

IMPROVING HEALTHCARE IN PAKISTAN



GLOBAL HEALTH



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EXECUTIVE SUMMARY

- While Pakistan is undergoing a political, financial and recently environmental crisis, the country not only has to face the new public health, flood induced, risks, but also has to tackle the constant health weaknesses of the past decades, that will now only be further exacerbated.
- Neonatal diseases are the leading cause of death, however non communicable diseases contribute to more than 50% of the total deaths, with ischemic heart disease and stroke taking the first 2 places in regards to deaths due to NCDs.
- Risk Factors: The main risk factors driving death and disability in Pakistan are malnutrition, air pollution and high blood pressure.
- Interventions to target the mentioned risk factors include nutritional supplementation, dietary and lifestyle changes, as well as solar powered water purification processes.
- Further interventions targeting healthcare shortages and social inequalities include community projects, such as Lady Health Workers and educational campaigns in rural areas.

3 GOOD HEALTH AND WELL-BEING



6 CLEAN WATER AND SANITATION



10 REDUCED INEQUALITIES



INTRODUCTION



UNICEF put Pakistan on the top of the list of the riskiest countries to be born in, due to the extremely high rate of 45 neonatal deaths per 1,000 births, in 2018 (Malik and Bhutta, 2018). While this number has dropped to 39,44 in 2021, it is still extremely high, as it translates to more than 250,000 neonatal deaths per year, in the sixth most populous country in the world.

Pakistan, like several other lower to middle-income countries, has devoted significant effort towards enhancing its healthcare infrastructure. Although there have been noticeable improvements resulting from these reforms, the potential for further advancement is vast. The existing healthcare system is insufficient to cater to a population of over 200 million people, and with a projected increase in population, the situation may exacerbate if necessary measures are not taken.

The country that has, for years, been battling droughts and floods due to the climate crisis, is currently one of the most vulnerable in the world, with regard to disasters. The already fragile health system was pushed to its limits after the catastrophic flooding and rainfall of 2022, which left more than 8 million people displaced (UN Office for the Coordination of Humanitarian Affairs, 2022), making access to clean water increasingly harder.

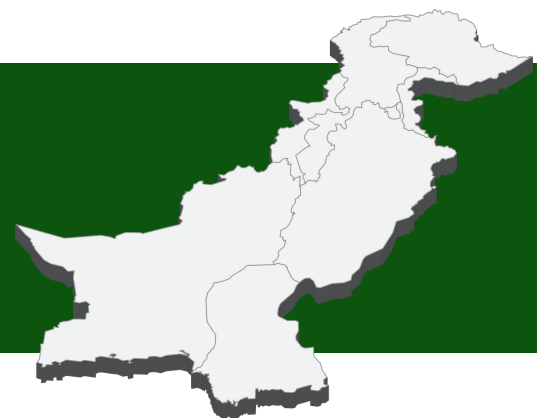
The country will keep being disproportionately affected by climate change, resulting in further social inequalities that hinder the access to healthcare and preventative medicine. Children and poor communities that are being overly affected by communicable and non-communicable diseases will need to be further supported in order to recover from the damage and prevent chronic diseases that might surface in the future.

This policy brief focuses on child health and provides the Minister of Health of the Islamic Republic of Pakistan, with evidence based recommendations that will assist in tackling the risks behind the burden of disease in the country.



ISLAMIC REPUBLIC OF
PAKISTAN

POPULATION: 240,485,658



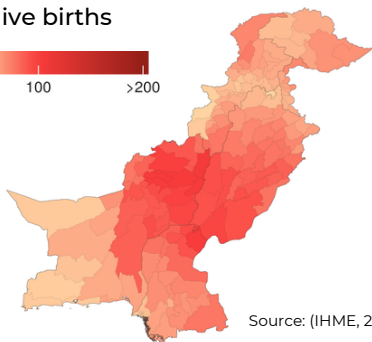
HEALTH IN NUMBERS

Most of Pakistan's health problems are disproportionately affected by poverty. Even though the poverty rate is expected to drop from 39.8 % in 2018, to 37.2% in 2023, if we account for population growth, that results to almost **3 million more poor people than in 2018** (World Bank Group and Moritz, 2023). As public healthcare facilities provide suboptimal care, people are forced to visit private facilities that are extremely expensive and out of financial reach for the poor.

