World Health Organization
REGIONAL OFFICE FOR Europe

MIGRATION AND HEALTH: KEY ISSUES

WHO Regional Office for Europe
Public Health Aspects of Migration in Europe

Refugees and migrants: common health problems

The health problems of refugees and migrants are similar to those of the rest of the population, although some groups may have a higher prevalence. The most frequent health problems of newly arrived refugees and migrants include accidental injuries, hypothermia, burns, gastrointestinal illnesses, cardiovascular events, pregnancy- and delivery-related complications, diabetes and hypertension. Female refugees and migrants frequently face specific challenges, particularly in maternal, newborn and child health, sexual and reproductive health, and violence. The exposure of refugees and migrants to the risks associated with population movements – psychosocial disorders, reproductive health problems, higher newborn mortality, nutrition disorders, drug abuse, alcoholism and exposure to violence – increase their vulnerability to noncommunicable diseases (NCDs). The key issue with regard to NCDs is the interruption of care, due either to lack of access or to the decimation of health care systems and providers; displacement results in interruption of the continuous treatment that is crucial for chronic conditions.

Vulnerable individuals, especially children, are prone to respiratory infections and gastrointestinal illnesses because of poor living conditions, suboptimal hygiene and deprivation during migration, and they require access to proper health care. Poor hygienic conditions can also lead to skin infections. Furthermore, the number of casualties and deaths among refugees and migrants crossing the Mediterranean Sea has increased rapidly, with over 3100 people estimated to have died or gone missing at sea in the first 10 months of 2015, according to the United Nations High Commissioner for Refugees (UNHCR).

Migration and communicable diseases: no systematic association

In spite of the common perception of an association between migration and the importation of infectious diseases, there is no systematic association. Communicable diseases are associated primarily with poverty. Migrants often come from communities affected by war, conflict or economic crisis and undertake long, exhausting journeys that increase their risks for diseases, which include communicable diseases, particularly measles, and food- and waterborne diseases. The European region has a long experience of communicable diseases such as tuberculosis (TB), HIV/AIDS, hepatitis, measles and rubella and has significantly reduced their burden during economic development, through better housing conditions, access to safe water, adequate sanitation, efficient health systems and access to vaccines and antibiotics. These diseases have not, however, been eliminated and still exist in the European region, independently of migration. This is also true of vector-borne diseases in the Mediterranean area, such as leishmaniasis, with outbreaks recently reported in the Syrian Arab Republic. Leishmaniasis is not transmitted from person to person and can be effectively treated. Typhoid and paratyphoid fever are also registered in the European region; the vast majority of cases in the European Union are related to travel elsewhere. The risk for importation of exotic and rare infectious agents into Europe, such as Ebola, Marburg, Lassa and Middle East respiratory syndrome (MERS) viruses, is extremely low. Experience has shown that, when importation occurs, it involves regular travellers, tourists or health care workers rather than refugees or migrants.

Tuberculosis

Migrants' risk for being infected or developing TB depends on: the TB incidence in their country of origin; the living and working conditions in the country of immigration, including access to health services and social protection; whether they have been in contact with an infectious case (including the level of infectiousness and how long they breathed the same air); and the way they travelled to Europe (the risk for infection is higher in poorly ventilated spaces). People with severe forms of infectious TB are often not fit to travel. The incidence of TB in the countries of origin varies from as low as 17 new cases per 100 000 population in the Syrian Arab Republic to 338 in Nigeria. The average TB rate in the European Region is 39 per 100 000 population. TB is not easily transmissible, and active disease occurs in only a proportion of those infected (from 10% lifetime risk to 10% per year in HIV-positive people) and within a few months or a few years after infection. TB is not often transmitted from migrants to the resident population because of limited contact.

HIV infection and viral hepatitis

Conflict and emergencies can disrupt HIV services; however, the prevalence of HIV infection is generally low among people from the Middle East and North Africa. Hence, there is a low risk that HIV will be brought to Europe by migrants from these countries. The proportion of migrants among people living with HIV varies widely in European countries, from below 10% in eastern and central Europe to 40% in most northern European countries; in western Europe, the proportion is 20–40%. Despite a decline during the past decade, migrants still constitute 35% of new HIV cases in the European Union and the European Economic Area; however, there is increasing evidence that some migrants acquire HIV after their arrival.

