The World Health Organization

Controlling the Impact of life Extension Technologies on Global Health Systems and Societal Stability

Technologies

-Committee guide-

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I. Introduction

a. Introduction to the Committee

The World Health Organisation (WHO) is the United Nations' leading health authority. It was founded in 1948 and aims to achieve the highest possible level of health for all peoples worldwide. As a specialized UN agency, the WHO coordinates international health initiatives, sets norms and standards, supports research and knowledge exchange. In addition, the WHO advises governments on health matters (World Health Organization, 2022). As part of its work, the WHO develops evidence-based guidelines and promotes global research collaboration with the aim of reducing health inequalities. Its key tasks include monitoring global health risks, coordinating vaccination campaigns and emergency responses (for example, during pandemics), and developing international health regulations. Furthermore, the WHO supports member states in strengthening their health systems and advancing research for more equitable healthcare.

In the area of health research and development (Health R&D), the WHO promotes collaboration and the equitable distribution of scientific knowledge and innovations by identifying global research needs. The WHO plays a pivotal role in the UN system by ensuring that scientific progress in the health sector benefits all countries and population groups, and by promoting global health equity (World Health Organization, 2022).

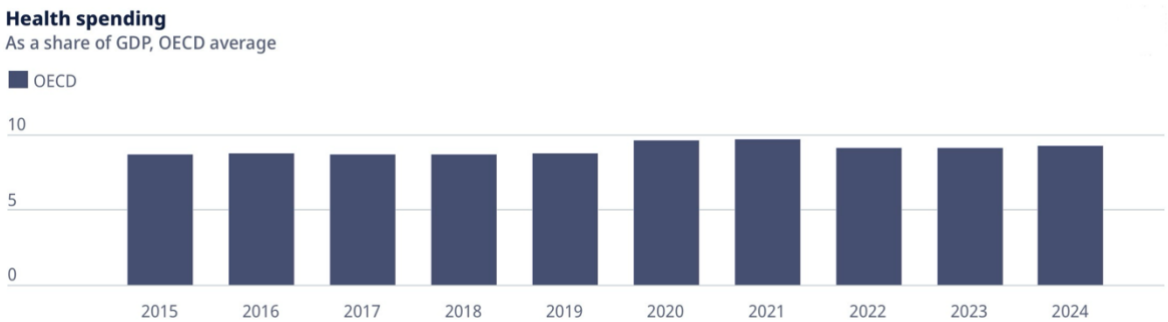
B. To the topic

In the last few decades, the lifespan of individuals across the globe has increased due to advances made in public health and medical science. The statistics released by the World Health Organization (WHO)also demonstrate that the average life expectancy has risen, and more individuals than ever are reaching old age. "For the first time in history, most people will have the chance to reach their sixties and even beyond," according to the report issued by the WHO. Certainly, there are more older adults (age 60 and above) than young children living in different parts of the world, and this will soon be true on a global scale as well. According to forecasts made by the WHO, one in five individuals will be above the age of 60 by 2050, compared to one in ten at present. This transition will take place largely in developing nations; it is expected that

by 2050, eighty percent of elderly people would reside in low- and middle-income countries.

This area is being researched extensively by science. According to the OECD, it might be possible to tackle the root causes of ageing in order to delay or prevent the development of its most debilitating illnesses in a 20-year timeframe. Currently, corporations and scientists are experimenting with pharmaceutical drugs like rapamycin, which has been proven to increase longevity of animals. Investments in 'anti-ageing' companies, both private and made by biotech companies and tech moguls, have increased. But there are doubts regarding how this could be applied to human beings. It must be kept in mind that any small advancement that results in an extension of healthy life span could change the course of many chronic diseases – the delaying of ailments like Alzheimer's disease and frailty could mean lesser cases of disability.