The healthcare system in Pakistan is both inadequate and costly. Due to the public sector's severe lack of funding and the expensive and unregulated nature of the private sector, healthcare plans are poorly executed, and confidence in government healthcare is low (Nisa, Nadeem and Mustafa, 2021).

2017

Mortality rate per 1,000 live births



Source: (IHME, 2023)

Additional to the inequalities caused by multidimensional poverty, the Pakistani society also suffers from severe gender disparities. Pakistan is placed in number **151 on the 2020 Global Gender Gap Index (GGGI)**, leading to less or worse access to healthcare for women (Balakrishnan and Margaret, 2022). When combined with other socio-economic characteristics, these inequalities are the cause for Pakistan having one of the worst maternal mortality ratios worldwide, and one of the highest in

South Asia, with numbers in rural areas exceeding **199 deaths per 100,000 livebirths** (Shaheen et al., 2022). However, these numbers have seen a big decrease in the last decade. While great effort has been made in tackling the country's most major health issues, additional effort is obviously required. Pakistan spends **only 3,98% of its GDP on health**. This low percentage for healthcare spending can be identified when looking at the numbers of hospital beds and healthcare human resources in the country.

There is less than one bed and one healthcare professional per 1,000 people seeking medical health (The World Bank, 2022). The number of public sector hospitals in 2018 was 1279, Basic Health Units (BHUs) had reached the number 5527, while there were only 686 Rural Health Centers (RHCs) (Nisa, Nadeem and Mustafa, 2021). Currently, the majority (**70%**) of Pakistan's healthcare budget is allocated towards tertiary care in major urban areas, while less than 30% is dedicated to preventive measures and health facilities, and a mere **0.1%** is allocated for **maternal and child health** (Malik and Bhutta, 2018). The Pakistani healthcare system lacks consistency, education and correct implementation of healthcare guidance protocols.

HEALTH CARE SYSTEM

Indicator	per 1,000 people
Hospital Beds	0,6
Physicians	1,1
Nurses and Midwives	0,6

(The World Bank, 2019)

METHODS & LIMITATIONS

In order to collect accurate and current data, that properly assist in creating effective and plausible policy recommendations, this policy brief builds upon systematic reviews and randomized control trials conducted after 2010. Data was also drawn from the World Bank, as well as the Global Burden of Disease Project. The main research sources were Google Scholar, the Campbell Collaboration and other peer-reviewed journals, such as "The Lancet" and "PubMed".

While these data sources should shape a sufficient image of the need for change, there are sufficient limitations that need to be taken into consideration.

- Lack of data for the most recent years and outdated information
- Lack of cultural context and understanding of societal structure
- Insufficient inclusion of the impact of environmental effects on future implications

The goal of this policy brief is to provide the Minister of Health of the Islamic Republic of Pakistan with accurate and scientifically supported information and suggestions, towards improving the population's overall health and reaching the Sustainable Development Goals. In order to issue specific recommendations that will assist in effectively combatting the inadequacies in the health system, the focus of the policy brief are the diseases that put the greatest strain on it.

1. The Global Burden of Disease Project

2. Systematic Reviews

3. Peer reviewed Journals

4. World Bank Data

MAIN FINDINGS

I. KEY RISK FACTORS

According to the Global burden of Disease Project, the two leading causes of death in Pakistan have remained the same for more than a decade, with Neonatal Disorders on the first place with an decrease of 11.8% and Ischemic Heart Disease on the second place, with a 28.8% increase in the past decade (IHME, 2023). Following those, are stroke with an increase of almost 20% and Diarrheal Diseases, seeing a decrease of 22.5% since 2009 (IHME, 2023). While communicable diseases have witnessed an overall decrease despite their high numbers,

non-communicable diseases (NCDs) contribute to an increasing amount of disability-adjusted life years (DALY) (World Health Organization, 2022).

The most common risk factors that drive disability and death are malnutrition, air pollution and high blood pressure.

