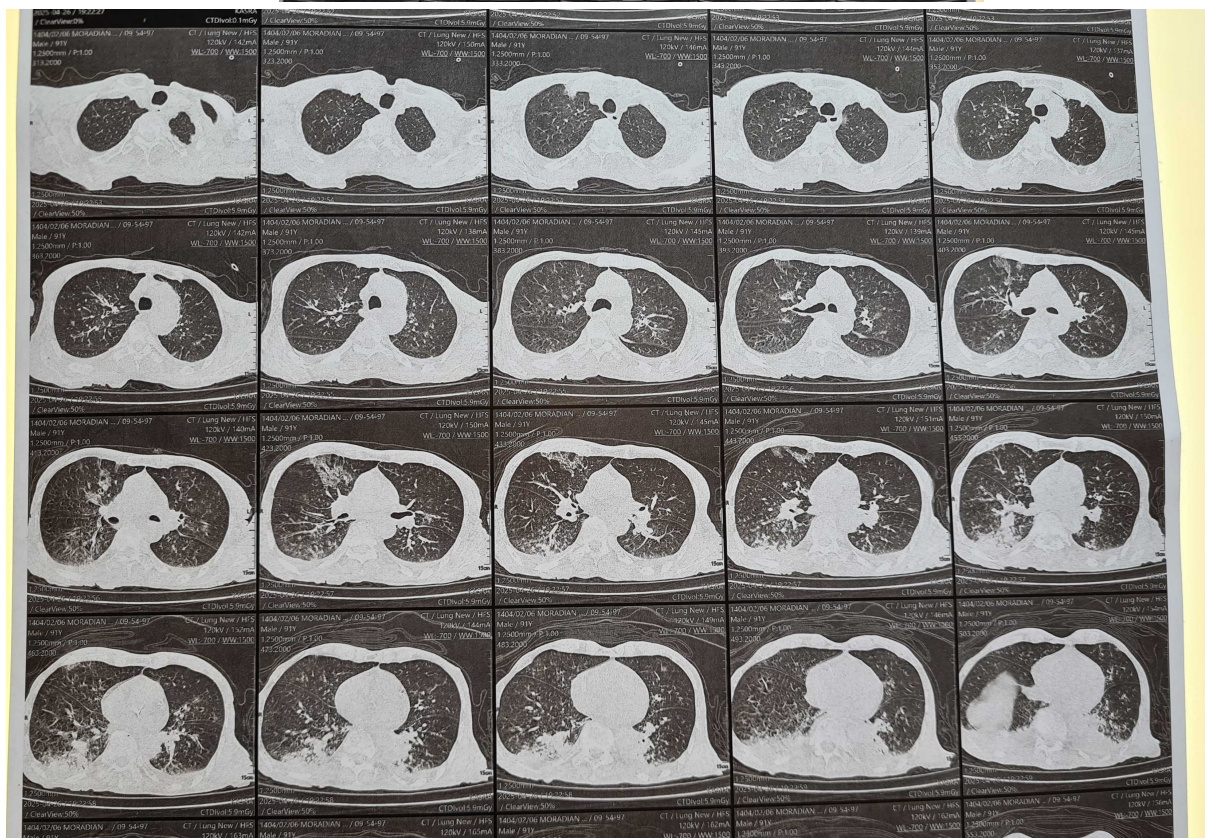


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

91 years old gentleman
fever
Respiratory distress





برسک معراج : قلمبریان - دادود

درخواستهای ارسالی جواب های ارسالی تعریف روتین درخواست درخواست آزمایش

شماره قبض	نوراد	درخواست	پذیرش	انجام	جوابدهی	سرپال باتولوز	تایید نهایی
7552		1404/02/10 10:09:07	1404/02/10 10:10:39	1404/02/10 10:09:00	1404/02/10		
7364		1404/02/09 15:05:12	1404/02/09 15:11:30	1404/02/09 15:05:00	1404/02/09		1404/02/10 06:19:02
6690		1404/02/06 20:44:44	1404/02/06 20:54:08	1404/02/06 20:44:00	1404/02/06		1404/02/07 10:00:32
6676		1404/02/06 19:52:46	1404/02/06 20:05:39	1404/02/07 06:00:00	1404/02/07		1404/02/07 08:20:21
6660		1404/02/06 19:50:10	1404/02/06 19:52:46	1404/02/06 19:50:00	1404/02/06		1404/02/07 10:00:15
6650		1404/02/06 19:08:29	1404/02/06 19:15:50	1404/02/06 19:08:00	1404/02/06		1404/02/10 07:02:56
6621		1404/02/06 18:52:11	1404/02/06 18:58:07	1404/02/06 18:52:00	1404/02/06		1404/02/10 07:02:54
6620		1404/02/06 18:50:44	1404/02/06 18:51:10	1404/02/06 18:50:00	1404/02/06		1404/02/07 16:39:37

تایید مشاهده
تایید جواب
تایید کنت
تایید اسب
تایید شناسایی

جواب
ناقص

گروه آزمایشی	کد	نام آزمایش	جواب	R Flag	تغییر	زمان ثبت	No Answer
PCR	877	پنل تنفسی	-		*	1404/02/07 16:32:35	
PCR	823	SARS-Cov-2	Not detected			1404/02/07 16:32:02	
PCR	824	Influ A	Not detected			1404/02/07 16:32:05	
PCR	827	Influ B	Not detected			1404/02/07 16:32:07	
PCR	840	Influ H1N1	Not detected			1404/02/07 16:32:09	
PCR	842	RSV	Not detected			1404/02/07 16:32:11	
PCR	858	Adeno Virus	Not detected			1404/02/07 16:32:14	
PCR	861	Metapnemo.V	Positive			1404/02/07 16:31:56	
PCR	862	H.Cov HKU1/O	Not detected			1404/02/07 16:32:17	
PCR	864	H.CO.V NL63	Not detected			1404/02/07 16:32:19	
PCR	865	H.CO.V 229-E	Not detected			1404/02/07 16:32:21	
PCR	866	H. Boca.Virus	Not detected			1404/02/07 16:32:26	
PCR	872	Parainfluenza1	Not detected			1404/02/07 16:32:28	