As many developing countries have a high burden of viral hepatitis, the increasing influx of refugees from highly endemic counties is changing the disease burden in Europe.

Influenza and other common respiratory infections

Refugees and migrants do not pose an increased threat for further spread of respiratory infections – from, for example, influenza viruses, respiratory syncytial virus, adenovirus or parainfluenza virus – to the populations of the receiving countries, where these are common infections that circulate widely. However, physical and mental stress and deprivation due to lack of housing, food and clean water increase refugees' risk for respiratory infections. Influenza can cause severe disease in known risk groups (pregnant women, children under the age of 5 years, people with chronic underlying conditions and the elderly). WHO supports policies to provide seasonal influenza vaccine to risk groups, irrespective of their legal status. In line with WHO recommendations, most countries of the WHO European Region recommend seasonal influenza vaccination for health care workers.[1]

Middle East respiratory syndrome coronavirus (MERS-CoV)

Since September 2012, 15 laboratory-confirmed cases of MERS-CoV infection, with seven deaths, have been reported by eight countries in the WHO European Region. Most of the cases were imported and did not result in further spread of the virus. The risk that another traveller infected with MERS-CoV will enter the European Region remains, but it is low. Most travellers to Europe do not transit through the countries currently reporting cases of infection with MERS-CoV; if they do, they will probably not use local hospitals. The only unknown factor is their likelihood of contact with camels and camel products. While the risk of a larger outbreak in European Union countries is considered small, the outbreak in the Republic of Korea earlier this summer demonstrates that this possibility cannot be excluded.

Vector-borne diseases

The risk for reintroduction and localized outbreaks of vector-borne diseases such as malaria and leishmaniasis can be increased by a mass influx of refugees, as seen by the recent resurgence of malaria in Greece that was directly linked to an influx of migrants from Pakistan. This experience highlights the continual threat of reintroduction and the need for continued vigilance to ensure that any resurgence can be rapidly contained. At the moment, two countries in the WHO European Region, Tajikistan and Turkey, are at high risk for reintroduction of malaria due to importation from Afghanistan and the Syrian Arab Republic, respectively.

[1]Additional information about managing severe influenza cases can be found at: http://www.euro.who.int/en/health-topics/communicable-diseases/influenza/publications/2011/seasonal-influenza-key-issues-for-case-management-of-severe-disease.

Antimicrobial resistance

Antimicrobial resistance is not a disease in itself but a complication of the treatment of disease. In situations such as the crowded settings with poor hygienic conditions of refugee camps, infections can easily occur and spread; whether they are caused by resistant pathogens depends on their origin, which can be the environment, animals, food or humans.

Communicable diseases: interventions to prevent the spread

General infection prevention and control measures

Hand hygiene is one of the most effective methods for preventing transmission of pathogens. Hand-washing facilities and sufficient soap should always be made available near toilets. Hand hygiene is ensured by washing hands with soap and water for at least 40–60 seconds or by rubbing hands with an alcohol-based solution for 20–30 seconds if hand rubs are available. Hand hygiene can also help prevent other diseases. Hands should be washed frequently, especially before and after contact with sick people, before and after preparing food, before meals and after using the toilet.

Respiratory hygiene and cough etiquette
Individuals should cover their mouth and nose with a single-use cloth or tissue (if possible) when sneezing or coughing and then wash their hands. Disposable paper tissues are the best and are often cheaper. They should be thrown away after use.

Ventilation of the environment
There should be good air-flow in rooms and other space. Fresh air should be allowed to replace the contaminated air around a patient, with the doors and windows on opposite sides of the room opened, if the climate permits. The larger the openings and the larger the difference in temperature between the inside and the outside, the better the air-flow.

Tuberculosis

European countries should ensure universal health coverage of refugees and migrants (both documented and undocumented), including early diagnosis of TB and effective care for the duration of the treatment course. This is essential not only to respect human rights but also to succeed in TB control and elimination in the WHO European Region. The Region is the only one of the WHO regions with a consensus document on the minimum package of cross-border TB control and care interventions. This includes ensuring access to medical services irrespective of a migrant's registration status and a non-deportation policy until intensive TB treatment has been concluded. TB cases are notifiable under the International health regulations (2005).

