IFMSA Policy Proposal
[Non-Communicable Diseases]

Proposed by [Team of Officials]
Presented to the IFMSA 71st General Assembly March Meeting 2022.

Policy Commission

- **[NMO Representative 1 – Salman Khan - MSAI India]**
- **[NMO Representative 2 – Mikołaj Patalong - IFMSA Poland]**
- **[Mohamed Eissa - IFMSA Liaison Officer for Public Health Issues]**

Policy Small Working Group

- **Fatima Elbasri Abuelgasim Mohammed - MedSIN Sudan - SWG coordinator**
- **Omar Hesham Mohamed Sardina - IFMSA Egypt**
- **Yahan Xu - AMSA Australia**
- **Anika Zainab - IFMSA Pakistan**
- **Żaneta Zawadzka - IFMSA Poland**

[lph@ifmsa.org]

Policy Statement

Introduction:
Non-communicable diseases (NCDs) refer to a group of slowly-progressing chronic conditions that are characterized by a high burden of long-term morbidity and mortality globally. NCDs affect all spheres of life, including social, financial, physical and mental ones. Their high morbidity, mortality and disability rates have historically been more prevalent in high-income countries. However, the rates are progressively increasing in low- and middle-income countries as well, therefore representing a source of significant global disease burden.
NCDs constitute a top public health priority and require the development of comprehensive and invasive interventions. Lack of funding, unequal distribution of resources, inadequate health awareness and conflicts of interest with various private entities are some of the barriers to curb NCDs worldwide. There is an urgent need to mobilize policymakers and communities to join forces and work towards prevention, management and treatment of NCDs. If no meaningful actions are implemented, the global community would risk falling behind in terms of achieving non-communicable diseases targets within the Sustainable Development Goals Agenda 2030

IFMSA position:
The International Federation of Medical Students' Associations affirms the urgent need for continued dialogue, commitment, and implementation of strategies which address the rising health burden caused by non-communicable diseases worldwide. The unmet targets set in the Sustainable Development Goals necessitate a rapid response from all stakeholders to curb the adverse health impact of NCDs. Different sectors must be included as trans-actional strategies are key for managing effective and efficient advocacy strategies, surveillance and control programs. Moreover, IFMSA believes in the utmost importance of placing the youth as a key stakeholder at the center of NCDs global action and decision making.

Call to Action:
The IFMSA calls on

Governments, to:

- Recognize NCDs' prevalence in contemporary societies and its multilayered impact on public health as a pressing public health emergency to be addressed through creation and execution of continuous and people-oriented trans-sectional strategies, leading to the implementation of effective control and surveillance programs.
- Implement policies that support the provision of equitable access to basic human rights to the entire population based on the social determinants of health and non-communicable diseases
- Establish efficient and effective national strategies, with the inclusion of the different stakeholders and sectors to mitigate NCDs during health emergencies, pandemics, and humanitarian crises and follow the UNHCR program recycle in responding to NCDs during humanitarian emergencies
- Implement a Health in All Policies approach when managing the different NCDs strategies.
- Implement long-term strategies to reduce the harmful effect of tobacco, alcohol, and recreational drugs, including but not limited to:
    - Increasing taxation, and implementation of clear restrictions and regulations on the selling of tobacco, alcohol, recreational drugs, and new products like e-cigarettes.
    - Funding public programs for people living with addiction to tobacco, alcohol, or recreational drugs.
    - Promoting research to identify effective methodologies and tools that would contribute to minimizing underage substance use.

    - Establishment of no-smoking zones in public places.
    - Increasing primordial prevention actions, by raising awareness for children in primary schools about the negative effects of tobacco, alcohol, and recreational drugs.
- Provide ample funding to campaigns aimed at raising the public awareness of the leading causes and complications of the NCDs, and advocating for healthy lifestyles.
- Ensure quality training of healthcare professionals by including a holistic approach in addressing the NCDs.
- Establish international collaborations between countries and regions to address NCDs as a global health issue.
- Understand the impact of the NCDs on underprivileged and vulnerable populations and develop strategies to tackle it specifically.

Private sector companies to

1. Develop consistent and easily comprehensible certifications indicating the overall nutritional benefit of food and beverage products.
2. Conform to all the relevant public health regulations and food safety standards throughout production and marketing goods
3. Ensure that the research aimed at evaluating food safety standards is guaranteed to be an independent and unbiased scientific process

Universities and other medical education providers to:

1. Incorporate topics concerning the evidence-based approach to NCDs from a perspective of healthcare professionals through providing a holistic approach in the medical curriculum, including deeper understanding of socioeconomic factors at play
2. Involve youth, through their representation in the form of Youth and Student Organizations, in planning, executing and evaluating NCDs educational strategies.
3. Expand the medical curriculum to introduce NCDs through an intersectoral lens

Healthcare professionals to

1. Increase efforts to further encourage the general public to adopt healthy lifestyle choices to reduce the individual and population risk of NCDs
2. Include relevant information concerning environmental risk factors that lead to the development and poor outcomes of NCDs when providing medical advice to patients
3. Consider the individualized social, economic and environmental risk factors of the patient and use this in consideration of assessment, diagnosis and management plans
4. Provide leadership and guidance to health-related activities and healthy lifestyle campaigns among the general public.

IFMSA National Member Organizations (NMOs) and medical students to

1. Raise awareness among their peers about NCDs as a global health issue beside them being chronic diseases.
2. Create impactful activities focused on prevention, diagnosis and treatment of non-communicable diseases to boost community awareness
3. Advocate NCDs prevention and promotion among community members
4. Increase advocacy efforts on implementing trans-sectoral actions to address NCDs among decision makers and ensure the inclusion of youth organizations in the decision-making process.

POSITION PAPER

Background information:
Non-communicable diseases (NCDs) are a group of diseases that can't be transmitted between individuals and tend to occur due to multifactorial causes, including genetic, behavioral, environmental and physiological factors. NCDs can affect people of any age, with the older population being the most susceptible group. NCDs account for more than 71% of all global deaths, with 15 million patients between 30 and 69 years succumbing to a chronic disease every year. 77% of those deaths occur in low- and middle-income countries. Among all NCDs, cardiovascular diseases, diabetes, cancer and chronic respiratory diseases are the four most prevalent (1).

- Cardiovascular diseases

Cardiovascular diseases account for 17.9 million deaths per year, making it the most lethal NCD and the leading cause of death globally. In 2019, out of 17 million premature deaths (less than 70 years old) were reported due to NCDs and 38% of them were due to CVDs. Cardiovascular diseases embody a group of heart and blood vessels diseases which includes but not limited to coronary heart disease, cerebrovascular disease, peripheral arterial disease, rheumatic heart disease, congenital heart disease, hypertensive heart disease, deep vein thrombosis and pulmonary embolism. (2)

- Cancers

In 2018, cancer was responsible for one in six deaths, making it the second most common cause of death worldwide. The most common types of cancer vary between males and females, with lung, prostate and colorectal cancers the most common among males, and breast, colorectal, lung and cervical cancers the most common among females. (3)

- Diabetes

It is a chronic, metabolic disease that, if not controlled, can lead to blood vessel damage that often results in serious cardiac, retinal and renal complications. More than 442 million people globally have diabetes, with the majority of cases present in low and middle-income countries. (4) Approximately 1.5 million deaths are induced by diabetes and its complications every year. (5)

- Chronic respiratory diseases (CRDs)

The most common CRDs are chronic obstructive pulmonary disease (COPD), asthma, occupational lung diseases and pulmonary hypertension. In a global perspective, there are more than 235 million people suffering from asthma and more than 3 million people die every year due to COPD, which accounts for more than 6% of the global deaths, with 90% of these COPD deaths occurring in low and middle income countries. (6)

Discussion:

Determinants of NCDs:
Biological/ genetic factors
Many factors contribute to the development of NCDs and some of them, including genetic determinants, are classified as non-modifiable. One or more genetic mutations can lead to an increased predisposition to a certain disease or a group of diseases. Identifying the genes responsible for the onset and/or negative response to treatment for NCDs can play a key role in improving both prevention and treatment. (7) Among the biological factors with proven connection to the non-communicable diseases epidemiology are obesity and being overweight, dyslipidemia, hyper-insulinaemia, and hypertension.(8) The highly heritable NCDs (for which genetic background is well-known) include certain types of cancer, CVDs, diabetes, obesity, hypertension, chronic lung dysfunction, and other NCDs. More comprehensive research is still needed concerning the genetic determinants of NCDs, including further analysis of specific information on how ethnicity and regional factors influence the individual risk. Moreover, the effort should be focused on NCDs with the highest morbidity, heritability and health burden within each country and region.(9)

Social, Economic and Political Determinants

Individuals of low economic status and those otherwise subjected to social stigmatization or ostracism are more exposed to NCDs regardless of where they live. They are also more likely to face many of the risk factors of these diseases. Their position within modern society is connected with education, occupation, income, gender and ethnicity. For example, it was found that among men and women with the least education in Singapore, physical inactivity, daily smoking and regular alcohol consumption was the highest. Research in the United States has shown that additional four years of schooling correlates with a decreased risk of heart disease and diabetes.(10)