Although health economists recognize the need for advancements that lessen the disabilities in older people, they agree that overall, healthcare utilization will continue to increase as populations become older. In other words, technology would make people stronger, but more patients than ever before will need medical treatment. One of the other critical aspects here is the capacity and cost of health care systems. One of the other critical aspects here is the capacity and cost of the health care system. According to the OECD report, people older than 65 consume three to five times more healthcare services compared to young individuals, accounting for about 50 percent of healthcare expenditure in a particular country.



https://www.oecd.org/en/data/datasets/oecd-health-statistics.html?utm_source=chatgpt.com

However, this significant consumption occurs during the last years of their life due to the presence of multiple diseases. Therefore, if lifespans increase, lifetime costs may

also go up. In addition, there is a shortage of personnel and funding in the global health systems nowadays. The Global Coalition on Aging notes that in order to provide adequate treatment to twice more people who will be older than 65 in 2050, governments should make innovation a centerpiece of policies on aging and health with appropriate incentives such as reimbursements. Otherwise, national economies will face growing costs for healthcare and pensions.

Finally, it is essential to examine public views and ethical discussions. While there has been a long fascination with extreme life extension (adding several decades to the natural lifetime), polls indicate that people do not feel wholly positive towards it. In particular, a study conducted in 2010 indicated that even though two-thirds of the participants favored research aimed at increasing lifespan through postponing aging, only one-third would consider taking anti-aging drugs if such became available. The fears relate to the quality of life, resource allocation, and the dangers posed by the novel technologies. Ethicists fear that societies might become preoccupied with extending their lifespans to the detriment of other priorities or might foster inequality. Such issues form the backdrop against which it becomes possible to discuss how longevity can be regulated.

II. Key Data

Ageing population: The magnitude of ageing has never been seen before. The WHO states that by 2030, the number of elderly people over 60 will outnumber those under the age of 14 worldwide. By 2050, it will amount to about 2.1 billion people – double the current number. In OECD countries, ageing takes place even faster: the share of people aged 65+ increased from less than 8% in 1960 to 18% by 2022 and will reach up to 30% by 2060. Rapid ageing occurs in Asia (China, India, Japan, among others), however, Latin America and Africa are also ageing quite fast. Worldwide life expectancy has risen from about 52 years in 1960 to more than 73 years recently. (It should be noted that due to the global impact of the coronavirus pandemic, the trend was reversed for one year in 2020-2021, and life expectancy fell by about 1.5 years.)

The following statistic shows the growth in the number of people aged 65 or older between 1960 and 2024. The website also allows you to select the specific age group and time period you wish to view.

https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS?end=2024&start=1960&utm_source=chatgpt.com&view=chart

Health expenditure: The older people will spend much more money on healthcare. According to OECD statistics, annual health expenditures of people over 65 years old are three to five times higher than health expenditures of younger individuals. Moreover, about half of all healthcare budgets go to people aged over 65 years. For example, a person aged 70 years will need multiple hospitalizations, treatment, while people aged 30 will be in good health. The OECD report estimates that without any changes, the costs related to aging will add at least 6 percentage points to the national GDP in 2060. At the moment, high-income countries spend about 8% to 12% of their GDP on health services; the United States spends more than 17%. The Effects on Labor and Social Sectors: Ageing also has an impact on labor markets and the social sector. While the retiree-to-worker ratio, otherwise known as the old-age

dependency ratio, has doubled in the past few decades, ageing societies imply that fewer people are taking care of more retirees. Consequently, many nations are increasing the ages at which citizens can claim their pensions and are promoting the employment of elderly individuals. The Japanese government, for example, is undertaking a '100-year life society' campaign to leverage the potential of their elderly populace. Nevertheless, life extension may both solve and exacerbate such issues. Technology and R&D: Longevity technology R&D funding is low compared to healthcare R&D in general. However, there is increasing interest. Notable examples include biotech companies working on senolytics and longevity genes. In addition, NIH in the US and Chinese scientific organizations have launched genomics of ageing and ageing projects. The private sector is also making big investments (e.g., Calico Labs, Altos Labs by Google). Nonetheless, as of 2025, there is no approved cure for ageing yet and most research into longevity has been in preclinical or early clinical phases. As such, there is limited data on health benefits from these treatments.

As such, governments will need to base their policy decisions on population and economic projections rather than treatment evidence.

Conclusion: Some of the key facts discussed in the paper emphasize an ageing world and high health expenditure per person. While longevity technologies can increase the health and efficiency of elderly populations, they may also contribute to an even higher number of years people spend suffering from age-related diseases if not managed properly. It is necessary to take preemptive actions in order to ensure that these technologies enhance rather than undermine health systems.

