




IMPACT OF THE HEALTHCARE SYSTEM AND THE PHYSICAL ENVIRONMENT ON HEALTH INEQUITIES IN SLOVENIA

CHALLENGES AND OPPORTUNITIES BETWEEN NATIONAL POLICIES AND LOCAL PRACTICES

(Summary)

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Summary

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UMAR

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Content

FOREWORD BY THE MINISTER OF HEALTH

Slovenia has a well-established tradition of ensuring equality of access to healthcare, and is recognised by the international healthcare community as an example of good practice in the design of inclusive healthcare policies. Health is a fundamental right of every individual, and is influenced by a multitude of factors: social and economic conditions, access to healthcare services, level of education and living environment, among others.

Preventing health inequity has been one of the Ministry of Health's main priorities for a number of years. When it comes to addressing the needs of the most vulnerable groups within the healthcare system, Slovenia's advantages lie mainly in the solid level of cooperation between the primary healthcare and public health systems, a community-based approach (which covers individual and population-wide approaches), the provision of preventive programmes, and the involvement of a wide range of stakeholders, including civil society.

Slovenia places particular emphasis on improving health literacy, on public cancer-screening programmes (SVIT, ZORA and DORA), and on preventive mental health programmes within the MIRA programme, which comprises a network of centres for adults and children. All these programmes encompass activities targeted at increasing the involvement of more vulnerable groups in society. In September 2024 the Slovenian government adopted the Strategy for the Development of Primary Healthcare Up To 2031, which places a strong emphasis on the need to strengthen preventive programmes. A national strategy for improving health literacy and a public health development strategy are being drafted; in their different ways, both address the activities required to reduce health inequity.

We recognise that health is not merely a question of the healthcare system, with inter-sectoral cooperation being key to ensuring that everyone enjoys the same opportunities for health and welfare. Healthcare is linked to social security, education, employment, the environment and the economy, which allows us to address in a more effective way the social determinants of health and the needs of vulnerable groups, to whom tailored measures, such as free health insurance, the development of social participation measures and locally based programmes for improving living conditions, can be made available.

This year's health inequities report places particular emphasis on access to certain healthcare services – access that has declined for a number of reasons, including the consequences of the covid-19 pandemic. One of the report's most striking findings is the significant geographical inequity in the average length of waiting times, and also noticeable differences between different age groups of patients on those lists. The oldest and youngest patients are more likely to be prioritised, which means that on average they wait less time to receive treatment than other age groups.

In the area of reproductive health, the report shows that socio-economic status was not a factor in the deepening of existing inequities in women's participation in the ZORA programme during the covid-19 pandemic. However, new barriers did arise during the pandemic, the most significant being the organisation of screening tests for younger women. The response by health services was exemplary. Robust cooperation between the various institutions meant that this issue could be identified during the pandemic itself and the relevant steps taken in response.

This report represents an important milestone, as it is the first to include an examination of the impact of certain environmental factors on health. This brings us into line with those countries that analyse health inequities from an all-encompassing perspective. The report therefore finds that there are differences in the level of exposure to air pollution, access to clean drinking water and the impact of climate change in Slovenia. These differences are mainly the result of geographical inequities.

Slovenia is very active when it comes to incorporating climate resilience into the healthcare system and reducing the climate footprint of the healthcare sector. Indeed, we are in the process of drawing up a comprehensive strategy that addresses climate change and health together. We are also developing a carbon footprint calculator for healthcare adapted to the specific features of systems in smaller countries. If we are to decarbonise the healthcare system, it is vital that we further strengthen inter-sectoral and also international cooperation, seek out innovative solutions, and systematically collect, analyse and compare data. Only evidence-based measures are capable of producing comprehensive and effective measures.

The Ministry of Health therefore welcomes the findings of this report, and supports further efforts to reduce health inequities in Slovenia and the rest of the world. Slovenia pursues the principles of justice and equal opportunities in relation to healthcare access, and strives for long-term solutions that will help create a healthier and more equitable society. The changes required demand that every section of society plays its part, which is why we are so keen to support dialogue and collaboration between all stakeholders in pursuit of a healthier future. The ministry works from the premise that health for all is a precondition for a successful, happy and prosperous society, and for the social inclusion of every member of it.

Dr Valentina Prevolnik Rupel, Minister of Health

REFLECTIONS BY PARTICIPATING INSTITUTIONS

Ministry of Labour, Family, Social Affairs and Equal Opportunities

'Alongside the creation of health policies and measures, even greater attention needs to be paid in the future to ensuring that people have access to and good information on healthy lifestyles, and that healthcare services tailored to the needs of vulnerable population groups are made available.'

Magda Zupančič, Ministry of Labour, Family, Social Affairs and Equal Opportunities

Ministry of Solidarity-Based Future

'The health inequities uncovered by this report help us better understand the under-researched concept of the 'ageing continent'.'

Aleš Kenda, Ministry of Solidarity-Based Future

Ministry of Education

'Research findings are not only an important tool and guideline for decision-makers in policy making process but also a reminder to all of us of the importance of making good lifestyle choices and taking care of the environment if we want to preserve the most precious of human assets—health. Education and awareness about the topics in question should begin at an early stage, which is why this well-written publication can be a valuable resource for teachers in elementary and high schools. It is also an important source for further scientific and professional study in academia.'

Breda Mulec, Ministry of Education

Social Protection Institute

'Growing health aspirations and an ageing population are increasing expenditure on the healthcare system, while other state expenditure on health remains relatively unchanged. This gap cannot fail to give rise to various forms of inequity of access to healthcare services.'

Barbara Kobal Tomc, Director of the Social Protection Institute of the Republic of Slovenia

Institute for Economic Research

'We hope and trust that this work will help decision-makers in Slovenia and elsewhere to better understand inequities in health, and steer their efforts towards reducing and eliminating them.'

Andrej Srakar, Institute for Economic Research

Institute of Oncology Ljubljana

'An individual's health is closely linked to the social and economic conditions in which they live. People lower down the social scale fall ill more often and have a shorter life expectancy than those in a better social and economic position.'

Vesna Zadnik, Head of the National Cancer Register, Institute of Oncology Ljubljana

Slovenian Environment Agency

'When it comes to the impact of environment and climate change on health inequity, socio-economic status and intergenerational differences are as significant as geography.'

Joško Knez, Director-General of the Slovenian Environment Agency

PREFACE

Health inequities have long been among the central challenges of modern society, both in Slovenia and the wider international community. Research into and the monitoring of inequity began in Slovenia at the end of the 19th and beginning of the 20th century, when a key role in developments was played by public health with a strong social aspect. That era is marked in particular by the studies conducted by Ivan Pirc after the First World War and the multi-layered reforms that took place after 1945 that provided the majority of the population with access to healthcare. Despite the progress made since then, and because they are conditioned by a larger number of social, economic and environmental factors, health inequities remain a significant challenge.

The previous health inequity reports, which came out in 2011, 2018 and 2021, gave an important insight into the dimensions of and main reasons for inequity. The first report presented a basic analysis of differences in health between different population groups, while the second contained a more in-depth discussion of the socio-economic factors, and addressed the impact of the financial crisis on the population's health. The third report highlighted the role of cooperation between institutions, and gave an insight into the effects of the covid-19 pandemic on health inequities.

This fourth report constitutes a step forward in linking data, policies and measures together. Its focus is on three key areas: access to the healthcare system, environmental inequities and the regional aspect of inequity. It also includes an analysis of the effects of the covid-19 pandemic on health inequities, and highlights the additional ways in which vulnerable groups were adversely affected. This report results from close collaboration between experts from the National institute of public health, the Institute, the Institute for Economic Research, the Institute of Macroeconomic Analysis and Development, and a number of other key stakeholders.

It provides a comprehensive overview of the situation, and gives proposals for measures to tackle the challenges based on data, analyses and examples of best practice. The report's key finding is that an inter-sectoral approach is required if we want to reduce health inequity – one that links public health to areas such as the environment, infrastructure, social policy and the economy. One remarkable achievement of this report is the regional perspective on the topics covered, indicating that we need to improve the way we identify the needs of stakeholders when providing information, and to transfer our knowledge and findings in a more effective way to a wider circle of users. This provides us with insights and directions of travel that will be valuable for the preparation of the fifth report.

We would like to thank everyone who helped make the publication of this report possible, from researchers and experts to representatives of the various sectors and institutions. We hope that the findings and proposals suggested will help decision-makers, researchers and the wider public to further develop measures that reduce health inequity and strengthen health justice.

Health justice is not only a question of policy, but an expression of our humanity. Every individual deserves an opportunity to live a healthy and high-quality life regardless of their social, economic or environmental circumstances. Through inter-sectoral cooperation, we can create a healthier and more equitable society for all.

Editorial board of the Impact of the Healthcare System and Physical Environment on Health inequities in Slovenia report

INTRODUCTION

It is only possible to outline the health inequities that exist between different population subgroups once data on health status and the different circumstances that affect health are properly broken down – mainly by gender, age, region of residence and, in particular, by education and socio-economic status. We can then establish which groups are in an unequal position compared to the general population when it comes to health. We are referring to inequities in health and well-being and the ways in which the government, together with stakeholders, should act to reduce unjust inequities.

Social and health inequities are monitored in a variety of ways in Slovenia. The National institute of public health (NIJZ) monitors the unequal distribution of health outcomes as part of its regular tasks, and by making use of domestic and international project initiatives. The first two NIJZ health inequity reports were focused mainly on collecting, analysing and presenting data on the differences in health between different groups of the population, while the third report shifted the emphasis from data on inequity to the programmes and measures that might be introduced to tackle it. This shift from a data-based to a policy-based approach also required a shift in relation to mutual cooperation and the development of all types of capacity, which we carried out using the health inequities platform.[1] Preparation of the report was only one of the short-term objectives of cooperation between partner institutions on the platform.

1 Inequalities in Health: Future Challenges for Inter-Sectoral Cooperation (Summary, 2021). The health inequity platform is shown on page 34. Summary available at: https://nijz.si/wp-content/uploads/2022/07/neenakosti_povzetek_slovenski_e_verzija_22_6_21.pdf.