NCDs are a crucial problem in urban areas due to the rapid development of these environments. Oftentimes, governments fail to meet inhabitants' needs of infrastructure and basic services, due to several factors including but not limited to lack of available funding and/or resulting from the preference given to developing economic policies. In addition, NCDs have become a prevailing issue within public health, especially for low- and middle-income countries (LMICs), since 80% of deaths related to NCDs worldwide take place there. On one hand, an increasing number of NCDs cases in LMICs is correlated with socio-economic development, which itself is connected to a rise in behavioral risk factors, among them harmful alcohol consumption, tobacco smoking, unhealthy diets and physical inactivity. On the other hand, it can lead to the inhibition of socioeconomic development because of its negative impact on the productivity of working age populations but also due to the way it affects health systems burdened by infectious, maternal and perinatal diseases. It is important to prepare and apply solutions which will include the economic context of LMICs and be highly cost-effective, cheap, feasible and culturally acceptable. (10)

NCDs Vulnerabilities

Factors increasing the vulnerability to NCDs

Numerous factors contribute to the increased individual vulnerability to NCDs. Apart from lifestyle choices (like smoking, alcohol consumption, and physical inactivity) and biological predispositions, some groups are more susceptible to being diagnosed with certain NCDs compared to others due to their sex, gender, sexual orientation, age, identification as an Indigenous individual or others. As of now, there is often a significant lack of research in areas such as how gender affects the vulnerabilities to NCDs.(11)

Vulnerabilities increased by NCDs

Some NCDs can increase the vulnerability of the individual to other NCDs. For example, diabetes affects small vessels of the body and can lead to other NCDs like cardiovascular disease, retinopathy, nephropathy, and erectile dysfunction. Many NCDs are chronic in nature and are rarely naturally resolved or cured. Having NCDs often makes people vulnerable to mental illnesses, like depression and anxiety, especially when the NCD have affected their family life, jobs, and social life.(11)

Vulnerable groups to NCDs

Some studies have shown that differences between the sexes tend to make them more vulnerable to different NCDs. A study done in China highlighted that men, who are more likely to report smoking and drinking, have higher risks of chronic lung disease and stroke. Women, on the other hand, are more likely to have arthritis, cancer, diabetes, and heart disease.(12)

The risk factors associated with self-identifying as a part of sexual or gender minorities are significantly underresearched. Due to societal stigma, widespread discrimination, and a lack of support, transgender, gender diverse and non-binary individuals often are susceptible to poorer mental health outcomes compared to the general population, having a higher rate of suicidal ideation and mental distress.(13) They are more likely to experience alcoholism, to smoke, use recreational drugs, and have unhealthy dietary practices. Additionally, due to societal exclusion and workplace discrimination, they are less likely to go out and exercise and more likely to be unemployed or underemployed. These factors combined make them more vulnerable to NCDs.(14)

Indigenous populations are often more vulnerable to NCDs compared to the general populations. Indigenous populations, even in developed countries like the US, Canada, and Australia, are likely to be extremely underprivileged. Their migration to urban centers often poses many challenges, including

underemployment, financial difficulties, low education rate, low access to nutritious foods, high prevalence of alcohol and tobacco usage, which makes them more vulnerable to NCDs. (15). In Australia, among Aboriginals and Torres Strait Islanders, NCDs including diabetes, cardiovascular diseases, renal disease, and obesity are highly prevalent and prominent risk factors contributing to increased mortality and thus reduced life expectancy as well.(16)

Childhood NCDs are also a leading cause of death among people younger than 15 years old. Some of the NCDs that children are extremely vulnerable to include:

- Cardiovascular disease (eg. congenital heart disease, rheumatic heart disease (RHD), pediatric stroke). NCD Child estimates that every year 15 million children die or attain disability due to treatable or preventable heart disease in developing countries.
- Cancer: The most common types are leukemia, brain cancer, and kidney cancer
- Chronic respiratory disease (eg.asthma)(17)
- Diabetes: Type 1 diabetes, also known as juvenile diabetes, are usually diagnosed during childhood or adolescence (18)

NCDs in Health and Humanitarian Crises:

Humanitarian crises have been increasing due to ongoing conflicts, climate change, and outbreaks of emerging infectious diseases. Levels of these adverse events range from emerging crises (essential healthcare services may or may not be available), to acute crises (basic needs where healthcare services are not available), chronic crises (low coverage of essential needs, a return to an acute crisis is possible), and post-crisis (essential needs are covered by structures with fragile viability) (19). The increase will lead to further health inequities in terms of access to healthcare services, including those related to NCDs. The health and quality of life of people with NCDs, especially the elderly, may be significantly worsened by the impact of these emergencies. These complications can be as a result of:

- Physical injuries: direct traumatic injuries can worsen the general state of patients with NCDs, aggravate acute cardiovascular events, exacerbate both of chronic respiratory disease and diabetes.
- Displacement: Inaccessibility of healthcare services, including medications, and supportive devices.
- Deterioration of basic living conditions: lack of water, food, income and loss of shelter.
- Dysregulation of healthcare: Damage caused to healthcare infrastructure leads to long-term inaccessibility of medical supplies, inability to access health-care providers who have been killed, injured, displaced or are otherwise unable to return to work. Furthermore, interruption of power or safe water, can result in life-threatening complications, especially for people with end-stage renal failure needing dialysis (20).

According to UNHCR, the humanitarian program cycle is used to respond to NCDs during humanitarian crises. It is composed of five steps: needs assessment and analysis, response planning, resources mobilization, implementation, monitoring and evaluation(20).

1. **The needs assessment:**

The needs assessment should include the demographic characteristics of the affected population, NCDs burden, health system infrastructure and NCDs servi*ce availability, delivery, the accessibility to health services and the related barriers, e*stablished national NCDs guidelines and essential drug lists, NCDs medicines and supplies procurement and supply systems, patient records, registers, health information system, and actors involved in care (local and international) (20).

2. **Response planning:**

The response planning includes identifying the gap in NCDs management and available resources, then the NCDs intervention should be implemented to strengthen the health systems. According to the UNHCR the following NCDs are prioritized during health emergencies: cardiovascular diseases, hypertension, asthma, chronic obstructive lung diseases, diabetes mellitus (DM) and epilepsy. The WHO prioritizes cardiovascular diseases, cancers, diabetes and chronic respiratory diseases in general,

regardless of their importance in humanitarian settings where, however, flexibility is applied to choose which disease should be prioritized. Moreover, the prioritized NCDs depend on the resources availability, risk factors and complications (20).

3. **Implementation and organization of care:**

NCDs care should be implemented within health systems primary health care, ideally within the existing national structure. Follow-up care should be provided with variations in the frequency according to the disease stage, risks, complications and treatment. Patients' follow-up during humanitarian crises is difficult to carry out, mainly due to unpredicted numbers of patients admitted to the healthcare centers.. This can be organized through a simple paper-based system or an electronic system, provided there is high accessibility to electronic devices. Due to the nature of the NCDs, the consultation time usually is prolonged. The form of the consultations depend on the caseload and the capacity of the clinic, either through dedicating separate hours for NCDs or through integrating NCDs follow-up care to the routine outpatients department (OPD). Moreover, NCDs care can be integrated into mobile clinics and outreach programs (20).

4. **Resources mobilization:**

Although the funding for NCDs care in humanitarian settings should be included in the budget of any health interventions, the availability of financial provisions for short-term projects may be problematic. Regular needs assessment should be performed to modify the budget and cooperation with various stakeholders is necessary to ensure the effectiveness and efficiency of all actions. The prioritized diseases should also be given high priority in terms of funding availability (20).

5. **Monitoring and evaluation:**

There are four indicators to monitor the quality of NCDs healthcare services: the percentage of primary healthcare facilities providing care for the prioritized NCDs, the number of days essential medicines for NCDs were not available in the past 30 days, the number of days for which basic equipment for NCDs was not available (or not functional) in the past 30 days and the percentage of trained healthcare workers in NCD management who can provide NCDs treatment (20).

COVID-19 and NCDs:

The COVID-19 pandemic has been causing a significant impact on people living with NCDs. NCDs patients need to continually assess their risk of COVID-19 infection, evaluate the available methods of transmission prevention, adhere to current medical and preventive guidelines as well as seek medical care as soon as first symptoms appear, in addition to complying with medical advice to control their NCDs. Apart from that, it is highly recommended to people living with NCDs, their caregivers, families and the general public to maintain their health through a balanced diet, avoiding tobacco and alcohol, maintaining regular physical exercise, reception of all compulsory and recommended vaccines, mental well-being, practicing good hygiene with regular health check-ups. It is advised for healthcare givers and program managers to develop a triage and an algorithm-based system, which will help with identifying the risk of COVID-19 infection, classifying the current and proposed severity of the disease, thus leading to early infection chain breaking and delivering best treatment available. Furthermore, COVID-19 pandemic has resulted in the dysregulation of healthcare services, in addition to the global disruption of the medicine supply chain. The situation in low-resource countries is largely determined by the fragile health system that faces a double burden of COVID-19 and NCDs (21).

