

HOW TO IMPROVE MATERNAL AND CHILD HEALTH IN SOMALIA

Source: UNICEF Somalia

Key Messages

- ▶ The combination of conflict, drought and an under-resourced health system leads to many premature deaths in Somalia, especially amongst mothers and children.
- ▶ Communicable and neonatal diseases dominate, with lower respiratory infections, tuberculosis and neonatal disorders causing the most deaths.
- ▶ The main risk factors driving death and disability are malnutrition, household air pollution and poor access to WASH.
- ▶ Interventions which target these risk factors include: breastfeeding peer counselling, providing access to cleaner stoves and investment in handwashing stations.
- ▶ Further interventions which target health staff shortages include: integrating traditional birth attendants with formal health systems and training community health workers in tuberculosis case detection.

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A conflict- and drought- ridden country...

- *Plagued by decades of civil war and extreme droughts, Somalia is a country in crisis. Conflict and extreme weather events have pushed its already-fragile health system to its limits.*

...served by an under-resourced health system...

- *With a mere 87 hospital beds per 100,000 people, Somali's healthcare infrastructure is severely lacking. Regarding personnel, the situation is even worse. Somalia has only 2 trained physicians and 11 nurses and midwives per 100,000 people, lagging behind neighboring countries like Kenya, Ethiopia and Djibouti (World Bank, 2022).*

...leads to many premature deaths,...

- *Inadequate health infrastructure and a lack of health personnel results in many preventable deaths. Life expectancy is only 57 years, which is significantly lower than the average for low-income countries (64 years) (World Bank, 2022). Most deaths are caused by lower respiratory infections and tuberculosis, infectious diseases which can be easily treated given the appropriate resources (IHME, 2022b).*

...especially in infants...

- *The third leading cause of death is neonatal disorders (IHME, 2022b) - a direct symptom of the lack of appropriate resources for maternal and baby healthcare. For every 100 babies born, 4 babies will not survive past four weeks (World Bank, 2022).*

...and mothers.

- *Maternal health is also a cause for concern, as Somali women die from pregnancy- and pregnancy termination- related causes at a much higher rate than women in comparable countries. The maternal mortality ratio stands at 829 per 100,000 births, well above the low-income average of 460 (World Bank, 2022).*

→ ***This report will present some evidence-based interventions which have the potential to significantly improve maternal and child health, as well as overall population health.***

Somalia: Key facts

- 👤 **Population:** 15.9 million
- 💰 **GDP per capita:** 438.255 US\$
- 👶 **Fertility rate:** 6 births per woman
- 👴 **Life expectancy:** 57 years
- 👶 **Neonatal mortality rate:** 37 per 1,000 live births
- 👶 **Maternal mortality rate:** 829 per 100,000 live births

Source: World Bank



Source: NRC

Key health system indicators for Somalia

Indicator	per 100,000 people
Hospital beds	87
Physicians	2
Nurses and midwives	11

Source: World Bank



Source: BORGEM Magazine

In order to develop evidence-based findings and recommendations, this report draws on four main data sources:



1. The GBD Project

The Global Burden of Disease (GBD) project is a rich source of data for policymakers. Collected by over 7,000 researchers across the globe, the tool includes data on the top causes of death and disability in 195 countries as well as key risk factors. It was developed by the Institute for Health Metrics and Evaluation (IHME), an independent health institute in Washington (IHME, 2022a).



2. World Bank Open Data

World Bank Open Data offers free access to global development data. Through this tool, it is possible to assess progress in certain indicators over time and to compare countries. Much of the statistics in this report stem from this data source, for example, population, child mortality rate, life expectancy and health system indicators.

3. Systematic reviews

In a systematic review, researchers summarize the existing research on a particular topic, using specific methods to choose and analyze studies. Thanks to their comprehensive and rigorous nature, they are a reliable source of information for evidence-based practice, especially in the field of public health. They are often used to justify the recommendation of certain interventions (Ganeshkumar & Gopalakrishnan, 2013).

4. Other peer-reviewed journal articles

In addition to the sources mentioned above, this policy brief refers to highly-cited research from prominent journals, especially in the field of health. Such journals include the Lancet, BMC Public Health, PLoS One, and the Bulletin of the World Health Organization.

Limitations of the approach include:

- outdated or missing data for Somalia
- lack of studies conducted in Somalia
- limited generalizability of studies to Somali context
- insufficient consideration of Somali culture
- insufficient consideration of economic factors

Review > Bull World Health Organ. 2008 May;86(5):390-398C. doi: 10.2471/blt.07.044529.

