

# Communicable diseases in the Mediterranean region

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## ARTICLE INFO

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## ABSTRACT

Communicable diseases still pose a health hazard and are a major cause of death in many parts of the world. Tuberculosis is one of the top 10 causes of death worldwide with an annual burden of 1.7 million. Global deaths in 2016 for other communicable diseases included 1.34 million from hepatitis; 1.0 million from HIV-related causes; and almost half a million from malaria. Outbreaks of vaccine-preventable diseases like polio, measles, rubella and other life-threatening diseases also pose a significant threat to various communities around the world. In this paper, we shed some light on the epidemiology of communicable diseases in the Mediterranean Region and conclude that socioeconomic differences between the north and the south Mediterranean lead to differences in the epidemiology of communicable diseases.

## INTRODUCTION

Socioeconomic, environmental and behavioural factors, as well as international travel and migration, foster and increase the spread of communicable diseases.

Vaccine-preventable, foodborne, zoonotic, health care-related and communicable diseases pose significant threats to human health and may sometimes threaten international health security.

In cooperation with governments, WHO/Europe develops norms and standards, guidance and

public health tools to help countries implement effective disease prevention and control programmes and address their risk factors.

Globally, an estimated 3 out of 10 deaths are attributed to communicable diseases. Among these, the World Health Organization (WHO) global burden of disease baseline projections in 2008 revealed that the African Region contributes the highest number of deaths with 41%, followed by the Eastern Mediterranean and South-East Asia Regions, each contributing 15% of the deaths due to infectious and parasitic diseases.

Table 1 Communicable diseases [* Vaccine-preventable communicable diseases]	
HIV/AIDS	* Hepatitis
Influenza	* Measles
Rotavirus	* Rubella
Tuberculosis	* Poliomyelitis
Malaria	* Diphtheria
Brucellosis	* Japanese Encephalitis
Typhoid	* Mumps
Cholera	* Neonatal Tetanus
Sexually Transmitted Infections	* Tetanus
Vector-Born & Parasitic Diseases	* Yellow Fever
-	* Congenital Rubella Syndrome

WHO defines communicable disease as infectious diseases which are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi, that can be spread, directly or indirectly, from one person to another.

Under this definition, one can include a long list of diseases. However, in this publication we will focus on the most important communicable diseases, which have significant impact on public health (Table 1).

**Table 2** List of the Mediterranean region countries included in the review

Southern European Coast from West to East	Levantine Coast from North to South
Gibraltar	Syria
Spain	Cyprus
France	Lebanon
Monaco	Israel
Italy	Palestine, Gaza Strip
Malta	<b>Northern African Coast from East to West</b>
Slovenia	
Croatia	
Bosnia & Herzegovina	
Montenegro	Egypt
Albania	Libya
Greece	Tunisia
Turkey	Algeria
	Morocco
	-

The review includes the countries listed in Table 2 in the Mediterranean Region.

## RESULTS

Table 3 presents the population of each Mediterranean country, the expenditure on health per capita and the expenditure on health as percentage of gross domestic product (GDP). The table shows clearly the big difference in spending on health between the Northern and Southern Mediterranean countries.

## HIV/AIDS

The incidence rate in northern Mediterranean countries is higher than in southern Mediterranean countries (Table 4).

Of the people living with HIV (PLWHIV), a variable percentage are receiving anti-retroviral therapy (ART) around the Mediterranean. The lowest percentage is in Egypt, with 27%; and the highest in Spain, with 77%. There is no correlation between the expenditure on health and the number of PLWHIV (Table 4).

**Table 3** Demographic and health care spending data for countries in the Mediterranean region

Country	Population	Expenditure on health per capita Intl. \$	Expenditure on health as % of GDP
Albania	2,897,000	615	5.90
Algeria	39,666,000	932	7.20
Bosnia & Herz.	3,810,000	957	9.60
Croatia	4,240,000	1,652	7.80
Cyprus	1,165,000	2,062	7.40
Egypt	91,508,000	594	5.60
France	64,365,000	4,508	11.50
Gibraltar	N/A	N/A	N/A
Greece	10,955,000	2,098	8.10
Israel	8,064,000	2,599	7.80
Italy	59,798	3,239	9.20
Lebanon	5,851,000	987	6.40
Libya	6,278,000	806	5.00
Malta	419,000	3,072	9.80
Monaco	38,000	7,302	4.30
Montenegro	26,000	888	6.40
Morocco	34,378,000	447	5.90
Palestine	N/A	N/A	N/A
Slovenia	2,068,000	2,698	9.20
Spain	46,122,000	2,966	9.00

Syria	18,502,000	376	3.20
Tunisia	11,254,000	785	7.00
Turkey	78,666,000	1,036	5.40

### **Hepatitis**

The incidence of hepatitis A (HAV) in south Mediterranean countries is much higher than in north Mediterranean countries, especially among school children. This is also the case for the hepatitis B virus (HBV) and the hepatitis C virus (HCV), with highest incidence rate of HCV (10.70%) being in Egypt (Table 4).

### **Tuberculosis**

The incidence rate of tuberculosis (TB) is much higher in the southern Mediterranean despite the increase of TB cases in European countries among PLWHIV. The same finding applies to multi-drug resistant (MDR) TB, where the incidence is higher in the southern Mediterranean (Table 4).