NCDs and SDGs:

On 25th September 2015, the United Nations agreed on a set of 17 goals and 169 targets to put the world on a road for sustainable development in all areas, to be fulfilled by 2030. The goals and targets are creating an extremely ambitious and transformation framework to trigger action in areas of supreme importance for nature and humanity that includes the planet, people, prosperity, harmony and unity. (26)

The new goals and targets were implemented on 1 January 2016, creating an opportunity for all countries and citizens of the world to come together and take revolutionary and well-marked steps to transform the world on to a sustainable and resilient course, that aims to improve human lives from all corners of the globe, in a way that no one is left out. For the achievement of all goals, it is absolutely necessary for everyone to play their role: governments, the private sector, academia, civil society and all global citizens. (22)

SDG 3: Ensure Healthy Lives and Promote. Well-Being for All at All Ages

One example of NCDs prevention strategies lies in understanding that the food industry has a key role in promoting healthy food choices and eating habits among all social groups. In order to achieve this vision, long-term commitment is required from the companies that constitute this branch of the economy. Meaningful cooperation with these actors may lead to the provision of healthy food choices, improving the nutritional quality of the food available, offering affordable beverages and adopting advertising ways and practices in a responsible and socially-conscious manner. It is also essential for governments to implement laws and regulations which aim to ensure that the food industry is only supplying food that is non-toxic, safe, nutritious and environmentally sustainable. (22)

WHO and UN agencies are collaborating to make policies and strategies to decrease the risk of NCDs globally. It is essential to monitor NCDs and analyze their progress at local, national, regional and global levels. These organizations can help to create research opportunities and collaborative projects among national and international entities. Tobacco smoking is one of the main risk factors for developing NCDs and therefore, stakeholders such as WHO can also, by law, safeguard tobacco control policies from the commercial benefits of the tobacco industry. (22)

All governments, according to their countries' economies, need to devise a plan at the country level. There are several cost-effective and efficient ways available to control and prevent NCDs. There should be appropriate allocation of funds to improve primary health care systems so that health services can be provided to all citizens. To attain extensive development, partnership between governments and various non-governmental organizations, universities and schools, to offer advice on lifestyle modifications and to raise awareness about NCDs, is highly recommended. (22)

To attain long term NCDs prevention and management, it is essential to encourage individuals and families to adopt healthy lifestyle and improve health outcomes. (22)

SDG 1: End Poverty in All its Forms Everywhere and SDG 2: End Hunger, Achieve Food Security and Improved Nutrition, and Promote Sustainable Agriculture

In mainstream discussion, ignoring the relationship between hunger and NCDs has serious consequences, especially when the focus of a number of NCDs prevention campaigns is mainly directed towards eating less. A moral problem arises when we only link chronic illnesses with inactivity and excess eating, the lifestyle of poverty and hunger should not be ignored in the context of NCDs. Highlighting the relationship between NCDs and deprivation can ensure advocacy for adequate and balanced food for all. (22)

One of the key risk factors for NCDs is malnutrition. Nearly one in three people is suffering from at least one form of malnutrition and the current data shows that this will reach one in two by 2025. Malnourishment includes nutritional disorders caused by deficiency in the intake of nutrients or energy, such as wasting, stunted growth and various micronutrient deficiencies. It also includes overconsumption and imbalanced intake of food that leads to obesity, overweight and NCDs in later years of life. (22)

There are several ways to tackle various forms of malnutrition. For example, introduction of school nutrition programs can ensure that children have access to a variety of meals and foods needed for their healthy growth and development, while reducing their exposure to unhealthy food and lifestyle choices. This will lead to achieving broader developmental goals. For example, Brazil implemented nutrition standards for school food that directs the institute to spend 30% of the school food budget on buying organic food from local farmers. (22)

The interrelated nature of NCDs and sustainable human development has an association with social, environment and economic progression. Production of sustainable agriculture would mean healthier food, less hunger and a decreased risk of NCDs. (22)

NCDs and health systems:
It is very important to acknowledge the fact that health systems with its people and organizations can do a lot through the 6 building blocks of health systems , in order to achieve better outcomes in the prevention, diagnosis and treatment of NCDs.

1. **Access to Medical technologies**

Development is vital for countries to adequately handle the growing NCDs issue. Much of the developed-world models will result in monetarily unsustainable programmes or programmes that lack the necessary human resources. It has been shown the transformative power of innovation and its crucial variables for its application. Beyond pilot completion, getting from 'seed to scale' is the harder issue. Medical technology is important, but it isn't enough; enthusiastic and motivated leaders and societies, aided by informed policymakers and financial agencies, are critical, in order to implement potential solution to assist, and management technologies to address the increasing burden of NCDs such as creating a databank of innovations for tackling the increasing burden of diseases arising from NCDs, forming platforms for innovators to collaborate with each other, funders and policy makers, in addition to encouraging the NCD management innovators in transforming from SEED to SCALE, which is a theory of social transformation proposes that altering how individuals use their energy is the most available and sustainable strategy to scaling up successful pilots and finally creating sustainable business models (23)

2. **Leadership and governance**

Individuals, institutions, and activities make up health systems. They need leadership and guidance to set policy and vision, and the resources for the implementation of the community they lead. They need relevant evidence to choose better health programs and strategies, as well as an efficient system that provides continuous monitoring. They also need systems for interacting with communities, not just to stay attentive to healthcare needs, but also to make it easier for societies to decide and participate fully in health promotion and management. With the rising prevalence of NCDs, the role of communities as an integral part of health systems has become increasingly significant. (24)

3. **Health Workforce**

NCD prevention and management provide a platform for intersectoral partnership, through "health in all policies" like tobacco control. To start, the necessary shift from acute infectious disease care to chronic disease care necessitates a reorientation of health systems, with human resources serving as a key lever. Human resources can be strategically exploited in the context of NCD management in a similar way to refocus systems toward chronic care in general. (25)

Human resources are the most strategic of all the resources that go into the healthcare system, including monetary, physical, technological, and human resources/aspects. They can affect change in this country either singly or in combination. For example, decentralization of authority from various high levels of government to lower levels of government, can improve accountability. Improved performance can be

obtained by maintaining a well-funded health system and establishing innovative delivery systems. These metrics become potential avenues to health system transformation as health systems are readjusted to control NCDs. (25)

In conclusion, human resources for health are critical for normalizing changes in the health care systems as well as the larger social system that impacts population health. Emerging objectives in the post-2015 landscape provide a chance to fully utilize the health-related potential of the human resources.(25)

4. **Health Financing**

Since 2000, the percentage of 'development aid for health' allocated to NCDs has been consistent at 1–2% of total. This quantity of money would not be enough to meet the nine goals set out in the WHO's Global Action Plan on NCDs. 193 countries endorsed the Sustainability Objectives in 2015, which include a target of eliminating premature NCD mortality by a third. While this pledge is positive, it also highlights the significance of domestic financing, which is currently dominated by out-of-pocket payments in LMICs. The epidemic of NCDs is also taking a toll on worldwide budgets. (26)

Fortunately, eliminating NCDs is rather inexpensive when compared to the expenditures induced by doing nothing. LMICs will need to use a variety of finance sources to maintain their political commitments to lessen the burden of NCDs. The specific mix of both the sources described below will be determined by political interests, budgetary capability, domestic illness burden, and the nature of current international donor ties.(26)

The Addis Ababa Pact created the framework for a global development agenda that places a greater emphasis on domestic financial responsibility. The quantity of external assistance required to stimulate NCD delivery of services is the next issue, backed by the most acceptable financial sources. (26)

As they shift to financing arrangements that rely primarily on local pre-pooling, LMICs will just have to manage an increasingly complex portfolio of funding sources. With monetary support and technical aid, traditional and developing benefactors can narrow the gap. If they succeed, the level of foreign aid targeted for NCDs may legitimately stay low; but the gap between financing and the global prevalence of diseases is less justifiable in the short run. (26)

The Sustainable Development Agenda is not a justification for wealthy countries to fail to meet their pledges to spend 0.7 percent of their GDP on foreign assistance. Nonetheless, even as resource-poor nations seek for more international help, they should start planning for a future distinguished by an increasing NCDs burden and an increasing worldwide focus on domestic investment. The ability of low-resource countries to mitigate more complicated mixtures of financing streams will be critical to the global NCDs response's viability. (26)

NCDs funding will be sustainable in the long run if domestic & global authorities emphasize NCDs prevention and control. To keep the government insurance systems afloat and secure future funding, LMIC governments will need to legalize their economies, expand their revenue base, and enhance the functioning of their revenue collecting agencies.(26)

5. **Health Information Systems**

It's been shown that information and communication technology (ICT) is advantageous since it has made it much easier to access health-related information. Due to its cost-effectiveness in illness prevention, the use of ICT in public health and management is becoming incredibly common. ICT is employed in health surveillance for both communicable and non-communicable diseases, according to evidence. ICT combined with surveillance tools can help people increase their physical activity (PA) and lose weight. Despite its importance of positive lifestyle behavior in chronic illness protection, few people follow it, and research has shown us that web-based treatments are effective in changing behavior. ICT is a term referring to technology that allows users to access information and communicate using a variety of communication tools. Internet, cell phones, laptops, and websites, all of them come under the category of ICT. (27)

The use of ICT in disease prevention and management is on the rise. In psychotherapy intervention, management and control of medical disorders such as hypertension, HIV and other highly contagious diseases, diabetes treatment, tobacco cessation, asthma treatment, weight reduction, ICT applications are employed. In addition, ICT applications have been utilized to recruit research groups. (27)

6. **Health Service delivery**

NCDs are predicted to cause $7 trillion in worldwide economic losses within the next 15 years. Although there is no universally accepted definition of healthcare provision, the fundamental objective is to improve healthcare outcomes, patient satisfaction, and high efficiency. Person-centeredness, and a decrease of obstacles to healthy lifestyles are all values of healthcare provision. These are all hallmarks of a very well primary care system.(24)