III. Current Situation

Life extension technologies have quickly changed from ideas into an expanding area of scientific research and medical innovation. Advances in biotechnology, genetics, regenerative medicine, and artificial intelligence have greatly improved scientists' ability to understand and influence aging. Researchers are now exploring methods like gene therapy, stem cell treatments, tissue engineering, and anti-aging drugs that may slow down age-related decline or even extend human lifespan beyond what current expectations suggest.

At the same time, global life expectancy has consistently risen thanks to improvements in healthcare, nutrition, sanitation, and disease prevention. According to international health organizations, the number of people aged 65 and older is expected to increase significantly over the next several decades. This demographic shift is creating new challenges for healthcare systems, pension programs, and labor markets worldwide.

Many governments and private companies are investing billions of dollars in longevity research. Countries with advanced healthcare systems are leading the way in developing life extension technologies, while many developing nations are struggling to provide basic healthcare services.

This situation has raised concerns about unequal access to future treatments. If life extension technologies are only available to wealthy individuals or countries, global health disparities could worsen greatly. As of now, there is no international framework regulating the development, distribution, or ethical use of life extension technologies. While some countries have set national guidelines for genetic research and biotechnology, international cooperation is still limited.

As a result, the global community is facing the challenge of preparing healthcare systems and societies for the potential impacts of significantly extended human lifespans.

IV. Relevant Cases Major Parties involved

A Relevant Cases

National initiatives: Certain governments have proactively assessed the ramifications of living in a society where people lead very long lives. “Japan 100-Year Life” council (founded 2016) conducted studies on using the knowledge and expertise of an ageing labor force and adjusting pension and healthcare systems accordingly. For instance, Japan may consider flexible retirement plans and assistance for senior employees considering the expected average lifespan reaching 100 years. Likewise, the European Union periodically releases Ageing Reports and Action Plans. Even though the mentioned initiatives are not concerned with radical longevity, they view the increased health span as an objective of social policy. Recently adopted biomedical ethics

policies of the EU (such as editing human germlines) may also indirectly relate to longevity studies through regulating genetic modifications.

WHO/UN programmes: Although not being strictly 'life extension' initiatives, WHO programs on ageing may be considered as examples for the discussed idea. WHO Global Network of Age-friendly Cities and Communities (2010) and Integrated Care for Older People (ICOPE) may be seen as examples of international cooperation in this field.

WHO/UN programs: Though not directly addressing life extension, WHO programs dealing with aging offer good examples. The WHO's Global Network of Age-Friendly Cities and Communities (started in 2010) and its ICOPE (Integrated Care for Older People) program can be used as a template for the organization and delivery of services for the aging population. This example shows how international organizations can tackle the issue of the deployment of longevity therapies in the future. In particular, the involvement of the WHO in the UN Decade of Healthy Aging (2021-2030) is bound to affect the discussion of anti-aging therapies amid the general idea of healthy aging.

Ethical reviews: The issues related to life extension have been addressed by various international bodies specializing in bioethics. While the UNESCO's International Bioethics Committee (IBC) reviews the development and use of various enhancement technologies on a regular basis, up until 2025 it failed to introduce any binding regulations on anti-aging therapy in particular. However, in 2015-2017, the UNESCO discussed ethical questions raised by human genome editing; such decisions may limit the development of extreme anti-aging therapy in the future. At the moment, there are no court or tribunal decisions related to life extension.

B: Major Parties involved

The stakeholders involved in control of life extension technologies cut across several industries and countries.

Government & Regulators: Governments have the responsibility for ensuring that health care issues are handled properly within their jurisdictions. Ministries of Health, Science and Finance will be tasked with regulating new medical procedures and changing the budget, like for instance raising the retirement age. The key stakeholders involved here will be the FDA in the US, the body in charge of licensing the anti-ageing drugs. Also included are the EMA in Europe and China's National Health Commission.

Diplomatic organizations like the WHO under the United Nations also feature prominently in dealing with matters relating to aging. The WHO has already developed global frameworks on aging and currently leading the United Nations Decade of Healthy Aging.

