and
- regular insights surveillance and reporting helps to inform advocacy.

4.2.2 Monitoring and Evaluation

Monitoring and evaluation of public health policies are vital to assess effectiveness, identify areas for improvement, allocate resources efficiently, and ensure that policies align with health objectives, ultimately enhancing public wellbeing. Although there are numerous policy documents that are well-structured and contain specific goals, action plans, and outcomes, conducting midterm or final evaluations of these policies is not a widespread practice due to insufficient resources dedicated to monitoring and evaluation.

Available data reveals that several of these policy documents are not reaching their intended objectives and targets, and thus a review with detailed feedback to the key stakeholders would be a valuable investment for the next planning cycle.

Policy recommendations:

- Establish the development of a well-resourced monitoring and evaluation structure within the health ministry that monitors the implementation of its strategies effectively and in a timely fashion. Appropriately trained and dedicated human resources are to oversee data collection, perform effective data analysis, issue recommendations to mitigate unmet targets and timelines and disseminate learning accrued from the whole process.
- Secure commitment for monitoring and evaluation through regular reporting obligations.
- Use digital technology to facilitate data collection for monitoring and evaluation.

4.2.3 Research

Research serves as the foundation of evidence-based public health policy. It informs policy development, guides implementation, and ensures that policies are effective in improving and protecting the health of populations. One of the key challenges for researchers is to secure funding and ensure sustained support. Most funding is directed towards industrial endeavours, and the limited research on NCD prevention that is carried out is often disjointed, while communication of results is sparse and ill-designed and does not necessarily emanate from the policy needs of the country. Furthermore, there is the potential risk to succumb to corporate social responsibility initiatives from the private sector whose ethos may be in direct opposition to the principles of public health.

More efforts are needed to use and contribute towards the European Commission's Best Practice Portal (78). Research needs to be carried out to identify why some initiatives fail to scale up. Finally, more research needs to be driven by the needs of the community.

Policy recommendations:

- Set up a national network for NCD-related research including NCD prevention.
- Develop a process that assists researchers to prioritise preventive health research so that research aligns with policy needs.
- Ensure that preventive health research is protected from real, perceived, or potential conflicts of interest.
- Identify and adapt best practises related to the prevention of NCDs for Malta. Introduce, pilot, and scale up these initiatives in practice.
- Evaluate all existing and new public health interventions in order to determine cost effectiveness of interventions.
- Contribute to the EU NCD best practices initiative.
- Engage communities including specific population groups to prioritise research and intervention areas, harness qualitative and experiential research, and communicate results when research is concluded.

4.3 Addressing determinants of health and health inequities

'Determinants of Health' are diverse and multifaceted factors, working in tandem to either enhance or diminish the wellbeing of individuals and populations. These determinants operate at every stage of life, from the pre-conception and conception stages, and throughout infancy, childhood, adolescence, adulthood, and into older age. They have both immediate effects on health and serve as a foundation for future wellbeing. Moreover, the determinants of health can have cumulative effects that span a lifetime and extend across generations. For instance, children at risk of poverty and social exclusion are more likely to experience poor educational outcomes, which can subsequently impact their employment opportunities, socio-economic status, and overall health in adulthood. This, in turn, can contribute to a cycle of disadvantage passed down through generations.

These determinants of health can be categorised into four primary groups (79):

- Physical environment, encompassing factors like housing quality, sanitation, and the natural and man-made surroundings.
- Social environment, including elements such as education, employment, political structures, social relationships, and cultural influences.
- Economic factors, which involve income levels, spending patterns, and affordability of essential resources and Political determinants of health, which refer to the systematic processes that shape health outcomes and life expectancy involving structuring relationships, distributing resources, and administering power.
- Individual characteristics, such as gender, genetic factors, and physical or mental attributes.

Health inequities are unfair, avoidable and systematic differences in health needs, outcomes and access to services between different people and groups of people. These differences can be due to many factors, such as a person's social, economic, or environmental circumstances. Greater deprivation in any of these factors is associated with a greater risk of becoming ill earlier and dying younger (80).

While most individuals in Malta consider their health to be in good condition, not everyone enjoys a high standard of health and wellbeing. As illustrated in Figure 1, a significantly larger percentage of individuals with lower levels of education reported having fair, bad or very bad (poor) self-perceived health between 2013 and 2022, compared to those with higher education levels (81). Since 2017, the proportion of women with lower levels of education reporting poor self-perceived health has not only increased but has also surpassed that of

men in the same educational category. In 2022, the prevalence of poor self-perceived health among those with lower levels of education was more than three times higher than that among the most educated individuals.

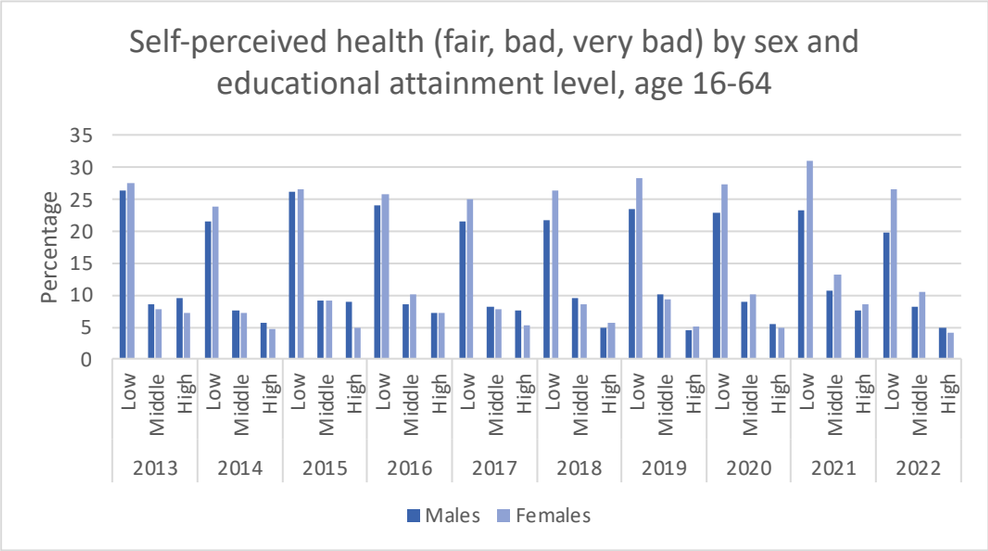


Figure 1: Self-perceived health as not good by sex and educational attainment (Source: Eurostat)

Data from 2022 shows clear income disparities for both males and females across all age groups who reported fair, bad or very bad health (Figure 2 (82).

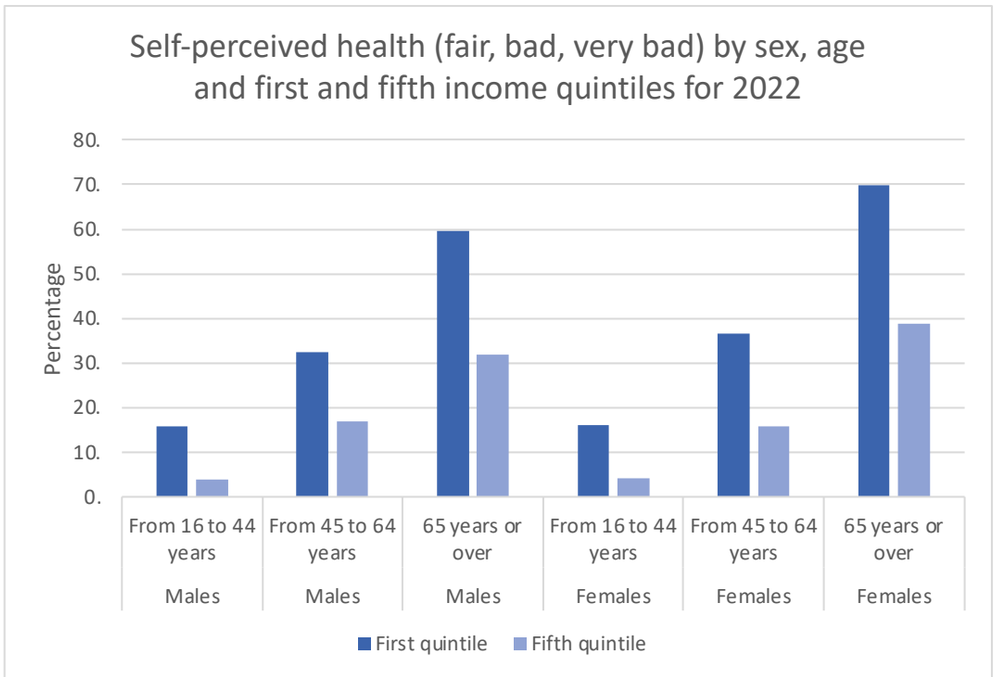


Figure 2: Self-perceived health as not good by sex, age, and first and fifth income quintiles for 2022 (Source: Eurostat)

Determinants of health impact NCDs in two main ways. Firstly, NCDs impose physical and mental strain on disadvantaged individuals living in subpar conditions. Secondly, this stress negatively influences health-related behaviours like smoking, alcohol abuse, poor diet, and lack of exercise, which are direct NCD risk factors. Both pathways contribute equally to the overall impact (83). Social, economic, and environmental conditions play a significant role in the likelihood of disadvantaged populations developing and succumbing to NCDs. Critical drivers include income security (35%), living conditions (29%), social and human capital (19%), access to healthcare (10%), and employment conditions (7%) (84). Investing in public services that promote health equity at sufficient scale and intensity, such as affordable housing and social safety nets, is crucial for marginalised groups' wellbeing by fostering trust, economic cohesion, productivity, and resilient healthcare systems. Therefore, understanding the determinants of health is crucial for crafting effective health policies, interventions, and strategies aimed at improving the health and quality of life for individuals and communities.

Current actions

Malta recognises the importance of investing in health equity but faces rising inequality (85). There are several social security initiatives that aim to assist vulnerable workers and families, including informal caregivers and migrants (86). Furthermore, ministries can adjust policies in response to changing circumstances, such as the cost-of-living crisis. Measures like energy subsidies and the additional COLA Mechanism support vulnerable households. Adapting support proportionately for different population groups could help avoid a "cliff-edge" situation.

Malta has already harnessed EU funding to study the patterns of health disparities and gain a deeper understanding of the societal factors contributing to poor health. The analysis of this study was completed in 2019, providing a foundation of evidence for strategic responses to combat health inequalities and reduce the burden of disease, particularly among the most affected populations. As part of these efforts, the Social Determinants of Health Unit has been established within the Superintendence of Public Health, with its portfolio including a multi-component awareness campaign targeting decision and policy makers, government, non-governmental organisations (NGOs), civil society and the general public. The aim is to promote a Health in All Policies approach, however, there is limited assessment of how policies may impact health and wellbeing to inform decision-makers of these potential outcomes before the decision is made.

Intersectoral collaboration is recognised as an integral part of policymaking in Malta. However, policymaking remains a top-down exercise with no established systematic approach for extended stakeholder involvement particularly from NGOs and the general public. Accountability relies on inter-ministerial committees, which lack effective alignment mechanisms, shared funding, and shared targets, leading to fragmentation of efforts between weakly connected consultative bodies. The lack of coordination is reflected in service delivery and user experience resulting in duplication of efforts and service gaps.

In recent years, the Ministry for Health introduced measures addressing diverse community needs. Language and cultural barriers affecting migrants and foreigners prompted a pilot project for telephone interpretation services. Cultural mediators assist at primary care but are lacking at secondary care facilities, leading to navigation challenges for migrants. One must also keep in mind that the healthcare workforce also encompasses significant number of foreign workers who despite all efforts during recruitment training initiatives may still have challenges with effective communication. Informal support from health workers of the same nationality is a possibility when available, however this lacks consistency, may be inappropriate in some instances where the medical encounter is particularly sensitive highlighting the need for structured navigation support services within the healthcare system. Whilst public-private partnerships with NGOs are common, there is a challenge in expanding services to meet demand, especially for certain groups like migrants and other vulnerable groups, particularly as NGOs often lack resources for NCD prevention and treatment, necessitating dialogue to clarify roles and responsibilities, and cooperation from the general public.

Policy recommendations:

- Advocate for proportionate universal policies and services.
- Strengthen Health in All Policies through continued awareness campaigns at various levels.
- Consolidate capacity for undertaking health-impact assessments for all public policies and strategies that are formulated.
- Engage in regular collaboration with other Ministries and entities to advocate for improvement in the necessary enabling environments.
- Consider joint ownership, funding with shared targets of strategies requiring significant multi-sectoral governance.
- Advocate for integrated service models that address multidimensional vulnerabilities. e.g., BCI approach, social prescribing, one stop shops, health justice partnerships.
- Broader and more consistent efforts to address the specific needs of different groups, particularly vulnerable and minority groups.

4.4 Re-orienting health systems for prevention

According to the Ottawa Charter for Health Promotion, reorienting health services involves a collaborative effort among individuals, community groups, health professionals, health institutions, and governments to shift the health sector's focus from primarily providing clinical and curative services to prioritising health promotion and disease prevention (87).