While NCDs are a growing issue in all regions of the world, they disproportionately impact LMICs, which account for over 80% of worldwide NCDs deaths. This is due to a variety of reasons, such as that many LMICs are still dealing with communicable illness prevention and control. This is exacerbated by the fact that health competes with other essential development objectives, including poverty alleviation, educational access, gender equality, infrastructural development, and protection of the environment. In many LMICs, the wider environmental, political, social, and economic settings are frequently hostile to wellness behaviors. (24)

Healthcare systems in LMICs frequently lack enough resources and are therefore not suited to manage serious diseases, putting a financial pressure on families, families, regions, and the economy. Current health-care use models rely on recurrent serial visits, which are intended for acute disorders but are economically unfeasible in the management of diseases. (24)

Community organizations and systems should be particularly placed to support health care facilities and respond rapidly to public needs, given the growing need for continuing care essential for patients with chronic diseases.(24)

NCDs and UHC:

Universal health coverage (UHC) is defined as when: “all people have access, without discrimination, to nationally determined sets of the needed promotive, preventive, curative, rehabilitative and palliative essential health services, and essential, safe, affordable, effective, quality and accessible medicines and vaccines, while ensuring that the use of these services does not expose the users to financial hardship, with a special emphasis on the poor, vulnerable, and marginalized segments of the population.”(29)

Every country, despite its political or economic condition, deals with challenges in providing their population with Universal Health Coverage. The rise in the prevalence of NCDs is one of the key challenges. Without a collaborative effort, attaining the global demands to broaden UHC service coverage is improbable. To form a united strategy for the effective NCDs service delivery, a strategic roundtable on strengthening NCDs was called on 14-15 July, 2020. The Roundtable consisted of health experts from Ministries of Health, the World Health Organization and other partners to analyze and work on schemes to prioritize prevention of NCDs in health benefit packages. This provided a pathway for all countries to work on a common goal of addressing NCDs. Cost and access have always been a barrier for most countries to provide all fundamental health services to their whole populations. Hence, abiding by the principles of equity, justice, efficiency and monetary protection can provide extensive coverage and prioritize health services for the general public. The process of nationwide prioritization given to health benefit packages is complicated and requires shared effort. The roundtable also discussed the ongoing plight of COVID-19 pandemic that has both intensified and emphasized on the significance and urgency of tackling NCDs in UHC.(29)

Attaining UHC is one of the keystones of the SDG agenda. SDG target 3.8 states that to “achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality, and affordable essential medicines and vaccines for all.” There is an utmost need to make NCDs and mental health conditions, major components of UHC and accessible health services for all. Doing so, the inclusion of all of them in the Global NCD Action Plan 2013-2020, and the WHO Independent High-Level Commission on NCDs, and the agenda for Building Back Better post-COVID-19 is essential. Regulation on access to NCD services is lagging. There has been a wide gap observed in coverage in health services when countries have tried to implement UHC for NCDs services. Coordinated efforts are required to reinforce health systems’ capacity to facilitate and treat people suffering from NCDs. (29)

NCDs deserve attention from all spheres of health-related forums and governments of various countries should extend coverage for health promotion and NCDs management and prevention in order to firmly establish the place of NCDs within the UHC agenda. Priority and inclusivity of comprehensive, accessible and cost-effective NCDs interventions are much needed in every country. In 2019, the Political declaration on UHC called governments devoted to “progressively cover 1 billion additional people by 2023 with essential health services and affordable essential medicines, by 2023.” The fulfillment of this commitment requires incorporating and extending coverage for NCDs management and prevention. (29)

NCDs and Health in All Policies:

Health in all policies aims to bring multiple sectors together to one table for the sake of implementing intersectoral actions through policies. Health is not the only agenda but there are other benefits for the other sectors as well. The importance of integrating NCDs into health policies was raised when the WHO recommended (NCDs best buy). One of the best implications for NCDs in health in all policies is the tobacco control strategy. Adopting the HiAP for NCDs was at the UN High-Level Meeting on NCDs in New York in October 2011. HiAP can be applied to NCD prevention and control in three pillars: risk factors, population groups, and sectors. There are many policies in diverse countries about nutrition (like labeling of ingredients), alcohol (blood alcohol limits for drivers, banning of advertising, limited hours for bars) and economic policies that promote the accessibility to healthy food. Protecting children through setting policies to control the advertising of tobacco, unhealthy food and alcohol is a priority for NCDs prevention. The global experiences show diverse tools being used to implement the HiAP approach. Notably, these include (European Observatory on Health Systems and Policies 2006, Government of South Australia 2010; Shankardass et al. 2011; McQueen et al. 2012):

- Governance structures (like inter-ministerial and interdepartmental committees, partnership forums, shared budgets and accounting): the European case studies found that these structures are used in different roles including to build strong evidence, advocacy, setting policy goals and indicators, policy guidance and implementation. Furthermore, it is important for negotiating financial support, legal commitments, supervising implementation programs and ensuring proper monitoring and evaluation. Additionally, it is important to apply a participatory approach through positively engaging non-state actors like civil society and private sector organizations.
- Joint activities, workforce, information and evaluation systems, community consultations and integrated reporting.
- Analytical tools like health lens and impact assessment. (30)

NCDs and Healthy lifestyles:

NCDs and Tobacco consumption

In terms of evidence, studies and statistics for 2012 says that 21% of the global population from the age of 15 and above are active smokers, meanwhile nearly 80% of them are middle and low income. The ratio of smoking incidence between men and women is 5 to 1. (31)

Poor health outcomes and several diseases are associated with behavioral risk factors that smoking is part of. Those diseases include cancer, heart diseases, diabetes, strokes and lung diseases which can

be Chronic Obstructive Pulmonary Diseases(COPD), Bronchitis or emphysema. It also precipitate as a risk factor for many diseases such as Eye disorders, erectile dysfunction for males, tuberculosis and immune diseases.(32)

The Framework Convention on Tobacco Control (FCTC) was adopted by the World Health Assembly in 2003. It has become one of the most widely embraced treaties in the history of the United Nations, with 180 Parties covering nearly 90% of the world's population. The following measurements were most implemented by FCTC parties: Protection from exposure to tobacco smoke (Article 8) Sales to and by minors (Article 16) Packaging and labeling of tobacco products (Article 11) Education, communication, training and public awareness (Article 12). (33)

Many countries are going through a transitional phase for tobacco control. To control tobacco use, WHO Member States negotiated the WHO Framework Convention on Tobacco Control (WHO FCTC) and adopted it in 2003 by consensus, with more than 179 parties accepting its provisions, making the treaty one of the most widely recognized conventions globally. The FCTC is considered as the first international public health treaty to reduce the health and economic burden caused by tobacco – various sociopolitical factors are adversely affecting tobacco control efforts.(34)

It is important to promote and support policy-based solutions to reduce all NCDs risk factors through long-term programs, research, evidence production, and advocacy for change. This can include activities such as research and education on the ways that tobacco and NCDs can worsen poverty and the impact of implementation of best practices on health and the economy; supporting partners and communities to implement best practice interventions; monitoring and exposing tobacco and alcohol industry interference tactics, and producing materials on tobacco control and NCD prevention, including transferring lessons learned from tobacco control to NCD prevention, analyze why some populations uses tobacco more than others and how to tackle it.(35)

NCDs and physical inactivity

Recent researches and studies showed the relation between NCDs and physical inactivity, as physical inactivity contributes as a risk factor for several diseases as it estimates about 7% Type II Diabetes Mellitus (3.9% to 9.6%), 6% Coronary artery diseases (3.2% in South-east Asia to 7.8% in the Eastern Mediterranean region) and 10% breast cancer (5.6% to 14.1%)& 10% colon cancers (5.7% to 13.8%).(36)

Policies that encourage physical activity should be implemented through multi sectoral collaborations with different organizations and governments. The implementation should include the importance of the following:

- Walking, cycling and other forms of active transportation are accessible and safe for all;
- Labor and workplace policies encourage physical activity;
- Schools have safe spaces and facilities for students to spend their free time actively;
- Sports and recreation facilities provide opportunities for everyone to be physically active.(37)

NCDs and healthy diets:

Malnutrition and unhealthy diets are major risk factors for non communicable diseases around the world. Foods that are rich in fiber are considered healthy diets, as vegetables, fruits, nuts and whole grains. They are considered balanced diets as they include the micronutrients “minerals and vitamins” and the macronutrients “Fat, carbohydrates and protein.”.

Poor people in every region of the world suffer from the over price of healthy foods, as they are unaffordable. Therefore, they are highly exposed to unhealthy and processed food that affects their

health. Malnutrition, Unhealthy and processed food leads to several non communicable diseases such as obesity, cardiovascular diseases, diabetes, hypertension and cancers.(38)

Dietary guidelines have been settled by more than 100 countries to provide dietary recommendations that are science based, simple and affordable. As proper nutrition has a role in preventing diseases and health disorders, if a person is encountering a malabsorption or reduced intake for example it'll lead to a health disorder and if it was left untreated, it will end up as chronic disease or a major disorder.(39)

NCDs and environmental health

Environmental issues are accountable for 12.6 million deaths each year, two-thirds of which are associated with NCDs. Environmental risk factors such as exposure to radiation, chemicals and air pollutants (causing 2.8 million deaths), household air pollution (3.7 million deaths), and occupational risks (more than 1 million NCD deaths per year), increase the co-morbidity and mortality rates of NCDs.(40)

Household air pollution from cooking with fuels and ambient air pollution are estimated to cause 17% and 13% of cardiovascular diseases, also 3% of cardiovascular diseases are due to second-hand smoke as it's also a leading cause for lung cancer.(41)

Chemicals are surrounding us everywhere as companies waste products in air and water, consumer products we use in our daily routines. Chemicals have caused more than 1.3 million deaths from NCDs in 2016 through cardiovascular diseases, many types of cancers and chronic obstructive pulmonary disease.