HIV infection and viral hepatitis

Social, economic and political factors in the origin and destination countries of refugees and migrants influence their risks for infection with HIV and hepatitis viruses. These include poverty, separation from a spouse, social and cultural norms, language barriers, substandard living conditions and exploitative working conditions, including sexual violence. Isolation and stress may lead migrants to engage in risky behaviour, which increases the risk for infection. This risk is exacerbated by inadequate access to HIV services and fear of being stigmatized. Female refugees and migrants may be particularly vulnerable. Some countries in Europe do not provide HIV services for people of uncertain legal status, who can include refugees and migrants. WHO supports policies to provide HIV testing, prevention and treatment services irrespective of legal status. Mandatory HIV testing is applied to refugees and migrants in some countries; WHO and the European Centre for Disease Prevention and Control strongly advise against mandatory HIV testing for these groups but support routine offering of HIV rapid testing and linkage to HIV treatment and care. Some countries fear that allowing HIV-positive asylum seekers to enter their countries would result in an overwhelming number of requests for treatment or that an influx of asylum seekers or refugees living with HIV would pose a substantial public health threat. Both of these concerns are contrary to the evidence and have no moral, legal or public health basis.

Health systems must enhance viral hepatitis prevention and care programmes. Several countries in the WHO European Region vaccinate only high-risk groups against hepatitis B, contrary to the WHO recommendation to introduce universal vaccination of newborns, which is the most effective way to prevent mother-to-child transmission. As for HIV infection, voluntary screening of migrants for viral hepatitis has been shown to be cost-effective.

Respiratory diseases and MERS-CoV

Transit and host countries should have the capacity to recognize and treat severe respiratory disease. These countries or WHO should consider offering seasonal influenza vaccine to at-risk refugees, starting in October–November 2015, that is, before influenza becomes widespread in the Region.

Laboratory capacity to detect MERS-CoV, treatment facilities equipped with isolation wards, arrangements for contact tracing, consistent application of adequate measures to prevent infection and provision of public health advice are all crucial to obviate or mitigate transmission.

Vector-borne diseases

Experience in Turkey shows that a well-prepared health system can prevent reintroduction of vector-borne diseases. Since 2012, Turkey's health system has demonstrated strong capacity and flexibility in adapting to changing needs, and, so far, reintroduction of malaria and outbreaks of leishmaniasis have been prevented.

Antimicrobial resistance

Knowledge about the patterns of antimicrobial resistance that are prevalent in a refugee's or migrant's country or region of origin and in the recipient country is important for treatment. This requires access to the host country's health system. Preferably, patients should be tested, so that doctors can make informed decisions about individual treatment. Refusing migrants access to the health system may result in lack of access to the appropriate antimicrobial agents. This will not benefit the patient and can induce resistance in the microorganisms with which they come in contact.

Interventions to prevent food- and waterborne diseases

When people are on the move and reach geographical areas different from those of their home country, they are more likely to experience disrupted or uncertain supplies of safe food and water, especially under difficult and sometimes desperate circumstances. In addition, basic public services – such as electricity and transport – can break down. In these conditions, people may be more prone to use inedible or contaminated food ingredients, cook food improperly or eat spoilt food. Refugees and migrants typically become ill during their journey, especially in overcrowded settlements. Living conditions can lead to unsanitary conditions for obtaining, storing or preparing food, and overcrowding increases the likelihood of outbreaks of food- and waterborne diseases. Examples of such diseases are salmonellosis, shigellosis, campylobacteriosis and norovirus and hepatitis A virus infections. Infants and young children, pregnant women and elderly and immunocompromised individuals, including those with HIV/AIDS, are particularly susceptible to these diseases. When people forage for food but do not know a new environment, they can fall victim to toxic plants and fungi that look similar to edible species in their own countries, as happened in Germany when refugees ate poisonous mushrooms.

Basic water, sanitation and hygiene standards are frequently not met during the journeys of refugees and migrants. Border or arrival points frequently lack sufficient numbers of sanitation facilities and washrooms; drinking-water is often not available in sufficient amounts, and the origin is unknown or water is untreated; hand-washing with soap and personal hygiene, including laundry, are often compromised. Waste bins and regular removal of waste are insufficient in reception centres, posing additional health threats for migrants, as flies, mosquitoes and rodents readily find breeding places.