The NHSS envisages the following two actions: 1) Initiatives by hospitals and community health services to mainstream prevention and health promotion as "everybody's business"; and 2) Implementation of a new 'Every Contact Counts!' programme (44). WHO acknowledges that screening and brief interventions (SBIs) are a valuable, cost-effective strategy for aiding individuals in quitting smoking, curbing or discontinuing alcohol consumption, and enhancing physical activity (88). Such interventions promote the adoption and sustenance of healthy dietary habits and the management of weight when consistently implemented among a substantial portion of the population.

Policy recommendations:

- Integrate SBIs and Motivational Interviewing (MI) for NCDs, NCD risk factors and community based mental wellbeing services in health care settings.
    - Provide context based validated guidelines, supported by referral and back referral protocols.
    - Include requirement for opportunistic preventive health education at all health encounters.
    - Include regular SBI and MI training in Continuous Professional Development programmes, and as a requirement for accreditation of health care facilities.
    - Include SBIs and MI in undergraduate curricula for all healthcare professionals.
    - Incorporate health behaviour screening questions to the electronic medical health record to prompt health care providers to allocate time for the provision of targeted health promotion advice and provide guidelines for referral to preventive services and lifestyle clinics as applicable.
    - Identify innovative actions to promote SBIs and MI.
    - Raising awareness of the public – through letters, invitations, outreach community activities, media messages, and screening weeks to support the increasing demand for SBIs and MI.

- Use a coherent integrated approach to physical and mental health through integration of health services, especially at primary health care level, using evidence-based tools.
    - Build capacity for preventive healthcare service providers.
    - Develop evidence-based clinical practice guidelines for primary care settings and establish clear referral and back referral pathways.
    - Assess the feasibility of adapting mental health Gap Action Plan (mhGAP) to the local context (89). This is a tool for integrating mental health services into primary care settings.
    - Partnering with civil society organisations operating in the health sector or working with hard-to-reach communities to gain a deeper understanding of problems, co-create and implement solutions.
    - Engaging peer experts (expert patients) within health services at different care levels to add value and improve the quality and efficiency of mental health services, the policy-making processes and service delivery. This includes involvement in health promotion and disease prevention, treatment, care, and rehabilitation services, including planning and evaluation of services.

4.5 Health literacy

"Health literacy is linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course" (90).

General health literacy has a positive impact on physical activity, the consumption of fruits and vegetables, alcohol consumption, and smoking behaviour. It also has a positive impact on self-perceived health, limitations in activities due to health problems, and long-term illness/health problems. Reduced interactions were observed between individuals with higher health literacy and their general practitioners/family doctors, their use of emergency services, and access to medical or surgical specialists, inpatient hospital services, and day patient hospital services (91).

In 2014, a nationally representative health literacy survey was conducted in Malta, revealing that 45.8% of the respondents had limited health literacy, with 3.3% categorised as inadequate and 42.5% as problematic. When comparing these results to the EU average, there was no statistically significant difference in the mean health literacy score. However, the health literacy indices for disease prevention and health promotion were not as good as health care, and were significantly lower than the EU average (20).

Efforts to boost population health literacy have shifted from focusing solely on individuals' abilities to access and understand healthcare information to considering the dynamic interaction between individuals and their environment. This broader perspective underscores the importance of health literacy specific to content and context, with a strong link to effective health information access (90). Addressing health literacy at the organisational level through healthcare systems simplifies health-related tasks and bridges gaps in individual health literacy (92). Investment in health literacy improves the quality and cost-effectiveness of healthcare while promoting patient-centered care (93). WHO introduced a framework for health literacy to prevent and manage NCDs, emphasising collaboration, accessibility, and the role of public policies in creating healthier environments (94). Health literacy development involves creating supportive settings to empower individuals to make informed health decisions and advocate for conducive environments (95,96).

The NHSS envisages the publication of a strategy to promote health literacy (44). Several countries, including Austria, Norway, Portugal, and Scotland, have already implemented comprehensive health literacy action strategies (97).

Policy recommendations:

- Develop and implement a comprehensive national health literacy strategy exploring the following priority areas:
    - Prioritisation of organisational interventions to render the health systems more health literate such as integration of health literacy principles into healthcare policies, laws, and regulations.
    - Prioritisation of interventions that enhance the communication between healthcare professionals and patients such as healthcare provider training.
    - Carrying out regular population and organisational health literacy surveys e.g., the WHO Action Network on Measuring Population and Organizational Health Literacy
    - Community engagement and partnerships such as NGOs, local leaders, advocates for vulnerable groups, and patient groups.
    - Carrying out health education campaigns tailored to specific cultural and linguistic groups.
    - Increasing capacity for cultural mediators.
    - Ensuring a culturally competent workforce.
    - Developing the health literacy competencies of the health workforce, patients, and the public.
    - Exploring how digital health literacy can be improved.
    - Enhancing existing national digital platforms providing credible, evidence-based health information.

4.6 Emergency preparedness

"From permacrisis to resilience" is a concept that emphasises the transition from a state of perpetual crisis, often characterised by recurrent emergencies or persistent challenges, to a state of resilience. This concept is relevant in various contexts, including environmental, economic, social, and personal wellbeing.

- Permacrisis: A permacrisis refers to a continuous or long-lasting state of crisis, instability, or vulnerability. It implies a situation where problems or challenges seem to persist without end. This could manifest in various ways, such as economic instability, recurrent natural disasters, ongoing conflict, or persistent health issues.
- Resilience: Resilience is the capacity to withstand, adapt to, and recover from adversity or challenges. In the context of permacrisis, transitioning to resilience means developing the ability to manage and mitigate the effects of persistent crises effectively. Resilience involves building strong systems, communities, and personal capabilities to cope with and overcome ongoing challenges.

Emergency preparedness is important in the prevention of NCDs for several reasons:

- Maintaining Healthy Lifestyles: Healthy behaviours and lifestyle choices are fundamental in preventing NCDs. During crises, access to healthy food, physical activity opportunities, and information about disease prevention can be compromised. Preparedness plans should include strategies to support and promote healthy lifestyles even during emergencies.
- Community Resilience: Communities that are well-prepared for emergencies tend to be more resilient. A resilient community can better support individuals with NCDs by maintaining essential services, providing social support, and reducing the overall impact of the crisis.
- Public Health Education: Effective emergency preparedness involves educating the public about the risks of NCDs during emergencies and the steps they can take to protect their health. This education can empower individuals to make informed decisions and engage in proactive health behaviours.
- Preventing Secondary Health Effects: Emergencies can lead to secondary health effects, such as increased air pollution, water contamination, or reduced access to clean water and sanitation facilities. These factors can contribute to the development or exacerbation of NCDs, making it vital to have measures in place to mitigate these risks.
- Data and Surveillance: Monitoring and surveillance are essential for understanding the impact of an emergency on NCDs and for planning effective responses. Emergency preparedness includes systems for data collection and analysis, enabling authorities to make informed decisions and allocate resources appropriately.

- Continuity of Healthcare Services: During emergencies such as natural disasters, pandemics, or other crises, healthcare infrastructure can be severely impacted or overwhelmed. In such situations, people with NCDs may face disruptions in access to medications, treatments, and regular healthcare services. Effective emergency preparedness ensures that essential healthcare services can continue, reducing the risk of complications and exacerbations of NCDs.
- Medication and Supply Availability: Many individuals with NCDs rely on daily medications and medical supplies to manage their conditions. Emergency preparedness includes stockpiling and distribution plans to ensure the availability of these essential items during a crisis, preventing interruptions in treatment regimens.
- Mental Health Support: NCDs often come with emotional and psychological challenges. Emergencies can exacerbate stress and anxiety, potentially leading to poor NCD management. Emergency preparedness includes provisions for mental health support, which can be crucial for individuals with NCDs.
- Vulnerable Populations: Certain populations, such as the elderly, individuals with disabilities, or those with pre-existing NCDs, are more vulnerable during emergencies. Proper preparedness strategies can identify these vulnerable groups and implement targeted interventions to protect their health and wellbeing.
- Focus on safety and learning: Prioritisation of safety principles aim to decrease the risks for and incidence of crisis situations, while a mindset of learning ensures that lessons learnt from one crisis are disseminated and used to inform strategies that help to reduce the risk of similar repeat crises.

Policy recommendations:

- Integrate NCDs as part of emergency preparedness and response planning. This includes ensuring continued and sustained public health efforts, workforce planning, and training and mental health support of the workforce.

5.0 Priority Areas for NCD prevention

5.1 Reduce tobacco use

Tobacco has a wide range of adverse health impacts. These include cardiovascular diseases such as ischaemic heart disease, cerebrovascular disease and peripheral vascular disease, several cancers, most notably lung cancer, chronic obstructive pulmonary disease, and reproduction issues (98). Smoking leads to poor health, work absences, presenteeism, and results in a significant burden on health care services (98–101). Second hand smoking also causes disease in adults and children who do not smoke (102). Reducing tobacco use would dramatically reduce the morbidity and premature mortality in Malta.

Policy context

Malta has successfully implemented many tobacco control measures. These include increasing excise taxes on tobacco and e-cigarettes, a ban on advertising and promotion, bans on smoking in public places, public transport, and private vehicles with children, implementing large pictorial warnings, and a ban on cross border sales. Despite tax increases since 2010, Malta is one of the two countries in the EU where the affordability of tobacco has increased in 2020 relative to 2010 (103). Furthermore, there is no excise tax on vaping products, making them more affordable and accessible. In terms of FCTC Article 15 and Protocol to Illicit Trade in Tobacco Products, Malta has complied with all requirements of the Tobacco Products Directive 2014/40/EU and the Implementing Regulations 2018/573 for the track and trace system. In terms of availability, although sale restriction laws are in place, display at the point of sale, free distribution, sale through vending machines and local internet sales are allowed, making tobacco easily accessible particularly for young people. Despite the inclusion of electronic nicotine delivery systems in regulations similar to tobacco products, control measures are considered inadequate. Electronic non-nicotine

delivery systems are not fully regulated. Educational campaigns are important but not fully evaluated for impact. The availability of smoking cessation services in Malta is limited, and a significant proportion of Maltese smokers are trying to stop unaided. In 2023, L.N. 229 of 2023 transposed the Commission Delegated Directive (EU) 2022/2100 of 29 June 2022 thereby: withdrawing certain exemptions regarding heated tobacco products; an amendment to the font size of health warnings; inclusion of health warning requirements for electronic cigarettes and refill containers; inclusion of the responsibility of the Superintendent to monitor the market developments concerning electronic cigarettes and refill containers; banning the cross-border distance sales of tobacco products; regulating electronic cigarettes and refill containers and herbal products for smoking; and specifying the language used in information leaflet included in electronic cigarettes packaging.

Measures in relation to tobacco control will be addressed through a National Tobacco Control Strategy which is being outlined.

Policy recommendations:

- Develop a comprehensive National Strategy and Action Plan for Tobacco Control aligned with the guidance provided in the WHO FCTC and Conference of the Parties Decisions.
- Adjust tobacco taxes adequately to reduce the affordability of tobacco and tobacco related products which include electronic nicotine delivery systems, electronic non-nicotine delivery systems, and other emerging nicotine and tobacco products to the tax policy.
- Devise national legislation to have tax rates automatically adjusted for inflation on at least an annual basis.
- Continue to deter illicit trade in tobacco products by further strengthening the implementation of the WHO Protocol to Eliminate Illicit Trade in Tobacco Products, in accordance with the terms of Article 15 of the WHO FCTC'.
- Strengthen the current tobacco control legislation to fully align with the WHO FCTC and extend the scope to cover novel and emerging nicotine and tobacco products to further protect the population, especially vulnerable groups, from the harms of smoking and second-hand smoke. Further restrictions on sale, consumption, branding, advertising, promotion, and sponsorship need to be enforced.
- Improve compliance with the law by strengthening enforcement.
- Conduct and evaluate education campaigns to make the public and the institutions aware of the benefits of a smoke free environment and health risks of e-cigarette use.
- Explore ways to regularly engage with youth to better prevent the uptake of smoking and vaping.
- Design, implement and evaluate effective large scale smoking cessation programmes to assist and support Maltese smokers to quit. For example, integrated brief interventions for smoking cessation in primary care and during any contact with health professionals.
- Increase the number of public outdoor areas where smoking is not permitted and encourage restaurants and other outdoor establishments to have smoking and non-smoking zones.

5.2 Reduce the use of alcohol

Alcohol poses a significant burden on the individual, communities, and society, contributing to increased violence, road traffic accidents, mental health conditions, and loss of economic productivity.

Policy context

Malta's first National Alcohol Policy 2015-2023 places a significant emphasis on tackling underage drinking, reducing the negative consequences of drink driving, and minimising alcohol consumption among those who drink (54). The WHO European Framework for Action on Alcohol 2022-2025 was unanimously adopted by all WHO European member states in September 2022. Six priority areas for action are outlined which include implementing policies to increase alcohol pricing, restricting the availability and marketing of alcohol, raising public awareness of the risks of alcohol use through effective labelling, implementing screening and brief interventions at primary care settings, and mobilising communities to influence policies that protect their environment (63).