Indoor air pollution from unprocessed solid fuel use and pneumonia risk in children aged under five years: a systematic review and meta-analysis

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Affiliations + expand

PMID: 18545742 PMID: PMC2647443 DOI: 10.2471/blt.07.044529

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PLOS ONE



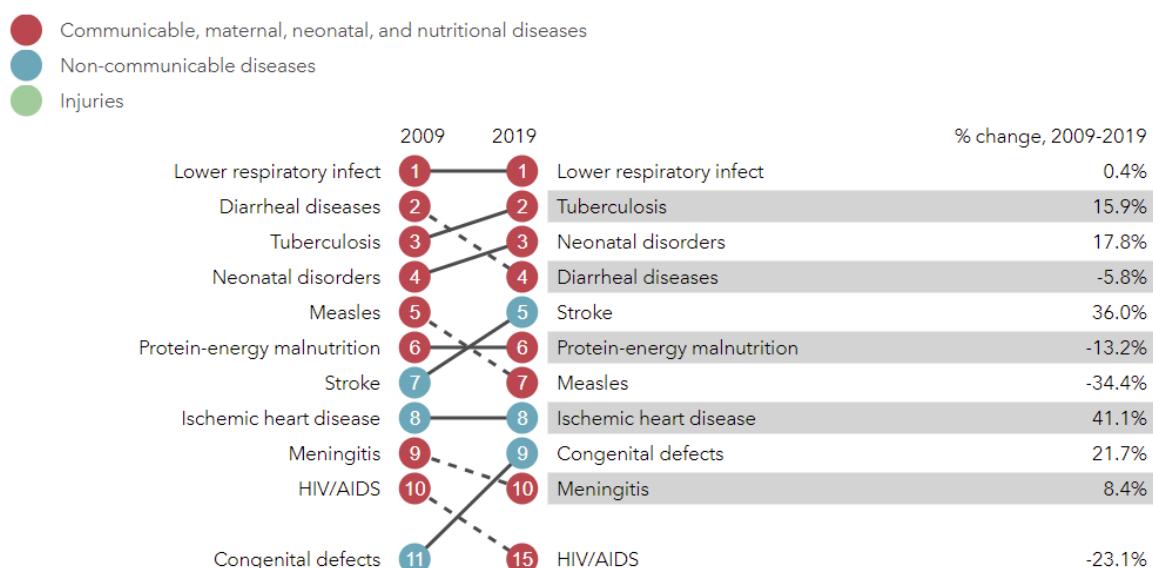
MAIN FINDINGS ON BURDEN OF DISEASE

In Somalia, communicable, maternal, neonatal, and nutritional diseases dominate, with lower respiratory infections, tuberculosis and neonatal disorders causing the most deaths. Key risk factors include malnutrition, household air pollution and poor access to WASH.

1. Lower respiratory infections continue to cause the most deaths, with children particularly affected

Since 2009, most deaths in Somalia have been caused by **lower respiratory infections**. Many of these deaths occur in **young children**, who are particularly vulnerable to these infectious diseases. **Malnutrition** makes them even more vulnerable, with childhood **wasting** being the leading risk factor for lower respiratory infection mortality among children under 5 years (GBD 2016 Lower Respiratory Infections Collaborators, 2018). Given that Somalia's **child mortality rate** is currently the highest in the world (World Bank, 2022), immediate action is required to reduce premature mortality from lower respiratory infections by combatting malnutrition along with other leading risk factors such as **household air pollution**.

What causes the most deaths?