It is important to prevent the development and spread of foodborne and waterborne diseases among refugees and migrants, especially during their stay in camps, where these diseases can easily attain epidemic proportions, especially in spontaneous settlements. Information about safe food handling practices, such as WHO's five keys to safer foods,[2] should be disseminated to both refugees and migrants and the providers of food. Access to sanitary facilities, including hand-washing, and sufficient amounts of safe drinking-water are critical for the prevention of food- and waterborne diseases; water, sanitation and hygiene facilities at border points and reception centres should be thoroughly assessed. When necessary, emergency water supplies may be established (e.g. packaged water, trucked water and/or mobile water treatment, disinfection and storage units). Local authorities must monitor the microbiological quality of drinking-water closely; chemical contamination is typically not a priority under emergency conditions. Hand-washing facilities and sufficient soap should always be available near toilets.

[2] http://www.euro.who.int/en/health-topics/disease-prevention/food-safety/multimedia/posters-five-keys-to-safer-food

The basic human physiological requirement for water to maintain adequate hydration is 2–3 litres of drinking-water per person per day. The total basic water requirement for personal and food hygiene as well as water for drinking and cooking is 15 litres per person per day.

Although one toilet for no more than 20 people is recommended in emergencies, this standard cannot be respected in most circumstances. If it becomes necessary to install additional (mobile) on-site sanitation facilities that are not connected to centralized sewerage, close attention should be paid to safe collection and disposal of human waste to prevent contact between humans and human faeces.

It is important that people with food- and waterborne illnesses have access to proper health care.

Cholera

The risk that refugees and migrants will bring cholera to Europe exists, but travellers returning from cholera-endemic countries pose a similar risk. The cold winter now starting in Europe is not favourable to the development of the Vibrio cholerae, which can survive at low temperatures, although it prefers higher temperatures to develop. If cholera bacteria are introduced into an environment with unsafe water and sanitation, the disease will spread easily; it will not spread further if access to potable water and safe sanitation is ensured, as observed every year in Europe with regard to cholera imported by travellers. The conditions in crowded camps where the minimum requirements of safe water and sanitation are not met increase the risk that people will be infected with cholera and spread the disease. The risk of spread is associated with poor hygiene and sanitation, so that it is the refugees and migrants living in camps and not the resident population who are at risk. Cholera is a waterborne disease that can be easily prevented and controlled by the provision of safe water and sanitation. The disease is well known in Europe, and European countries are well equipped to address it. Cholera is also an easily treatable disease: up to 80% of people can be treated successfully by prompt administration of oral rehydration salts.

Vaccination for new refugees and migrants: WHO recommendations

Vaccine-preventable diseases are just as likely to be transmitted to host country populations by a resident of that country after a holiday in a cholera-endemic country as by refugees and migrants. Despite the widespread availability of vaccines in all countries of the Region, many people are opting not to avail themselves of the benefits of immunization due to misconceptions about vaccines. For others, access to vaccination services may be problematic.

The WHO Regional Office for Europe does not routinely collect information on transmission of vaccine-preventable diseases among refugees and migrants or on their vaccination coverage; however, well-documented outbreaks of measles have originated by transmission from migrants, mobile populations, international travellers and tourists alike. Equitable access to vaccination is of prime importance and is one of the objectives of the European Vaccine Action Plan 2015–2020.[3] The plan urges all countries in the Region to ensure the eligibility and access of refugees, migrants, international travellers and marginalized communities to culturally appropriate vaccination services and information.

Many countries, such as those receiving large influxes of migrants, are incorporating vaccination of migrants into their routine vaccination programmes. The immunization coverage of all countries is reported by WHO.

Migration and noncommunicable diseases

NCDs are common causes of preventable morbidity and mortality. The main NCDs are cardiovascular diseases, diabetes, cancer and chronic lung diseases; and the prevalence of NCDs such as diabetes and hypertension in adults in certain low- and middle-income countries is as high as 25–35%.

[3] http://www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/publications/2014/european-vaccine-action-plan-20152020.

[4] http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/.

[5] WHO Global Health Observatory, 2014 survey data. http://apps.who.int/gho/data/node.main.A875?lang=en

Refugees and migrants with NCDs may be more vulnerable due to the conditions prevalent during their travel

NCDs have common characteristics that can make people more vulnerable when they are refugees or migrants. NCDs:

- require the provision of continuous care over a long time, often for life;
- often require regular treatment with a drug, a medical technique or an appliance;
- can be associated with acute complications that require medical care, incur health costs and may limit function, affect daily activities and reduce life expectancy;
- necessitate coordination of care provision and follow-up among various providers and settings; and
- may require palliative care.