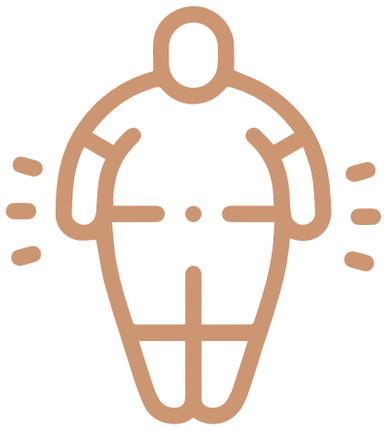
The excise tax share remains low for the three main types of alcoholic beverages with excise taxes of beer, wine, and spirits being 5%, 1%, and 21% respectively, resulting in increasing affordability of alcohol (104). Health taxes, especially the specific excise taxes and minimum unit pricing, have been shown to reduce health inequities (105,106). The minimum age for purchasing and consuming alcohol is currently 17 years, with Malta being one of the six EU27 Members States where the minimum age is below 18 years (107). Furthermore, 85% of 15-16-year-olds find it 'fairly or very easy to obtain' (108). In 2011, amendments to the Trading Licences Act were passed prohibiting any outlet that is not licensed as a bar or club restaurant to sell alcohol to anyone after 9 pm (109). Whilst there is a ban on public drinking on the beaches and streets of Malta, several cafes and pubs are open 24 hours a day to sell alcohol making alcohol more accessible. Alcohol is promoted through increasingly complex advertising and promotional strategies such as linking alcohol brands to sports and cultural events, sponsorships, product placements, and through various social media platforms. WHO advocates for a total ban of alcohol marketing. Though alcohol marketing is restricted on national TV and radio from 6am to 9pm, it is not restricted on other media venues such as streaming services, digital media, print media, or billboards. Furthermore, sponsorships by local alcohol brand to popular sports continues to persist.

Policy recommendations:

- Update the comprehensive alcohol strategy and action plan at national level to align with the WHO European Framework for Action on Alcohol 2022-2025.
- Reduce the affordability of alcohol by adjusting taxes.

- Increase restrictions on the physical availability of alcohol.
- Increase restrictions on the marketing of alcohol. These include but are not limited to banning all marketing of alcohol in print media, billboards, in movie theatres, and in sporting and youth events, and banning sponsorships by alcoholic beverage companies particularly of events where adolescents and youth are participating, sporting events, and cultural events.
- Improve compliance with the law by strengthening enforcement, particularly for alcohol consumption among minors, public intoxication, unlicensed sale of alcohol, and driving under the influence of alcohol.
- Design, implement and evaluate effective large scale alcohol programmes to assist and support Maltese to reduce or quit alcohol. For example, integrated brief interventions for alcohol in primary care and any contact with a health professional.

5.3 Reduce overweight and obesity



WHO defines overweight (pre-obesity and obesity) as "abnormal or excessive fat accumulation that presents a risk to health". Obesity is a worldwide chronic disease, with significant morbidity and mortality from cardiovascular, neurological, and oncological sequelae (110). Malta has one of the highest rates of overweight and obesity in the WHO European Region across all age groups (111). Obesity in Malta is an economic burden with an expenditure of approximately €36.3 million, or 5.6% of the total health expenditure in 2016 (35).

Policy context

The "Healthy Weight for Life: A National Strategy for Malta 2012-2020" represented Malta's primary policy approach to combatting overweight and obesity. The strategy promoted a multi-sectoral approach across various government ministries aimed at transforming the living environment from one that promotes weight gain (obesogenic) to one that encourages healthy choices and a healthy weight for all. The strategy delineated three key domains where healthy eating, promoting physical activity, and re-orienting public health services are promoted. The actions envisaged a life course approach and targeted different settings, including schools, workplaces, communities, and healthcare settings (36).

In its report, "A review of the implementation of Sustainable Development Goal 2: Addressing pre-obesity and obesity" (2023), the NAO advocated for strengthened political commitment across government, allocation of resources, policy and legislative changes, fiscal initiatives, public awareness, improving enabling environments and improving the services (56).

During the 75th WHA in 2022, new guidelines for tackling obesity were approved and nations gave their support to the WHO Acceleration Plan aimed at halting obesity (A75_REC1). The WHO Acceleration Plan was developed to encourage and assist collaborative efforts at the country level worldwide. By leveraging proven policies grounded in implementation and delivery science, the plan presents an opportunity for significant progress in addressing the escalating obesity crisis, promising a substantial improvement in effectiveness and outcomes (112).

Policy recommendations:

- Emphasise obesity as a disease and communicate it as such in mass media campaigns.
- Focus on prevention and management in parallel, each given its due importance and policy consideration in combating overweight and obesity.

- Prevention:
    - Enhance efforts to improve access to an affordable healthy diet through a Healthy Eating and Nutrition Strategy for Malta.
    - Increase physical activity and reduce physical inactivity and sedentary time through a Health Enhancing Physical Activity Strategy and Action Plan.
- Management:
    - Outline a tiered Weight Management and Obesity Care strategy by reassessing, adjusting, and expanding the healthcare services related to weight management.
- Ensure clear roles and responsibilities, lines of referral, and avoid duplication of services and gaps between services.

5.4 Improve access to a healthy diet

A healthy diet is important to prevent all forms of malnutrition and non-communicable diseases. However, adherence to a healthy diet is deemed difficult due to increased availability of processed foods, rapid urbanisation, and changing lifestyles which have led to consumption of foods high in saturated and trans-fat, free sugar, and salt/sodium, and low in dietary fibre (113).

Dietary habits in Malta are a cause for concern. The population's consumption of fruits and vegetables falls well below the recommended levels, with only a small percentage meeting the daily target (11.6%) (114). High sugar intake is prevalent, exceeding the WHO's recommended daily limits, leading to various health issues like weight gain, diabetes, heart disease, and certain cancers. Adolescents have poor dietary habits, with a significant portion consuming sugary drinks daily (17% and 20% of 15-year-old boys and girls, respectively) (12). Results from the National Food Consumption survey in 2015-2016 indicate that sugar intake is high across all age groups, especially among children. Consumption of fibre, vegetables, fruit, and fish is also insufficient, while salt intake remains within acceptable levels (115). Regular national-level data collection regarding breastfeeding is not conducted in Malta. A telephone survey carried out by Borg in 2018 revealed that 64.4% of babies were breastfed within one hour of birth, however, the percentage of babies exclusively breastfed under 6 months old was only 9.6% (116). This falls significantly short of the global target of achieving exclusive breastfeeding for at least 50% of infants by the age of 6 months (117).

Policy context

The "Healthy Weight for Life: A National Strategy for Malta 2012-2020" actions related to food and nutrition were expanded within the National Food and Nutrition Policy and Action Plan for 2015 - 2020, and the National Breastfeeding Policy and Action Plan 2015-2020 (37,38). While there has been some progress regarding the legislation on the marketing of food high in fats, sugar and salt during children's media programmes, marketing budgets of fast-food companies are strong and complemented with extensive digital marketing, advertising on social media and engaging influencers, and strategic product placement of unhealthy foods at specific locations within supermarkets.

Food reformulation refers to modifying the processing or composition of a food or beverage product with the aim of enhancing its nutritional profile or lowering the presence of specific ingredients or nutrients of concern. Sugar sweetened beverage (SSB) taxes were implemented in nearly 11 countries in the EU. Despite limited published evidence, SSB taxes have been shown to reduce consumption of sugary drinks, with higher reductions in socio-economically vulnerable populations (118). A systematic review and meta-analysis showed that a 10% SSB tax can decrease sales and consumption by 10% (95% CI: -5.0% to -14.7%) (119). Malta presently does not have effective SSB taxation.

Accessibility and affordability of healthy foods play crucial roles in promoting public health and wellbeing. Currently there are no policies in place that regulate food and drink availability near schools and in out-of-education locations, health-related food taxes, or income-related subsidies. There is also limited support to children in low-income households as free school meals are not provided, no measures to support food producers, manufacturers, or retailers to increase healthy food and decrease unhealthy food in the supply chain (120).

Public educational awareness campaigns on nutrition are also important. Some of the local efforts carried out across government to promote healthy eating include various ongoing campaigns, such as the lunch box campaign, sharing healthy recipes with the public, cooking and budgeting classes, health promotion messages aimed at children through theatrical performances, with the incorporation of familiar characters or mascots to convey a consistent message. These efforts prioritise putting healthy eating on the agenda, however educational efforts are not coordinated nor evaluated for effectiveness (56).

Food labelling is another valuable tool facilitating public awareness of healthy nutrition and encouraging persons to make the healthier choices (121). Back-of-pack labels provide detailed information about the nutritional value of food, which whilst very informative, require high levels of health literacy for appropriate interpretation (122). To address this issue, the EU is pushing for front-of-pack nutrition labelling which provides a simplified nutrition information label that is easier to interpret and is more visible, and which is strategically placed on the front of food packing. Despite having a comprehensive national breastfeeding policy and action plan from 2015 to 2020, Malta also faces challenges in effectively implementing this policy as evidenced by the low rates of exclusive breastfeeding at six months (38). Several issues contribute to this situation. Both of Malta's public maternity hospitals have not yet met the criteria to become Baby-Friendly Hospitals, and despite having a locally established and comprehensive breastfeeding code supported by legislation, the marketing of breastmilk substitutes persists.

Policy recommendations:

- Develop a Healthy Eating and Nutrition Strategy for Malta.
- Identify and address gaps in legislation on the marketing of foods and beverages high in saturated fat, trans fat, free sugars or salt to infants, children, and adolescents.
- Reduce salt and sugar in commonly consumed food through international collaboration to set regional targets on the maximum limit of salt and sugar for different food categories and continued national food reformulation efforts.
- Incentivise the industry to reformulate SSB by using a tiered tax approach with different rates for different sugar levels.
- Provide financial subsidies or voucher schemes to promote healthy eating.
- Increase public awareness of healthy and nutritious food.

- Continue utilising the school setting to promote healthy and nutritious diet.
- Implement front of pack nutrition labelling and carry out public awareness campaign to stimulate consumer demand for healthy food and beverages. This requires advocacy for legislative support at EU level.
- Monitor and evaluate the effectiveness of public awareness campaigns.

- Implement measures to improve healthier food procurement e.g., in workplaces and institutions, as well as within childcare and education settings.
- Implement the Baby Friendly Hospital Initiative in the maternity hospitals and provide support for a healthy weaning journey to give the best possible start to life for children.
- Design, implement and evaluate effective large scale healthy eating and nutrition programmes to assist and support Maltese to eat healthily. For example, integrated brief interventions for healthy eating. For example, integrated brief interventions for weight in primary care.

5.5 Increase physical activity, and reduce physical inactivity and sedentary time

Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure above resting level. This includes walking, cycling, sport, and active play. Regular physical activity decreases the risk of non-communicable diseases such as heart disease, stroke, diabetes, and certain cancers. It also improves blood pressure, helps maintain a normal weight, improves mental health and overall wellbeing (123).

Policy context

Considerable progress in policies and regulations have been made to improve physical activity in recent years, particularly in schools and the community. These include the publication of several strategies across government, some improvements to cycling routes and walking paths, mandatory physical education in primary and secondary schools, the rebate on the purchase of bicycles, the reduction of taxable income for parents whose children attend sporting activities approved by the Malta Sports Council, and the provision of free school transport and public transport. Across government, initiatives often lack coordination, staggered implementation, and evaluation. Poor interconnectivity of active routes is lacking, and serious road safety issues persist. There has been some progress in promoting physical activity through mass media campaigns, however more often than not, their scope is limited, and the effort largely unsustained and disjointed (56). Additionally, there are no policies in place that promote physical activity opportunities in the workplace, that promote physical activity through enabling environments, or give physical activity training, assessment and counselling healthcare (124).

A Strategy for Health Enhancing Physical Activity (HEPA) is being finalised.

Policy recommendations:

- Develop a HEPA Strategy including:
    - Leadership and coordination on health-enhancing physical activity
    - Pregnancy, early years, and adolescence
    - Physical activity in adulthood
    - Physical activity among older persons
    - Enabling environments for physical activity
    - Supporting action through training, research, and surveillance

- Support effective intersectoral partnerships both within government and with the private sector to build safe access to open spaces, cycling, and walking routes to improve uptake of physical activity. This could be achieved through a HEPA intersectoral national coordination mechanism where health objectives of promoting health activity are prioritised amongst all stakeholders.
- Create environments to support physical activity for all age groups. Schools are an excellent setting for promoting physical education and physical activity. Special considerations for physical activity promotion need to be considered in the case of vulnerable groups such as the disabled, the elderly, refugees, migrants, unemployed, and those in detention to ensure equitable access to prevention services.
- Carry out continuous mass media campaigns for physical activity promotion.
    - Continue utilising the school setting to promote physical activity.
    - Monitor and evaluate the effectiveness of public awareness campaigns.
- Design, implement and evaluate effective large scale physical activity programmes to promote and support effective physical activity across all sectors of the Maltese population, such as, integrated brief interventions limiting sedentary time and being more physically active in primary care.

5.6 Early diagnosis

Secondary prevention efforts focus on the early diagnosis and management of a disease or condition and include population-based screening programmes and general health examinations. The aim is to reduce the impact of the disease or condition, reducing morbidity and mortality. Screening can be targeted, opportunistic at the point-of-care, or nation-wide. Its purpose is to aid in diagnosis, leading to better patient outcomes and general health and wellbeing. It also contributes to enhancing long-term results such as reduced healthcare expenses and optimised resource utilisation.