PRESENTATION OF THE SITUATION BASED ON INDICATORS AND QUALITATIVE RESEARCH

Indicators of health inequity

We have been aware of the existence of health inequity in Slovenia for almost 20 years, and knowing how to measure, present and interpret it remains highly important. Public health indicators are the main tool here, and can be used as criteria for assessing health trends over time and between different populations. Monitoring these indicators enables different stakeholders, particularly health system authorities and policymakers, to observe the development of existing health-related issues and the emergence of new public health challenges, the effects of health policies, and allocate funds to where they are most needed. Public health indicators enable comparisons between regions, countries and different socio-demographic groups, and the development of a particular phenomenon to be monitored over time. This helps us identify good practices and areas that require improvement.

We have monitored a wide-ranging set of indicators in this and all previous reports on health inequity in Slovenia.[2] In developing this set of indicators, we proceeded from the methodological handbooks compiled by international organisations in collaboration with leading experts whose research in the field of population health focuses on socio-economic inequities in health. The set of indicators was adapted to the context and public health challenges specific to Slovenia, taking into account the availability of data sources. We have focused on the differences that arise as a result of socio-economic status.

As far as the design and interpretation of the indicators are concerned, we cannot ignore the fact that, in the majority of cases, the data on which the indicators are based also covers the years of the covid-19 pandemic (2020–2023). The covid-19 pandemic had a profound impact on all aspects of human life in Slovenia and across the globe. More than four years have passed since the first SARS-CoV-2 infection in Slovenia, followed by multiple waves that affected the entire population. Even today, the pandemic continues to influence our lives. The estimated values of certain specific indicators clearly show how the pandemic affected different areas of life not directly linked to covid-19. This refers to the broader impact and consequences of the pandemic on individuals, society, and the healthcare system. The severity of the pandemic and the measures introduced to limit the spread of the disease affected everyone's daily life after 2020. Where relevant, the impact of the pandemic is explained and described in the interpretation of specific indicators.

For the sake of comparison, data on individuals and internationally comparable categories are used to classify individuals into different groups by typical determinants of socio-economic status. In NIJZ publications, level of educational attainment is most often taken as the determinant of socio-economic status, as this is the most reliable of all the socio-economic determinants, or at least the one that can most easily be extracted from the different data sources (databases and national surveys from which we obtain information on health, healthcare, social security, employment and the population's economic status). We have already shown in previous health inequity reports that the level of educational attainment and income show a good correlation at both national and regional level.

2 Inequalities in Health in Slovenia (2011), Inequalities in Health in Slovenia at a Time of Economic Crisis (2018), Inequalities in Health: Future Challenges for Inter-Sectoral Cooperation (2021).

Using health indicators, we show the outcomes and important factors that influence the main causes of disease and death. This information helps organisations, communities and governments to focus their resources and efforts on improving the health and well-being of the whole population. Which factors should be selected to highlight health inequity is a matter of ongoing professional debate. Studies conducted in Slovenia and abroad have taught us that there are health- and disease-related factors in which differences in socio-economic status play a significant role, to the disadvantage of the less educated and less wealthy. There are also factors in which differences in socio-economic status play no part, as well as instances where the less educated and less wealthy individuals are at an advantage.

In this report, we publish the same set of indicators as used for the previous reports, with the exception of those for which there is not yet any new or updated data because of the multi-annual nature of some of the national research studies (e.g. the national health and healthcare study, which is carried out every six years). The indicators for the previous report were selected based on the experience gained during the preparation of the first two reports. As in the most recent report (2021), the thematic areas included represent major public health challenges in terms of prevalence, frequency, and their impact on the working capacity of the population, premature mortality, the burden on healthcare services, and the quality of life in Slovenia and Europe.

In this report as well, we are delighted to be able to present indicators that have been produced as a result of institutions working closely together. This cooperation has enabled experts who are most familiar with the data and are best able to interpret it to contribute their knowledge to the descriptions of social security, long-term care and healthcare access indicators. A review of social indicators suggests an individual's early years are crucial to determining the ability to enjoy a healthy life as they get older. For this report, we have therefore included an extensive set of indicators that throw light on social status in Slovenia. We present a wide-ranging set of indicators for the healthcare system, and show that, despite universal health insurance, some groups still find it difficult to access that system.

For the purposes of the indicators, a person's level of educational attainment is categorised as low, medium or high: low means no education and education up to vocational education level, while high means tertiary and postgraduate education. Where possible, we have shown the gap between lower and higher levels of educational attainment over a longer time period, and tried to assess whether gaps according to socio-economic status in Slovenia are narrowing, widening or remaining the same (or indeed cannot be defined with any certainty).

When considering health outcomes, age is the most important factor, and there are significant observable differences between age groups when it comes to health-related behaviours as well. However, these differences are often distributed in a different way to health outcomes. While health outcomes are typically more favourable for younger members of the population, the young tend to engage in riskier health-related behaviours. In order to exclude the impact of age as much as possible in comparisons of time and space, we have made use of age standardisation, which is the usual standard applied to health outcome indicators and the majority of the other indicators addressed.

During the extensive analysis that was required before the indicators could be outlined, we calculated the different dimensions of the relative and absolute difference between the groups, the slope index of inequity and the population attributable fraction (PAF). For data presentation purposes, we decided for a simple presentation of the gap in incidence or prevalence by socio-economic factor (most frequently education).

The set of indicators presented in the report constitutes a standard set of selected indicators that will enable us to monitor health inequity in Slovenia with greater frequency over the long term.

Comparative presentation of key indicators

improvement during the period observed

deterioration during the period observed

no statistically significant changes or an indefinable trend resulting from a fluctuation in the value or a reversal of the gap during the period observed

Table 1.1: Trends over time for indicators shown in the report for different educational attainment groups.

Indicator	Trend for Slovenia	Low level of educational attainment	High level of educational attainment	Trend in the gap Low/High
Smoking during pregnancy				
Proportion of women with a body mass index of over 25 before pregnancy				
First examination after 12th week of pregnancy				
No pregnancy screening examination				
Pregnant women (first pregnancy) not attending a maternity course				
Preterm birth				
Low birth weight				
Perinatal mortality of singletons				
Cleaning of teeth				
Loss of teeth				
Prescribed antihypertensives – men				
Prescribed antihypertensives – women				
Prescribed diabetes medication – men				
Prescribed diabetes medication – women				
Incidence of all cancers (total) - men				
Incidence of all cancers (total) - women				
Incidence of lung cancer - men				
Incidence of lung cancer - women				
Incidence of gastric cancer - men				
Incidence of gastric cancer - women				
Incidence of breast cancer				
Incidence of melanoma skin cancer - men				
Incidence of melanoma skin cancer - women				
Incidence of head and neck cancers - men				
Incidence of head and neck cancers - women				
Hospital treatment				
Lung cancer mortality - men				
Lung cancer mortality - women				
Mortality directly attributable to alcohol - men				
Mortality directly attributable to alcohol - women				
Adult mortality from injuries caused by accidents				
Mortality of elderly people from falls				
Suicide mortality - men				
Suicide mortality - women				

Note 1: Good mental health is excluded from this presentation because there is no observable trend for this indicator.

Table 1.2: Indicators in which the trend in the gap between low and high levels of educational attainment is improving (difference between socio-economic groups narrowing) .

Indicator	Trend for Slovenia	Low level of educational attainment	High level of educational attainment	Trend in the gap Low/ High
First examination after 12th week of pregnancy				
Cleaning of teeth				
Suicide mortality - men				

Table 1.3: Indicators in which the trend in the gap between low and high levels of educational attainment is deteriorating (difference between socio-economic groups widening).

Indicator	Trend for Slovenia	Low level of educational attainment	High level of educational attainment	Trend in the gap Low/ High
Pregnant women (first pregnancy) not attending a maternity course				
Loss of teeth				
Prescribed antihypertensives – men				
Prescribed antihypertensives – women				
Prescribed diabetes medication – men				
Prescribed diabetes medication – women				
Lung cancer mortality - women				
Mortality directly attributable to alcohol - men				

Table 1.4: Indicators in which the trend in the gap between low and high levels of educational attainment is not statistically significant, or fluctuates from period to period.

Indicator	Trend for Slovenia	Low level of educational attainment	High level of educational attainment	Trend in the gap Low/ High
Smoking during pregnancy				
Proportion of women with a body mass index of over 25 before pregnancy				
No pregnancy screening examination				
Preterm birth				
Low birth weight				
Perinatal mortality of singletons				
Incidence of all cancers (total) - men				
Incidence of all cancers (total) - women				
Incidence of lung cancer - men				
Incidence of lung cancer - women				
Incidence of gastric cancer - men				
Incidence of gastric cancer - women				
Incidence of breast cancer				
Incidence of melanoma skin cancer - men				
Incidence of melanoma skin cancer - women				
Incidence of head and neck cancers - men				
Incidence of head and neck cancers - women				
Hospital treatment				
Lung cancer mortality - men				
Mortality directly attributable to alcohol - women				
Adult mortality from injuries caused by accidents				
Mortality of elderly people from falls				
Suicide mortality - women				

Health vulnerabilities and inequities in three local areas in Slovenia

In 2022 the National institute of public health conducted a study of health vulnerabilities and inequities in three local areas in Slovenia: those covered by the Vrhnika, Celje and Sevnica medical centres. The study aimed to establish which individuals or groups were encountering barriers to healthcare access, what their vulnerabilities were, what those barriers to access to healthcare and other services were, and the methods employed to overcome those barriers in the local areas in question. The study also included persons with first-hand experience of health vulnerabilities and inequities, and with barriers to access to healthcare and other services.[3]

The study identified the following people or groups as vulnerable: the unemployed, foreign nationals, immigrants, workers from countries of the former Yugoslavia, Albanian families, the elderly, people suffering social deprivation, single-parent families, single mothers, precarious workers, people living in poor housing conditions, people living in geographically remote areas, children with special needs and children of separated parents, people with mental health problems, people with disabilities, the deaf and hearing-impaired, the partially sighted, people experiencing social exclusion, victims of violence, users of illicit drugs and/or alcohol and their families, people with dementia and their families, and people with chronic illnesses and other health problems.

The actual situation in the field is most directly described in the statements of some of those participating in the study, such as this one:
'There is a lot of this [poor living conditions, op. ed.] in the town, particularly among the elderly [...] They didn't have a washing machine or a fridge, the water system was blocked, the woman did not have a place to lie down but had to lie down on a sheet on the floor, there were stacks of dirty urine-soaked laundry because the machine wasn't working, the toilet was blocked, they cooked a kilo of refined pasta for breakfast, the woman was diabetic [...] There were remains of food on the table that had been lying around for a couple of days [...]' (home nursing service employee).