Challenges specific to sexual and reproductive health and action taken by WHO to address them

During the past 20 years, various issues in sexual and reproductive health have arisen in the WHO European Region due to migration. For example, female genital mutilation has become a topical issue in Belgium, Norway, Sweden and the United Kingdom, and countries have asked for guidance from WHO in addressing it. Furthermore, a proportion of the refugee and migrant population has undiagnosed NCDs, such as cardiovascular disease and diabetes; these health problems cause problems during pregnancy and can result in severe maternal morbidity and sometimes death.

Unregistered migrants who do not have access to and are not informed about the availability of reproductive health services, including antenatal care, may receive late diagnoses, and their conditions may sometimes be life-threatening for women, mothers and their babies.

An analysis by the WHO Health Evidence Network of the maternal health status of refugees and migrants is under way and will be ready in 2016. This target group will be covered in the WHO European Sexual and Reproductive Health Action Plan, which will be presented to the Regional Committee for Europe at its 65th session, in 2016.

Impact of sudden migration on the health of people with NCDs

The conditions in which refugees and migrants travel can acutely exacerbate or cause a life-threatening deterioration in the health of those with NCDs. Elderly people and children are particularly vulnerable. Complications can result from:

- *physical injuries:* factors such as secondary infections and poor control of glycaemia compromise management of acute traumatic injuries;
- *forced displacement:* loss of access to medication or devices, loss of prescriptions, lack of access to health care services leading to prolongation of disruption of treatment;
- *degradation of living conditions:* loss of shelter, shortages of water and regular food supplies and lack of income add to physical and psychological strain; and
- *interruption of care:* due to destruction of health infrastructure, disruption of medical supplies and the absence of health care providers who have been killed, injured or are unable to return to work; and
- *interruption of power supplies or safe water,* with life-threatening consequences, especially for people with end-stage renal failure who require dialysis.

Minimum standards for responding to the needs of refugees and migrants with NCDs

- Identify individuals with NCDs to ensure continuing access to the treatment they were receiving before their travel.
- Ensure treatment of people with acute, life-threatening exacerbation and complications of NCDs.
- When treatments for NCDs are not available, establish clear standard operating procedures for referral.
- Ensure that essential diagnostic equipment, core laboratory tests and medication for routine management of NCDs are available in the primary health care system. Medications that are on the local or WHO lists of essential medicines are appropriate.

Key indicators

- All primary health care facilities have clear standard operating procedures for referral of patients with NCDs to secondary and tertiary care facilities.
- All primary health care facilities have the necessary medications to continue pre-emergency treatment of patients with NCDs, including for pain relief.

Screening of refugees and migrants: WHO recommendations

WHO does not recommend obligatory screening of refugee and migrant populations for diseases, because there is no clear evidence of benefit (or cost–effectiveness); furthermore, it can cause anxiety in individual refugees and the wider community. WHO strongly recommends, however, that health checks be offered and provided to ensure access to health care for all refugees and migrants requiring health protection. Checks should be performed for both communicable diseases and NCDs, while respecting the human rights and dignity of refugees and migrants.

The results of screening must never be used as a reason or justification for ejecting a refugee or a migrant from a country. Obligatory screening may deter migrants from asking for a medical check-up, thus jeopardizing identification of high-risk patients.

In spite of the common perception that there is a link between migration and the importation of infectious diseases, there is no systematic association. Refugees and migrants are exposed mainly to the infectious diseases that are common in Europe, independently of migration. The risk that exotic infectious agents, such as Ebola virus, will be imported into Europe is extremely low; experience shows that, when it occurs, it affects regular travellers, tourists and health care workers rather than refugees or migrants.

Triage is recommended at points of entry to identify health problems in refugees and migrants soon after their arrival. Proper diagnosis and treatment must follow, and the necessary health care must be ensured for specific population groups (children, pregnant women and the elderly). Each and every person on the move must have full access to a hospitable environment, to prevention (such as vaccination) and, when needed, to high-quality health care, without discrimination on the basis of gender, age, religion, nationality, race or legal status. This is the safest way to ensure that the resident population is not unnecessarily exposed to imported infectious agents. WHO supports policies to provide health care services to migrants and refugees irrespective of their legal status, as part of universal health coverage.