Cancer is the leading cause of mortality in those younger than 70 years, contributing to nearly 40.4% of deaths in Malta under the age of 70, and representing 26.0% of all deaths in 2019 (125). In 2019, according to the National Mortality Registry, breast cancer was the leading cause of cancer death in females in Malta (17.8%), followed by colorectal cancer (9.7%) and ovarian and pancreatic cancer (both 9%) (125). In males, lung cancer (21.0%), colorectal cancer (9.9%), and prostate cancer (8.9%) contributed to the highest mortality (125). Cardiovascular diseases (CVD), including ischaemic heart disease, cerebrovascular disease, and peripheral vascular disease, are the leading cause of mortality in Malta (33.7%) (125). It is the second leading cause of mortality in those under the age of 70 years, contributing 24.5% of deaths in Malta in 2019 (125).

High systolic blood pressure, high fasting plasma glucose, and high LDL cholesterol are well known contributors to cardiovascular disease. However, many people are not aware that they have them. A health examination survey conducted between 2014 and 2016 assessed a representative sample of the adult population between 18-70 years stratified by age, sex, and locality, found that the prevalence of diabetes mellitus stood at 10.31%, 40% of which were newly diagnosed. Overall, males were more likely to have diabetes, however, females were diagnosed at an earlier age than males. The total annual diabetes health care expenditure was approximately €107M for 2017, while the projected expenditure for 2045 was estimated at €244M. The prevalence of hypertension stood at 30.12%, with males having a higher prevalence (35.04%) than females (25.09%) (126). One in four (26.41%) of those with hypertension were newly diagnosed, the majority of which were male (64.01%) (127).

Mental health and illness exist along a continuum moving away from wellbeing to mild, time-limited distress through to more chronic, progressive, and severely disabling mental disorders (26). Conditions related to substance misuse often coexist with mental disorders. Mental disorders are also more common in persons with chronic physical conditions. The binary approach to diagnosing mental disorders, although useful for clinical practice, does not accurately reflect the diversity and complexity of mental health needs of individuals

or populations. Mental disorders can have an impact for many years. Up to 50% of mental disorders in the adult population begin in adolescence before the age of 14 years (128). Whilst these disorders can occur one time only with full remission afterwards, they often take a more relapsing-remitting or persistent course, so that their impact on the lives of the affected people and their families can last for decades. Trends worldwide show that depression is on the increase, especially in adolescent girls, where around one third experience mental health issues.

Persons with mental disorders die 20 years earlier than the general population (129). The great majority of these deaths are not necessarily mental disorder cause-specific, but rather the result of other co-morbidities associated with their mental conditions, notably NCDs that have not been appropriately identified and managed. The incidence of psychosis in Malta within the general population has been estimated to be 26 per 100,000 with urbanisation, low socio-economic status and immigration being identified as potential risk factors. Higher educational attainment may be a protective factor. Migrants are particularly at risk with a rate of 400 per 100,000 within asylum seekers (130). A study conducted locally in 2007 showed that 21.3% of Form 3 students were at risk of developing depression (131). A similar subsequent study in 2015, found that 27.3% of Form 4 students were at risk of developing depression, indicating an increasing trend in risk (132). Mental health problems in pregnancy may often go unnoticed with serious consequences. A study conducted locally some years ago found that around 15% of mothers met the criteria for depression at their booking visit. This rate declined to 11% in the third trimester and 9% after delivery (133).

Policy context

Cancer

Malta introduced organised, population-based cancer screening programmes over the last 15 years, with breast cancer screening introduced in 2009, colorectal screening in 2012 and cervical screening in 2015. Malta's National Cancer Plan 2017-2021 set out strategies to gradually expand each screening programme over the five years to meet the EU recommendations and to expand screening to people with higher risk of breast, colorectal and cervical cancer outside the regular age cohorts (41). With the fast-growing population in Malta, the eligible population is expected to rise. This will in turn require an increasing capacity in all 3 cancer screening programmes, which have already reached their maximum capacity with current resources.

All organised screening provided by the government service takes place or are coordinated at one publicly funded centre led by a clinical lead and is free at the point of contact. . Considering the increased numbers of entitled persons, capacity issues challenge the quality of the screening services provided resulting in inevitable delays for confirmatory testing in those who screen positive. Other challenges include the. lack of data incorporation into national monitoring systems, stringent requirement for sharing of data, lack of evaluation and inability to dedicate resources to approach the non-responders. The private sector also has a role in cancer screening however often there is a lack of regulation and accreditation of

the screening effort. In addition, workforce challenges are evident with insufficient capacity to manage persons who test positive with the initial screening test in a timely manner. This is evident for colorectal cancer (CRC) screening, where there are long waiting times for a screening colonoscopy following a positive Faecal Immunochemical Test (FIT).

Breast cancer screening

The EU and WHO recommend screening women aged 50-69 years every two years, while the EU also suggests extending this to women aged 45-49 and 70-74 at both ends of the recommended expanded age cohort. The Government current practice in its Electoral Manifesto has committed itself to include 45–49-year-olds in the Malta in the mammographic screening programme (Electoral Manifesto Initiative 481). This will require increasing the capacity of the screening programme and of downstream services to cater for the increased number of detected lesions. Currently it is offered every two years from 50-69 years. Coverage in the public sector is approximately 55-60% (134). Some women attend both private and public screening. There is a risk associated with too frequent mammography because of excess radiation exposure and the public sector have recently taken steps to stop women having a mammography in the public sector if they have received one in the private sector in the previous year, in line with the European guidelines on breast cancer (135).

Colorectal cancer (CRC) screening

The EU recommends CRC screening using a FIT for persons aged 50-69 every two years. Due to capacity constraints, the starting age for CRC screening is 55. In 2022-23, uptake was estimated to be 50-55% in the public sector (134). The limiting factor preventing the expansion of CRC screening are long waiting times for colonoscopy due to lack of endoscopy theatres, anaesthetists, and endoscopy nurses. The Minister for Health and Active Ageing has recently announced the intention to extend the CRC screening programme to start screening from the age of 45 (Announced by Minister MHA at the tenth high-level meeting of the Small Countries Initiative: Limassol, Cyprus, 10–12 April 2024). This will require increasing the capacity of the screening programme, in particular colonoscopies, and of downstream services to cater for the increased number of detected lesions.

Cervical cancer

The EU recommends Human Papillomavirus (HPV) testing for women aged 30 to 65 every 5 years to detect those at risk of cervical cancer, taking into account HPV vaccination status (136). The current practice is to screen women from 25-44 years every three years using liquid-based cytology screening. Following the new EU recommendations, the National Screening Centre is planning to change from primary cytology to HPV testing and increase the screening interval from three to five years. This will increase capacity to screen more women. A working group has been set-up to assess and coordinate this transition. A pilot study is currently underway, the results of which will be finalised in Q3 of 2024. Eventually self-sampling could also be explored as an option to increase access for hard-to-reach populations. HPV vaccination of girls started in 2013, while vaccination started to be offered to 12-year-old boys from January 2023, including a catchup programme for all those born in or after the year 2000. Challenges exist as some children are not listed in any official

registers and will not be invited for vaccination, leading to inaccuracies when presenting data on the rate of take-up due to an incorrect denominator.

New Screening Programmes

The EU suggests exploring the introduction of screening programmes for Lung and Prostate Cancer, and there is local political commitment to do so. The National Screening Centre will be embarking on a feasibility study, involving all stakeholders, to assess the resources required to implement such screening programmes.

Cardiovascular disease

WHO does not currently recommend systematic population-level screening programmes for CVD risk and CVD risk factors, including for abdominal aortic aneurysm (AAA). However, WHO suggests enhancing case finding which involves assessing patients who make contact with the health care system (137). In Malta AAA screening is offered once to men aged 65 years and older. Systematic screening refers to an independent initiative that welcomes all members of the community to join, whereas case-finding is interwoven with the healthcare structure and centres on individuals as they engage with the system. However, considering the significant amount of undiagnosed diabetes, hypertension, and possibly hyperlipidaemia in a country with a very high prevalence of obesity, there is scope for examining the need for a population-based cardiovascular screening programme in Malta.

An example of a population-based cardiovascular screening programme is the NHS Health Check. The NHS Health Check initiative, initiated in 2009, is a program designed to prevent CVD. Its purpose is to evaluate all individuals between the ages of 40 and 70 in England for factors that contribute to CVD, such as obesity, lack of physical activity, smoking, excessive alcohol consumption, high blood pressure, and elevated cholesterol levels. After the evaluation, using well-established methods, the program conveys the personal risk level to patients, and if deemed necessary, applies evidence-backed interventions to reduce the identified risks. A similar nationwide comprehensive cardiovascular screening strategy for Malta poses significant implementation challenges related to efficacy and efficiency. Despite this, such a strategy should be considered due to the cost incurred for treating avoidable and/or premature morbidity and mortality emanating from these risk factors.

Mental Health

It is very important to establish and strengthen a specialist team that focuses on the crisis management of mental disorders. This function needs to provide immediate professional assistance and response to support individuals and carers faced with an urgent unscheduled need for care or social support. This includes cases of self-harm and attempted suicide which need immediate professional attention in the appropriate environment. Whilst community services should be able to offer immediate care and support to their known clients on a walk-in basis in the event of a crisis, emergency services, particularly for new cases as well as for out-of-hours. The emergency service needs to operate at national level using the accident and emergency services as a base for activity. This will allow first responders from the various sectors to arrive onsite together as a team. The other priority is the early intervention in psychosis function, with particular attention to intensive follow-up of young adults following

a first acute psychotic episode with a focus on the community and acute hospital referral pathways. The early intervention function merits a specialised parallel national service working to ensure that all new cases of psychosis are treated promptly, intensively, and uniformly with access to all support services that will avoid institutionalisation. Emergency and crisis intervention services and the early intervention in psychosis function are areas to be prioritised in the deployment of the mental health workforce as more mental health professional resources become more widely available.

Policy recommendations:

- Strengthen existing quality assurance systems for all screening programmes based on the European quality assurance schemes.
- Increase human resources for mammography and colonoscopy.
- Explore if there are opportunities for more effective use of resources, notably in the private sector.
- Mandatory reporting of screening initiatives carried out within the private sector, with this requirement tied to licencing of the facility. This process can be facilitated by the roll out of the National Health Electronic System, which can facilitate data linkage at the individual level and reduce unnecessary repetitive screening.
- Enhance opportunistic screening of diabetes, hypertension, and hypercholesterolemia through collaboration within different settings and entities such as local councils, workplaces, NGOs, and established patient groups.
- Carry out a cost-benefit analysis to identify the feasibility, development, implementation, and evaluation of a national CVD and mental health screening programme. Consider integration with other existing or planned screening programmes.
- Improve population awareness campaigns for early symptoms and signs of common NCDs and their complications, and risk factor screening. Coordinate efforts to ensure more consistent and coordinated messages.
- Consider mental health screening by the School Medical Services.
- Implement the relevant action points in the Mental Health Strategy concerning emergency and crisis intervention services and the early intervention in psychosis function.

5.7 Promote mental health and wellbeing

Mental health represents a state of mental wellbeing that empowers individuals to effectively manage life's challenges, recognise their talents, acquire knowledge, excel in their endeavours, and actively participate in their communities. It serves as an essential element of overall health and quality of life, forming the foundation for our personal and collective capacity to make choices, foster connections, and influence the environment in which we exist (138).

Improved mental wellbeing plays a crucial role in advancing the SDG of reducing premature mortality from NCDs by one-third. This is achieved through activities aimed at preventing and treating mental ill-health and promoting mental wellbeing. Mental health conditions not only elevate the risk of suicide, which can lead to direct mortality, but they also exacerbate the impact of other NCDs. This is because the prevalence of all NCDs and their associated risk factors tends to rise in individuals with mental health disorders. The connection between mental wellbeing and the four primary risk factors for NCDs is bidirectional (3). Conditions related to substance misuse often coexist with mental disorders. Drug-induced psychosis accounts for 25 % of all acute psychiatric admissions, most of whom were males aged under 30 years (139). Engaging in physical activity in open green and blue spaces, leading a tobacco-free life, maintaining a healthy diet, and consuming little or no alcohol are all linked to positive mental wellbeing. Good mental health also empowers individuals to make healthy choices, especially in societies where healthy options are prevalent and affordable. The inextricable link between mental wellbeing and broader social, environmental, and economic context cannot be over emphasised.

The COVID-19 pandemic had a notable impact on many, particularly young people's mental wellbeing, with a small survey suggesting particularly significant impacts on students. Additionally, the enforced stay at home orders resulted in increased body weight and decreased physical activity which is also were linked to higher anxiety and depression levels (140).

Policy context

In Malta, significant strides have been taken in enhancing mental wellbeing over the past decade. The introduction of the Mental Health Act in 2012 enhanced the rights of individuals with mental health issues and their caregivers with the introduction of legislation regulating involuntary care, favouring less restrictive care options and promoting community-based treatments. The appointment of the Commissioner for Mental Health, responsible for overseeing the Act's implementation, further reinforced these efforts. Regular annual reports have been presented to the Maltese Parliament, providing updates on mental health policies and services offered by both preventive and curative aspects of mental health care.