Vulnerable individuals or groups encounter a range of obstacles when trying to access healthcare and other forms of assistance or service. They include: language barriers (they use ad hoc interpreters, mainly children), cultural barriers (the 'different culture of the Albanian community', stigma, difficulties with integration), geographical barriers, socio-economic barriers (low incomes, low pensions, unemployment), lack of health insurance, poor living conditions, social exclusion (isolation, lack of social skills, mental illness, dependence), and other barriers to healthcare access.

The results of the study highlighted the importance of local community support in overcoming the barriers encountered by vulnerable people. The study showed the importance of the following: networking between organisations; cooperation between institutions and organisations; the sharing of information between institutions and special-interest societies/associations; projects and programmes that support vulnerable groups; the existence and operations of humanitarian and other NGOs; primary schools with programmes tailored to the needs of children with special needs; the organisation of lectures and workshops on health-related topics; the organisation and delivery of Slovenian language courses

3 In the course of the study, 31 interviews were held with 41 individuals: employees from healthcare and other institutions, members of NGOs and volunteers from a range of societies and associations (Red Cross, karitas, the ŠENT Association, a homeless shelter, a mothers' shelter, the SOCIO Institute, the KNOF Institute, a society for the deaf and hearing-impaired and a pensioners' society).

designed to help members of the Albanian community overcome language barriers; and a number of other programmes and activities.

One recognised barrier, and an example of good practice put in place to overcome it, was described by one of the interviewees:
'One barrier, the most evident one here, is choice of gynaecologist. The gynaecologists at our medical centre agreed to provide a tour of the gynaecology clinic so that these women [Albanian women, op. ed.] *could come and see that there was nothing to be scared of. So this is another example of good cooperation'* (medical centre employee).

The results of the health vulnerabilities and inequities in three local areas in Slovenia study represent an important contribution to our understanding of health inequities and vulnerabilities and the forms they take in different local environments. They will also help to reduce health inequity and involve vulnerable people in the healthcare system in greater numbers.

The study threw light on the complexity of health vulnerabilities and inequities in three local areas in Slovenia. The diverse and overlapping vulnerabilities that certain groups or individuals experience require tailored and targeted interventions based on the specific needs of the local population. Vulnerability is not uniform l and can change over time and between individuals and groups, so it is important to develop flexible strategies that include all vulnerable groups. Systematic solutions at national level are key to reducing health inequity; these include improving access to healthcare services, reducing social exclusion, improving language support for immigrants, and strengthening support for the elderly and other vulnerable groups.

Challenges in measuring the health inequities of people with disabilities

It is estimated that the European region of the World Health Organization (WHO) is home to 135 million people who live with a disability - at 14% of the population of that region, this is a large number of people with a particular vulnerability. The 2020 EU-SILC (EU Statistics on Income and Living Conditions) study covered 367.8 million people living in EU, 24.9% of whom were living with a disability (7.2% with a severe disability or impairment to their quality of life, and 17.7% with a moderate disability). EU-SILC data for Slovenia are similar.

Key public health challenges for people with disabilities

a) **Who are people with disabilities and how does the law define this group?** Slovenian law differentiates between people with disabilities and people with impairments or special needs. The law defines a person with a disability on the basis of the disability status they have acquired rather than on their specific circumstances. This means that a person with a disability does not obtain the necessary rights unless they have obtained disabled person status.

   It is occasionally assumed that people with disabilities are in poor health; the health status is separated from disability. Disability does not mean that a person is not or cannot be healthy. To be healthy means being and remaining healthy so that you are able to lead a full and active life, and having the tools and information to make healthy choices and engage in healthy behaviour.

b) **People with disabilities encounter inequities in health** brought about by inequitable socio-economic and political circumstances, social health determinants, risk factors and barriers to healthcare access. The problem with health inequity indicators is that they only show the differences and not the causes of inequity. If we want to understand those causes, we have to understand the problems people with disabilities face, particularly in integrating into the community.

c) **To involve people with disabilities in the community to a greater extent, the United Nations drafted the Standard Rules on the Equalization of Opportunities for Persons with Disabilities**, which apply the human rights model to disability. The term 'disability' is used to describe the interaction between people with a biological or medical impairment and their environment in terms of human rights. The causes may lie in deficiencies in the physical environment, or a discrepancy between what society offers and the actual needs of people with disabilities. It is therefore not just about the individual having to adapt and change to fit society; first and foremost, society has to plan ways of ensuring that all citizens have equal opportunities.

d) In order to equalise opportunities for people with disabilities, **Swedish disability organisations designed a method, referred to as 'Agenda 22'**, which is aimed at producing disability policy plans based on the UN's Standard Rules. The basic idea is that human rights should form the basis, while the best possible outcomes are achieved through cooperation between disability organisations and political decision-makers. Agenda 22 comprises 22 rules containing instructions for political decision-makers to help them plan disability policies.

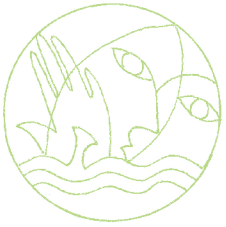
Recommendations for the future

Agenda 22 provides us with the basis for designing indicators for measuring the inclusion of people with disabilities in all spheres of life, including public health. The Agenda 22 indicators, which measure the inclusion of people with disabilities in public health policies, provide us with a clearer picture of the causes of the health inequities revealed by the indicators. Agenda 22 is therefore a welcome tool for reducing inequity in the health of people with disabilities, as it provides us with a better understanding of the difficulties they face and makes it easier to design inclusive health policies. The inclusion of people with disabilities is an important factor in strengthening public health. Adapting society to the limitations of the individual makes it possible to integrate people with special needs more fully into society. This leads to a more pleasant social environment – one that encourages healthier lifestyles not just for people with disabilities but for all members of the community.

People with disabilities encounter inequities in health. Setting the indicators for measuring those inequities is challenging, as inequity indicators show only the differences and not the reasons for those differences. Cooperation between disability organisations and authorities is key to understanding and tackling the health inequities that people with disabilities face.

State of health is differentiated from disability. People with disabilities experience inequities in health caused by social health determinants, risk factors, barriers to healthcare access, and inequitable socio-economic and political circumstances. Health inequity indicators show only the differences and not the reasons for those differences. People with disabilities often also experience exclusion from the community, which leads to further deterioration in their health status. A deeper understanding of the difficulties that people with disabilities encounter is necessary if we want to properly understand why these difficulties exist.

The UN has formulated the Standard Rules on the Equalization of Opportunities for Persons with Disabilities, which are the basis for the Swedish method, Agenda 22, which contains 22 rules with instructions for authorities on planning disability policy. The basic idea is that human rights should form the basis, while the best possible outcomes are achieved through cooperation between disability organisations and authorities.



INEQUITIES OF ACCESS TO HEALTH SERVICES AND PROGRAMMES

Inequities of access to certain types of health service

While ensuring access to healthcare services is the principle underlying today's health services, an analysis of access to selected orthopaedic services in Slovenia in terms of treatment waiting times, reveals significant differences. Here we focus on geographical differences and differences between age groups of patients waiting to access five important types of medical service: first orthopaedic consultation, diagnostic knee and hip MRI scans, knee and hip replacement surgery.

Geographical differences in access

One of the study's most striking findings is that there is pronounced geographical inequity when it comes to average waiting times. For example, people living in Jugovzhodna Slovenija region wait more than two years longer for a knee replacement than those living in the Pomurska region, while waiting times for MRI hip scans are four times longer in the Obalno-Kraška region than in Koroška. Moreover, waiting times for certain types of services can also differ significantly despite considerable similarities. For example, regional differences are surprisingly large for MRI scans of hips and knees, which use the same equipment and staff, indicating that there are significant systemic differences in the way access to healthcare services is organised.

A comparative analysis of average waiting times for a first specialist orthopaedic consultation (Figure 2.1) showed that they were longest for residents of the Posavska region (266 days), the Obalno-Kraška region (258 days) and Jugovzhodna Slovenija (256 days), and shortest in the Osrednjeslovenska and Gorenjska regions (159 and 161 days, respectively).

These differences may be the result of several factors. They include, first of all, the unequal distribution of capacities between regions, with some regions (e.g. Zasavska) having no provider of medical services such as MRI diagnostics or orthopaedic operations, and second, the integration of medical services, whereby patients prefer to choose providers that perform surgery alongside diagnostic investigations, which affects demand and consequently increases waiting times.

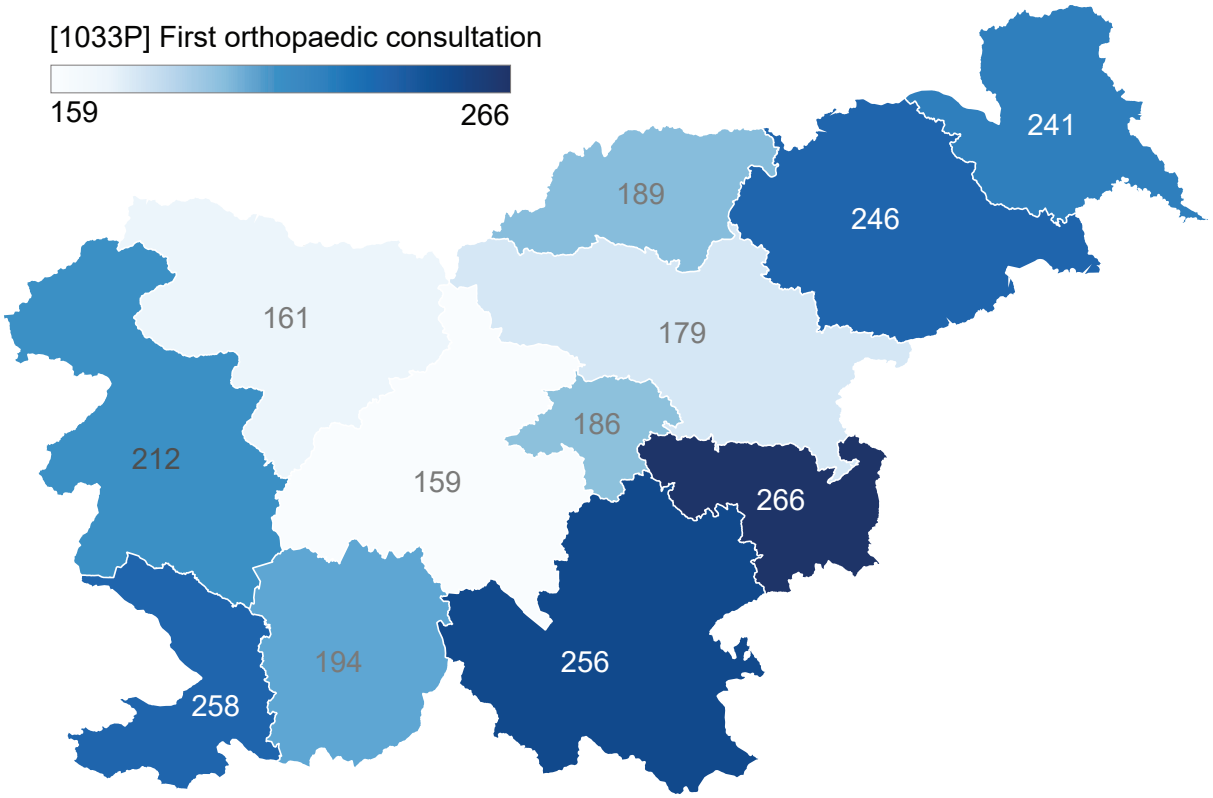


Figure 2.1: Average expected waiting times for a first orthopaedic consultation by statistical region of residence, Slovenia, 1 January 2024 (days)

Age differences and priority treatment

The study showed that the differences between age groups were less pronounced when it came to average waiting times. The oldest (85 years and over) and youngest (15–34) patients are more frequently dealt with as a matter of priority, which means that the length of time they wait for treatment is, on average, shorter than for other age groups. This may be an indication that vulnerable groups have precedence when it comes to treatment, which accords with the objective of universal access to healthcare services.