Breastfeeding in the context of large-scale migration

The life-saving role of breastfeeding during emergencies, notably large-scale migration, is firmly supported by evidence and guidance. The *Global strategy for infant and young child feeding*[6] outlines means for improving infant and young child feeding in emergencies. In all situations, the best way to prevent malnutrition, some diseases and mortality among infants and young children is to ensure that they start breastfeeding within 1 hour of birth, breastfeed exclusively (with no food or liquid other than breast milk, not even water) until 6 months of age and continue breastfeeding with appropriate complementary foods up to 2 years or beyond. Even in emergency situations, the aim should be to create and sustain an environment that encourages frequent breastfeeding of children up to at least 2 years of age. Unfortunately, there is a widespread misconception that stress or inadequate nutrition, which are common during large migration movements, can decrease a mother's ability to breastfeed successfully. Under these exceptional circumstances, unsolicited or uncontrolled donations of breast-milk substitutes may undermine breastfeeding and should be refused. Instead, breastfeeding should be actively protected and supported. As part of health assistance in this context, hospitals and other health care services should have trained health workers who can help mothers to establish breastfeeding and overcome any difficulties.

[6] http://www.who.int/nutrition/publications/infantfeeding/9241562218/en/1

Health care access for refugees and migrants

Legal status is one of the most important determinants of the access of migrants to health services in a country. Each refugee and migrant must have full, uninterrupted access to a hospitable environment and, when needed, to high-quality health care, without discrimination on the basis of gender, age, religion, nationality or race. WHO supports policies to provide health care services irrespective of migrants' legal status. As rapid access to health care can result in cure, it can avoid the spread of diseases; it is therefore in the interests of both migrants and the receiving country to ensure that the resident population is not unnecessarily exposed to the importation of infectious agents. Likewise, diagnosis and treatment of NCDs such as diabetes and hypertension can prevent these conditions from worsening and becoming life-threatening.

Public health challenges of large-scale migration: preparedness of countries in the European Region

The health systems in the countries receiving migrants are well equipped and experienced to diagnose and treat common infectious diseases and NCDs; they should also be prepared to provide such health care to refugees and migrants. Under the *International health regulations* (2005), all countries should have effective disease surveillance and reporting systems and capacity for outbreak investigation, case management and response. Should a rare exotic infectious agent be imported, Europe is well prepared to respond, as shown over the past 10 years in responses to imported cases of Lassa fever, Ebola virus disease, Marburg virus disease and MERS, as countries have good laboratory capacity, treatment facilities equipped with isolation wards, a trained health workforce and systems for contact tracing. While countries should remain vigilant, this should not be their main focus.

Responding quickly and efficiently to the arrival of large groups of people from abroad requires effective coordination and collaboration between and within countries as well as between sectors. A good response to the challenges faced by migrant groups requires good preparedness: preparedness is the basis for building adequate capacity in the medium and long term, requiring robust epidemiological data on the refugees and migrants, careful planning, training and, above all, adherence to the principles of human rights. Defining contingency scenarios to adequately address current or potential large influxes of refugees or migrants into a country will improve coordination among the numerous stakeholders involved, heighten resilience and avoid overloading of health systems.

Access of vulnerable groups such as young children to acute care for common and severe conditions must be assured, as children's health can deteriorate quickly if they do not have adequate care. Where necessary, health care professionals should learn to detect and treat communicable diseases that they don't often see. In addition, they should learn to communicate with people who speak other languages and are from other cultural backgrounds (through interpreter services or other means). High-quality care for refugee and migrant groups cannot be ensured by health systems alone. The social determinants of health, such as education, employment, social security and housing, all have a considerable impact on the health of migrants.

Impact of weather conditions on the health of refugees and migrants

Cold weather

Cold weather, especially extreme temperatures, can threaten health. When refugees and migrants sleep outdoor or in cold shelters at temperatures below 16 °C, they are prone to hypothermia, frost-bite and other poor health conditions. Their risk increases if they lack proper clothing, food and medical care. The elderly, children, people with health problems and alcohol abusers are particularly vulnerable to the consequences of cold weather.