Other international organisations beyond WHO include:

For instance, UNAIDS, ILO (in relation to older workers) and the UNDP (in relation to development issues) may address longevity in their work. The World Economic Forum exerts non-formal influence through its role in formulating agendas for industries and public-private partnerships (such as the longevity panel discussed above). Also, there are non-UN organisations like the US National Academies of Sciences which have started campaigns (including the 2022 Global Roadmap for Healthy Longevity Campaign) that are advisory but influential in policy formulation.

Industries and Research: The main players in the area of longevity are large companies in the pharmaceutical and biotechnology sectors as they develop solutions to promote longevity. For instance, Takeda and other pharmaceutical companies have research departments that focus on researching age-related disorders (as mentioned in the discussion on the WEF panel). Moreover, Silicon Valley and technology entrepreneurs are actively engaged in the research on longevity (for example, Google's Calico). Other parties include the insurance and pension funds sector which is affected by increased lifespan of humans. They fund anti-ageing research projects.

Academia and think tanks: Gerontology researchers and academic consortia generate evidence on ageing biology and health economics. Think tanks such as the Global Coalition on Aging and AARP (US) advocate policies that capitalize on older demographics (the 'longevity economy') while guarding against inequity. The Global Coalition, for example, brings together industry and government leaders to promote health innovation for ageing societies.

Civil society and NGOs: Organisations representing older people (e.g. HelpAge International, AARP and Age UK) are stakeholders in longevity policy as their constituents will be affected. Patient advocacy groups (e.g. Alzheimer's associations) may either lobby for or be concerned about new treatments. NGOs focused on global health equity emphasize that longevity gains must be shared. At WEF 2020, UNAIDS' director warned that neglecting the vulnerable leaves 'millions behind`.

• Media and public opinion: Public perception, informed by media coverage, will shape political will. As previously mentioned, scientists currently need to engage with the public in order to build understanding. Influential voices in ethics and religion may also influence the acceptance of radical life extension.

V. Past international actions

Although none of the previous global initiatives on ageing and health specifically mandated 'life extension' measures, several provide useful precedents. Key milestones include:

- The 1982 Vienna International Plan of Action on Ageing; The first World Assembly on Ageing (UN) established global principles and recognized ageing as a development issue. The Vienna Plan urged governments to integrate older people into social and economic policies. (No citation of the primary text used here.)
- 1991 UN Principles for Older Persons: The UN General Assembly endorsed principles on independence, participation, care, and self-fulfillment in old age.
- 2002 Madrid Plan of Action on Ageing (MIPAA): At the Second World Assembly on Ageing, UN member states adopted the Madrid International Plan, which focused on the development, health and supportive environments of older persons. This represented a significant consensus on ageing issues.
- 2015 Sustainable Development Goals: While not specifically related to ageing, the SDGs include Goals 3 (Health) and 8 (Decent Work), which address healthy ageing and intergenerational equity as part of the commitment to 'leave no one behind'. The SDGs implicitly set targets for universal health coverage that will affect older populations.
- 2016 WHO Global Strategy and Action Plan (GSAP) on Ageing and Health: The World Health Assembly approved a global strategy (2016–2020) aiming to 'transform policies and programmes for healthy longevity. The WHO followed up with the World Report on Ageing and Health (2015) to provide an evidence base. The GSAP outlined objectives including strengthening primary care for older people and combating ageism. This was the first WHO strategy to explicitly link longer lives to health system adaptation.
- 2017–2020 Regional and National Actions: Many countries formulated national ageing plans. For example, the European Union issued regular Ageing Reports

analyzing the fiscal and social impacts. WHO Member States developed policies in line with the GSAP (e.g. age-friendly healthcare).