Climate change and global warming has a role as being a risk factor for NCDs patients as the increase in the temperature and heat waves effects the cardiovascular and respiratory mortality and morbidity rates, It's considered to be a modifiable risk factor as action can decrease the effect of climate change hence decrease the mortality rates.(42)

NCDs and Alcohol:

Harmful alcohol consumption has been always known for its harmful effects and consequences on human bodies. In 2012 Alcohol accounted for 5.9% of global deaths and 5.1% of disability adjusted life years the male to female ratio was nearly double as man encountered 7.6% and women 4%(43)

Harmful alcohol consumption is well known for its chronic effect on the liver and its association with liver diseases such as fatty liver, alcoholic liver and cirrhosis (the most common). For every three liver transplants, one is due to alcohol abuse, .(44)

There is a strong relation between the amount of alcohol consumption and different types of cancers. Studies say that every additional 10 grams of pure alcohol per day for a female increases the relative risk by 7% for breast cancer. Also every 50grams of pure alcohol per day increases the relative risk of colorectal cancer by 10-20% and more than 100% for larynx, pharynx and esophageal cancer.

The relation between alcohol consumption and the cardiovascular system is controversial. Light to moderate drinking is thought to be protective for ischemic heart diseases, although Roerecke and Rehm found that consumption of 60 grams of pure alcohol on one occasion among the light to moderate drinkers wasn't associated with protective effects. Otherwise chronic heavy drinking is associated with adverse cardiovascular outcomes.(45)

There is a correlation between alcohol abuse and accidents, as alcohol abusers are more prone to accidents whether they are minor as falls or major and spurious accidents as road traffic accidents, drowning, poisoning. About 29% of alcohol related deaths are caused by unintentional injury.(46)

NCDs and animal health:

The correlation between people, animal products and even animals has shifted from an international trade to a break-out pandemics, epidemics and endemics. As diseases can shift from an animal to a human and vice versa. Diseases that spread from animal to human are called “Zoonotic diseases”. (47)

The cycle starts from animals that eat contaminated agricultural products whether contaminated by organisms, toxins or expired fertilizers. As a study made in Africa about mycotoxins that are present on plants and eaten by the animals, humans ingest the mycotoxin through eating the contaminated plant directly or through eating meat and dietary products of animals that used to eat the contaminated plant, with the mycotoxins acting as carcinogens for humans. (48)

NCDs Advocacy:

NCDs prevention:

NCDs preventive strategies need human collaborations on both small and large scales with NCDs management being based on addressing the risk factors that affect individuals, societies, countries and the whole globe. NCDs prevention needs concrete actions including resources mobilization, trans-sectoral collaborations, implementing innovative approaches through collaborative sharing of knowledge and experiences. The most important pillar in NCDs prevention strategy is to increase awareness among the society about lifestyle modifications and change their behaviors as well. Community awareness is an important element to influence national health policy and global health strategies as well. Moreover, new approaches should be developed to influence strong leadership (49). Globally WHO and UN agencies work collaboratively to develop strategies that reduce NCDs risk through supporting research, encouraging collaborations among academic, national and international organizations. Research about agriculture, food systems, biotechnology, besides the development of diagnostic tools with high sensitivity have a high influence on the prevention and early detection of NCDs. At the national level, each country needs to develop its own policy based on the social needs. Additionally, effective allocation of financial resources to PHC centers is needed to provide high quality health services to community members.(50).

Health promotion approach to NCDs prevention:

According to the International Union for Health Promotion and Education (IUHPE), seven actions should be implemented to address the global crisis of NCDs:

- Applying inclusive strategies for health promotion through capacitating individuals with the necessary skills to change their health besides the socioeconomic and environmental conditions which influence their health.
- Addressing the different determinants of health including economic, educational, accessibility to health services and lack of effective promotive health services.
- Prioritizing and investing in NCDs health promotion research, which would allow for the creation of better evidence-based policies, knowledge and experiences exchange.
- Multisectoral engagement to implement NCDs policies ideally.
- Investment in the health workforce for better equipment with the needed capacities and hence proper implementation of policies.
- Setting and implementing specific health promotion strategies on healthy eating, physical activity and tobacco control. This approach will lead to decreased NCDs burden globally.
- Equitable access to health services among all countries with more focus on disadvantaged groups and poor communities (51).

A life-course approach for NCDs prevention and promotion:
The main risk factors for NCDs are unhealthy diet, lack of physical activities, air pollution, tobacco consumption and harmful alcohol use. Throughout the lifecourse there are approaches in which these risk factors can be tackled to prevent further development of NCDs.

- **Preconception and prenatal care:**

Nutrition status of women during the preconception and prenatal care may influence the susceptibility of her offspring to NCDs (52). According to WHO, maintaining a healthy lifestyle including diet and physical activity before and during pregnancy prevents hypertension and gestational diabetes (52)(53). Moreover, unborn children are affected by harmful exposures to tobacco, alcohol and air pollution (54)(55). Therefore, pregnancy can play an important opportunity for health promotion in a family through eliminating tobacco and alcohol use besides air renewal to avoid pollution (51).

- **Infancy:**

According to the WHO, a person's susceptibility to develop NCDs and obesity may be influenced during fetal development and infancy, and these factors may clarify the connection between health inequalities and NCDs. Moreover, exclusive breastfeeding is an important factor to prevent NCDs (52). Public policy has an important role through supporting universal paid maternal leave, mandating workplaces to provide a suitable environment for breastfeeding mothers and restricting the uncontrolled marketing of products that compete with breastfeeding (56). During infancy, important vaccines are administered like the hepatitis B vaccine that prevents liver cancer (57). Lastly, the infant's environment should be carefully monitored to prevent exposure to harmful toxins, tobacco, alcohol, or air pollution (51).

- **Childhood:**

A healthy lifestyle including a healthy diet and physical activities are crucial elements for competent and sustainable development during childhood. Therefore, the children surrounding the environment should support this healthy development. Risk factors for NCDs can be monitored in school. These data can be utilized to create national prevention policies (58). For example, in more than 40 European countries the WHO European Childhood Obesity Surveillance Initiative collects data and prepares statistics about overweight and obesity among primary school children. Therefore high quality data are used to create policies about obesity and children's overweight issues (59)(60). Policymakers should adopt and implement national guidelines for the food and drinks available in schools, setting restrictions on unhealthy foods, mandating smoke-free childcare facilities, and ensuring that the air in schools and public recreational settings is meeting WHO indoor air quality guidelines (61).

- **Adolescence:**

Adolescents can be manipulated by marketing harmful substances such as alcohol and tobacco. Therefore, countries must strictly apply the WHO Framework Convention on Tobacco Control and deal with emerging risks such as electronic nicotine delivery systems (54).

Healthy lifestyle habits should be maintained during adolescence. Policymakers need to develop a comprehensive response to the social determinants of access to healthy food, food insecurity, unhealthy environment, and obesity among adolescents (59). Health literacy should be intensively promoted among adolescents because they will start to make their own health-related decisions. HPV vaccine administration among adolescent females is an essential component in cervical cancer prevention (62).

- **Adulthood:**

The workplace is a crucial environment to promote healthy practices like nutrition education, providing healthy food and implementing policies that prohibit the use of alcohol and tobacco (62) (63). Moreover, these policies should be implemented in other accessible settings for marginalized people like community, healthcare and rehabilitation centers. Monitoring alcohol use, tobacco consumption, physical activity and nutrition status are important indicators to build NCDs surveillance. It is also important to

consider the socioeconomic factors, demographic and geographic characteristics. The government can set policies like tax on tobacco, alcohol and sugary drinks companies (51)

- **Older people:**

After retirement, sustainable provision of healthcare services for older groups is important. Although it is important to access data about NCDs among aging populations, still many NCDs surveillance systems exclude older people. Health systems can implement promotive strategies about nutrition for old people with diet-related chronic diseases, the importance of physical activities and having a supportive surrounding (51).

Health Education

Life-long health behaviors are shaped during childhood and adolescence.That is why it is extremely important to make the core school curriculum include learning about the risks associated with tobacco, alcohol, unhealthy diet and physical inactivity which are main causes of NCDs, especially in terms of increasing exposure of children and adolescents to these determinants (64). It is also proved that health-literacy interventions help promote disease knowledge, attitude and behavior across four chronic conditions that cause the burden of NCDs. Traditional medical education curricula focus on diseases, forgetting about the prevention. A common problem is also not demonstrating the correlation between living conditions and diseases; and the social system oppressions that reflect on marginalized populations' health (65). The reasons mentioned above show the need of training our future physicians to address social determinants of health in their clinical practice by combining biomedical education with an approach that builds critical thinking.(66) To create a change in medical education, collaboration between ministries of education and ministries of health is necessary.