The adverse health effects associated with exposure to the cold include those listed below.

- Hypothermia, or body temperature below 35.0 °C, is due to exposure to extreme cold or immersion in cold water and can compromise human vital functions. Shivering is the first symptom as the body attempts to react by warming itself.
- Frost-bite occurs when the skin and underlying tissues freeze due to exposure to cold air, wind and humidity. Contact with cold objects or liquids, long exposure and inappropriate or wet clothing increase the severity of frost-bite. Frost-bite is most common in the fingers, toes, nose, ears, cheeks and chin.
- Cold temperatures can increase the risks for fractures, sprains and strains from falls and accidents as well as cardiovascular, respiratory and mental health problems.
- Severe bacterial and viral infections, such as respiratory diseases, are also commoner in the winter and are increasingly associated with exposure to the cold.
- Ice and snow can severely disrupt general transport, compromising access to roads and pavements, thus increasing the risk for accidents.

Exposed people can protect themselves by wearing layers of warm clothing, covering their hands, feet and head, warming their food, drinking enough fluids but avoiding cold drinks, avoiding alcohol and tobacco, taking physical exercise and avoiding standing or sitting still for long periods in the cold. If they use solid fuels (such as charcoal, wood or coal) for cooking and heating, they must ensure that the space is ventilated. They should look out for warning signs of frost-bite on the skin (numbness in the fingers and toes and pale spots on the face or other skin areas) and warm the area immediately.

The most important preventive action during cold weather is to reduce exposure to the cold by providing heated shelters, warm meals and proper clothing. Refugees and migrants should be informed about the risks associated with cold weather and about how to live in a changed environment. Particular care must be taken of vulnerable groups. Influenza vaccination should be provided and cold-related diseases detected and treated. The adverse health effects of cold weather are largely preventable, but the short lag between the onset of extreme weather and its health effects means that planning and preparedness are essential.

Hot weather

Very hot weather can also cause illness and death. When the outdoor temperature is higher than the skin temperature, the only heat loss mechanism available is evaporation (sweating). Therefore, any factors that hamper evaporation, such as high ambient humidity or tight-fitting clothes, can result in a rise in body temperature that may culminate in life-threatening heat-stroke. Very hot weather can trigger exhaustion, heart attacks or confusion and can worsen existing conditions such as cardiovascular and respiratory diseases. An individual's risk for heat stress is increased by a range of factors, including chronic medical conditions, social isolation, overcrowding, being confined to bed and certain medical treatments.

The most important preventive actions to be taken during a heat-wave are to ensure that people avoid or reduce exposure, to communicate the risks effectively, to take particular care of vulnerable population groups and to manage mild and severe heat-associated illness. The WHO Regional Office for Europe has prepared information sheets with public health advice for different readers on preventing the health effects of heat.

The WHO Regional office for Europe response to the refugee and migrant crisis

WHO is providing support for preparation of refugee- and migrant-sensitive health policies, strengthening health systems to provide equitable access to services, establishing information systems to assess refugee and migrant health, sharing information on best practices, improving the cultural and gender sensitivity and specific training of health service providers and professionals and promoting multilateral cooperation among countries in accordance with resolution WHA61.17 on the health of migrants endorsed by the Sixty-first World Health Assembly in 2008.

Health issues associated with the movement of peoples have been on the agenda of the WHO European Region for many years. The WHO European health policy framework Health 2020 has drawn particular attention to migration and health, population vulnerability and human rights. Following the political, economic and humanitarian crises in the north of Africa and the Middle East, the WHO Regional Office for Europe, in collaboration with the Italian Ministry of Health, established the Public Health Aspects of Migration in Europe project in April 2012. Its aims are to strengthen the capacity of health systems to meet the health needs of mixed inflows of refugees, migrants and host populations; promote immediate essential health interventions; ensure refugee- and migrant-sensitive health policies; improve the quality of the health services delivered; and optimize use of health structures and resources in countries receiving these populations. Up to October 2015, the Regional Office had conducted joint assessment missions with the ministries of health of Albania, Bulgaria, Cyprus, Greece, Hungary, Italy, Malta, Portugal, Serbia and Spain, with the new "Toolkit for assessing health system capacity to manage large influxes of migrants in the acute phase", to respond to and address the complex, resource-intensive, multisectoral, politically sensitive issues in health and migration.