The current National Mental Health Strategy 2020-2030 sets a clear vision for a robust system of primary and specialised mental health services. It outlines actions to enhance public mental health, including increasing awareness and mental health literacy, supporting lifelong learning, and preventing suicide and self-harm. Specific strategies target different community settings, such as schools and workplaces, to reach specific populations in need. Digital innovations can be effective in reaching out to young people and those who are hard to reach due to societal stigma. However, it's crucial to carefully evaluate the effectiveness of these innovations, especially in markets where many are industry-driven before widespread adoption at the national level.

Policy recommendations:

- Expand actions outlined in the National Mental Health Strategy to promote and protect public mental health and wellbeing addressing identified social determinants of mental health. For example:
    - Address the harmful and excessive use of social media in young children and adolescents.
    - Advocate for better work-life balances, reducing and dealing with life stressors.
- Enhance, implement, and evaluate targeted Mental Health literacy interventions through the life course.
    - For example, this could include the creation of an accessible and user-friendly Mental Health Literacy digital platform, potentially as part of a broader National Health Literacy platform, to empower individuals and combat stigma.
- Enhance, implement, and evaluate focused interventions to ensure the mental wellbeing of vulnerable and minority groups, including children, adolescents, youth, elderly, migrants, and LGBTIQ+ for example, is addressed and supported.
    - For example, schools play a vital role in promoting mental health, and the WHO manual "Mental Health in Schools" guides educators in adopting suitable approaches. Collaboration between families/caregivers, schools and other services, such as health and social services, is essential for a holistic approach (141).
- Review and adopt appropriate digital technologies and innovations used in various mental health services and interventions, such as prevention and management of mental health disorders, and promotion of mental wellbeing. Digital Applications can help with self-monitoring and other behaviours conducive to mental health, such as mindfulness and breathing techniques for example.

5.8 Promote environmental health

Twenty-four percent (24%) of deaths and disease worldwide are attributed to environmental factors such as air pollution, water and sanitation, chemicals, climate change, and radiation. In 2012, 13% of deaths in the 28 EU Member States (EU-28) were attributable to environmental stressors (142). In Europe, the majority (90%) of deaths attributable to the environment stem from NCDs such as cancer, heart disease, stroke, chronic obstructive pulmonary disease, mental and behavioural disorders, neurological conditions, diabetes, kidney disease, and asthma (142).

Environmental risks are estimated to cause over 18% of cardiovascular disease-related deaths in Europe (143). In the 2019/2020 EHIS Survey, 36% of the respondents in Malta reported being exposed to pollution, grime or other environmental problems, while 33% reported being exposed to noise from neighbours or outside (144). Nearly 70 million Europeans are exposed to noise levels higher than55 decibels as a result of the daily traffic situation (145). As reported in the draft National Strategy for the Environment 2050, 84% of the public in Malta is highly concerned about air quality, and 72.7% is highly concerned about air quality in their locality. 91.4% of citizens are highly or very highly concerned about urban issues, such as traffic congestion and lack of green open spaces (146).

Air Quality

Air pollution poses a significant environmental health risk. It includes both ambient air and household air pollution (147). Malta's air quality is governed by the Ambient Air Quality Regulations (S.L. 549.59) and the Limitation of Emissions of Certain Atmospheric Pollutants Regulations (S.L. 549.124), which are in compliance with relevant EU Directives. There are no regulations related to indoor air quality and no initiatives in place that address the air quality of households. The primary ambient air pollutants of concern in Malta include particulate matter (PM 2.5 and PM10), nitrogen dioxide (NO2), and ozone (O3). A portion of PM10 originates from natural sources such as sea spray and dust from the Sahara Desert.

Various sectors have an impact on air quality, including transportation, energy production, and industrial activities like construction. Presently, there is a heavy reliance on private vehicles in the transportation sector. By the end of 2021, the number of licensed motor vehicles in Malta had reached 413,019, which is approximately one car for each person living on the Maltese islands. The rate of licensed motor vehicles per 1,000 residents increased from 780 in 2020 to 795 in 2021 (148).

Despite this, over the past decade, air quality had been improving. In 2010 PM2.5 concentrations were at 17.17 µg/m3 (17.18 µg/m3 in urban areas and 12.36 µg/m3 in rural areas). In 2019, according to data from the WHO global air quality database, the average concentration of PM2.5 in Malta was 12.93 µg/m3, which was lower than the WHO European

Region's average of 14.88 µg/m3. This trend held true for both urban areas (12.94 vs. 14.71 µg/m3) and rural areas (9.31 vs. 15.17 µg/m3) (149). However, caution must be exercised. Although there has been a downward trend in the levels of selected air pollutants over the past, mostly because of improvement in car technology in the EU, it has been observed that the trend is turning back up owing to the sheer increase in the number of cars on Maltese roads. Furthermore, air pollution can also be of a transboundary nature. In addition to national action to address indigenous sources of air pollution, public health should maintain its international advocacy initiatives to reduce air pollution from countries in the Mediterranean region (e.g., in the form of ammonia from the agricultural sector) and from shipping in the Mediterranean Sea (e.g. in the form of sulphur dioxide).

Biodiversity and Ecosystem Health

Biodiversity plays a crucial role in fulfilling human and societal requirements, encompassing aspects such as ensuring food and nutrition security, enabling energy production, facilitating the development of medicines and pharmaceuticals, and sustaining the availability of freshwater, all of which are essential for promoting good health. Furthermore,, biodiversity creates economic prospects and offers recreational activities that enhance overall wellbeing (150). The second National Biodiversity Strategy and Action Plan to 2030 stems from the National Strategy for the Environment and is up for public consultation (151).

Chemicals

Chemicals play a vital role in everyday life and the industrial use of chemicals has increased tremendously over the past decades. 230 million tonnes of chemicals hazardous to health were consumed in 2020, a 4% increase from 2019 (145). Whereas research on the effects of selected chemicals (e.g., heavy metals such as lead and mercury) on health is advanced, the adverse health effects of the multitude of chemicals that people are exposed to daily is under-researched. In addition to the sheer number of chemicals that are present in the environment, interactions between different chemicals can also produce different health effects. Chemicals can be found everywhere including in the air, in households, in food, in cosmetics, and in the objects that people buy (152). There is an expanding body of evidence suggesting that dangerous chemicals are linked to health issues spanning one's entire life, as well as the increasing occurrence of non-communicable diseases like cancer, urinary and reproductive system ailments, cardiovascular and respiratory disorders, allergies, neurodevelopmental and congenital defects, endocrine disruption,, and mental health disorders (153,154). Examples of chemicals include asbestos, lead, mercury, pesticides, persistent organic pollutants POPs and endocrine-disrupting chemicals EDCs. It is imperative to protect individuals from exposure to hazardous chemicals at all stages of life, with the most crucial and beneficial protection being in the early stages of life (155). The Malta National Poisons Centre was launched in May 2024 and is functional.

Climate Change

Climate change impacts the factors that influence both social and environmental determinants of health, including access to fresh air, safe drinking water, an adequate food supply, and stable housing (156). Furthermore, climate change can have wide-ranging health impacts, including through heat-related illnesses and related complications, and emergence of

climate-sensitive vector-borne diseases (157). Regions such as the Mediterranean countries and the Balkans are particularly susceptible to the impacts of these prolonged periods of extreme heat. A comprehensive Heat-Health Action Plan has been developed and will need to be updated periodically over the next decades as extreme weather events intensify and become more frequent. Other climate and health action plans will need to be developed as well, as recommended in the Malta Low Carbon Development Strategy (158). This includes the development of climate-sensitive vector-borne disease plans, risk assessment and surveillance. Furthermore, there is an increasing role for health as a catalyst of change towards carbon neutrality. This means that there need to be plans for the decarbonisation of health systems and the 'greening' of the Maltese health system, to lead by example. In addition, strong advocacy initiatives that articulate the health effects of climate change and the health benefits of decarbonisation in society, will need to be developed. At national level, climate change and action is being led by the Climate Action Board (159).

Food Safety

Ensuring the safety of food products is just as important as ensuring sufficient access (160). Food safety is highly regulated at EU level and is supported by the European Food Safety Authority. In Malta the main legislation related to food safety is the Food Safety Act. The Food Safety Commission is responsible to monitor, coordinate and keep under review all practices, operations and activities relating to food (161). Whilst the European Commission has a Farm to Fork Strategy, currently, there are no policies and strategies in place that address food safety in Malta.

Ionising and Non-ionising Radiation

Radiation is usually classified into ionising and non-ionising radiation. Such radiation encompasses unseen electrical and magnetic forces and originates from natural occurrences like the Earth's magnetic field or human actions, primarily in the utilisation of electricity. Ionising radiation is carcinogenic and includes ultraviolet rays from the sun, X-rays and other rays from medical devices in healthcare use, and rays from radioactive gases such as radon (162,163). On the other hand, the health concerns of non-ionising radiation (sometimes referred to as Electro Magnetic Frequencies) are typically associated with the advancement and widespread use of technology, particularly communication technology (e.g., 5G) (164). This area falls under the Commission for the Protection from Ionising and Non-Ionising Radiation.

Light Pollution

The human body produces melatonin, a hormone that regulates sleep patterns and which is vital for human health. Exposure to artificial light (especially of the blue spectrum) during nighttime hours can suppress the production of melatonin, reducing the feeling for the need for sleep and sleep's restorative effects on the human body. Furthermore, WHO has acknowledged research indicating that disruptions to the circadian cycle caused by shift work may act as a potential trigger for carcinogenesis (165,166). Disturbances in the circadian rhythm can also lead to various sleep disorders which can manifest in several ways, including weight gain, stress, depression, the onset of diabetes, and a potential increase in the risk of cancer (167,168). The Guidelines for the Reduction of Light Pollution

in the Maltese Islands intends to raise public awareness, create a comprehensive guide for individuals and organisations, preserve "dark" rural areas, and provide assistance to those that conduct impact assessments for development applications (169). It is important that public health engages in such awareness raising initiatives to articulate the health concerns of the stimulating effects of light (especially of the blue wavelengths), the inappropriate use of street blue light fixtures in neighbourhoods where people live, and the healthy use of light-emitting devices especially, but not only, among children.

Noise Pollution

Noise pollution is known to increase mental stress, sleep disturbance and annoyance, and to aggravate selected health conditions, such as heart disease. There is also the possibility that noise pollution negatively affects children's learning environments and might affect children's educational development (170). The 2018 Environmental Noise Guidelines for the European Region by WHO establish noise limits for daytime (Lden 24-hour average) and nighttime (Lnight 23:00 - 7:00) noise levels. These limits are determined through a rigorous and comprehensive analysis of academic research on the health consequences of noise pollution (171). In 2011, a significant proportion of Malta's population (30.4%) reported experiencing noise disturbances in their homes, which was notably higher than the EU average of 19.8% during the same year. Those in the lowest income quartile were more than twice as likely to report major noise problems compared to the wealthiest quartile. In contrast, individuals in the highest income quartile were more likely to have no issues with noise (62.4%) compared to those in the lowest quartile (52.6%). Additionally, the study showed that older residents were more affected by noise problems than younger individuals, with 13.7% of those aged over 65 perceiving noise as a neighbourhood problem compared to only 5.9% of 18- to 24-year-olds (142). The European Environmental Agency (EEA) provides data on the population exposed to noise levels exceeding the limits specified in the EU Environmental Noise Directive (END) (172). The latest mapping under the END reveals a significant rise in the urban population of Malta exposed to elevated levels of noise from both road and air traffic. Specifically, the number of people exposed to high road traffic noise has increased substantially, going from approximately 50,000 in 2010 to nearly 70,000 in 2017 (173). Malta develops periodic Noise Action Plans approximately every 6 years to protect low noise areas and reduce background environmental noise, preferentially addressing those areas that are hardest hit by the highest noise levels in the Maltese islands (174). Notwithstanding, noise pollution remains a serious health concern. The transposed END regulates selected sources of noise (classified as background) which mostly include noise from transport sources (such as cars and planes). Legal and policy instruments remain to be explored for the effective reduction of noise from all sources (including from the entertainment industry and from high noise emitting devices and vehicles, among others).

Urban health

The overwhelming majority of Malta's population resides in urban areas. Only a mere 1.8% of these urban spaces are designated as green open areas (46). This situation has been deteriorating, with the land covered by buildings doubling over the past two decades, increasing from 15.6% in 1990 to a staggering 29.9% in 2018 (175). According to population surveys, a substantial 91.4% of the residents expressed serious concerns about environmental

urban issues in Malta, particularly the scarcity of green open spaces (46). Indeed, urban health is a concept at the intersection of clean air, quiet neighbourhoods, and appealing environments for people to socialise and mobilise (176). The concept of urban health is captured in the concept of the 15-minute town where all services are accessible within a 15-minute walk or bicycle ride (177).

Waste Management

Proper waste management is essential to prevent air pollution, water and soil contamination and their associated health risks (178). The Long Term Waste Management Plan 2021 – 2030, which includes recycling and waste-to-energy projects, is one such example promoting good practice. Attention has to be paid to health concerns from hazardous chemicals that are not eliminated during the recycling process as promoted in a circular economy (179).

Water Quality

Clean and safe water is a cornerstone of good public and environmental health. For this reason, no efforts should be spared to ensure the public health safety of potable water and other uses of water (such as enclosed waters, bathing water, etc.) (180,181). Malta's limited freshwater resources and potential issues with desalination plants can affect water quality, impacting public health (182). Whilst water quality is probably more related to infectious disease prevention, chemical and other exposures and palatability are also important for NCD prevention. The Drinking Water Directive introduces the obligation for EU member states to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean, and to improve access to water intended for human consumption (183).