Role of Youth

Adolescents and youth are important stakeholders in the fight against NCDs. The WHO estimates that 70% of premature deaths in adults are the result of risk factor behaviors that began during adolescence and youth(67). In 2019 about 38.2 million children under the age of 5 years were overweight or obese. An estimated 24 million young people, aged 13-15, smoke cigarettes. Half of the mortality in people aged 5–14 years is due to NCDs and injuries. Half of all mental illnesses begin by the age of 14 and they are most common NCDs found in adolescents. Alcohol use is responsible for 5% of all deaths of young people between the ages of 15 and 29. It is estimated that in 2019 over half of the disability-affected life years (DALYs) among adolescents was due to NCDs.(68)

NCDs are considered as 'lifestyle illnesses' which leads to limited solutions to prevent NCDs among adolescents and modify their lifestyle as the youth population is thought of as healthy. On the other hand, the statistics show that they also experience an important NCDs burden. Even though policies/laws/legislations targeting NCDs risk factors among adolescents exist in many countries, their implementation and impact is limited. (69)

It is also important to target product design, advertising, marketing, sponsorship and promotion of harmful substances in the policies where the youth becomes the main group which is aimed by commercials, media and marketing. Because adolescents are one of the most literate groups in social media, this channel of communication can be an easy way to reach them with health promotion and NCDs prevention.(70)

It is essential to engage young people in changing the unhealthy and sedentary behaviors of other adolescents as it helps create holistic and appealing solutions for their peers. We have to support their process of learning and development of capabilities supporting evidence-based decision-making so as adults and future leaders they will be able to reduce NCDs risk and its impact on individuals, families, communities and society.(71)

Interventions targeting modifiable risk factors for NCDs like tobacco consumption, alcohol use, physical activity or healthy diet should be also implemented at educational institutions as youth spend much of their time there. Schools have the potential to increase access of young people to healthy foods, teach them healthy choices and ensure daily physical activity. (72)

NCDs on Global and National Levels

Global efforts

Reduction of NCDs on a global scale calls for global coordination and global actions. In May 2010, the United Nations passed a resolution on reduction and prevention of NCDs unanimously. The resolution called for an UN Summit dedicated to NCDs. In 2021, the first High-Level UN Summit on Noncommunicable Diseases was held, and the UN Political Declaration on prevention and control of noncommunicable diseases was passed at the end of the Summit.(68) The UN 2030 Agenda for Sustainable Development includes a goal of reducing deaths due to NCDs by one-third by 2030(73).

In 2013, the WHO passed the WHO Global NCD Action Plan 2013-2020, which calls governments around the world to fulfill the six objectives related to NCD reduction.(74)

In 2013, the United Nations established the UN Interagency Task Force on the Prevention and Control of Non-communicable Diseases (NCDs), which allows different UN systems to cooperate with each other and offer support to countries in order to reduce NCDs. Its strategic priorities are 1) supporting countries to deliver multisectoral action on the NCDs, 2) mobilizing resources to help countries develop national action plans, 3) harmonizing actions and forging partnerships, and 4) being an exemplar for UN reform to achieve the 2030 Sustainable Development Agenda. When evaluating the results, since the development of the Task Force, 30 countries has requested and received support, 5 global join programmes were financed and in operation, a fund was launched specifically for resources including technical assistance, an increase in countries that utilize functional multi-sectoral coordination mechanisms for NCD reduction, and an increase in the number of partnerships.(75)

National efforts

In response to the increasing threat of NCDs and the global call to address it, many countries have set up specific strategic plans to combat NCDs. Here are a couple of examples:

The Centers for Disease Control and Prevention (CDC) in the United States have initiatives including Data for Health Mobile Phone Surveys, Global Hearts Initiative, International NCD Economics Research Network, and NCD Field Epidemiology Training to promote NCD reduction both at the national and global level. Data for Health Mobile Phone Surveys facilitates NCD data collection in order to construct action plans, Global Heart Initiatives promotes the delivery of WHO HEARTS Technical Package to different countries used for cardiovascular disease preventions, International NCD Economics Research Network that facilitates international research and collaborations around NCD reduction strategies, and NCD Field Epidemiology Training provides NCD training in many launched epidemiology programs.(76)

Countries in Asia have also been dedicated to NCD reduction. Japan has integrated NCD-related measures into its legislature as early as 1978. In 2000, Japan passed the *Third National Health Promotion Measures*, which emphasized on primary prevention of NCDs and included 9 focus areas: (1) nutrition and diet, (2) physical activity and exercise, (3) rest and mental health promotion, (4) tobacco, (5) alcohol, (6) oral health, (7) diabetes, (8) cardiovascular disease, and (9) cancer. In 2012: *The Basic Policy for the Comprehensive Promotion of Health Promotion of Citizens* was reviewed to reduce health inequalities and specified the prevention of NCDs. (77)

In Oceania, organizations like the Australian Chronic Disease Prevention Alliance (ACDPA) are working hard to advocate for healthy lifestyles and NCD reduction at a national and local level. ACDPA brings together five leading Australian NGOs including Cancer Council Australia, Diabetes Australia, National Heart Foundation of Australia, Kidney Health Australia, and the Stroke Foundation to raise awareness

and propose action plans on NCDs reduction. Over the past few years, ACDPA has been making their presence through letters and meetings with the Australian Government, submissions and position statements, community campaigns, and policy counseling to shape national health policy.(78)

In Africa, to help Nigeria develop a multi-sectoral action plan to combat NCDs, in 2020, 15 agencies participated in Nigeria's Joint High-level Mission among the United Nations system, development partners and the Government of Nigeria, which was co-chaired by the UN Task Force on NCD and the WHO. The Meeting identified progresses Nigeria has achieved but also gaps. The Meeting emphasized on political participation and leadership as key to reducing NCDs in Nigeria, and discussed the provision of funds toward combating NCDs. The Meeting established strategies including increasing national and international funding toward NCD reduction, training of related professionals, increasing the development of relevant infrastructure, promoting engagement from other sectors, strengthening national policy framework on NCD reduction, and adopting a human-rights-approach to NCD prevention. (79)

In places where the government is not actively implementing strategies to reduce NCDs, the role NGOs play would be a key to combating NCDs. In South America, Argentina has 35% of its adult population who are overweight, 20% are clinically obese, 25% of the country's population smokes. However, Argentina is still not a member of the Framework Convention on Tobacco Control (FCTC). In order to address this, FIC Argentina (Fundación InterAmericana del Corazón) submitted a report to the UN Committee on Economic Social and Cultural Rights (CESCR), which emphasized on "the government's obligation, as found in the National Constitution, to protect people's health, particularly regarding obesity and tobacco control".(80) Additionally, in 2017, the UN Interagency Task Force visited Argentina and discussed a US$350 million loan titled "Protecting Vulnerable People Against Noncommunicable Diseases Project" to the Argentina Government from the World Bank, which aimed to fund the prevention and control of NCDs, mainly cardiovascular diseases, diabetes, cancers, chronic respiratory diseases and associated risk factors.(81)

In collaboration with the WHO country office, the Ministry of Health of Ukraine launched its first project on NCDs prevention and health promotion (2015–2019), which aimed to prevent and reduce NCD-related mortality and morbidity. The project aimed to 1) strengthen leadership, governance, policy and intersectoral action and partnerships, 2) strengthen the prevention of NCDs in clinical and community settings, and 3) reduce risky behaviors that influence NCD mortality and morbidity. This project established multiple achievements, including adoption of Ukraine's national NCD action plan, development and adoption of Ukraine's Food-based dietary guidelines, delivery of training of healthcare professionals with an emphasis on NCD prevention, and the introduction of Ukraine's first national smoking-cessation service launched in 2017.(82)