However, the differences become more pronounced when we look at the proportion of people waiting for treatment beyond the longest statutory waiting period. The oldest and youngest patients wait for knee and hip replacements for the shortest period, while those aged between 35 and 84 often wait longer. This shows the need for further analysis of the factors at play in these differences, particularly with regard to the morbidity, access to services and needs of specific age groups.

Proposed measures

The study, which focuses on inequities of access to healthcare services, must be understood within the wider context of long average expected waiting times in Slovenia. Although the study looks mainly at orthopaedic medicine, it is likely that similar inequities exist in other healthcare services, and that unacceptably long treatment waiting times exist there as well. The proposed measures therefore do not address inequities in orthopaedic provision alone, but the wider issue of access to services across the entire health system.

a) **Integrated capacity management:** Capacities must be aligned across regions and providers if we are to reduce the inequities of access to healthcare services. This includes: (1) increasing capacities in regions with the longest waiting times and (2) encouraging providers to offer a full range of services (diagnostics, consultations and operations), which will reduce the inequities resulting from the degree to which services are integrated with each other.

b) I**ncreasing health literacy:** Patients need better information on the options for selecting providers and on waiting times. This includes: (1) designing and delivering measures to increase navigational health literacy, such as educational campaigns to ensure that patients are better informed and steps to encourage patients to seek out the best solution for them, and (2) examining the possibilities of making information on healthcare providers easier to use.

c) **Region-specific measures:** Differences between regions require coordinated measures that are targeted, for example, on securing additional premises, staff and funding in regions with the poorest levels of access to healthcare services. Regional and structural plans must be developed to improve access to healthcare services (and consequently shorten waiting lists, particularly for those waiting beyond the statutory waiting period). These plans must be tailored to local needs. There must be greater coherence of practices of patient referrals to consultations, diagnostic services and operations per level of urgency of treatment at national level, with a close examination of the reasons for differences in provision and of the ways in which those differences can be eliminated.

d) **Comprehensive patient care:** The study showed that healthcare services were interconnected and co-dependent to differing degrees. Steps taken to shorten waiting lists (and therefore waiting times) must cover the entire process of patient care, from specialist consultation through diagnostics to surgery and rehabilitation. Moreover, there must be cooperation between public primary, secondary and tertiary healthcare providers, the Ministry of Health, the Health Insurance Institute, the National institute of public health, and local communities, with the aim of developing more accessible solutions

The case study focuses on an analysis of inequities of access to certain types of orthopaedic service in Slovenia. As waiting times are unacceptably long in other healthcare services as well, it is likely that similar inequities exist more widely across the health system. The proposed measures are therefore designed to address inequities of access to services in a comprehensive way across all healthcare areas.

The analysis of the time taken to access a range of orthopaedic services in Slovenia uncovered pronounced geographical inequities, with significant differences in average expected waiting times between statistical regions of residence. There are also differences between the age groups of patients waiting for medical services. Measures are proposed to improve the situation; these are focused mainly on comprehensive capacity management (better inter-regional coordination of capacities), improvements in health literacy (better patient access to information on providers and waiting times), the regional coordination of measures (reduction in differences in access to healthcare services) and comprehensive patient management (integration of all phases of medical provisions, from diagnostics to rehabilitation).

Inequities in seeking professional help for mental health problems

Identifying and understanding the factors that affect whether a person does or does not seek professional help for mental health problems is key to the development of appropriate public health measures and policies targeted at reducing health inequities. With this in mind, an analysis was conducted of data from the National Study of Mental Health Literacy in Slovenia,[4] which took place from November 2021 to January 2022 as part of the Increasing Health Literacy in Slovenia project. The key findings of the study were as follows:

a) Men are less inclined than women to seek professional help for mental health problems.

Women were more than two times more likely than men to seek professional help for mental health problems. Research shows that several factors lie behind this, including lower levels of health literacy among men and a greater tendency for men to stigmatise mental health.

b) Lower levels of educational attainment and lower self-assessed socio-economic status are significant predictive factors when it comes to the length of time it takes a person to seek professional help (i.e. a gap of more than one year between the onset of the first symptoms of mental health problems and the decision to seek help for those problems).

The reasons for the longer time gap may lie in the lower mental health literacy of people with lower levels of educational attainment and lower socio-economic status, along with fear of stigmatisation and discrimination, uncertainties around employment as a result of a diagnosis of mental illness (sick leave, dismissal, etc.) and various structural barriers (e.g. help not available).

c) Older people are more inclined to seek professional help for mental health problems.

Higher age was a predictive factor for seeking professional help for mental health problems only in the model that excluded the impact of the positions on seeking help mentioned below. Older people are less sensitive to potential stigma than younger people (stigma is one of the main factors preventing people from seeking help). Similarly, the average age of people who sought help less than one month after the onset of the first symptoms was slightly higher than the average age of those who sought help one month or more later.

d) Positive attitudes to seeking help are important.

Readiness to talk about one's mental health problems (psychological openness) and an ability to convince individuals that they can and should seek professional help are important predictive factors when it comes to whether or not a person seeks professional help. People who sought help within one year of the onset of symptoms typically scored more highly when it came to attitudes to seeking help and indifference to stigma than those who sought help after one year (an individual's beliefs about what people important to them would think if they knew they were experiencing mental health problems).

4 The study covered 2,677 people aged between 18 and 64. Just over 39% of them had experienced mental health problems at some point in the past.

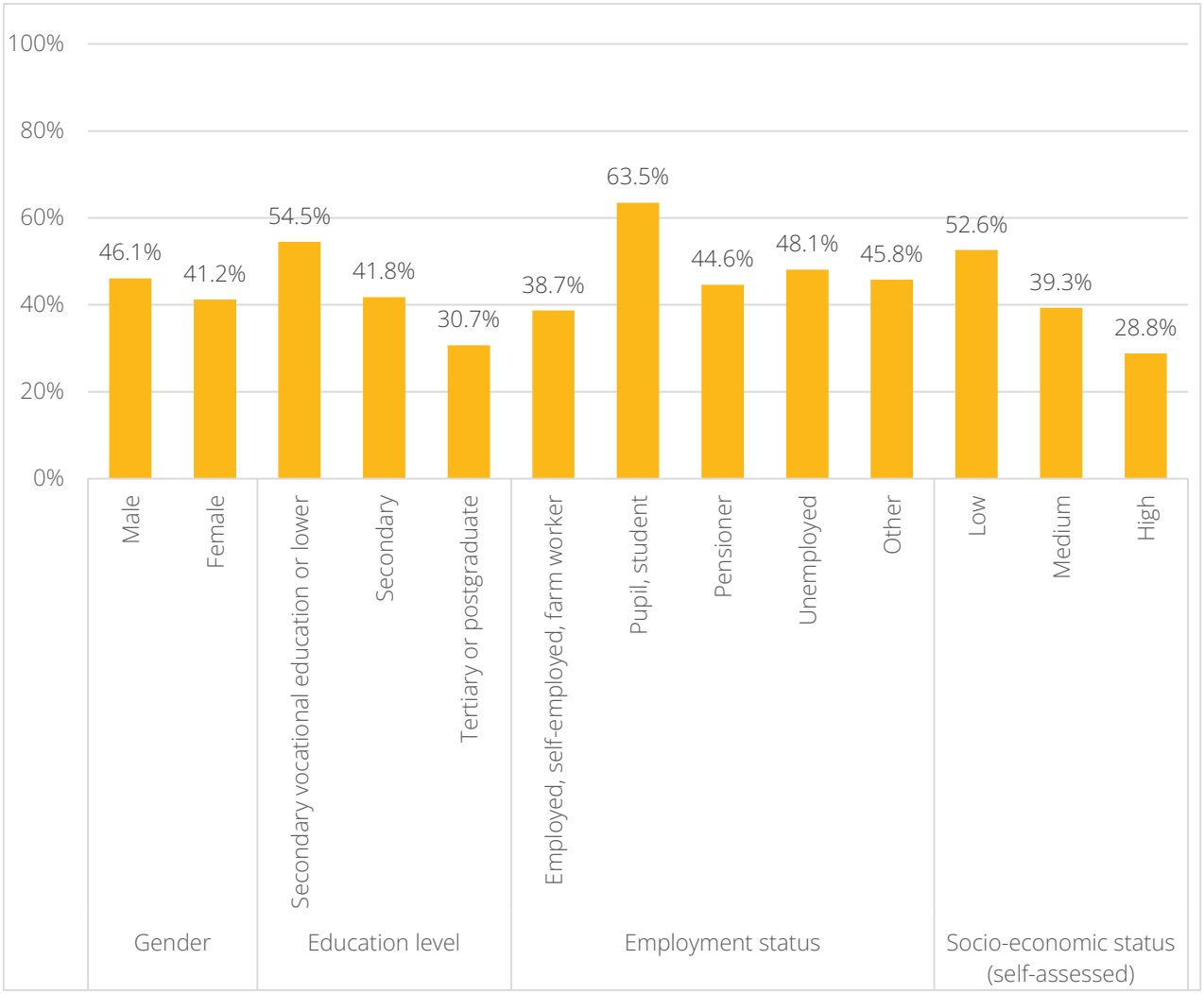


Figure 2.2: Gap of more than one year between the onset of mental health problems and the seeking of professional help by selected socio-demographic variable

Several socio-demographic groups stand out in the graph above, which shows a gap of more than one year between the onset of mental health problems and the seeking of professional help. These are: people with lower levels of educational attainment, people with lower socio-economic status, secondary school students and students. To clarify what lies behind these results, we would need an in-depth examination of the factors that hold young people back from seeking help and the factors that affect whether a person with lower levels of educational attainment and lower socio-economic status seeks help, and the time it takes for them to do so (if they do).