Source: IHME

2. Tuberculosis is now the second leading cause of death

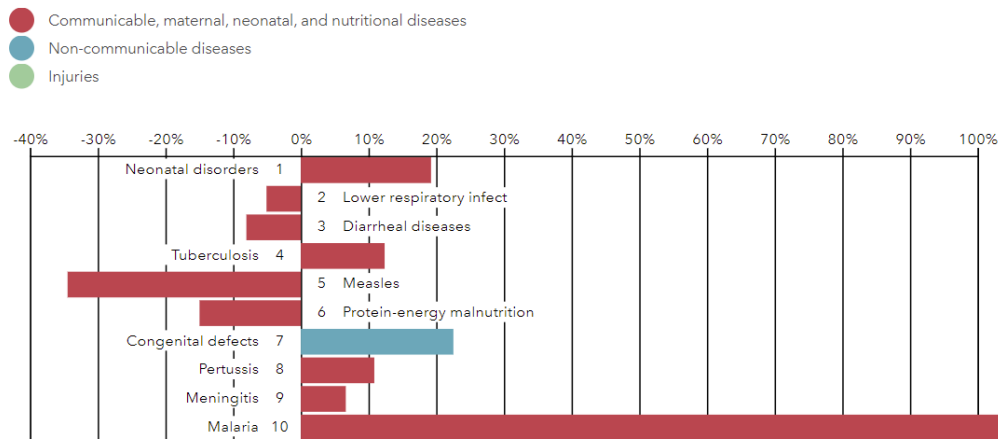
Tuberculosis (TB), another **communicable disease**, is the second leading cause of death in Somalia. The impact of the disease is growing, with the burden now 15.9% higher than it was in 2009. Like lower respiratory infections, risk factors include **malnourishment**, **young age**, and **household air pollution**. An additional risk factor for TB is HIV-positivity (Narasimhan et al., 2013). Somalia faces specific challenges in its response to TB: **low detection rates**, the increasing prevalence of **multidrug-resistant strains** (Sindani et al., 2013) and culture-related issues such as **stigma** and misconceptions (Gerrish et al., 2012). In Somalia, only 42% of TB cases are officially reported (World Bank), which is much lower than the WHO's target of 70% (Borgdorff et al., 2002).

MAIN FINDINGS ON BURDEN OF DISEASE

3. Neonatal disorders account for an increasingly large share of deaths

The burden of **neonatal disorders** has increased in the past decade, and they are now the third leading cause of death in Somalia. Because these disorders often lead to the premature death of newborn babies, they have the highest burden in terms of disability-adjusted life years (**DALYs**), i.e., such diseases make the highest contribution to years of life lost due to premature mortality or years lived with a disability. Although Somalia's **neonatal mortality rate** has been falling in recent years, it remains the fifth highest rate in the world. According to World Bank data, around 4% of Somali children die within 28 days of birth. This high rate can be linked to **poor sanitation facilities, malnutrition** and a **lack of skilled health staff**. In Somalia, only 9% of births attended by trained healthcare providers (World Bank), which is the lowest rate in the world.

What causes the most death and disability combined?



Source: IHME

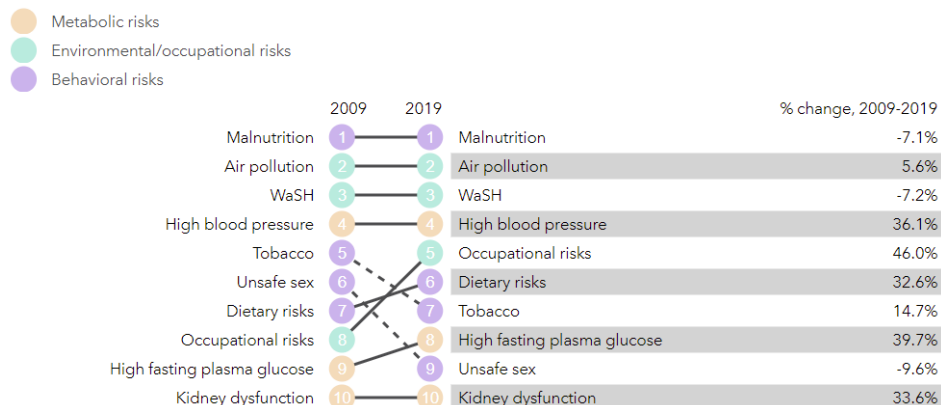
4. Malnutrition, air pollution and poor access to WASH as key risk factors

The high prevalence of diseases like tuberculosis and the high rate of child mortality are primarily driven by malnutrition, air pollution and inadequate access to clean water, sanitation and hygiene (WASH). Somalia's **malnutrition** rate is reflected by high rates of stunting and wasting. One in four children under the age of five suffer from **stunting** (low height for weight) (UNICEF, 2020).

Household air pollution is a major problem in Somalia. Just 3% of the population have access to clean fuels and technologies for cooking (World Bank), with the remaining 97% relying on **charcoal, firewood** and traditional cooking methods. Exposure to indoor air pollution significantly increases the risk of **pneumonia** in young children (Bruce et al., 2008), which is a key driver of child mortality.

While major improvements have been made in this century, access to **WASH** remains a problem, with about 70% of Somalis lacking access to safely managed sanitation facilities (World Bank).