Policy Recommendations:

- Contribute towards a comprehensive National Climate, Environment and Health Policy in close collaboration with other Ministries and important entities whose ownership is crucial for implementation.
- Engage with other Ministries and stakeholders to include the requirement for and conduct environmental health impact assessments to support decision making and integrate a health-in-all-policies approach. Consider equity impacts of the environment and other sector policies to avoid disproportionate burden on disadvantaged and vulnerable population groups.
- Develop tailored inter-sectoral advocacy initiatives to promote enabling living environments that are conducive to health and wellbeing.
- Strengthen Malta's international participation in environmental health programmes, processes, and partnerships such as those relating to urban health, active mobility, green hospitals, and human biomonitoring.
- Develop climate, environment and health capacity and expertise in proportion with the projected increase and emergence of environmental health issues in the foreseeable future.

References

1. WHO Discussion Paper for the Regional Expert Consultation (Version dated 20 August 2021) Development of an Implementation Roadmap 2023-2030 for the Global Action Plan for the Prevention and Control of NCDs 2013-2030 [Internet]. World Health Organization; 2021. Available from: https://cdn.who.int/media/docs/default-source/documents/health-topics/non-communicable-diseases/eb150---who-discussion-paper-on-ncd-roadmap-development-(20-aug-2021)---for-web.pdf?sfvrsn=58b8c366_17&download=true

2. Noncommunicable diseases [Internet]. [cited 2024 May 6]. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

3. Stein DJ, Benjet C, Gureje O, Lund C, Scott KM, Poznyak V, et al. Integrating mental health with other non-communicable diseases. BMJ [Internet]. 2019 Jan 28 [cited 2024 May 6];364. Available from: https://www.bmj.com/content/364/bmj.l295

4. A Strategy for the Prevention and Control of Noncommunicable Disease in Malta [Internet]. Department of Health Promotion and Disease Prevention Public Health Regulation Division Ministry for Health, the Elderly and Community Care; 2010. Available from: https://healthservices.gov.mt/en/strategy-development-and-implementation-unit/Documents/Strategies_and_Policies/Noncommunicable_Disease_Control_Strategy_2010.pdf

5. The European Health Report 2021. Taking stock of the health-related Sustainable Development Goals in the COVID-19 era with a focus on leaving no one behind [Internet]. Copenhagen; 2022. Available from: https://iris.who.int/handle/10665/352137

6. People having a long-standing illness or health problem, by sex, age and labour status [Internet]. Eurostat Database. 2024. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_silc_04/default/table?lang=en

7. Charrier L, van Dorsselaer S, Canale N, Baska T, Kilibarda B, Comoretto RI, et al. A focus on adolescent substance use in Europe, central Asia and Canada. Health Behaviour in School-aged Children international report from the 2021/2022 survey. Volume 3 [Internet]. Copenhagen PP - Copenhagen: World Health Organization. Regional Office for Europe; 2024. Available from: https://iris.who.int/handle/10665/376573

8. Frequency of heavy episodic drinking by sex, age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_al3e/default/table?lang=en

9. Daily consumption of fruit and vegetables by sex, age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_FV3E/default/table?lang=en

10. Time spent on health-enhancing (non-work-related) aerobic physical activity by sex, age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_PE2E/default/table?lang=en&category=hlth.hlth_det.hlth_pha

11. Body mass index (BMI) by sex, age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_BM1E__custom_4948866/default/table?lang=en&page=time:2019

12. Rakić JG, Hamrik Z, Dzielska A, Felder-Puig R, Oja L, Bakalár P, et al. A focus on adolescent physical activity, eating behaviours, weight status and body image in Europe, central Asia and Canada: Health Behaviour in School-aged Children international report from the 2021/2022 survey [Internet]. World Health Organization. Regional Office for Europe; 2024. Available from: https://iris.who.int/handle/10665/376772

13. Tabone L. Email correspondence from the Principal Investigator of the Childhood Obesity Surveillance Initiative (18th April 2023). 2023.

14. Persons reporting a chronic disease, by disease, sex, age and educational attainment level [Internet]. Eurostat Database. 2021. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_cd1e/default/table?lang=en

15. Self-reported screening of cardiovascular diseases and diabetes risks by sex, age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_pa2e/default/table?lang=en

16. Self-reported last breast examination by X-ray among women by age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_PA7E/default/table?lang=en&category=hlth.hlth_care.hlth_prev

17. Self-reported last cervical smear test among women by age and educational attainment level [Internet]. Eurostat Database. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_PA8E/default/table?lang=en&category=hlth.hlth_care.hlth_prev

18. Self-reported last colorectal cancer screening test by sex, age and educational attainment level [Internet]. Eurostat Database. 2021. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_PA5E/default/table?lang=en&category=hlth.hlth_care.hlth_prev

19. England K. Email correspondence from the Lead of the National Mortality Register and European Health Interview Survey (15th March 2023). 2023.

20. Health Literacy Survey: Malta 2014 [Internet]. 2015. Available from: https://healthservices.gov.mt/en/CommMentalHealth/Documents/health-literacy/health-literacy-survey-malta-2014.pdf

21. Preventive health care expenditure statistics [Internet]. Eurostat Statistics Explained. 2024. Available from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Preventive_health_care_expenditure_statistics#Among_EU_Member_States.2C_spending_on_preventive_healthcare_ranged_between_1.0_.25_and_5.6_.25_of_current_healthcare_expenditure_in_2020

22. GBD compare [Internet]. Seattle, WA: Institute for Health Metrics and Evaluation (IHME); 2019. Available from: http://vizhub.healthdata.org/gbd-compare

23. Parliamentary Question Number 10849 [Internet]. House of Representatives - Parliamentary Questions Website. 2023. Available from: https://pq.gov.mt/PQWeb.nsf/7561f7daddf0609ac1257d1800311f18/c1257d2e0046dfa1c12589e800464ce7!OpenDocument

24. Social determinants of mental health (unpublished). Social Determinants of Health Unit, Office of the Superintendence of Public Health; 2023.

25. EHIS 2019/2020: Health Status Report [Internet]. 2022. Available from: https://healthservices.gov.mt/en/dhir/Documents/Survey Documents (18Nov2019)/European Health Interview Survey 2019 2020 Health Status Report.pdf

26. A Mental Health Strategy for Malta 2020-2030 [Internet]. Office of the Deputy Prime Minister, Ministry for Health; 2019. Available from: https://health.gov.mt/wp-content/uploads/2023/04/Building_Resilience_Transforming_Services_A_Mental_Health_Strategy_for_Malta_2020-2030_EN.pdf

27. Malta: Country Health Profile 2021 [Internet]. Brussels: OECD Publishing, Paris/European Observatory on Health Systems and Policies; 2021 [cited 2024 May 9]. (State of Health in the EU). Available from: https://www.oecd-ilibrary.org/social-issues-migration-health/malta-country-health-profile-2021_cd4b1ed7-en

28. Nikoloski Z, Alqunaibet AM, Alfawaz RA, Almudarra SS, Herbst CH, El-Saharty S, et al. Covid-19 and non-communicable diseases: evidence from a systematic literature review. BMC Public Health [Internet]. 2021;21(1):1068. Available from: https://doi.org/10.1186/s12889-021-11116-w

29. Imtiaz S, Shield KD, Roerecke M, Samokhvalov A V, Lönnroth K, Rehm J. Alcohol consumption as a risk factor for tuberculosis: meta-analyses and burden of disease. Eur Respir J. 2017 Jul;50(1).

30. Probability of dying between the exact ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases (SDG 3.4.1). In: Global Health Observatory [online database] [Internet]. World Health Organization; 2021. Available from: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/probability-of-dying-between-exact-ages-30-and-70-from-any-of-cardiovascular-disease-cancer-diabetes-or-chronic-respiratory-(-)

31. More ways, to save more lives, for less money: World Health Assembly adopts more Best Buys to tackle noncommunicable diseases [Internet]. World Health Organization. 2023. Available from: https://www.who.int/news/item/26-05-2023-more-ways--to-save-more-lives--for-less-money----world-health-assembly-adopts-more-best-buys--to-tackle-noncommunicable-diseases

32. Technical Annex (version dated 26 December 2022) Updated Appendix 3 of the WHO Global NCD Action Plan 2013-2030 [Internet]. 2022. Available from: https://cdn.who.int/media/docs/default-source/ncds/mnd/2022-app3-technical-annex-v26jan2023.pdf?sfvrsn=62581aa3_5

33. National Report on the Drug Situation and Responses in Malta 2023 [Internet]. 2024. Available from: https://familja.gov.mt/wp-content/uploads/2024/02/National-Report-Drugs-2023.pdf

34. Addressing health inequalities in the European Union [Internet]. 2020. Available from: https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/646182/EPRS_IDA(2020)646182_EN.pdf

35. PwC Malta. Weighing the costs of obesity in Malta [Internet]. 2017 [cited 2022 Jul 29]. Available from: https://www.pwc.com/mt/en/publications/assets/weighing-the-cost-of-obesity.pdf

36. A Healthy Weight for Life: A National Strategy for Malta (2012-2020) [Internet]. Malta: Superintendence of Public Health, Ministry for Health, the Elderly and Community Care; 2012 [cited 2016 Dec 20]. Available from: https://health.gov.mt/wp-content/uploads/2023/04/A_Healthy_Weight_for_Life-A_National_Strategy_for_Malta_2012-2020_EN.pdf

37. Food and Nutrition Policy and Action Plan for Malta (2015-2020) [Internet]. Health Promotion and Disease Prevention Directorate, Parliamentary Secretariat for Health, Malta; 2014. Available from: https://health.gov.mt/wp-content/uploads/2023/04/Food_and_Nutrition_Policy_and_Action_Plan_for_Malta_2015-2020_EN.pdf

38. National Breastfeeding Policy and Action Plan 2015-2020 [Internet]. 2015 [cited 2022 Jun 9]. Available from: https://health.gov.mt/wp-content/uploads/2023/04/National_Breastfeeding_Policy_And_Action_Plan_2015-2020_EN.pdf

39. A National Strategy for Diabetes 2016-2020 [Internet]. 2014. Available from: https://health.gov.mt/wp-content/uploads/2023/04/Diabetes_A_National_Public_Health_Priority_A_National_Strategy_for_Diabetes_2016-2020_EN.pdf

40. National Cancer Plan 2011-2015. 2011.

41. The National Cancer Plan for Maltese Islands 2017-2021 [Internet]. 2017. Available from: https://health.gov.mt/wp-content/uploads/2023/04/The_National_Cancer_Plan_for_the_Maltese_Islands_2017–2021_EN.pdf

42. A Whole School Approach to a Healthy Lifestyle: Healthy Eating and Physical Activity Policy [Internet]. 2015. Available from: https://healthservices.gov.mt/en/strategy-development-and-implementation-unit/Documents/Strategies_and_Policies/A_Whole_School_Approach_to_a_Healthy_Lifestyle_Healthy_Eating_and_Physical_Activity_Policy.pdf

43. Annex IV: A Whole School Approach to Healthy Living: Healthy Eating & Physical Activity Policy. In: A Policy Education in Schools Route to Quality Inclusion [Internet]. 2022. Available from: https://educationservices.gov.mt/en/NSSS/Documents/Policy on Inclusive Education in Schools.pdf

44. A National Health System Strategy for Malta 2023-2030 [Internet]. Ministry for Health; 2022. Available from: https://health.gov.mt/wp-content/uploads/2023/04/A_National_Health_Systems_Strategy_for_Malta_2023_-_2030_Investing_Successfully_for_a_Healthy_Future_EN.pdf

45. Aiming Higher [Internet]. 2019. Available from: https://www.gov.mt/en/Government/DOI/Press Releases/PublishingImages/Pages/2019/May/21/pr191132/PR191132a.pdf

46. ERA. National Strategy for the Environment 2050: A Draft for Public Consultation – September 2022 [Internet]. Environment and Resources Authority; 2022. Available from: https://era.org.mt/wp-content/uploads/2022/09/National-Strategy-for-the-Environment-2050-–-Public-Consultation-Draft.pdf

47. A Social Vision for Vision 2035: Shaping the Future of Our Society [Internet]. 2022. Available from: https://familja.gov.mt/wp-content/uploads/2023/04/Social-Vision-for-Malta-2035-Policy-Document-EN.pdf

48. National Strategic Policy for Poverty Reduction and For Social Inclusion Malta 2014-2024 [Internet]. 2015. Available from: https://familja.gov.mt/wp-content/uploads/2023/04/Poverty-Strategy-14-EN.pdf

49. National Children's Policy [Internet]. 2017. Available from: https://familja.gov.mt/wp-content/uploads/2023/04/National-Childrens-Policy-2017.pdf

50. National Action Plan for a Child Guarantee 2022-2030 [Internet]. 2022. Available from: https://familja.gov.mt/wp-content/uploads/2023/04/National-Action-Plan-Child-Guarantee-EN-1.pdf