The consequences of delaying or failing to seek treatment for mental health problems can be serious and long-lasting. This calls for action, with the key results referred to above suggesting possible measures for reducing inequities when it comes to seeking professional help for mental health problems. We must:

- design and introduce approaches aimed at destigmatising the search for help to deal with mental health problems and targeted at a range of different population groups;

- strengthen activities to raise mental health literacy among men, people with lower levels of educational attainment and people with lower socio-economic status, and make mental health literacy programmes more widely available.

The national study of mental health literacy in Slovenia offered a number of findings that provide important insights into the population's mental health and could serve as starting points for measures to reduce mental health inequities.

The study's main findings are (1) that men are less inclined than women to seek help, seek help less often and attach more stigma to the search for help, (2) that age is a significant factor when it comes to seeking help, and also correlates with the amount of time it takes someone to seek help and (3) that lower levels of educational attainment and lower socio-economic status are important predictive factors for gaps of more than one year between the onset of mental health problems and the search for help.

Based on the findings, it would make sense to consider designing and introducing destigmatisation programmes, with an emphasis on removing the taboo surrounding professional help and targeted specifically at: (1) men (strengthening activities to raise mental health literacy); (2) young people (with in-depth research into the factors that prevent them from seeking help, and possible targeted outreach programmes); (3) people with lower levels of educational attainment and lower socio-economic status, with an emphasis on the possible ways of reducing the time it takes them to seek professional help, and including strong activities to raise mental health literacy.

Reducing inequities in access to national ZORA programme services: What we learned during the covid-19 pandemic

This paper sets out the results of a collaboration between the ZORA programme[5] and researchers from SI-PANDA,[6] who studied the behaviour and beliefs of women regarding the ZORA programme during the covid-19 pandemic. During the pandemic there was a decrease in the number of cervical screening tests and in the detection of pre-cervical cancer mainly among young women; this is concerning because more than a third of all new cases of high-grade pre-cervical cancer, which requires treatment, occur among women aged between 30 and 39. It appears that socio-economic status or age were not factors in the deepening of existing inequities in women's participation in the ZORA programme during the covid-19 pandemic. However, new barriers did arise during the covid-19 pandemic, the most prominent being the organisation of screening tests for younger women. Some of the key findings of the SI-PANDA study, which was conducted during the covid-19 pandemic, are set out below.

a) **Decrease in the number of cervical screening tests and in the detection of pre-cervical cancer in the most at-risk age group of women during the pandemic** At the end of 2020, the biggest decline was found to be in the number of cervical screening tests (26%) and in the detection of pre-cervical cancer (19%) in the 30–39 age group in comparison with the Slovenian average over the same period for women aged between 20 and 64 (a 23% decrease in the number of screening tests and a 10% decrease in the detection of pre-cervical cancer).

b) **Obstacles to and protective factors for participation in the ZORA programme.** The results of the SI-PANDA study[7] highlighted the obstacles to participation in gynaecological examinations identified by women themselves, the healthcare system or the ZORA programme. Just under half of all women surveyed mentioned problems organising their time during the covid-19 pandemic as the main reason why they found it more difficult to access gynaecological examinations, and less likely that they would respond to an invitation to attend an examination, or organise one themselves. Younger women typically identified significantly more barriers than older women. When it came to responding to an invitation to attend a ZORA screening test during the pandemic, the most important protective factor was trust in the general practitioner.

c) **Inequities of access:** The results show that socio-economic status or age were not factors in the deepening of existing inequalities in women's participation in the ZORA programme during the covid-19 pandemic. However, new barriers did arise during the covid-19 pandemic, the most prominent being the organisation of screening tests for younger women.

To prevent a renewed increase in the cervical cancer burden in Slovenia and reduce inequality of access to the ZORA screening programme, a more thorough study needs to be made of the known and possible new obstacles to and drivers of women's participation in the ZORA programme. Safe, effective, feasible and acceptable measures need to be identified and carried out, taking into account the new EU Council recommendations on cervical cancer screening programmes. We recommend the following approaches, which should be taken as part

5 The national ZORA programme is a population-wide cervical cancer screening programme conducted by Institute of Oncology Ljubljana since 2003.

6 SI-PANDA is a research study focusing on the impact of the pandemic on various aspects of life in Slovenia. It has been conducted by the National Institute of public health (NIJZ) since December 2020.

7 The 19th round of the SI-PANDA study, which was conducted in December 2021.

of the national ZORA programme, include all stakeholders, and be based on analyses of data routinely collected in the ZORA register and on additional studies:

a) **Additional studies to deepen understanding of the obstacles to and drivers of women's participation in the ZORA programme.** It would be worth examining possible new risk factors for non-participation by working mothers with pre-school or school-age children. At the overall healthcare system level, it would be beneficial to analyse capacities, obstacles and drivers among ZORA programme service providers, mainly primary-level gynaecology clinics. In relation to the ZORA programme itself, steps should be taken to assess whether there is a need to increase the number of three-year tests and the detection of pre-cervical cancer, and greater cost-effectiveness, by transitioning to a system in which all women of relevant age are invited centrally; this would replace the system that has been in place since the ZORA programme was set up, where women are invited to attend a screening test once four years have elapsed from their last examination.

b) **Implementation of effective, safe, feasible and acceptable adjustments.** Plans must be developed with all key stakeholders to adjust implementation of the ZORA programme so that access to the programme's medical services is as good as it can be for women across the spectrum of needs. This should also involve a search for tailored solutions for those women we are currently unable to reach through the existing approaches. These adjustments might, for example, include adjusting the working hours of gynaecology clinics by introducing additional slots in the afternoon and on Saturdays, additional incentives and support for gynaecology teams in relation to inviting and examining women in line with the expert recommendations of the ZORA programme, additional incentives for women (e.g. a day's leave from work to attend all recommended screening tests, with organised childcare provided during the test), the creation of acceptable adjustments in collaboration with the target group of women, and so on. New scientific findings should be taken into account, alongside expert recommendations and the EU Council's recommendations regarding new developments in cancer screening.

c) **Development of ZORA programme communication strategies to increase the number of screenings carried out under the programme and to reduce inequities.** The research results indicate that efforts should be made to provide women with continuously updated information on the availability of screening tests and, more particularly, that plans should be made to provide them with information on any new developments in this area, where this information must be tailored to vulnerable groups and brought into line with the findings of additional research to identify the obstacles to and drivers of participation in screening. Plans must also be developed to communicate any changes brought about by the new EU Council recommendations that change the dynamics of healthcare services within the ZORA programme, as these will be felt by women themselves as well as by gynaecology teams and laboratories.

Only by ensuring that all stakeholders work together on an inter-sectoral and inter-programme basis, identifying and responding to current barriers to participation in screening, focusing on the specific needs of women and making adjustments to the needs of certain groups of women will we be able to ensure that the ZORA programme continues to reduce the cervical cancer burden in Slovenia.

The ZORA screening programme is an important element in preventive healthcare for women in Slovenia because it is effective in reducing the cervical cancer burden. It appears that socio-economic status or age were not factors in the deepening of existing inequities in women's participation in the ZORA programme during the covid-19 pandemic. However, new barriers did arise during the pandemic, the most prominent being the organisation of screening tests for younger women. Due to the ongoing decline in the number of younger women taking part in the ZORA programme, which existed even before the pandemic, measures must be introduced as quickly as possible to maintain or increase the number of tests, with an emphasis on vulnerable groups. Any further reduction in the number of tests attended by the most at-risk groups of women will lead to an increase in the cervical cancer burden. Recommendations for future action include additional research to deepen understanding of the barriers to and drivers of women's participation in the ZORA programme, the identification and implementation of effective, safe, feasible and acceptable adjustments, and the development of ZORA programme communication strategies in order to increase the number of screenings carried out under the programme and reduce inequities.

IMPACT OF THE ENVIRONMENT ON INEQUITY

Climate change and health inequity

Climate change is altering global and local weather patterns, causing rises in average and peak daytime temperatures, rainfall and sea level, and increasing the frequency of extreme weather events, such as heatwaves, floods and drought.

The impacts of climate change on human health differ between individuals and groups according to level of exposure, sensitivity and ability to adapt, which are all measures of vulnerability. The more vulnerable groups and individuals are those that live in flood-prone areas, the elderly, people with health problems, the socially isolated, the mobility-impaired, and immigrants with language barriers.

Using data from the 2015–2022 period, we examined the association between the number of deaths and level of educational attainment (as an indicator of socio-economic status) during heatwaves and reference heatwave periods during the warmer part of the year in three different climate zones in Slovenia. The analysis aimed to establish whether there were any Inequities. The key findings were as follows:

a) **Continental climate (temperate continental climate)** When it came to level of educational attainment, our analysis of the association between the number of deaths and heatwaves found no statistically significant differences within single groups or between different groups.

b) **Transitional climate (humid upland climate and temperate upland climate)** Our analysis of the association between the number of deaths and heatwaves found a statistically significant increase in the number of deaths within the medium level of educational attainment group. A comparison between groups with different levels of educational attainment showed a statistically significant lower number of deaths during heatwaves among the low level of educational attainment group in comparison with the medium level of educational attainment group.

c) **Maritime climate (temperate Mediterranean climate)** When it came to level of educational attainment, our analysis of the association between the number of deaths and heatwaves found no statistically significant differences between the different groups or within single groups.

Heatwaves affect mortality to differing degrees and in differing ways around the world, with numerous factors at play.[8] Socio-economic status (SES) also has an impact on mortality from heatwaves.[9] Lower SES is associated to increased mortality during heatwaves.

Projections for the local climate indicate that heatwaves will be stronger, longer and more frequent in Slovenia as well, with forecasts suggesting that areas with a maritime climate will suffer the most, followed by those with a continental climate and those with a transitional climate.

