3.7. Travel medicine

Travel medicine is the branch of medicine as a medical specialty that deals with the prevention and management of health problems of international travelers. Modern modes of transportation (water, land and air) allow more people to travel literally around the world at a faster pace and more comfortable way than ever.
The emerging of travel medicine is a self-generating procedure because of the widest variety of long-distance destinations and the increasing comfort at transportation instigate

- travelers with pre-existing conditions and at higher health risk to take part in more or less extreme tours if related to their health status, and
- the health service is providing more sophisticated assistance to survive under threatening circumstances

Travel programs may have different features and individual travellers or traveling agencies providing package tours are usually combining the opportunities. The main types are

- Sightseeing tours (urban and natural destination)
- Recreation (typically in the summer and winter holiday seasons)
- Visiting sport events (Olympic Games, Formula 1, World Championships etc.)
- Conference tourism and
- Religious tourism (pilgrimages)

Traveling as a potential risk factor: travel is not a risk factor in itself but it may be a source of health problems if

- the long distance and span of the journey (longer than 30 days) overburden even healthy people,
- the type of transportation may be a specific causative agent (sea sickness)
- the target area is a risk factor in itself (endemic infectious diseases, extreme tours with potential injuries)

Traveling as a genuine risk factor by

- changing time zones (jet-lag)
- worsening the circumstances of adaptation for healthy and ill people alike (extreme temperatures, or sunshine)
- usual travel accidents (of mechanical, physical, chemical nature)

Jet-lag between London and Los Angeles: "as if we did not sleep throughout the night"

Westward	**Biological clock London local time**	**Real time Los Angeles local time**
Departure	JAN 29 – 10:05	JAN 29 – 02:05
Arrival	JAN 29 – 21:10	JAN 29 – 13:10
Going to bed	JAN 30 – 06:00	JAN 29 – 22:00

Jet-lag between Los Angeles and London: "as if we should go too early to bed"

Eastward	**Biological clock Los Angeles local time**	**Real time London local time**
Departure	JAN 29 – 15:50	JAN 29 – 23:50
Arrival	JAN 30 – 02:00	JAN 30 – 10:00
Going to bed	JAN 30 – 14:00	JAN 30 – 22:00

Personal risk factors

- travellers aged less than 14 or more than 65
- chronic diseases

Mortality and morbidity

Actually, there are no representative statistics about the mortality of travel related diseases. It is estimated (by day-to-day experiences) that cardiovascular diseases account for the majority of death cases (50-70%). Injuries happen in approximately 25%. The prevalence of infectious diseases is only 2.8-4.0%. Morbidity data are more uncertain. It is only estimated that travelers staying more than 30 days in a developing country will get sick in 50%. Among these diseases the "travelers' diarrhea" is the most experienced condition.