51. National Youth Policy 2021-2030 [Internet]. 2021. Available from: https://online.fliphtml5.com/rqmms/wbuk/#p=1

52. Freedom to Live: Malta's 2021-2030 National Strategy on the Rights of Disabled Persons [Internet]. 2021. Available from: https://inclusion.gov.mt/wp-content/uploads/2023/04/Disability-Doc-ENG-SEP-21.pdf

53. The National Strategic Policy for Active Ageing 2023-2030 [Internet]. 2022. Available from: https://activeageing.gov.mt/wp-content/uploads/2023/04/NSPActiveAgeing2023-30.pdf

54. National Alcohol Policy 2018-2023 [Internet]. 2018. Available from: https://familja.gov.mt/wp-content/uploads/2023/04/Alcohol-Policy-EN.pdf

55. National Drug Policy 2023-2033 [Internet]. 2023. Available from: https://familja.gov.mt/wp-content/uploads/2023/06/National-Drugs-Policy-2023-2033.pdf

56. A review of the implementation of Sustainable Development Goal 2: Addressing pre-obesity and obesity [Internet]. 2023. Available from: https://nao.gov.mt/wp-content/uploads/2023/08/Obesity-report-July-2023.pdf

57. NCDs across the SDGs: A call for an integrated approach [Internet]. 2017. Available from: https://ncdalliance.org/sites/default/files/resource_files/NCDs_Across_SDGs_English_May2017.pdf

58. NCD Global Monitoring Framework [Internet]. 2011. Available from: https://www.who.int/publications/i/item/ncd-surveillance-global-monitoring-framework

59. World Health Organization. 76th World Health Assembly adopts the Global framework for integrating well-being into public health utilizing a health promotion approach [Internet]. 2023. Available from: https://www.who.int/news/item/29-05-2023-76th-world-health-assembly-adopts-the-global-framework-for-integrating-well-being-into-public-health-utilizing-a-health-promotion--approach

60. Luxembourg Statement on advancing health and well-being: Ninth high-level meeting of the Small Countries Initiative, 10–12 May 2023, Luxembourg [Internet]. Copenhagen: World Health Organization. Regional Office for Europe; 2023. Available from: https://www.who.int/europe/publications/i/item/luxembourg-statement-on-advancing-health-and-well-being

61. Seventh Ministerial Conference on Environment and Health 5 – 7 July 2023 Budapest, Hungary [Internet]. Copenhagen: World Health Organization. Regional Office for Europe; 2023. Available from: https://www.who.int/europe/publications/i/item/EURO-Budapest2023-6

62. World Health Organization. MPOWER : a policy package to reverse the tobacco epidemic [Internet]. World Health Organization; 2008. Available from: https://iris.who.int/handle/10665/43888

63. European framework for action on alcohol 2022–2025 [Internet]. Copenhagen: World Health Organization Regional Office for Europe; 2022. Available from: https://iris.who.int/bitstream/handle/10665/361662/72wd12e-Alcohol-220604.pdf?sequence=1&isAllowed=y

64. World Health Organization. Regional Office for Europe. European Food and Nutrition Action Plan 2015–2020 [Internet]. 2015. Available from: https://iris.who.int/handle/10665/329405

65. World Health Organization. Regional Office for Europe. Physical activity strategy for the WHO European Region 2016–2025 [Internet]. 2016 [cited 2017 Feb 1]. Available from: https://iris.who.int/handle/10665/329407

66. International Code of Marketing of Breast-milk Substitutes [Internet]. Geneva; 1981. Available from: https://iris.who.int/bitstream/handle/10665/40382/9241541601.pdf?sequence=1

67. World Health Organization, United Nations Children's Fund (UNICEF). Implementation guidance: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services: the revised baby-friendly hospital initiative [Internet]. 2018. Available from: https://iris.who.int/handle/10665/272943

68. World Health Organization. WHO technical manual on tobacco tax policy and administration [Internet]. Geneva; 2021 [cited 2023 Apr 14]. Available from: https://iris.who.int/bitstream/handle/10665/340659/9789240019188-eng.pdf?sequence=1

69. Sornpaisarn B, Shield KD, Österberg E, Rehm J, editors. Resource tool on alcohol taxation and pricing policies [Internet]. Geneva; 2017. Available from: https://iris.who.int/bitstream/handle/10665/255795/9789241512701-eng.pdf?sequence=1

70. WHO manual on sugar-sweetened beverage taxation policies to promote healthy diets [Internet]. Geneva: World Health Organization; 2022. Available from: https://iris.who.int/bitstream/handle/10665/365285/9789240056299-eng.pdf?sequence=1

71. World Health Organization. Regional Office for Europe. Tobacco Control Playbook [Internet]. 2019. Available from: https://apps.who.int/iris/handle/10665/347383

72. World Health Organization. Regional Office for Europe. Alcohol Control Playbook (under development, unpublished).

73. BCIHUB [Internet]. 2024. Available from: https://bci-hub.org/about#:~:text=The term behavioural and cultural,targeted and affected by policy.

74. WHO expert meeting on prevention and control of noncommunicable diseases: learning from the arts. Opera House Budapest, Hungary, 15-16 December 2022: meeting report. [Internet]. Copenhagen; 2023. Available from: https://iris.who.int/bitstream/handle/10665/373900/WHO-EURO-2023-8280-48052-71230-eng.pdf?sequence=1&isAllowed=y

75. Addressing and managing conflicts of interest in alcohol control policies [Internet]. Geneva; 2022. Available from: https://iris.who.int/bitstream/handle/10665/352517/9789240044487-eng.pdf?sequence=1

76. Guidelines for implementation of Article 5.3: Guidelines on the protection of public health policies with respect to tobacco control from commercial and other vested interests. 2013.

77. United Nations General Assembly. Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases (A/66/L.1) [Internet]. New York, UN; 2011. Available from: http://www.who.int/nmh/events/un_ncd_summit2011/political_declaration_en.pdf?ua=1

78. European Commission. Best Practices Portal [Internet]. Available from: https://webgate.ec.europa.eu/dyna/bp-portal/

79. World Health Organization. Determinants of Health [Internet]. 2017. Available from: https://www.who.int/news-room/questions-and-answers/item/determinants-of-health#:~:text=The determinants of health include,person's individual characteristics and behaviours.

80. World Health Organization. Social determinants of health: Key concepts [Internet]. 2013. Available from: https://www.who.int/news-room/questions-and-answers/item/social-determinants-of-health-key-concepts

81. Self-perceived health by sex, age and educational attainment level [Internet]. 2024. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_silc_02__custom_7954004/default/table?lang=en

82. Self-perceived health by sex, age and income quintile [Internet]. 2022. Available from: https://ec.europa.eu/eurostat/databrowser/view/hlth_silc_10__custom_7954883/default/table?lang=en&page=time:2022

83. Giesinger I, Goldblatt P, Howden-Chapman P, Marmot M, Kuh D, Brunner E. Association of socioeconomic position with smoking and mortality: The contribution of early life circumstances in the 1946 birth cohort. J Epidemiol Community Health. 2014;68(3):275–9.

84. Healthy, prosperous lives for all: the European Health Equity Status Report [Internet]. Copenhagen; 2019. Available from: https://iris.who.int/handle/10665/326879

85. International Monetary Fund. Malta: 2023 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Malta [Internet]. 2024. Available from: https://www.imf.org/en/Publications/CR/Issues/2024/01/29/Malta-2023-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-544248

86. Social Security [Internet]. Department of Social Security - Malta. Available from: https://socialsecurity.gov.mt/en/information-and-applications-for-benefits-and-services/

87. World Health Organization. The Ottawa Charter for Health Promotion [Internet]. Geneva, Switzerland: World Health Organization. Regional Office for Europe; 1986 [cited 2017 May 7]. Available from: https://www.who.int/teams/health-promotion/enhanced-wellbeing/first-global-conference/actions

88. WHO Regional Office for Europe. Integrated brief interventions for noncommunicable disease risk factors in primary care: the manual. BRIEF project. [Internet]. Copenhagen; 2022. Available from: https://www.who.int/europe/publications/i/item/9789289058551

89. World Health Organization. mhGAP operations manual [Internet]. Geneva: World Health Organization; 2018. Available from: https://iris.who.int/handle/10665/275386

90. Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: a systematic review and integration of definitions and models. BMC Public Health [Internet]. 2012;12(1):80. Available from: http://www.biomedcentral.com/1471-2458/12/80

91. M-POHL THC of the WAN. International Report on the Methodology, Results, and Recommendations of the European Health Literacy Population Survey 2019-2021 (HLS19) of M-POHL [Internet]. Vienna; 2021. Available from: https://m-pohl.net/sites/m-pohl.net/files/inline-files/HLS19 International Report.pdf

92. Brach C, Keller D, Hernandez LM, Baur C, Parker R, Dreyer B, et al. Ten Attributes of Health Literate Health Care Organizations [Internet]. Washington, DC: Perspectives. Discussion Paper, National Academy of Medicine; 2012 [cited 2019 May 7]. Available from: http://gahealthliteracy.org/wp-content/uploads/2014/07/BPH_Ten_HLit_Attributes.pdf

93. M-POHL. Measuring Organizational Health Literacy. Action Network on Measuring Population and Organizational Health Literacy; 2022.

94. Health literacy development for the prevention and control of noncommunicable diseases: Volume 1. Overview [Internet]. Geneva: World Health Organization; 2022. Available from: https://iris.who.int/bitstream/handle/10665/364203/9789240055339-eng.pdf?sequence=1

95. Health literacy development for the prevention and control of noncommunicable diseases: Volume 2. A globally relevant perspective [Internet]. Geneva: World Health Organization; 2022. Available from: https://iris.who.int/bitstream/handle/10665/364204/9789240055353-eng.pdf?sequence=1

96. Osborne RH, Elmer S, Hawkins M, Cheng CC, Batterham RW, Dias S, et al. Health literacy development is central to the prevention and control of non-communicable diseases. BMJ Glob Heal [Internet]. 2022 Dec 1;7(12):e010362. Available from: http://gh.bmj.com/content/7/12/e010362.abstract

97. Guide to Health Literacy: Contributing to Trust Building and Equitable Access to Healthcare [Internet]. Council of Europe; 2023. Available from: https://rm.coe.int/inf-2022-17-guide-health-literacy/1680a9cb75

98. U.S. Department of Health and Human Services. Smoking Cessation: A Report of the Surgeon General [Internet]. Atlanda, GA; 2020 [cited 2023 Mar 22]. Available from: https://www.hhs.gov/sites/default/files/2020-cessation-sgr-full-report.pdf

99. Baker CL, Flores NM, Zou KH, Bruno M, Harrison VJ. Benefits of quitting smoking on work productivity and activity impairment in the United States, the European Union and China. Int J Clin Pract [Internet]. 2017 Jan 1 [cited 2024 May 6];71(1). Available from: /pmc/articles/PMC5299499/

100. Rezaei S, Sari AA, Arab M, Majdzadeh R, Poorasl AM. Economic burden of smoking: a systematic review of direct and indirect costs. Med J Islam Repub Iran [Internet]. 2016 [cited 2024 May 6];30(1):397. Available from: /pmc/articles/PMC5004566/

101. Lee SY, Lee J, Kwon M. Impacts of heavy smoking and alcohol consumption on workplace presenteeism: A cross-sectional study. Medicine (Baltimore) [Internet]. 2021 Nov 11 [cited 2023 Apr 21];100(47). Available from: /pmc/articles/PMC8615302/

102. Öberg M, Jaakkola MS, Woodward A, Peruga A, Prüss-Ustün A. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. Lancet. 2011 Jan 8;377(9760):139–46.

103. WHO report on the global tobacco epidemic 2021: addressing new and emerging products [Internet]. Geneva; 2021. Available from: https://iris.who.int/bitstream/handle/10665/343287/9789240032095-eng.pdf?sequence=1

104. Neufeld M, Rovira P, Ferreira-Borges C, Kilian C, Sassi F, Veryga A, et al. Impact of introducing a minimum alcohol tax share in retail prices on alcohol-attributable mortality in the WHO European Region: A modelling study. Lancet Reg Heal - Eur [Internet]. 2022 Apr 1 [cited 2024 May 7];15:100325. Available from: http://www.thelancet.com/article/S2666776222000187/fulltext

105. Maharaj T, Angus C, Fitzgerald N, Allen K, Stewart S, MacHale S, et al. Impact of minimum unit pricing on alcohol-related hospital outcomes: systematic review. BMJ Open. 2023 Feb;13(2):e065220.

106. Herttua K, Mäkelä P, Martikainen P. Changes in alcohol-related mortality and its socioeconomic differences after a large reduction in alcohol prices: A natural experiment based on register data. Am J Epidemiol. 2008;168(10):1110–8.