8 Local climate, socio-economic factors, demographic factors, the healthcare system, the readiness of a community to listen to the advice of health professionals and the resilience of a population within a specific country.

9 SES is a complex concept that includes socio-economic risk factors: education, income, general financial security, profession, living conditions, resources, and the opportunities available to people in society.

Despite certain limitations, the results of the study showed that account must be taken of socio-economic factors as well as the characteristics of different climate zones in Slovenia when assessing the impact of climate change on health and planning preventive measures.

The impact of climate change on health depends on a large number of climate-related, economic and social factors. The results of the study highlight the fact that preventive climate change measures must take both climate-related characteristics and socio-economic factors into consideration.

The effects of climate change on health are not the same for everyone. When examining the association between the number of deaths and level of educational attainment during heatwaves in three climate zones in Slovenia, we found no statistically significant differences between the different groups in the continental and maritime climate zones. By contrast, there was an increase in the number of deaths during heatwaves in the transitional climate zone within the medium level of educational attainment group, while there were fewer deaths among those with a lower level of educational attainment.

The impact of climate change on health depends on a large number of factors. Lower socio-economic status is frequently associated to increased mortality during heatwaves.

Projections suggest that heatwaves will become stronger and more frequent in Slovenia in the future, with the coastal area of the country (Primorska) being most heavily affected. The results of the study show that preventive measures must take account of socio-economic factors as well as the characteristics of specific climate zones.

Inequities of access to clean drinking water

Inequities of access to drinking water present a global challenge, one that goes beyond geographical borders and affects all social classes. Access to safe and clean drinking water is crucial to the realisation of basic human rights and the maintenance of population health. At the international level, numerous objectives and guidelines have been formulated to improve access to drinking water and resolve the associated health and environmental challenges.

The drinking water supply system has one or more water supply zones. A water supply zone is an area that supplies drinking water from one or more water sources and in which water quality is more or less uniform. According to data from 2022, almost 94% of the Slovenian population are supplied with water from supply zones included in the water quality monitoring network. The data also shows:

a) **Drinking water quality is generally consistent and health-compliant in large, medium-sized and some small supply zones that supply more than 500 inhabitants.** The smallest supply zones (supplying between 50 and 500 inhabitants) are problematic from the point of view of microbiological contamination.[10]

b) **The largest total percentage of microbiologically non-compliant samples[11] was in the Obalno-Kraška region (4.4%), the Gorenjska region (4.3%) and the Primorsko-Notranjska region (4.2%).** In the Koroška and Pomurska regions, all samples were microbiologically compliant. Generally speaking, the percentage of non-compliant samples falls in inverse proportion to the size of the water supply zone. A total of two drinking water samples in two supply zones failed to comply with the chemical parameters.[12]

c) **In 2022, measures had to be taken at 102 supply zones in Slovenia in response to disruptions to or restrictions on drinking water supply.** The most common causes of restrictions or bans on the use of drinking water and of replacement supply of drinking water in 2022 were extended periods or abundant quantities of rainfall (28.4%) and short-term showers (17.6%). In some statistical regions,[13] residents were instructed to boil their drinking water over a longer period in 2022.

d) **Inequity of access to high-quality drinking water continues to present a serious challenge,** particularly in smaller supply zones, where most instances of microbiological contamination occur. The drinking water of 6.2% of the population (the 130,356 inhabitants who supply their own drinking water) was not subject to monitoring in 2022, meaning that we do not know the quality of the water they are drinking.

Ensuring that everyone has sufficient quantities of health-compliant drinking water is an ongoing task of the whole community, and one that must be based on assessment and risk management across the whole drinking water supply chain, from catchment area through the water supply system to point of use. A range of sectors, including healthcare, the en-

10 In 2022 there were 576 such supply zones; they supplied slightly less than 5% of the population.

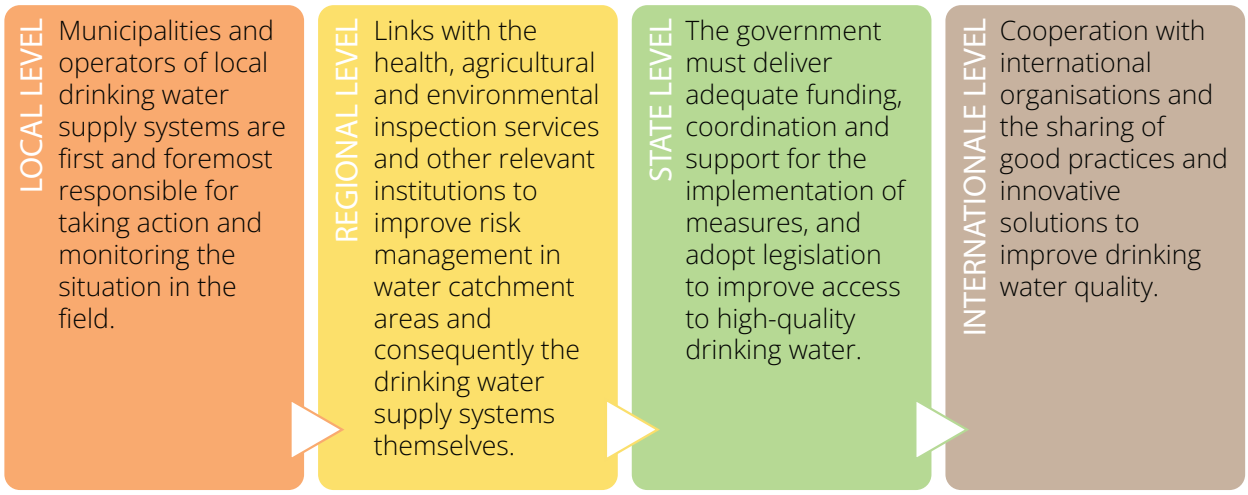
11 Presence of Escherichia coli.

12 Tests of chemical quality were carried out on 638 samples from 477 supply zones in 2022. One of the non-compliant samples was taken as part of periodic testing, with the Group B parameters indicating the presence of the pesticide desethyl atrazine. In the other sample, taken in the course of regular testing, the Group B parameters indicated the presence of lead.

13 Zasavska, Posavska, Jugovzhodna Slovenija, Osrednjeslovenska and Gorenjska.

vironmental sector, agriculture, infrastructure, education and local development, must be involved, as they are all tightly connected to the provision of safe drinking water for all.

Cooperation at all levels is required if we are to resolve the challenges successfully:



An analysis of the results of drinking water monitoring has shown that there are differences in provision of high-quality drinking water, particularly in smaller supply zones (which is where most instances of microbiological contamination occur). Inter-sectoral cooperation at all levels, from local to international, is key to reducing Inequities.

Although safe drinking water is a basic human right, there are still differences in drinking water quality in Slovenia, particularly in smaller supply zones. In 2022, almost 94% of the Slovenian population were supplied with water from supply zones included in the water quality monitoring network.

Microbiological contamination issues arose most frequently in smaller supply zones in the Obalno-Kraška, Gorenjska and Primorsko-Notranjska regions. Chemical contamination of water was rare. The most common causes of restrictions on or disruptions to drinking water supply were extended periods of rainfall and short-term showers.

Inter-sectoral cooperation at all levels is required if we are to reduce inequities: local authorities must monitor and improve their supply systems, regional authorities must manage the risks in water protection zones, the state must secure funding and produce legislative solutions, and international cooperation must contribute to the sharing of good practices.

Health inequities arising from exposure to air pollution

Air pollution is an important risk factor for the development of numerous diseases, and is also a factor in the premature mortality of people who are exposed to it over the longer term. The two most significant sources of air pollution in Slovenia are particles ($PM_{2.5}$ and PM_{10}) and ozone.

Elevated particle levels generally arise from traffic and small-scale combustion installations, as well as from industry and other economic activities. Ground-level ozone is produced by complex reactions involving ozone precursors during periods of intensive solar radiation and high air temperatures (particularly in the summer).

The respiratory tract is the first target of fine particles. Individuals exposed to particulate matter over the longer term have a greater risk of developing asthma, lung cancer, pneumonia and other chronic lung diseases. Finer particles also reach other organs in the body, such as the heart and vascular system, the kidneys, the nervous system, the digestive system and the reproductive system.

Ozone leads to a reduction in lung function among children and older people, and increases the risk of hospitalisation from chronic lung disease and stroke. Exposure to ozone leads to an increase in general mortality and mortality from cardiovascular diseases. Ozone is also implicated in the onset of type 2 diabetes and gestational diabetes.

With the aim of showing inequities in exposure to air pollution in Slovenia relative to geographical location, we analysed the differences in air pollution from particulate matter and ozone between healthcare regions in the 2010–2023. The data showed the following:

Air pollution from particulate matter

a) Trends in the average annual concentrations and the number of times the daily limit concentrations were exceeded indicate that PM_{10} levels in the ambient air are decreasing.

b) Their spatial distribution showed that exposure to PM is the highest for residents of settlements in valleys and basins in continental Slovenia, and the lowest for those who live in the higher-lying parts of less densely populated areas. The level of exposure to PM is slightly lower for people living in Primorska (the healthcare regions of Nova Gorica and Koper),

c) while the healthcare regions of Murska Sobota and Celje have the highest exposure to PM.

Air pollution from ozone

a) No trend in air pollution from ozone was detected in the period observed (except for the period of the covid-19 pandemic).

b) Measurements showed that residents of Primorska and of high-lying areas were the most exposed to ozone.

c) The highest levels of ozone exposure were observed in the healthcare regions of Koper and Nova Gorica, and the lowest in Celje and Novo Mesto.

The results confirm an association between geographical area[14] of residence and exposure to ambient air pollution.

The population must continue to be informed of the significant impact air pollution has on health, and encouraged to be informed about pollution levels and take measures to protect themselves.

Efforts must be made to reduce PM emissions.[15] The appearance of ozone in Primorska in the summer months is difficult to control as many of the ozone precursors are brought by air from the neighbouring Po Valley. This increases the importance of awareness-raising and self-protection still further.[16] Self-protective measures are particularly important for children and older people, and for people suffering from respiratory and cardiovascular diseases.

In Slovenia, the levels of air pollution from particles (PM_{10}, $PM_{2.5}$) and ground-level ozone differ according to geographical location. Differences in exposure to air pollution can lead to inequities in health between people in different geographical areas.