3.8. Health impact of the global migration

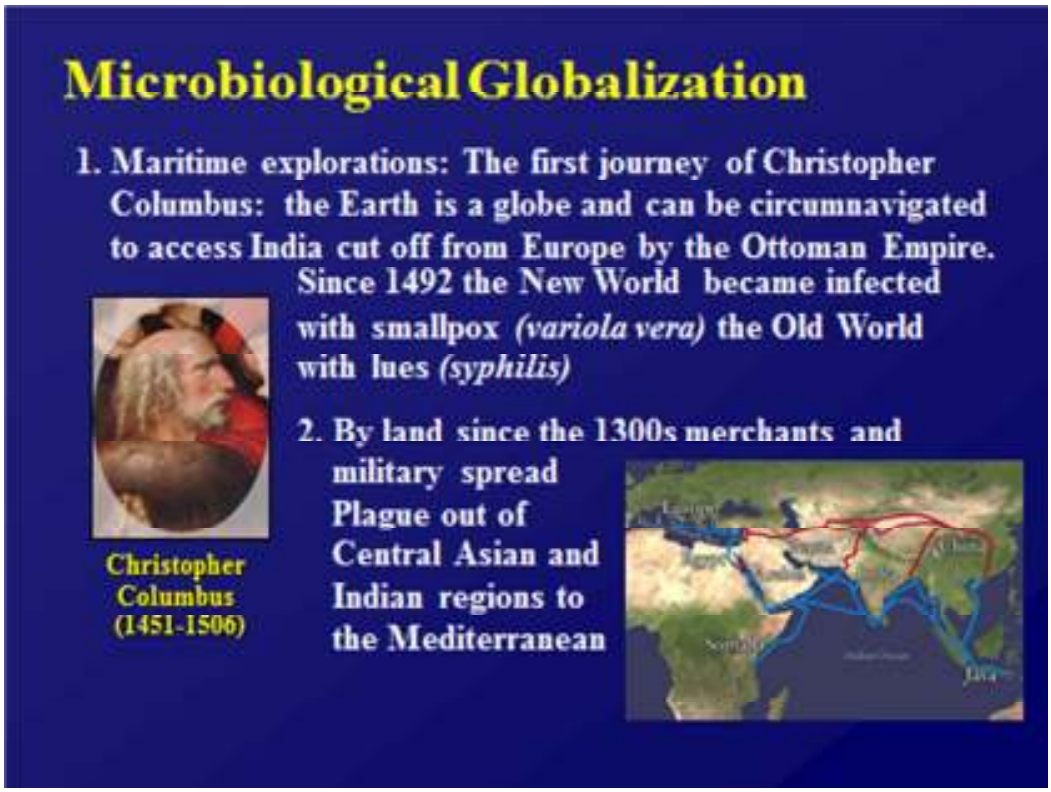
3.8.1. Historic concerns

Migration is an ancient phenomenon in history of men and contributed to the spread of the human race over the whole Earth since the prehistoric times. Water covers 71% of the Earth's surface, but the continents Europe, Africa and Asia are not separated by water and historically the Americas and Australia were also accessible by land or at least a short maritime journey. Down to the latest time, the prehistoric type of migration was/is a living tradition among nomadic people. In our contemporary demographic terms (as discussed in Chapter 4), migration is change of residence by leaving (emigration) or entering (immigration) a specific territory. From migrants' point of view, changing the place of residence may be voluntary or involuntary (forced migration) features of which were changed basically by the globalization.
Historically, the health impact of migration is not interchangeable with

- maritime and land explorations
- good transportations of merchants by land and sea routes and
- military campaigns.

Explorations and long distance trade connected regions before the Earth became a common pool of infectious diseases and launched devastating epidemics as the Black Death (plague) in Europe since the middle of the 1300s, smallpox in the Caribbean and the Americas transferred by Euro-

pean maritime explorers and conquerors since the end of 1400s, but the same people brought back syphilis (lues) to Europe with devastating consequences in the 16th and 17th century.



Prior the WW I, military campaigns moved several thousand or ten thousand people (soldiers and logistic) under critical circumstances of personal hygiene food and water management. Thus they spread also infestations (insects, mice and rats) as *typhus exanthemicus* further food and water-borne diseases *(cholera, salmonellosis, and shigellosis)*.

Typhus exanthemicus remained an unsolved problem even at the beginning of the 20th century. Military health services established delousing stations for troops on the fronts of the WW I, but fatalities were considerable in the Eastern parts of Europe. About 10-40% of infected servicemen died and the ravage continued in Russia during the Civil War killing soldiers of the Red and White Armies and civilians alike.
During the WW II, servicemen were systematically protected, but prisoners of war died typically of typhus. The situation was the same in concentration camps of Nazi Germany and ghettos of the Jewish population because of extremely unhygienic conditions.

The picture shows delousing by the military health service of the US Army in the WW II.

3.8.2. Public health and involuntary migration

Definition of migrants and refugees

Traditional causes of involuntary migration (local military conflicts, genocide, ethnic cleansing) do not involve means of

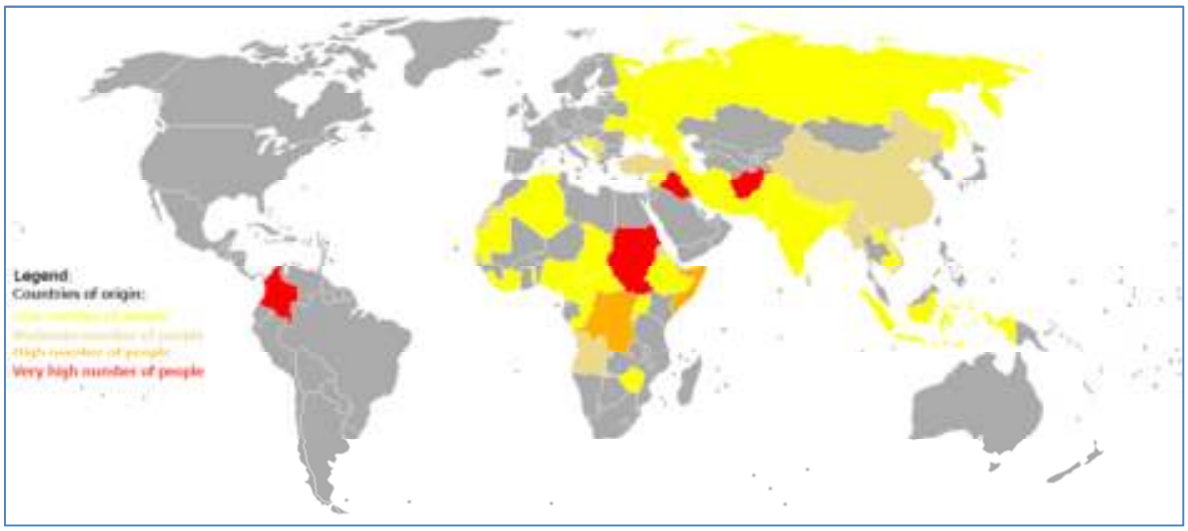
- Organized transportation (e.g. slave trade or deportation of Europe's Jewish population during WW II)
- Evacuation of people related to natural catastrophes or disasters.