COMMON CAUSES OF DEATH

1. Neonatal disorders ● CD
2. Ischemic heart disease
3. Stroke ● NCD
4. Diarrheal diseases

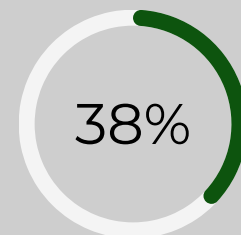
Malnutrition contributes to the most deaths: Yet to be tackled

Adequate intake of macronutrients and vitamins is crucial for the proper functioning, growth, and development of the human body. Unfortunately, numerous women and children do not obtain sufficient amounts of these essential nutrients through their dietary intake. Malnutrition in Pakistan has deteriorated during the past decades, especially when it comes to protein and micronutrient deficiencies (Ali, 2020). **Around two-third of households with almost 80% of children in Pakistan don't have access to enough amount of healthy and nutritious food (Ali, 2020) and 17% of the total population is still undernourished (Food and Agriculture Organization of the United Nations, 2021).**

Micronutrient deficiencies are exacerbated during pregnancies, due to the increased nutritional requirements. This can lead to further deficiencies, anemia, preterm births (Keats et al., 2021). Preterm birth complications are the leading cause of neonatal deaths in Pakistan accounting for **34% of the total number** (Healthy Newborn Network, 2019). Along with India and Bangladesh, Pakistan is one of the countries that contribute to the highest global levels of disability-adjusted life years (DALYs) due to child undernutrition (Wali, Agho and Renzaho, 2019).

Malnutrition is also one of the key risk factors for stunting in children. Currently **stunting is prevalent in 40% of Pakistani children**, which not affects physical growth but also weakens neurodevelopmental and cognitive functions and is connected to an elevated risk of chronic diseases in adulthood (Ali, 2020).

UNICEF, WHO, World Bank

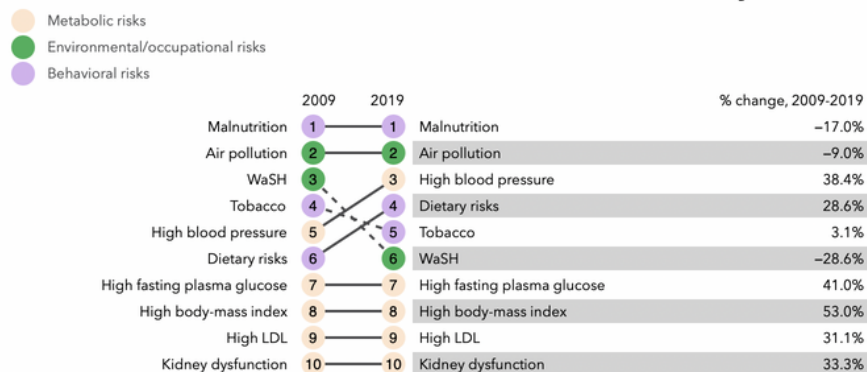


In Pakistan, 38 percent of the children under five years of age are stunted.



CPSD

What risk factors drive the most death and disability combined?



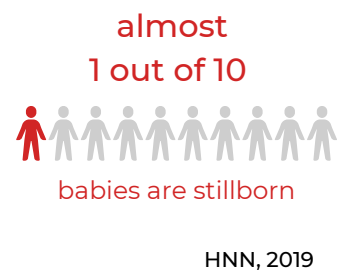
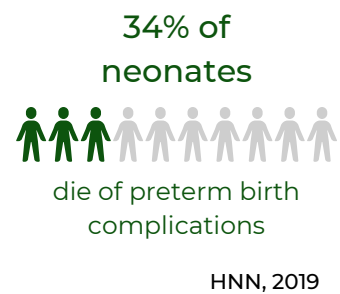
I. COMMUNICABLE DISEASES

Neonatal Disorders and Maternal Health

Nutritional deficiencies and specifically calcium deficiency are associated with hypertension, which is of the primary causes of maternal morbidity, mortality, fetal growth restriction and preterm birth (Keats et al., 2021).

In Pakistan, the maternal mortality ratio has significantly improved the past decade from 230 per 100,000 births in 2010, down to currently 140 deaths per 100,000 live births (World Health Organization, 2019).