Air pollution is an important risk factor for the development of numerous diseases and for premature mortality. In Slovenia the main pollutants are particles (PM_{10}, $PM_{2.5}$) and ground-level ozone.

Differences in air pollution between healthcare regions:
a) The highest PM_{10} levels were recorded in the valleys and basins of continental Slovenia.

b) Primorska region and high-lying areas were the most exposed to ozone.

Efforts must be made to reduce particle emissions, particularly from traffic and household combustion installations, and self-protective measures taken by individuals. These measures are necessary to protect against the effects of ground-level ozone, particularly in the summer months.

Children, older adults and patients suffering from respiratory and cardiovascular diseases require particular protection.

14 Closed basins, valleys, openness of Primorska towards the Po Valley.

15 Particularly from combustion installations and internal combustion engines. One important step is to replace solid-fuel boilers with new heating methods, such as heat pumps, district heating and the like.

16 Staying indoors between 10 am and 5 pm, performing outdoor physical activities in the morning, adjusting the working hours of those who work outdoors.

TRANSFER AND USE OF INFORMATION ON INEQUITIES IN THE REGIONS

Health inequities in Slovenian regions through the eyes of local stakeholders

Slovenia is an exceptionally diverse country in terms of geography, economy and society; this diversity also produces regional differences in population health. If we are to reduce health inequities in a specific region, it is vital that we bring the various sectors and stakeholders in that region together.

A research study was carried out in 2024 involving all regional units of the National institute of public health with the aim of gaining an insight into the views of key regional stakeholders[17] on the health inequities suffered by residents of their region in relation to access to health-care services, mental health and environmental issues. The key findings are set out below:

Health inequities in Slovenian regions in relation to access to healthcare services

a) Two-thirds of respondents think that there are unmet needs for access to healthcare services in their region, more than 80% believe long-term care services are inadequate.

b) Around 60% think that there are fewer general practitioners, dentists and paediatricians in their local area than in others, and just under half say that their local area has fewer gynaecologists than other areas.

c) Almost all respondents are aware of health promotion and health education centres, although only half think that they meet the needs of the local population. Less than one sixth of respondents believe that mental health centres for adults, children and adolescents are adequate to the needs of the local population.

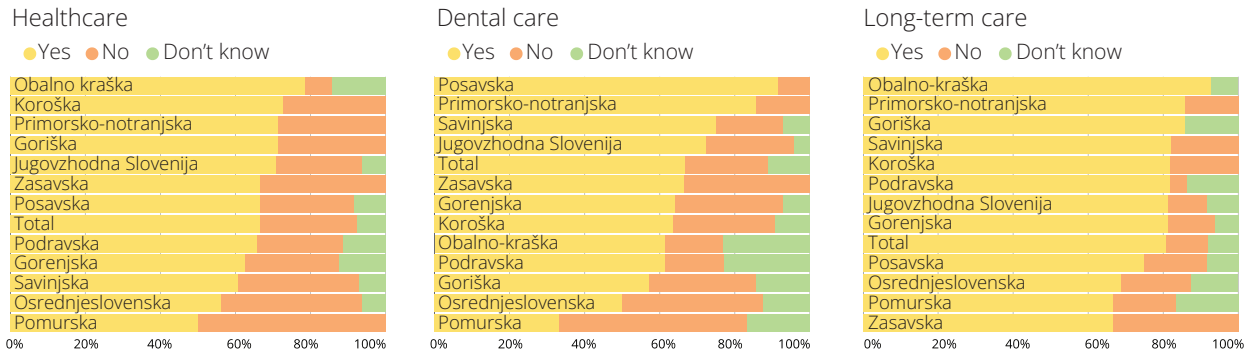


Figure 4.1: Regional distribution of answers to the question 'Do you believe there are unmet needs in your local areas for healthcare, dental care and long-term care?'

17 Municipalities, health centres, regional development agencies/centres, and social services centres.

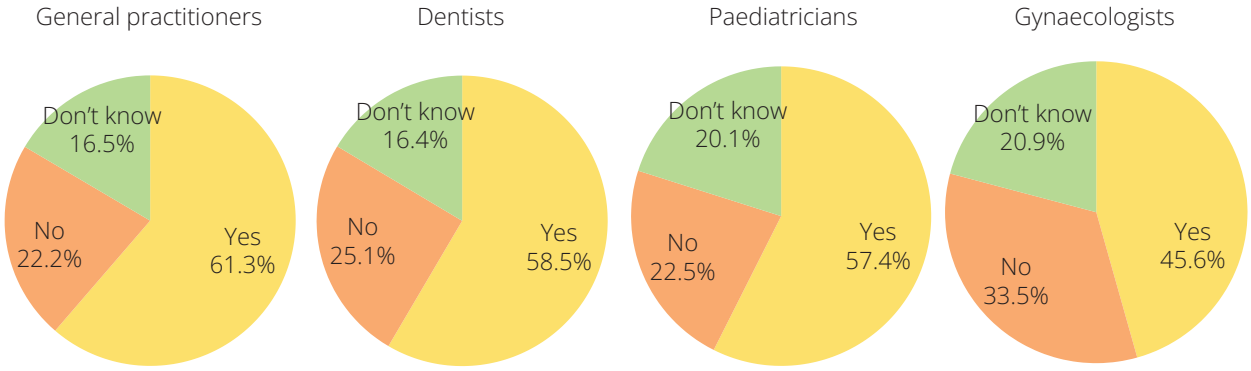


Figure 4.2: Distribution of answers to the question 'Do you believe that there are negative differences in the allocation of primary-level healthcare capacities between your local area and other local areas in terms of number of healthcare workers per head of population?'

Mental health inequities in Slovenian regions

a) More than half of all respondents believed that resources for helping people with mental health problems were more difficult or significantly more difficult to access in their local area than in most other areas.

b) From the list of the factors that have a positive impact on a person's mental health,[18] respondents highlighted social network as the most important factor, and an individual's personal characteristics and healthcare as the two least important factors.

c) The main obstacle preventing people from accessing the right help when experiencing mental health difficulties within the region were stigma, a lack of suitable structures and services, and a lack of awareness of the services working in this field in their local area.

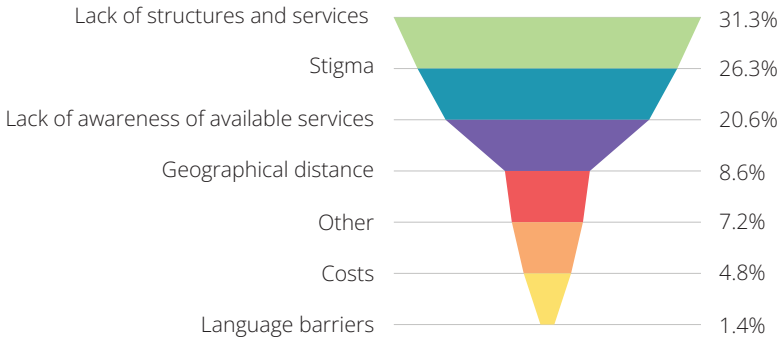


Figure 4.3: Answers to the question 'What do you believe are the main obstacles preventing people in your local area from accessing the help they need to tackle their mental health problems?'

18 Social network, individual's personal characteristics, living environment, financial and social security, employment and working conditions.

Health inequities in Slovenian regions in relation to environmental challenges

a) In relation to environmental challenges, the respondents mentioned high temperatures, storms, floods and other natural disasters as the most frequent consequences of climate change in their local area.

b) Problems with drinking water and food supply were frequently highlighted by respondents from the Primorsko-Notranjska region.

c) Only a quarter of respondents believed that air quality in the area in which they lived was good.

The responses highlight the need to tackle the issue of regional inequity, particularly in relation to the lack of general practitioners and dentists, inadequate capacities at mental health centres for adults and for children and adolescents, and opportunities to improve the promotion of prevention programmes at health promotion and health education centres.

If we are to improve access to mental health services, additional capacities will need to be directed towards improving access to sources of help and raising mental health literacy, with an emphasis on reducing stigma and improving awareness of the help already available in local areas. There is also a demonstrable need to raise awareness and carry out preventive measures to protect people's health from environmental risks.

Differences arise in relation to access to healthcare services, access to sources of help, mental health literacy and environmental challenges between individual healthcare regions in Slovenia.

In relation to access to healthcare services, mental health and environmental issues, local regional stakeholders noted the following:

Access to healthcare services was deficient, with a critical lack of general practitioners, dentists and gynaecologists. Moreover, health promotion centres and mental health centres largely did not meet local needs.

Dealing with mental health remained a challenge, with more than half stating that sources of help were more difficult to access in their region than elsewhere in Slovenia. Barriers included stigma, a lack of services and a lack of information on the sources of help available.

The environmental challenges faced by the Slovenian regions included climate change, heatwaves, floods and poor air quality. Problems with drinking water and food were particularly highlighted by respondents from the Primorsko-Notranjska region.

Access to healthcare services should be strengthened, access to mental health services improved, more and better information on mental health provided, and preventive measures against environmental risks introduced on a region-by-region basis.

CONCLUSION

The world is currently facing one of the most uncertain and unpredictable periods in its recent history. The population-wide effects of the covid-19 pandemic, the growing global conflicts, economic instability and climate change have combined to form a 'polycrisis', with the effects of individual crises interacting with others and increasing their global impact beyond the sum of their individual parts.[19] Although the crises differ in terms of their nature, dynamics and root causes, they have a common denominator: all of them disproportionately affect the most vulnerable, and increase poverty and inequity at local and global levels. As far as public health is concerned, the dramatic decline in the key determinants of health is leading to a significant increase in morbidity and mortality among the poorest, and therefore to even greater health inequity.[20] These days, an effective approach to tackling inequities in health must be multi-layered, involving multi-methodological and multidisciplinary approaches to data creation, the inclusion of experts from a variety of fields and the provision of comprehensive assessments. This includes making the most of existing databases, using various forms of research, and involving stakeholders from a range of different sectors. This approach is designed to bridge the gap between research and policy, and to encourage evidence-based decision-making to reduce the burden on healthcare and achieve the health-related goals of sustainable development.[21] We have therefore touched on these complex issues, albeit in part, in this fourth report on health inequities in Slovenia.