### **Schistosomiasis in Egypt**

Schistosomiasis is a parasitic disease caused by blood flukes (Trematodes) of the genus *Schistosoma* (S.). It is well documented that schistosomiasis haematobium was endemic in Ancient Egypt. Infection was diagnosed in mummies 3000, 4000 and 5000 years old.

Schistosomiasis haematobium was highly prevalent (60%) both in the Nile Delta and Nile Valley South of Cairo. However, by the end of 2010, in the whole country only 29 villages had a prevalence of >3% and none had more than 10%.

A recent study in 2016 by a group of scientists from Tanta University report that the prevalence of *S. mansoni* infection was found to be 1.8% among schoolchildren of the studied areas.

**Table 4** Incidence rates of communicable diseases in Mediterranean countries

Country	HIV Incidence /10 <sup>5</sup>	PLWHIV	Receiving ART %	HBV	HCV	TB Incidence /10 <sup>5</sup>	MDR TB Incidence /10 <sup>5</sup>
Albania	0.15	1,700	30%	-	-	16	0.42
Algeria	0.04	13,000	76%	<b>2.30%</b>	<b>8.90%</b>	70	1.10
Bosnia & Herz.	N/A	N/A	N/A	-	-	32	N/A
Croatia	0.04	1,500	70%	2.70/10 <sup>5</sup>	-	12	N/A
Cyprus	N/A	N/A	N/A	0.20	0.2/10 <sup>5</sup>	5.6	N/A
Egypt	0.03	11,000	27%	<b>1.40%</b>	<b>10.70%</b>	14	2.20
France	0.21	180,000	78%	-	-	7.7	0.13

Gibraltar	N/A	N/A	N/A	0.20/10 <sup>5</sup>	-	N/A	N/A
Greece	N/A	N/A	N/A	-	-	4.4	0.10
Israel	N/A	N/A	N/A	0.20/10 <sup>5</sup>	-	3.5	0.30
Italy	0.12	130,000	58%	0.60/10 <sup>5</sup>	0.3/10 <sup>5</sup>	6.1	0.24
Lebanon	0.04	1,200	51%	-	-	12	0.48
Libya	N/A	4,400	73%	<b>3.20%</b>	<b>1.20%</b>	40	1.90
Malta	N/A	N/A	N/A	4.20/10 <sup>5</sup>	0.7/10 <sup>5</sup>	13	N/A
Monaco	N/A	N/A	N/A	-	-	0	N/A
Montenegro	0.23	<500	60%	-	-	16	N/A
Morocco	0.05	22,000	48%	<b>1.80%</b>	<b>1.60%</b>	103	1.80
Palestine	N/A	N/A	N/A	-	-	N/A	N/A
Slovenia	N/A	N/A	N/A	-	-	6.5	N/A
Spain	0.18	140000	77%	1.10/10 <sup>5</sup>	-	10	0.50
Syria	<0.01	175	70%	<b>3.10%</b>	<b>0.40%</b>	21	2.00
Tunisia	0.05	2900	29%	<b>0.80%</b>	<b>1.90%</b>	38	0.40
Turkey	N/A	N/A	N/A	<b>4.00%</b>	<b>1.00%</b>	18	0.70

### **Leishmaniosis in Syria**

Due to the unrest in Syria over the past seven years, the incidence of leishmaniosis cases has significantly increased: from 35,876 cases in 2014; to 50,972 cases in 2015; and to 48,311 cases in 2016. Scientists attribute the increase to poor sanitation and the accumulation of rubbish and garbage around towns and villages, as many municipalities are not able to clear the garbage regularly.

### **Polio in Syria**

Outbreaks of polio cases have been reported by WHO country offices in several parts of Syria (Table 5). These outbreaks are attributed to poor

sanitation and the inability of International organisations to implement the immunization programme in the hard-to-reach areas.

## **DISCUSSION**

The epidemiology of communicable diseases is affected by the socioeconomic status of the populations of the north and south Mediterranean. HIV/AIDS prevalence is higher in the northern than the southern Mediterranean countries; largely attributed to the conservative societies and the sexual behaviour of the populations, as multi-partners sexual relationships and sex outside marriage are not widespread in southern Mediterranean countries.

**Table 5** Syria Polio (cVDPV2) outbreak\*

Governorate	District	Number of cVDPV2 cases to date
Deir Ez-Zor	Mayadeen	58
Deir Ez-Zor		01
Boukamal		12
Raqqa	Tell Abyad	01
Thawra		01
Homs	Tadmour	01
<b>Total</b>		<b>74</b>

\* Situation Report #34, February 2018

The prevalence of hepatitis, brucellosis, typhoid, schistosomiasis and vaccine-preventable communicable diseases is much higher in the southern Mediterranean countries; mainly due to poor hygiene and inefficiency of the health systems to provide viable health services in all areas, especially in remote and hard-to-reach areas. The outbreak of Hepatitis A among schoolchildren is an example of the inefficiency of the health system to provide proper hygiene in schools and public places.

More effort and funds are needed to combat many killer diseases in southern parts of the Mediterranean to eradicate hepatitis, tuberculosis, typhoid, brucellosis and other communicable diseases.

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