References

1. Non communicable diseases. World Health Organization. World Health Organization; [cited 2022Feb1]. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases
2. Cardiovascular diseases (cvds). World Health Organization. World Health Organization; [cited 2022Feb1]. Available from: https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)
3. Cancer - who.int. [cited 2022Feb1]. Available from: https://www.who.int/health-topics/cancer
4. Global report on diabetes. World Health Organization. World Health Organization; [cited 2022Feb1]. Available from: https://www.who.int/publications/i/item/9789241565257
5. Diabetes. World Health Organization. World Health Organization; [cited 2022Feb1]. Available from: https://www.who.int/health-topics/diabetes
6. Chronic respiratory diseases. World Health Organization. World Health Organization. [cited 2022Feb1]. Available from : https://www.who.int/health-topics/chronic-respiratory-diseases
7. Non-Communicable Diseases and Sexual and Reproductive Health: Linkages and Opportunities through a life-course approach. World Health Organization. World Health Organization. [cited 2022Feb1]. Available from: https://www.euro.who.int/__data/assets/pdf_file/0004/292198/NCDS-SRH-Linkages-Opportunities-Life-Course-Approach.pdf
8. Budreviciute, A., Damiati, S., Sabir, D. K., Onder, K., Schuller-Goetzburg, P., Plakys, G., Katileviciute, A., Khoja, S., & Kodzius, R. (2020). Management and prevention strategies for non-communicable diseases (NCDs) and their risk factors. Frontiers in Public Health, 8, 574111. [cited 2022Feb1]. Available from: https://doi.org/10.3389/fpubh.2020.574111
9. Jamaluddine, Z., Sibai, A. M., Othman, S., & Yazbek, S. (2016). Mapping genetic research in non-communicable disease publications in selected Arab countries: first step towards a guided research agenda. Health Research Policy and Systems, 14(1), 81. [cited 2022Feb1]. Available from: https://doi.org/10.1186/s12961-016-0153-9
10. NCDs and Development. World Health Organization. World Health Organization. [cited 2022Feb1]. Available from: https://www.who.int/nmh/publications/ncd_report_chapter2.pdf
11. Diabetes: Types, risk factors, symptoms, tests, treatments & prevention. (n.d.). Cleveland Clinic. [cited 2022Feb1]. Available from: https://my.clevelandclinic.org/health/diseases/7104-diabetes-mellitus-an-overview
12. Liu, Y., Liu, G., Wu, H., Jian, W., Wild, S. H., & Gasevic, D. (2017). Sex differences in non-communicable disease prevalence in China: a cross-sectional analysis of the China Health and Retirement Longitudinal Study in 2011. BMJ Open, 7(12), e017450. [cited 2022 Feb1]. Available from: https://doi.org/10.1136/bmjopen-2017-017450
13. Blondeel, K., Say, L., Chou, D., Toskin, I., Khosla, R., Scolaro, E., & Temmerman, M. (2016). Evidence and knowledge gaps on the disease burden in sexual and gender minorities: a review of systematic reviews. International Journal for Equity in Health, 15(1). Available from: https://doi.org/10.1186/s12939-016-0304-1
14. Madhavan, M., Reddy, M. M., Chinnakali, P., Kar, S. S., & Lakshminarayanan, S. (2020). High levels of non-communicable diseases risk factors among transgenders in Puducherry, South India. Journal of Family Medicine and Primary Care, 9(3), 1538–1543. Available from: https://doi.org/10.4103/jfmpc.jfmpc_1128_19
15. Indigenous ncds. World Health Organization. World Health Organization. Available from: https://www.who.int/ncds/governance/third-un-meeting/caring-and-living-as-neighbours.pdf
16. Gracey, M., et al. (2006). An Aboriginal-driven program to prevent, control and manage nutrition-related 'lifestyle' diseases including diabetes. Asia Pacific Journal of Clinical Nutrition, 15(2),178-88. Available from: https://pubmed.ncbi.nlm.nih.gov/16672201/
17. Guariguata, L., Jeyaseelan, S., Farmer, M., Klein, J., Hauerslev, M., & Samuels, A. (n.d.). CHILDREN AND NON-COMMUNICABLE DISEASE. Ncdchild.Org. Retrieved January 3, 2022. Available from: https://www.ncdchild.org/wp-content/uploads/2021/03/ncdchild_global_burden-report-2019.pdf
18. Type 1 diabetes. (n.d.). Mayo Clinic. Available from: https://www.mayoclinic.org/diseases-conditions/type-1-diabetes/symptoms-causes/syc-20353011

19. International Committee of the Red Cross (ICRC). Les types de crise. Assistance. Les types de crise et illustration du cycle à travers un exemple. Module préparatoire. Programme d'intégration. International Committee of the Red Cross. 2009. Available from: doi:10.1371/currents.dis.53e08b951d59ff913ab8b9bb51c4d0de.
20. Non-communicable diseases (NCDs) in humanitarian settings. (n.d.). ReliefWeb. Available from: https://reliefweb.int/report/world/integrating-non-communicable-disease-care-humanitarian-settings-operational-guide
21. Addressing non-communicable diseases in the COVID-19 response. Available from: https://apps.who.int/iris/bitstream/handle/10665/331923/NCD-COVID-19-eng.pdf?sequence=1&isAllowed=y
22. Takian, A., & Akbari-Sari, A. (2016). Sustainable Health Development becoming agenda for public health academia. Iranian Journal of Public Health, 45(11), 1502–1506. Available from: https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC5182259/
23. Lim, J., Chan, M. M. H., Alsagoff, F. Z., & Ha, D. (2014). Innovations in non-communicable diseases management in ASEAN: a case series. Global Health Action, 7(1), 25110. Available form: https://doi.org/10.3402/gha.v7.25110
24. Allotey, P., Davey, T., & Reidpath, D. D. (2014). NCDs in low and middle-income countries - assessing the capacity of health systems to respond to population needs. BMC Public Health, 14 Suppl 2(S2), S1. Available from: https://doi.org/10.1186/1471-2458-14-S2-S1
25. Nishtar, S., & Ralston, J. (2013). Can human resources for health in the context of noncommunicable disease control be a lever for health system changes? Bulletin of the World Health Organization, 91(11), 895–896. Available from: https://doi.org/10.2471/BLT.13.118711
26. Allen, L. N. (2017). Financing national non-communicable disease responses. Global Health Action, 10(1), 1326687. Available from: https://doi.org/10.1080/16549716.2017.1326687
27. Joseph-Shehu, E. M., Ncama, B. P., Mooi, N., & Mashamba-Thompson, T. P. (2019). The use of information and communication technologies to promote healthy lifestyle behaviour: a systematic scoping review. BMJ Open, 9(10), e029872. Available from: https://doi.org/10.1136/bmjopen-2019-029872
28. Allotey, P., Davey, T., & Reidpath, D. D. (2014). NCDs in low and middle-income countries - assessing the capacity of health systems to respond to population needs. BMC Public Health, 14 Suppl 2(S2), S1. https://doi.org/10.1186/1471-2458-14-S2-S1
29. Strengthening AND service delivery through UHC benefit package. World Health Organization. World Health Organization. Available from: https://apps.who.int/iris/bitstream/handle/10665/338690/9789240017528-eng.pdf
30. "Lin, Vivian; Jones, Catherine; Wang, Shiyong; Baris, Enis. 2014. Health in All Policies as a Strategic Policy Response to NCDs. Health, Nutrition, and Population (HNP) discussion paper;. World Bank, Washington, DC. © World Bank.
31. *Tobacco use*. (2015, July 30). NCD Alliance. Available from: https://ncdalliance.org/why-ncds/ncd-prevention/tobacco-use
32. CDCTobaccoFree. (2021, October 6). *Fast Facts*. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm
33. *Tobacco use*. (2015, July 30). NCD Alliance. Available from: https://ncdalliance.org/why-ncds/ncd-prevention/tobacco-use
34. NCDs. (n.d.). *Tobacco use*. World Health Organization - Regional Office for the Eastern Mediterranean. Available from: http://www.emro.who.int/noncommunicable-diseases/causes/tobacco-use.html
35. HealthBridge Foundation of Canada. (2020, April 1). *Tobacco Control & NCD prevention*. HealthBridge. Available from: https://healthbridge.ca/tobacco-control-ncd-prevention
36. Lee, I.-M., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., Katzmarzyk, P. T., & Lancet Physical Activity Series Working Group. (2012). Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet*, *380*(9838), 219–229. Available from: https://doi.org/10.1016/S0140-6736(12)61031-9
37. *Physical activity*. (2015b, July 30). NCD Alliance. Available from: https://ncdalliance.org/why-ncds/ncd-prevention/physical-activity

38. *Unhealthy diets and malnutrition*. (2015, July 30). NCD Alliance. Available from: https://ncdalliance.org/why-ncds/ncd-prevention/unhealthy-diets-malnutrition
39. Ruthsatz, M., & Candeias, V. (2020). Non-communicable disease prevention, nutrition and aging. *Acta Bio-Medica : Atenei Parmensis*, *91*(2), 379–388. Available from: https://doi.org/10.23750/abm.v91i2.9721
40. *Preventing non-communicable diseases (NDCs) by reducing environmental risk factors*. (n.d.). Climate & Clean Air Coalition. Available from: https://www.ccacoalition.org/en/resources/preventing-non-communicable-diseases-ndcs-reducing-environmental-risk-factors
41. Preventing Non-communicable diseases by reducing environmental risk factors. World Health Organization. World Health Organization. Available from: https://apps.who.int/iris/bitstream/handle/10665/258796/WHO-FWC-EPE-17.01-eng.pdf
42. Prüss-Ustün, A., van Deventer, E., Mudu, P., Campbell-Lendrum, D., Vickers, C., Ivanov, I., Forastiere, F., Gumy, S., Dora, C., Adair-Rohani, H., & Neira, M. (2019). Environmental risks and non-communicable diseases. *BMJ (Clinical Research Ed.)*, *364*, l265. Available from: https://doi.org/10.1136/bmj.l265
43. *Harmful use of alcohol*. (2015, July 30). NCD Alliance. Available from: https://ncdalliance.org/why-ncds/ncd-prevention/harmful-use-of-alcohol
44. *Alcohol facts and statistics*. (n.d.). Nih.Gov. Available from: https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/alcohol-facts-and-statistics
45. Parry, C. D., Patra, J., & Rehm, J. (2011). Alcohol consumption and non-communicable diseases: epidemiology and policy implications: Alcohol consumption and NCDs. *Addiction (Abingdon, England)*, *106*(10), 1718–1724. Available from: https://doi.org/10.1111/j.1360-0443.2011.03605.x
46. How to prevent alcohol related accidents. Drinkaware.Co.Uk. Available from: https://www.drinkaware.co.uk/advice/staying-safe-while-drinking/how-to-prevent-alcohol-related-accidents
47. *One health basics*. (2020, October 15). Cdc.Gov Available from: https://www.cdc.gov/onehealth/basics/index.html
48. Ladeira, C., Frazzoli, C., & Orisakwe, O. E. (2017). Engaging one health for non-communicable diseases in Africa: Perspective for mycotoxins. *Frontiers in Public Health*, *5*. Available from: https://doi.org/10.3389/fpubh.2017.00266
49. Global Action Plan for the Prevention and Control of NCDs 2013-2020. (2013) World Health Organization.
50. BBudreviciute A, Damiati S, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, Katileviciute A, Khoja S and Kodzius R (2020) Management and Prevention Strategies for Non-communicable Diseases (NCDs) and Their Risk Factors. Front. Public Health 8:574111. Available from: doi: 10.3389/fpubh.2020.574111
51. A call to action on health promotion approaches to non-communicable diseases prevention. World Health Organization. World Health Organization. Available from: https://www.who.int/global-coordination-mechanism/working-groups/iuhpeaction.pdf
52. Good Maternal Nutrition The best start in life. (n.d.). Who.Int. Available from: http://www.euro.who.int/__data/assets/pdf_file/0008/313667/Good-maternal-nutrition-The-best-start-in-life.pdf?ua=1
53. Physical activity strategy for the WHO European Region 2016-2025. GartneriRådgivningen. World Health Organization. Regional Office for Europe. (2016).
54. World Health Organization. Tobacco-free generations: protecting children from tobacco in the WHO European Region. WHO Europe, 2017.
55. World Health Organization. European action plan to reduce the harmful use of alcohol 2012-2020. WHO, 2012;
56. European food and nutrition action plan 2015-2020.WHO Europe, 2014
57. Hutin Y, Desai S, Bulterys M. Preventing hepatitis B virus infection: milestones and targets. Bulletin of the World Health Organization 2018;96:443-A.
58. WHO Report of the commission on ending childhood obesity.WHO, 2016.