When it comes to neonatal mortality, other than prematurity, which is the leading cause of death, **32% of neonates die of birth asphyxia and other intrapartum related events** (Healthy Newborn Network, 2019). Pakistan's rate of neonatal mortality accounts for the majority of under-five deaths (Ahmed and Won, 2017).



PAKISTAN KEY POINTS

- Fertility Rate: 3.4 births per woman
- Neonatal Mortality: 39.44 per 1,000 live births
- Under 5 Mortality Rate: 63,3 per 1,000 live births
- Maternal Mortality Rate: 140 per 100,000

United Nations Inter-agency Group for Child Mortality Estimation (2023)



UNICEF Pakistan/2016/Zaidi

Diarrheal Diseases, Diet and Water Insecurity

One of the most critical ways of avoiding enteric diseases is safety of water and food supplies. However, in Pakistan only **36% of the total population has access to safely managed drinking water services** (The World Bank, 2022).

Pakistan had one of the highest rates of death from diarrhea in children under the age of 5 (Saeed, Haile and Chertok, 2020). Insufficient access to safe facilities for disposing human waste, obtaining clean drinking water, and practicing hygienic washing and food preparation increases the risk of deadly infections. It can also lead to chronic diseases like acute **respiratory infections and diarrheal disease** (Chirgwin, H., Cairncross, S., Zehra, D., & Sharma Waddington, H., 2021).

To avoid diarrheal diseases as well as rising transmitted diseases clean water for drinking and everyday use is necessary. Further sterilization measures must be undertaken, as only disinfected water should be consumed.

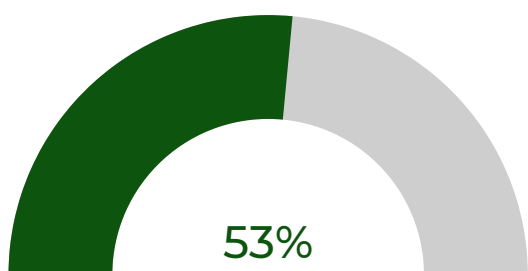
II. NON-COMMUNICABLE DISEASES

The biggest health risks related to Non-Communicable diseases in Pakistan as well as South Asia as a whole are **hypertension** and **air pollution**. These health risks have been on the top of the burden of disease in Pakistan for more than a decade. Hypertension and air pollution contribute in the two leading non-communicable diseases in Pakistan, which are **ischemic heart disease** and **stroke**.

01 Hypertension as a leading risk

In Pakistan **38,7%** of the population has **hypertension**, followed by diabetes, which is prevalent in **14,6%** of the population (Kazmi et al., 2022). Hypertension exists alongside other chronic diseases such as diabetes, cardiovascular disease and behavioral and social characteristics. According to Kazmi et al. , some of the social factors affecting the level of high blood pressure in the country are **improper and inconsistent healthcare guidelines, limited resources and research, as well as a lack of patient safety measures** (Kazmi et al., 2022).

Obesity, the use of tobacco and a poor diet are the most common risk factors for high blood pressure (Kazmi et al., 2022). Adopting a healthy diet and lifestyle can decrease the risk of hypertension, which can lead to a reduction of ischemic heart disease, with which hypertension is linked to an amount of **47%** and **strokes** (**54%** of stroke episodes are linked with hypertension) (Riaz et al., 2021). The lack of physical activity and the unhealthy eating habits also put the Pakistani population at a higher risk for diabetes.



In the provinces of Sindh and Punjab, hypertension was observed in **53%** of the population (Kazmi et al., 2022).

RISK FACTORS

- **OBESITY**
- **SALT INTAKE**
- **TOBACCO USE**
- **POOR DIET**

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II. NON-COMMUNICABLE DISEASES

02 Air Pollution

The air quality in Pakistan has remained exceptionally poor since the 90s and has constantly been surpassing the WHO pollutant limits (Anjum et al., 2021). Extreme urbanization, an increasing cluster of harmful pollutants in big cities combined with indoor air pollution have put Pakistan on the list of top countries with premature deaths due to air pollution.

According to the World Bank's assessment, in Pakistan, outdoor air pollution leads to **22,000 premature deaths** of adults and a **loss of 163,432 DALYs annually**. Similarly, indoor pollution results in 40 million cases of acute respiratory infections and 28,000 deaths per year (Waheed and WHO, 2023).