People concerned generally by involuntary migration are refugees. The 1951 United Nations Convention Relating to the Status of Refugees has adopted the following definition of a refugee (in Article 1.A.2):

- [A]ny person who: owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country".

Thus these people are migrating to a foreign country where they are called as "asylum seeker" until recognized by the state where they make a claim. However, there were/are refugees who did not cross any international border. As a result of historic challenges the original definition was extended in 1967 to those people who fled war or other violence in their home country. Nevertheless they do not have the legal status of asylum seekers.
In addition men who fled starvation by lack of food emerging naturally or even generated are not classified as refugees rather migrants of natural disasters.

World map showing origin countries of refugees (asylum seekers) in 2007



Red colored are countries (Afghanistan, Iraq, Sudan, and Bolivia) with very high number of asylum seekers.

World map showing countries of destination of refugees (asylum seekers) in 2007

Dark blue are the most frequented countries (Germany, Syria and Pakistan).

Health status of refugees

In their country of origin, the majority of refugees and asylum seekers have experienced

- Deprivation and prolonged poverty and
- Poor access to health care prior to arrival,
- Physical and psychological trauma or torture prior leaving their home country,
- Negative stress in period of immigration detention.

As a result, many refugees have multiple and complex physical and psychological health problems on arrival, including high levels of avoidable illness and associated mortality.

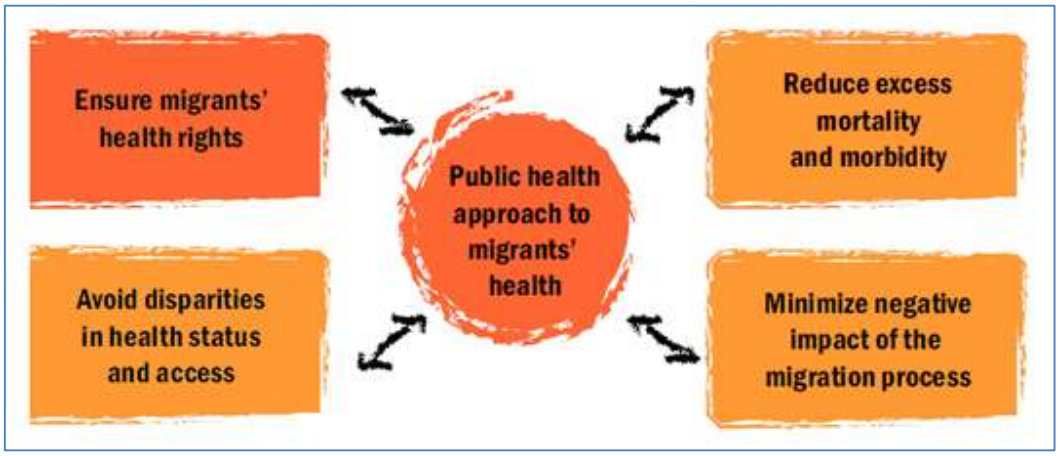
Public health approach addressing the migrants' (refugees') health

Home countries of refugees are mainly in the less developed regions of the world thus in professional terms the main concern are the spread of infectious diseases to be controlled on the borders of transitory or asylum providing countries by public health authorities and emerging mental disorders of migrants in these countries.
Four basic principles of the WHO (2008) for a public health approach of host communities to address the health of migrants:

- Avoiding disparities in health status and access to health services between migrants and the host population.
- Ensuring migrants' health rights, i.e. limiting discrimination or stigmatization, and removing impediments to migrants' access to preventive and curative interventions, which are the basic health entitlements of the host population.

- Availability of lifesaving interventions (emergency services) so as to reduce excess mortality and morbidity among migrant populations (particularly relevant in situations of forced migration resulting from disasters or conflict).
- Minimizing negative health outcomes of the migration process on migrants' health outcomes. Migrants are more vulnerable to health risks and potential hazards by stress of displacement, and adaptation to new environments.

Public Health Approach to Migrant Health



Migration and potential mental disorders

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1414713

Migration and consequences of negative stress reaction

3.8.3. Voluntary migration and the health care

Voluntary migration for economic reasons is basically influenced by global trade of labour-intensive and capital-intensive goods and services. Providing services and producing goods is a continuum. Medical care as a labour-intensive business is genuinely a pure service, nevertheless providing this service needs a huge background of facilities, equipment and devices.

Voluntary migration in health care has also professional impacts as

- National loss or gain of medical workforce and
- Cross-border traveling for treatment (patient tourism).

If developed countries import medical workforce out of less developed countries it will result in shortage of service in these countries. If in turn, developed countries are sending patients to the less developed countries (it is typical in dental tourism) it will decrease the outflow of migrant health personnel for economic reasons.

The interrelations of voluntary migration and its impact in the health care are concerning mainly the *Health Economics* nevertheless it must be mentioned as a part of the global migration. In the 21th century it generated new problems in the European Union by joining of the less developed Central and Eastern European countries.