107. Purchasing and consuming alcohol [Internet]. European Union Agency for Fundamental Rights. 2018. Available from: https://fra.europa.eu/en/publication/2017/mapping-minimum-age-requirements-concerning-rights-child-eu/purchasing-and-consuming-alcohol

108. Arpa S, Borg P. European School Survey Project on Alcohol and Other Drugs: 2019 Malta National Report [Internet]. 2019. Available from: https://fsws.gov.mt/en/Documents/ESPADReports/MalteseReports/ESPAD_2019 report (Digital).pdf

109. L.N. 96 of 2011 - Trading Licences Act (CAP. 441) [Internet]. 2011. Available from: https://legislation.mt/eli/ln/2011/96/eng

110. Obesity and overweight [Internet]. World Health Organization; 2024 [cited 2016 Dec 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

111. WHO European Regional Obesity Report 2022 [Internet]. Copenhagen; 2022. Available from: https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-eng.pdf?sequence=1&isAllowed=y

112. WHO acceleration plan to stop obesity [Internet]. Geneva; 2023. Available from: https://iris.who.int/bitstream/handle/10665/370281/9789240075634-eng.pdf?sequence=1

113. World Health Organization. Healthy diet [Internet]. 2020. Available from: https://www.who.int/news-room/fact-sheets/detail/healthy-diet

114. Daily consumption of fruit and vegetables [Internet]. Eurostat Database. 2019. Available from: https://ec.europa.eu/eurostat/databrowser/view/HLTH_EHIS_FV3E/default/table?lang=en

115. National Food Consumption Survey 2015-2016 (unpublished data).

116. Borg K. The measurement of breast-feeding indicators in the Maltese Population (Master's dissertation) [Internet]. University of Malta; 2017. Available from: https://www.um.edu.mt/library/oar/handle/123456789/34222

117. Global Nutrition Targets 2025 Breastfeeding Policy Brief [Internet]. Geneva; 2014. Available from: https://iris.who.int/bitstream/handle/10665/149022/WHO_NMH_NHD_14.7_eng.pdf?sequence=1

118. Andreyeva T, Marple K, Marinello S, Moore TE, Powell LM. Outcomes Following Taxation of Sugar-Sweetened Beverages A Systematic Review and Meta-analysis. 2022;5(6):1–18.

119. Teng AM, Jones AC, Mizdrak A, Signal L, Genç M, Wilson N. Impact of sugar-sweetened beverage taxes on purchases and dietary intake: Systematic review and meta-analysis. Obes Rev [Internet]. 2019 [cited 2022 Aug 11];20(9):1187–204. Available from: https://doi.org/10.1111/obr.12868

120. Nutrition policy status in Malta Nourishing policy index [Internet]. 2023. Available from: https://www.wcrf.org/wp-content/uploads/2023/04/Malta-NOURISHING-snapshot-May-2023.pdf

121. European Commission. Nutrition labelling [Internet]. 2020. Available from: https://food.ec.europa.eu/safety/labelling-and-nutrition/food-information-consumers-legislation/nutrition-labelling_en

122. World Health Organization. Health literacy [Internet]. 2022. Available from: https://www.who.int/teams/health-promotion/enhanced-wellbeing/ninth-global-conference/health-literacy

123. World Health Organization. Physical Activity [Internet]. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/physical-activity

124. Physical activity policy status in Malta MOVING policy index [Internet]. 2023. Available from: https://www.wcrf.org/wp-content/uploads/2023/04/Malta-MOVING-snapshot-May-2023.pdf

125. England K. Email correspondence from the Lead of the National Mortality Registry (10th May 2024). 2024.

126. Cuschieri S. The diabetes epidemic in Malta. South East Eur J Public Heal. 2020;13(February):1–10.

127. Cuschieri S, Vassallo J, Calleja N, Pace N, Mamo J. The Effects of Socioeconomic Determinants on Hypertension in a Cardiometabolic At-Risk European Country. Int J Hypertens. 2017;2017.

128. Mental health action plan 2013-2020 [Internet]. Geneva; 2013. Available from: https://iris.who.int/bitstream/handle/10665/345301/9789240031029-eng.pdf?sequence=1

129. Thornicroft G. Physical health disparities and mental illness: the scandal of premature mortality. Br J Psychiatry [Internet]. 2018/01/02. 2011;199(6):441–2. Available from: https://www.cambridge.org/core/product/06CD314810155127BFE42EEDFFFE49BB

130. Camilleri N, Grech A, East RT. Socio-economic status and population density risk factors for psychosis: prospective incidence study in the Maltese Islands. Int psychiatry Bull Board Int Aff R Coll Psychiatr. 2010 Jul;7(3):69–71.

131. Sammut A. Depression and Anxiety in Adolescents in Malta. (Master's thesis). Msida: University of Malta; 2007.

132. Buttigieg A. Factors influencing help-seeking for mental health problems in adolescents. (Master's thesis). Msida: University of Malta; 2015.

133. Felice E, Saliba J, Grech V, Cox J. Prevalence rates and psychosocial characteristics associated with depression in pregnancy and postpartum in Maltese women. J Affect Disord. 2004 Oct;82(2):297–301.

134. Reiff S. Email correspondence from the Clinical Lead of the National Screening Unit (19th April 2024). 2024.

135. European Commission. Cancer Screening, Diagnosis and Care [Internet]. 2017. Available from: https://cancer-screening-and-care.jrc.ec.europa.eu/en/ecibc/european-breast-cancer-guidelines

136. World Health Organization. WHO recommends DNA testing as a first-choice screening method for cervical cancer prevention [Internet]. 2021. Available from: https://www.who.int/europe/news/item/11-09-2021-who-recommends-dna-testing-as-a-first-choice-screening-method-for-cervical-cancer-prevention#:~:text=For the general population of women%2C HPV-DNA detection is,testing every 5–10 years.

137. World Health Organization. New WHO report: population-based screening for cardiovascular disease risk factors does not reduce CVD mortality [Internet]. 2021. Available from: https://www.who.int/europe/news/item/18-01-2021-new-who-report-population-based-screening-for-cardiovascular-disease-risk-factors-does-not-reduce-cvd-mortality

138. World Health Organization. Mental Health [Internet]. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

139. Breaking Silos, Building Bridges. Annual Report 2017 [Internet]. 2018. Available from: https://healthservices.gov.mt/en/CommMentalHealth/Documents/2018/AR 2017 FINAL.pdf

140. Cuschieri S. Anxiety and depression levels in Malta: A year into Covid-19 pandemic. Eur J Public Health [Internet]. 2021 Oct 1;31(Supplement_3):ckab165.570. Available from: https://doi.org/10.1093/eurpub/ckab165.570

141. Mental health in schools: a manual [Internet]. Cairo; 2021. Available from: https://iris.who.int/handle/10665/347512

142. European Environment Agency. Healthy environment, healthy lives: how the environment influences health and well-being in Europe [Internet]. 2020. Available from: https://www.eea.europa.eu/publications/healthy-environment-healthy-lives

143. European Environment Agency. Beating cardiovascular disease — the role of Europe's environment [Internet]. 2023. Available from: https://www.eea.europa.eu/publications/beating-cardiovascular-disease/

144. EHIS 2019/2020: Health Determinants Report [Internet]. 2023. Available from: https://healthservices.gov.mt/en/dhir/Documents/EHIS health determinants report - version 1.1 09_05_2023.pdf

145. European Environment Agency. Health [Internet]. 2024. Available from: https://www.eea.europa.eu/en/topics/at-a-glance/health?activeTab=fa515f0c-9ab0-493c-b4cd-58a32dfaae0a

146. Environmental attitudes and behaviour in Malta: Results and analysis from a nation-wide survey (2018). In: National Strategy for the Environment 2050: A draft for public consultation Malta [Internet]. Environment & Resources Authority, Malta; 2022. Available from: https://era.org.mt/wp-content/uploads/2022/09/National-Strategy-for-the-Environment-2050-–-Public-Consultation-Draft.pdf

147. WHO global air quality guidelines. Particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide [Internet]. Geneva; 2021. Available from: https://iris.who.int/bitstream/handle/10665/345329/9789240034228-eng.pdf?sequence=1

148. Transport Publication 2022 (reference year 2021) [Internet]. Valletta; 2023. Available from: https://nso.gov.mt/wp-content/uploads/Transport-publication2022.pdf

149. SDG Indicator 11.6.2 Concentrations of fine particulate matter (PM2.5). In: Global Health Observatory [online database] [Internet]. 2024. Available from: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/concentrations-of-fine-particulate-matter-(pm2-5)

150. World Health Organization. Biodiversity and Health [Internet]. 2015. Available from: https://www.who.int/news-room/fact-sheets/detail/biodiversity-and-health

151. National Biodiversity Strategy and Action Plan to 2030 Draft Version [Internet]. 2023. Available from: https://era.org.mt/wp-content/uploads/2023/02/NBSAP-public-consultation-draft-19.01.23.pdf

152. European Environment Agency. Chemical [Internet]. 2024. Available from: https://www.eea.europa.eu/en/topics/in-depth/chemicals

153. James AA, OShaughnessy KL. Environmental chemical exposures and mental health outcomes in children: a narrative review of recent literature. Front Toxicol. 2023;5:1290119.

154. Mental Health and Environmental Exposures [Internet]. Learning and Developmental Disabilities Initiative; 2008. Available from: https://www.healthandenvironment.org/uploads-old/MentalHealth.pdf

155. Chemical safety [Internet]. World Health Organization. 2023. Available from: https://www.who.int/europe/news-room/fact-sheets/item/chemical--safety

156. Ragavan MI, Marcil LE, Garg A. Climate Change as a Social Determinant of Health. Pediatrics. 2020 May;145(5).

157. World Health Organization. Climate change [Internet]. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health

158. Malta's Low Carbon Development Strategy [Internet]. 2017. Available from: https://sustainabledevelopment.gov.mt/wp-content/uploads/2021/10/LCDS-Vision.pdf

159. Climate Action Act (CAP. 543) [Internet]. 2015. Available from: https://legislation.mt/eli/cap/543/eng/pdf

160. World Health Organization. Food safety [Internet]. 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/food-safety

161. Food Safety Act (CAP. 449) [Internet]. 2002. Available from: https://legislation.mt/eli/cap/449/eng/pdf

162. World Health Organization. Radon [Internet]. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/radon-and-health

163. World Health Organization. Ionizing radiation and health effects [Internet]. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/ionizing-radiation-and-health-effects

164. World Health Organization. Electromagnetic fields and public health: mobile phones [Internet]. 2014. Available from: https://www.who.int/news-room/fact-sheets/detail/electromagnetic-fields-and-public-health-mobile-phones

165. Straif K, Baan R, Grosse Y, Secretan B, El Ghissassi F, Bouvard V, et al. Carcinogenicity of shift-work, painting, and fire-fighting. Vol. 8, The Lancet. Oncology. England; 2007. p. 1065–6.

166. Stevens RG, Brainard GC, Blask DE, Lockley SW, Motta ME. Breast cancer and circadian disruption from electric lighting in the modern world. CA Cancer J Clin. 2014;64(3):207–18.

167. Stevens RG, Brainard GC, Blask DE, Lockley SW, Motta ME. Adverse health effects of nighttime lighting: comments on American Medical Association policy statement. Am J Prev Med. 2013 Sep;45(3):343–6.

168. Fonken LK, Nelson RJ. The effects of light at night on circadian clocks and metabolism. Endocr Rev. 2014 Aug;35(4):648–70.

169. Environment & Resources Authority (ERA) and Planning Authority (PA). Guidelines for the Reduction of Light Pollution in the Maltese Islands [Internet]. 2020. Available from: https://era.org.mt/wp-content/uploads/2020/06/Guidelines-for-the-Reduction-of-Light-Pollution-in-the-MI-PC-Draft.pdf

170. World Health Organization. Noise [Internet]. 2010. Available from: https://www.who.int/europe/news-room/fact-sheets/item/noise

171. World Health Organization. Environmental Noise Guidelines for the European Region [Internet]. Copenhagen; 2018. Available from: https://iris.who.int/bitstream/handle/10665/279952/9789289053563-eng.pdf?sequence=1

172. Directive 2002/49/EC [Internet]. Directive (EU) 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise; 2002. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002L0049

173. European Environment Agency. Malta noise fact sheet 2021 [Internet]. 2022. Available from: https://www.eea.europa.eu/themes/human/noise/noise-fact-sheets/noise-country-fact-sheets-2021/malta-noise-fact-sheet-2021

174. Noise Action Plan Malta Agglomeration (2019 – 2024) [Internet]. 2023. Available from: https://era.org.mt/wp-content/uploads/2023/12/Noise-Action-Plan-Agglomeration-Interactive.pdf

175. Cefai C, Spiteri R, Galea N. Spaces and places for children and young people living in Gozo. In: Perspettivi A Gozo Review Issue 2. Victoria: Gozo Regional Development Authority; 2023.

176. World Health Organization. Urban health [Internet]. 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/urban-health

177. Moreno C, Allam Z, Chabaud D, Gall C, Pratlong F. Introducing the "15-Minute City": Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. Vol. 4, Smart Cities. 2021. p. 93–111.

178. Solid waste. In: Compendium of WHO and other UN guidance on health and environment. Geneva: World Health Organization; 2021.

179. Long Term Waste Management Plan 2021-2030 [Internet]. 2021. Available from: https://era.org.mt/wp-content/uploads/2022/02/Long-Term-Waste-Management-Plan-v1.4.3-Spreads-Digital-Version.pdf

180. World Health Organization. Sanitation [Internet]. 2024. Available from: https://www.who.int/news-room/fact-sheets/detail/sanitation

181. World Health Organization. Drinking water [Internet]. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/drinking-water

182. Hartfiel L, Soupir M, Kanwar RS. Malta's Water Scarcity Challenges: Past, Present, and Future Mitigation Strategies for Sustainable Water Supplies. Vol. 12, Sustainability. 2020.

183. Directive (EU) 2020/2184 [Internet]. Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast); 2020. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020L2184

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