This report has also arisen on the basis of collaboration between the main national institutions active in their relevant fields: the National institute of public health and the Institute of Oncology Ljubljana for the healthcare sector, the Institute for Economic Research for the labour sector, the Slovenian Environment Agency for the environmental sector, the Institute of Macroeconomic Analysis and Development, and several other key expert government organisations. The Social Protection Institute also took part at the planning stage. Preparations were overseen and steered by representatives of the Ministry of Health, the Ministry of the Environment, Climate and Energy, the Ministry of Solidarity-Based Future, the Ministry of Education, and the Ministry of Labour, Family, Social Affairs and Equal Opportunities. After careful consideration, these institutions have steered their work towards the highly relevant area of access to healthcare services (something that was not addressed in previous health inequity reports), and included reflections on the covid-19 pandemic period. This is the first of our reports to address the health inequities that arise from the impact of the physical environment. The indicators section, which shows the outcomes and important factors that influence the main causes of disease and death, has again been supplemented by an examination of the qualitative aspects of the inequity faced by vulnerable groups, and of the challenges involved in measuring the inequities to which people with disabilities are subject. The added value of the report comes from the insights into inequity provided by regional and local stakeholders; the report also has high use value for those who work with specific populations and individuals (and who are therefore best placed to identify their unequal needs and opportunities).

19 World Economic Forum. Global Risks Report [internet]. 2023 (cited 4 March 2025). Available at: https://www.weforum.org/publications/global-risks-report-2023/.

20 United Nations. Sustainable Development Goals Report, Special Edition [internet] 2023 (cited 4 March 2025). Available at: https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf.

21 Rasella, D., Macicame, I., Naheed, A., Naidoo, M., Landin-Basterra, E., Silva, N., et al. The Need for Global Social Epidemiology in the Polycrisis Era. BMJ Glob Health. 2024;9(4):e015320; doi: 10.1136/bmjgh-2024-015320.

While health inequities are a complex and significant public health challenge, there is relatively little strong evidence of their extent and direction of travel in Slovenia and other European countries. It is therefore vital that we thoroughly examine and come to a precise understanding of what we need to do and where. Only then will we be able to steer policies aimed at reducing them in an effective manner. Moreover, a more precise analysis of health inequities enables us to make a better assessment of the impact of current policies and develop new, more precisely targeted measures. This will help improve health outcomes and quality of life for the most vulnerable in our society. If we want to improve our understanding of the complex dynamics of health inequity and design measures that will have a positive long-term effect on the health of the whole population, we must place greater focus on collecting and analysing data from a range of different areas.

The diverse set of topics addressed in this health inequity report for 2025 reflects the wealth of research and data presentation on this issue taking place in Slovenia, as well as the fine efforts being made at infrastructural level through the multidisciplinary cooperation of national sectoral institutions, which is a unique practice. The health inequities platform arose between 2014 and 2016, when national sectoral institutions in the field of health, labour, social security and education together laid the foundations for the Strategy for a Long-Lived Society.[22] In this way they were able to develop multidisciplinary competencies and cooperation, improve the quality of individual proposals and strongly accelerate the process of inter-sectoral coordination. It is more effective to address sectoral systems together, while inter-sectoral coordination is more effective when carried out in parallel with specific phases of the preparation of proposals for measures.

We would like to see the establishment of an institutionalised platform for inequities in which institutions can address health inequity together. National expert institutions covering specific areas cooperate through the platform to prepare situational analyses, decide on which databases to use and how to develop coordinated methodologies, and help each other interpret the results. They coordinate the proposed measures and assessments of their effects, particularly their effects on well-being and the health equality gap.

The infrastructural and systematic approach required by the platform removes otherwise common and recurrent problems: the time pressures that attend the preparation of analyses, the lack or inadequacy of data and tools, problems relating to the coordination of the work of researchers within single institutions, and problems relating to the establishment of regular groups of researchers (as their engagement is only periodic and partial). Proper coordination of the work of key sectoral research and other relevant institutions will require the systemic development of opportunities for cooperation when the bases for measures are being prepared and the measures themselves are being designed. As this report goes to press, the platform is celebrating ten years of existence, which means that the last three health inequity reports have relied on its findings and work.

The health inequities platform is a unique and emerging practice of great promise, which is why we offered it to the 24 EU Member States that share their experiences through the JA Prevent NCD project. One of the important cross-cutting themes addressed by the project is the taking of measures to reduce health inequities in Member States and across the EU more widely. Slovenia's pilot experience of collaboration between national sectoral institutions, which coordinate the preparation of the bases for measures within their sectors, which they

22 Integration of Geriatric Care project, available at: https://staranje.si. Strategy for a Long-Lived Society, available at: https://www.umar.gov.si/fileadmin/user_upload/publikacije/kratke_analize/Strategija_dolgozive_druzbe/Strategija_dolgozive_druzbe.pdf.

are then more easily able to communicate along their respective verticals, will be developed further as part of a joint action over the next three years, and presented to other participating countries. We expect to be able to institutionalise it in Slovenia and put it to optimal use for the effective joint planning of measures, with particular emphasis on reducing health inequities and increasing the well-being of specific population groups and of society as a whole.

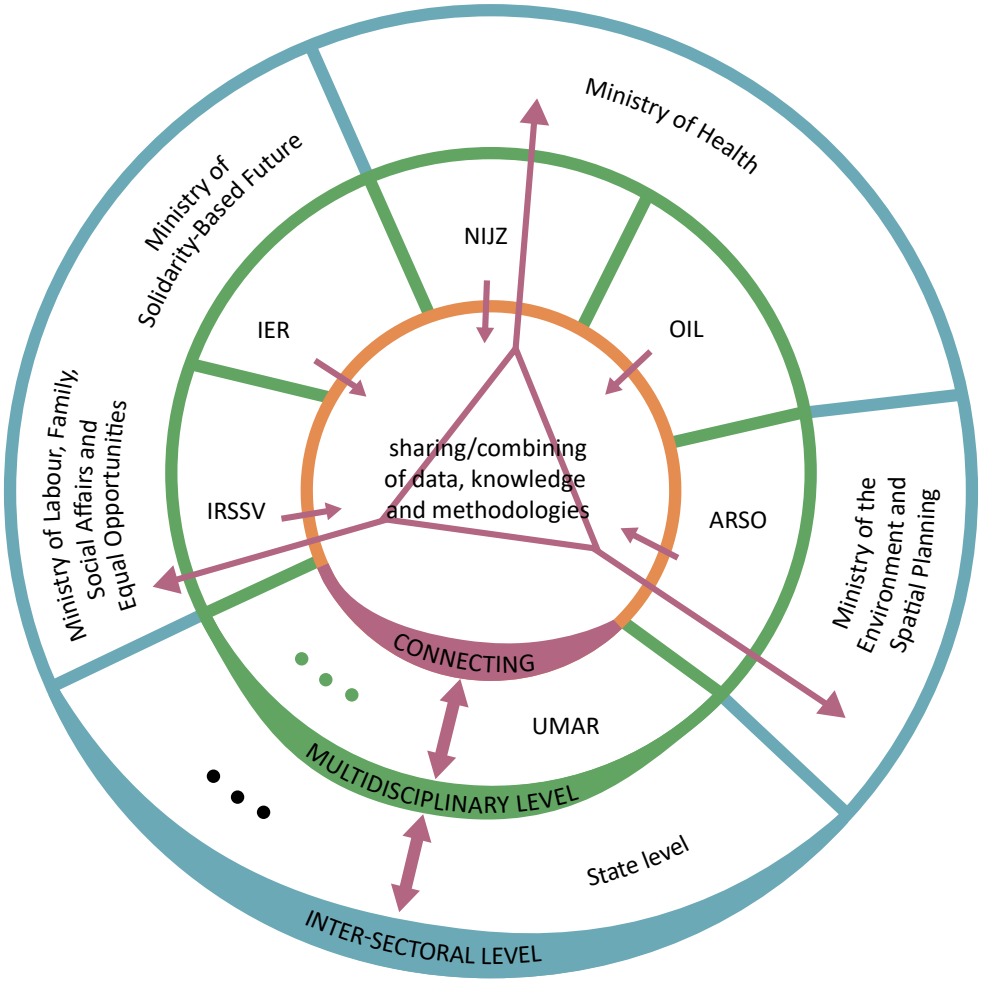


Figure 5.1: Platform for inter-sectoral cooperation in the field of health inequity

Note: ARSO - Slovenian Environment Agency, IER - Institute for Economic Research, IRSSV - Social Protection Institute of the Republic of Slovenia, NIJZ - National institute of public health, OIL - Institute of Oncology Ljubljana, UMAR - Institute of Macroeconomic Analysis and Development

Kazalo slik

Kazalo tabel

REVIEWERS' REFLECTIONS

'The general impression gained from examining the indicators is that health inequities between different population groups in Slovenia largely remain in place. Education continues to be the main determinant of these inequities, which means that education brings with it financial, cultural and social capital that has an impact on health. People with lower levels of education are vulnerable in terms of health, life expectancy and the risk of developing certain health problems (with some exceptions). Of course, it is neither possible nor logical for all inhabitants to have higher education. This raises the question of what can be done to empower these people to lead healthier lives, and to make healthcare more accessible to them.

The Slovenian healthcare system remains a significant leveller of social differences, and public health efforts to identify, analyse and explain health inequities, and to plan measures to overcome them, are the foundational activities in this regard. The problem lies in the interests of other holders of power in society, who are indifferent or opposed to these efforts. As the authors of the papers in this report almost unanimously state, this process requires integration, cooperation and the creation of alliances: alliances for health. The major contribution made by these texts lies in identifying not only the areas of inequities, but also those entities whose concerted action could lead to better health for the Slovenian population as a whole.'

Professor Majda Pahor

'Viewed cross-sectionally, the key finding remains that there are still major inequities in health in Slovenia that are determined by level of education and socio-economic status. Men with low levels of education are still most exposed to the risk of premature mortality, while the situation among the more highly educated has improved to such an extent that they no longer fall behind women with lower levels of education. A large social gradient is also present in mortality from lung cancer, diseases attributable to excessive alcohol use, injuries and falls, and suicide.

The report highlights the key findings that provide important messages and guidance for future public health activities. The topics addressed are among the most urgent questions facing the public healthcare system, and ones that require multi-sectoral and multidisciplinary cooperation. The analytical nature of the papers in this report and the variety of methods used, which reflects the ability to adapt to the requirements of specific issues, confirms the validity of the results and recommendations.

This report will serve as excellent material for discussions with representatives of the Ministry of Health and all health-related ministries, as well as with parliamentarians, those paying for health services and everyone involved in population health, and as the basis for further developing healthcare services.'

Assistant Professor Tit Albreht

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