What risk factors drive the most death and disability combined?



Source: IHME

The following policy recommendations focus on evidence-based interventions which target the top 3 risk factors as well as issues related to health personnel shortages.

1. Combat malnutrition and child mortality through breastfeeding peer counselling

Promoting breastfeeding is a **low-cost intervention** which has the potential to significantly reduce malnutrition and neonatal/infant mortality. In a Lancet review, the intervention that led to the greatest reduction in child mortality was **breastfeeding counselling** (Bhutta et al., 2008). In a study conducted in the Burao district of Somalia, mothers who were given advice on breastfeeding during antenatal care were more likely to practice **exclusive breastfeeding (EB)** (Jama et al., 2020).

Although breastfeeding rates have dramatically increased in Somalia in the past two decades, **EB rates** remain low. Currently, just a third of infants aged 0-5 months are fed with breastmilk only (UNICEF, 2020). For low-resource settings such as Somalia, the most feasible way to promote breastfeeding is through **peer counselling**. This involves the training of local women so that they can provide home-based breastfeeding support to mothers in their community. The training can be completed within just one week, as seen in the **PROMISE-EBF trial** in Sub-Saharan Africa. The results of this trial were impressive, with peer counselling leading to an increase in EBF rates of more than 50% (Tylleskär et al., 2011).



Source: ENN

2. Reduce household air pollution by investing in cleaner stoves

The prevalence of lower respiratory infections and tuberculosis can be reduced by tackling **household air pollution**, the second leading risk factor driving death and disability in Somalia. Although **improved stoves** provide less health benefits than cleaner fuels (e.g., kerosene, LPG), they are the most **cost-effective** intervention for reducing indoor air pollution from solid fuel use. In Africa, the average annual cost works out at I\$ 615 per healthy year gained (Mehta & Shahpar, 2004).

Table 5. Cost effectiveness ratios (CERs) for interventions to reduce indoor air pollution from solid fuels^[1]

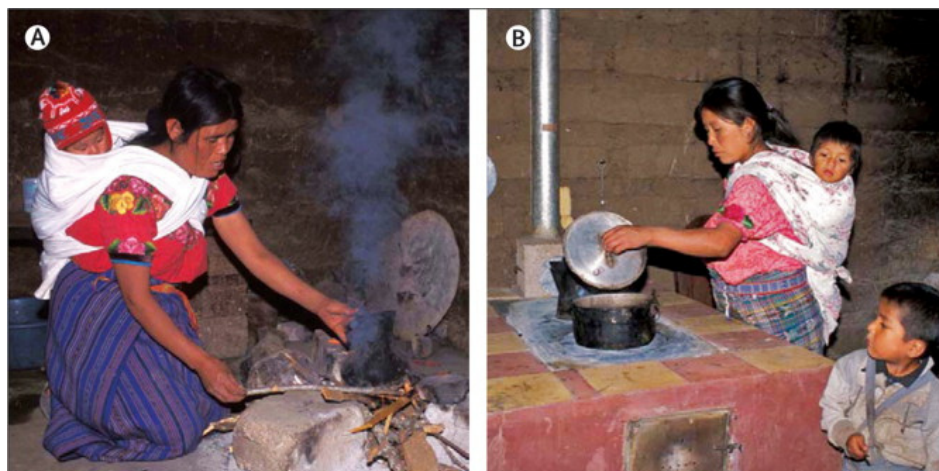
	Africa		The Americas		Eastern Mediterranean		Europe	South and South-east Asia		Western Pacific
	AfrD	AfrE	AmrB	AmrD	EmrB	EmrD	EurB	SearB	SearD	WprB
Cost-effectiveness ratio (CER) (I\$/healthy year gained)										
LPG	6,270	11,050	14,050	7,500	24,200	11,020	17,740	15,120	7,350	1,410
Kerosene	1,000	2,000	2,410	1,180	16,200	1,800	3,010	2,450	1,380	260
Improved stoves	500	730	-	5,880	-	7,800	-	1,180	610	32,240
Combination: LPG and improved stoves	3,750	6,440	16,330	6,770	-	9,780	19,870	8,970	4,280	1,570
Combination: kerosene and improved stoves	840	1,530	8,080	3,120	-	4,500	9,510	1,950	1,040	780

Note

1. Missing values indicate that health benefits from current regional coverage exceed those of the intervention scenario.