- 2020 UN Decade of Healthy Ageing (2021–2030): In December 2020, the UN launched the Decade of Healthy Ageing, designating the period from 2021 to 2030 as a time for “concerted collaboration” aimed at improving the lives of older people. The WHO was tasked with leading the implementation of the Decade, with a focus on age-friendly environments, integrated care, long-term care, and inclusion. The Decade is intended to be a platform for innovation and knowledge sharing on ageing among nations. Although not specifically targeting radical life extension, it is the leading international initiative addressing the challenges of longevity.
- Ongoing initiatives: Other significant actions include the establishment of the WHO Global Network of Age-Friendly Cities in 2010 and the Council of Europe’s work on the rights of older persons. International conferences (e.g. G20 Health Ministers) have periodically featured ageing on the agenda. Furthermore, multilateral research projects (e.g. reports by the U.N. Population Fund and OECD ageing workshops) continue to inform policy.

VI. Current Challenges

Developing life extension technologies comes with many challenges that affect healthcare systems, economies, and societies around the world. One major concern is the increasing strain on healthcare infrastructure. Even if people live longer, they may still need long-term medical care, which adds pressure on hospitals, healthcare professionals, and public health budgets.

Another significant challenge is inequality. Advanced life extension treatments are likely to be expensive, especially in their early stages. Wealthier individuals and developed countries may access these technologies first, leaving poorer populations behind. This disparity could create a global divide in life expectancy and quality of life, undermining efforts to achieve health equity.

Economic issues must also be taken into account. Longer lifespans could put substantial pressure on pension systems, retirement policies, and social welfare programs. Governments might need to adjust retirement ages and redesign economic systems to cater to aging populations that remain active for longer.

Ethical concerns complicate the situation further. Questions arise about who should receive access to life extension technologies, whether extending life indefinitely is morally right, and how society should balance individual advantages with collective interests.

Additionally, environmental issues like population growth, resource use, and sustainability could become increasingly important if average lifespans rise significantly. Without effective international cooperation and regulation, these challenges could threaten both global health systems and societal stability.

VII. Possible Solutions

To tackle the challenges posed by life extension technologies, the international community needs to develop coordinated and sustainable solutions. One important step is to create international regulatory frameworks. With the guidance of organizations like the WHO, countries could set common standards for research, safety, ethics, and distribution to promote responsible development of these technologies. Ensuring fair access is another key priority. Governments and international organizations should collaborate to prevent life extension technologies from being available only to wealthy individuals or nations.

Financial support programs, technology-sharing agreements, and global health initiatives could help reduce inequalities and promote equal access. Healthcare systems must also be strengthened to prepare for populations that live longer. Investing in healthcare infrastructure, medical education, and preventive care can enhance countries' ability to manage demographic changes. Promoting healthy aging, rather than just extending lifespan, should remain a central focus.

In addition, ethical oversight committees could be formed at both national and international levels. These groups would assess emerging technologies, monitor possible risks, and ensure that scientific progress respects human rights and social values.

Finally, increased international research collaboration is essential. By sharing scientific knowledge, funding, and best practices, countries can speed up innovation while reducing risks. Through collective action, the global community can maximize the benefits of life extension technologies while protecting health systems, social stability, and future generations.

VIII. Definition of Key Terms

Life Extension Technologies: Medical, scientific, and biotechnological innovations aimed at increasing human lifespan and improving health during aging.

Healthy Aging: The process of maintaining physical, mental, and social well-being as people grow older.

Gene Therapy: A medical technique that modifies or replaces genes to prevent or treat diseases.

Stem Cell Therapy: A treatment using stem cells to repair, replace, or regenerate damaged tissues and organs.

Regenerative Medicine: A branch of medicine focused on restoring normal function through the repair or replacement of cells, tissues, or organs.

Healthcare System: The network of institutions, professionals, and resources responsible for delivering healthcare services to a population.

Health Equity: The principle that all individuals should have fair and equal access to healthcare opportunities and services.

Societal Stability: The ability of a society to maintain social order, economic security, and political functioning over time.

Longevity: The length of an individual's life or the ability to live for an extended period.

Bioethics: The study of ethical issues arising from advances in medicine, biology, and healthcare technologies.

IX. Useful Links

https://smw.ch/index.php/smw/article/view/1270/1424

https://cdn.nuffieldbioethics.org/wp-content/uploads/The-search-for-a-treatment-for-ageing.pdf

https://flt.life/longevity-for-all-or-just-the-few-the-debate-over-access-to-life-extension-technology/

X. Sources

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