59. Inchley J. Adolescent obesity and related behaviors: trends and inequalities in the WHO European region, 2002-2014: Observations from the Health Behavior in School-aged Children (HBSC) WHO Collaborative Cross-national Study. WHO Europe, 2017.
60. *WHO European childhood obesity surveillance initiative (COSI)*. (2022). Available from: http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/activities/who-european-childhood-obesity-surveillance-initiative-cosi
61. World Health Organization. Action plan for the prevention and control of noncommunicable diseases in the WHO European Region. WHO Europe, 2016.
62. Alcohol, Drugs, & Addictive Behaviors. (2004, January 11). *Training guide for HIV prevention outreach to injecting drug users*. Who.Int; World Health Organization. https://www.who.int/ncds/management/best-buys/en/
63. Warburton DER, Bredin SSD, Health benefits of physical activity: a systematic review of current systematic reviews. Curr Opin Cardiol 2017;32:541-56. Available from: doi:10.1097/HCO.0000000000000437 pmid:28708630
64. Diseases, N. (n.d.). *What ministries of education need to know*. Who.Int. Retrieved January 3, 2022, from https://apps.who.int/iris/rest/bitstreams/1061261/retrieve
65. Gaps and recommendations on 'Transformative Health Personnel Education" Available from: https://www.who.int/workforcealliance/media/news/2014/TWG2_TransformativeEducation.pdf
66. Committee On Educating Health Professionals To Address The Social Determinants Of Health, Board on Global Health, Institute of Medicine, & National Academies of Sciences Engineering and Medicine. (2016). *A framework for educating health professionals to address the social determinants of health*. National Academies Press.
67. Department of Child and Adolescent Health and Development. World Health Organization. The second decade: Improving adolescent health and development.1998. Geneva, Switzerland
68. *Understanding NCDs*. (2021, March 6). NCD Child. Available from: https://www.ncdchild.org/understanding-ncds/
69. Akseer, N., Mehta, S., Wigle, J., Chera, R., Brickman, Z. J., Al-Gashm, S., Sorichetti, B., Vandermorris, A., Hipgrave, D. B., Schwalbe, N., & Bhutta, Z. A. (2020). Non-communicable diseases among adolescents: current status, determinants, interventions and policies. *BMC Public Health*, *20*(1), 1908. Available from: https://doi.org/10.1186/s12889-020-09988-5
70. *Non communicable diseases and adolescents – an opportunity for action*. (n.d.). Knowledgesuccess.Org. Available from: https://toolkits.knowledgesuccess.org/toolkits/very-young-adolescent-sexual-and-reproductive-health-clearinghouse/non-communicable-0
71. Bay, J. L., Hipkins, R., Siddiqi, K., Huque, R., Dixon, R., Shirley, D., Tairea, K., Yaqona, D., Mason-Jones, A., & Vickers, M. H. (2017). School-based primary NCD risk reduction: education and public health perspectives. *Health Promotion International*, *32*(2), 369–379 Available from: https://doi.org/10.1093/heapro/daw096
72. *Non communicable diseases and adolescents – an opportunity for action*. (n.d.). Knowledgesuccess.org. Available from: https://toolkits.knowledgesuccess.org/toolkits/very-young-adolescent-sexual-and-reproductive-health-clearinghouse/non-communicable-0
73. *Noncommunicable diseases*. (n.d.). Who.Int. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases
74. *Global Action Plan for the Prevention and Control of NCDs 2013-2020*. (n.d.). Who.Int. Available from https://www.who.int/southeastasia/publications-detail/9789241506236
75. *United nations inter-agency task force on the prevention and control of non-communicable diseases*. (n.d.). Who.Int. Available from https://apps.who.int/iris/bitstream/handle/10665/279895/WHO-NMH-NMA-19.98-eng.pdf?sequence=5&isAllowed=y
76. *Global noncommunicable diseases fact sheet*. (2021, June 3). Cdc.Gov. Available from: https://www.cdc.gov/globalhealth/healthprotection/resources/fact-sheets/global-ncd-fact-sheet.html
77. *NCDs*. (n.d.). Japanhpn.Org. Available, from https://japanhpn.org/en/ncds-2/

78. *Australian Chronic Disease Prevention Alliance (ACDPA)*. (2020, April 23). NCD Alliance. Available from: https://ncdalliance.org/australian-chronic-disease-prevention-alliance-acdpa-0
79. *Report of the Joint United Nations High-Level Mission on non-communicable diseases and tuberculosis, Nigeria, 24*. (2020). Who.Int. Available from: https://apps.who.int/iris/bitstream/handle/10665/339816/9789240019409-eng.pdf?sequence=1&isAllowed=y
80. *Successful advocacy to protect the right to health in Argentina*. (2018, December 8). NCD Alliance. Available from: https://ncdalliance.org/news-events/news/successful-advocacy-to-protect-the-right-to-health-in-argentina
81. *UN Task Force, World Bank discuss project to support NCDs prevention and control in Argentina*. (n.d.). Who.Int. Retrieved January 6, 2022, from Available from: https://www.who.int/news/item/24-10-2017-un-task-force-world-bank-discuss-project-to-support-ncds-prevention-and-control-in-argentina
82. Tackling noncommunicable diseases in Ukraine. World Health Organization. Available from: https://www.euro.who.int/__data/assets/pdf_file/0004/385078/ukr-leaflet-hr-eng.pdf

Bylaws Paragraphs concerning Policy

17.2 Definitions

a. Policy Statement: Short and concise document highlighting the position of IFMSA for specific field(s). A policy statement does not include background information, discussion related to the policy, a bibliography and neither does it quote facts and figures developed by outside sources. The maximum length of a policy statement is 2 pages, including introduction, IFMSA position and call to action.

b. Position Paper: A detailed document supporting the related policy statement that contains background information and discussion in order to provide a more complete understanding of the issues

involved and the rationale behind the position(s) set forth. A position paper must cite outside sources and include a bibliography.

c. Policy commission: A policy commission is composed of three people, with 2 representatives of the NMOs and one Liaison Officer. The proposer of the draft is part of the policy commission and is responsible of appointing its members. The tasks of the policy commission are the following:

a. They are responsible of the quality of the policy document with the approval of the proposal.
b. Ensuring the content is based on global evidence.
c. Collecting and incorporating NMO feedback after the call for input.
d. Coordinating the discussion during the General Assembly.

Adoption of policies

17.3. A draft policy statement, position paper and the composition of the policy commission must be sent to the NMO mailing list by the proposer and in accordance with paragraph 9.4. Input from NMOs is to be collected between submission of the draft and submission to the General Secretariat.

17.4. The final policy statement and position paper are to be sent in accordance with paragraph 9.4, using the template provided in the call for proposals. The proposal must be co-submitted by two NMOs from different regions or the Team of Officials. A corrected version of this document may be submitted according to paragraph 9.5. Correction may not be used to add members to the policy commission.

17.5. Policy statements and position papers must be presented to NMOs during the first working day of the IFMSA General Assembly.

17.6. A motion to adopt the policy statements and position papers must be submitted the day before the relevant plenary by two NMOs from different regions or an IFMSA Official, the IFMSA Team of Officials or the IFMSA Executive Board. Adoption requires ⅔ majority.

17.7. Amendments may be sent to the proposer in accordance with Annex 1. Amendments made during a General Assemblies or after the deadline stipulated in Annex 1, shall be submitted to the Chair at the latest 23:59 observed in the timezone of the relevant General Assembly on the day before the scheduled start of the session in which the policy will be voted on. These amendments require ⅔ majority to pass.