Source: Mehta & Shahpar, 2004

One example of an improved stove that could be implemented in Somali homes is a **locally-made chimney stove**, like the one deployed in a randomized control trial in Guatemala. In this trial, called **RESPIRE** (Randomized Exposure Study of Pollution Indoors and Respiratory Effects), chimney stoves reduced the incidence of severe **pneumonia** in children by one third (Smith et al., 2011). As pneumonia is the leading cause of death in children, interventions like the chimney stove could lead to significant **reductions in child mortality**. Reducing household air pollution can also decrease the likelihood of adverse pregnancy outcomes such as stillbirth and low birth weight (Amegah et al., 2014).



Traditional open fire used for cooking (A) and the locally developed high-mass chimney woodstove (B) (Source: Mehta & Shahpar, 2004)

3.Improve WASH access by investing in handwashing stations and local entrepreneurs

WASH improvements are key to **reducing the spread of communicable diseases** such as lower respiratory infections and tuberculosis. The health ministry should **invest in low-cost, sustainable solutions** such as simple **handwashing stations**. In line with findings from a study in Bangladesh (Hulland et al., 2013), these stations, which include soap and water, should be located close to cooking spaces in order to remind people to wash their hands before preparing and eating food. Additional stations should be located close to latrines.

The government should also support **innovations developed by locals**, for example the hands-free wash station developed by Somali entrepreneur Abdiwali Muhamed to reduce the spread of COVID-19 (see picture below) (European Commission, 2020). Such solutions are **easy-to-use** and enjoy **high acceptance** from local people.

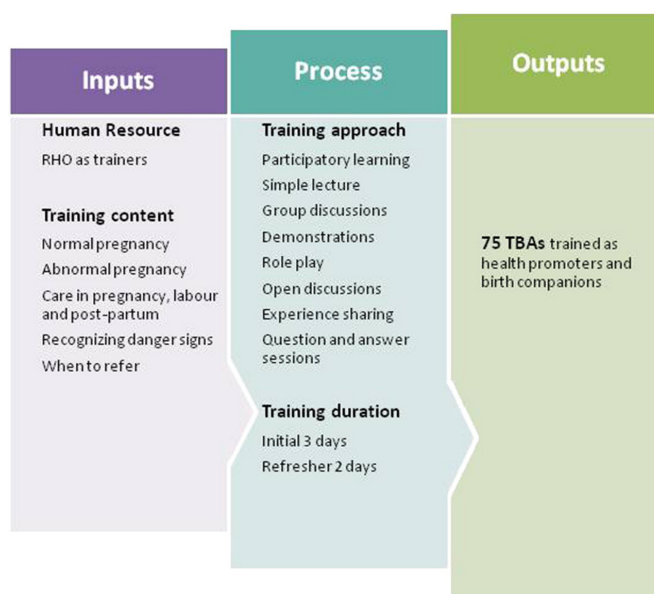


Source: European Commission

4. Increase skilled birth attendance by integrating traditional birth attendants with formal health systems

Increasing the attendance of skilled health staff during childbirth is crucial in order to **reduce maternal mortality and neonatal mortality rates** in Somalia. As traditional birth attendants (TBAs) are usually highly respected within their community, integrating them into formal health systems can be very effective (Byrne & Morgan, 2011).

TBAs should be **trained** and **incentivized** to accompany mothers to nearby health facilities, where they can safely give birth in the presence of a skilled birth attendant (SBA). A study conducted in Somaliland found this strategy to be effective in increasing the number of deliveries at formal health facilities. In this case, TBAs were trained to act as **birth companions** and **promoters of skilled birth attendance** and received a financial incentive for each patient brought to a healthcare facility (Pyone et al., 2014).



Training provided to TBAs in Somaliland (Source: Pyone et al., 2014)

5. Increase tuberculosis case detection rates by training community health workers

In order to decrease the prevalence of tuberculosis (TB), the second leading cause of death in Somalia, it is important to achieve a **case detection rate** (the number of cases detected divided by the estimated number of cases) that is closer to the **WHO's target of 70%**. Managing TB is also key to **reducing child mortality rates**.

Given the lack of skilled health staff in Somalia, **community health workers** could be **trained** on how to identify **suspected cases of TB** and how to conduct **TB tests**. An RTC conducted in Ethiopia found this strategy to be very effective, with the case detection rate increasing by a factor of 1.8 as a result of the intervention (Datiko & Lindtjorn, 2009).



Community health worker visiting a rural community in Ethiopia (Source: ONE Campaign)

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