The Demographic Health Survey report states that **62% of households in Pakistan use solid fuels** like wood, crop residue, animal dung, charcoal, and coal for cooking (Khan and Lohano, 2018). The double burden of indoor and outdoor air pollution affects the immune system and not only increases the chances of respiratory infections and pneumonia, but increases the risk of cardiovascular diseases. Exposure to long term air pollution increases the risk of **ischemic stroke** while short term exposure increases the risk for **intracerebral haemorrhage**, a type of hemorrhagic stroke (Verhoeven et al., 2021).



NDTV.com. (2021).

POLICY RECOMMENDATIONS

Neonatal Disorders and Maternal Health

- Endorse neonatal Vitamin A, dextrose and probiotic supplementation, as a cost effective and easily accessible implementation to reduce gastrointestinal illnesses, blood infection and overall death of neonates (Imdad et al., 2021).
- Continue investing in health education projects, such as Lady Health Workers to bridge the gap between local communities and the healthcare system. Promote interventions through community health workers in order to improve antenatal care and reduce newborn mortality (Keats et al., 2021).

Malnutrition

- The intake of nutrient-dense fortified complementary foods (FCF) should be promoted (Ali, 2020).
- Promote early identification of chronic and acute malnutrition on the community level through active community screening by trained community health workers (CHWs) (Das et al., 2020).
- Endorse daily nutritional supplementation as antenatal care to overcome complications associated with micronutrient deficiencies (Keats et al., 2021).

Diarrheal and Transmitted Diseases

- Improve access to clean water supply by investing in solar-powered reverse osmosis (RO) facilities, which purify contaminated water (Iqbal et al., 2022).
- Exclusive breastfeeding until at least the first 6 months of age should be recommended in order to reduce infant mortality and avoid chronic diseases in adulthood. Human milk contains antibodies that support the immune system against diarrheal diseases (Saeed, Haile and Chertok, 2020).



(Amar Jaleel\International Medical Corps)

POLICY RECOMMENDATIONS

Hypertension: Ischemic Heart Disease + Stroke

- The Ministry of Health should follow WHO recommendations and provide education around dietary habits in order to reduce salt intake. Governments are urged to create systematic alliances with private food-processing sectors and the marketing sector, in order to reduce salt intake in the general population (Pandian et al., 2017).
- Increase testing and monitoring facilities and include antihypertensive and antithrombotic medicine (such as polypills, a reduced cost combination of pills) in the list of essential medicine, in order to make them available in rural areas at an affordable price and reduce stroke burden (Pandian et al., 2017).
- Promote school and community education programs regarding the importance of physical activity and tobacco cessation or reduction.

Support innovative ways to decrease indoor and outdoor Air Pollution

- Adopt a public-private partnership model to fund entrepreneurs and promote the production of fuel-efficient technologies in Pakistan
- Raise public awareness regarding the health risks of biomass fuel use and market low-cost alternatives
- Raise awareness between public and private stakeholders regarding air pollution and its effects on human health (Anjum et al., 2021)
- Fund a monitoring system in order to assess the burden of air pollution on the environment and its consequences on the rise of cardiovascular diseases
- Fund fuel-efficient stoves in remote and impoverished areas, to reduce the use of harmful fuel in cooking, as well as smoke inhalation



(Khan and Zaidi, 2005)

OVERALL HEALTH IMPLICATIONS

It is crucial for the overall health system to be reorganized and take into consideration societal characteristics, to come closer to reaching the SDGs.



Budget

To address the challenges faced by the health sector in the country, it is necessary for both federal and provincial governments to increase their budget allocation, particularly for development expenses (Nisa, Nadeem and Mustafa, 2021).



Surveillance

Create and implement National surveillance in order to report an accurate number of cases and battle the inconsistencies in implementation of national programs, from the design on a national level to the implementation on a district level. To ensure programs are effective, third-party monitoring is suggested (Shaikh, Hafeez and Ali (2019).



Inequalities

The National Health Insurance Programme must be inclusive with regard to the coverage of outdoor or ambulatory services and the cost of medicines and diagnostics, as well as contributory and non-contributory healthcare coverage for the population that has a low income (Shaikh, Hafeez and Ali, 2019).

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