Answer Detail :

نمودار آزمایش

جدول جواب ها

کل سوابق

جواب کلی

جواب گروهی

جوابهای Word

Comments :

PCR : - Specimen: Nasopharynx
- Specimen Quality: Adequate
- Method: Real Time PCR
- Interpretation of the above mentioned results should be performed taking into

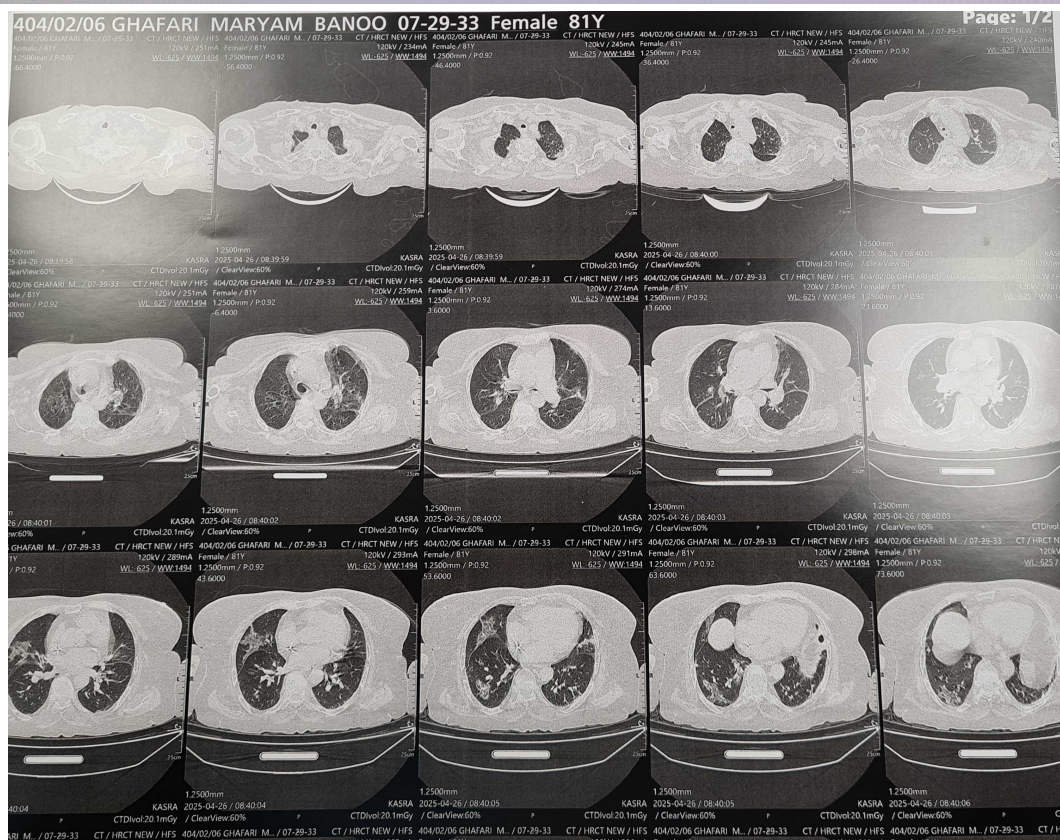
07:06 ق. ۱۳۰۵/۰۲/۱۴۰۴

✓	6621	1404/02/06 18:52:11	1404/02/06 18:58:07	1404/02/06 18:52:00	1404/02/06
✓	6620	1404/02/06 18:50:44	1404/02/06 18:51:10	1404/02/06 18:50:00	1404/02/06

گروه آزمایشی	کد	نام آزمایش	جواب	R Flag	تغییر	زمان ثبت	No Answer
PCR	877	پنل تنفسی	-		*	1404/02/07 16:32:35	
PCR	823	SARS-Cov-2	Not detected			1404/02/07 16:32:02	
PCR	824	Influ A	Not detected			1404/02/07 16:32:05	
PCR	827	Influ B	Not detected			1404/02/07 16:32:07	
PCR	840	Influ H1N1	Not detected			1404/02/07 16:32:09	
PCR	842	RSV	Not detected			1404/02/07 16:32:11	
PCR	858	Adeno Virus	Not detected			1404/02/07 16:32:14	
PCR	861	Metapnemo.V	Positive			1404/02/07 16:31:56	
PCR	862	H.Cov HKU1/O	Not detected			1404/02/07 16:32:17	
PCR	864	H.CO.V NL63	Not detected			1404/02/07 16:32:19	
PCR	865	H.CO.V 229-E	Not detected			1404/02/07 16:32:21	
PCR	866	H. Boca.Virus	Not detected			1404/02/07 16:32:26	
PCR	872	Parainfluenza1	Not detected			1404/02/07 16:32:28	

✓	6621	1404/02/06 18:52:11	1404/02/06 18:58:07	1404/02/06 18:52:00	1404/02/06
✓	6620	1404/02/06 18:50:44	1404/02/06 18:51:10	1404/02/06 18:50:00	1404/02/06

گروه آزمایشی	کد	نام آزمایش	جواب	R	Flag	تغییر	زمان ثبت	No Answer
PCR	877	بیل تنفسی	-			*	1404/02/07 16:32:35	
PCR	823	SARS-Cov-2	Not detected				1404/02/07 16:32:02	
PCR	824	Influ A	Not detected				1404/02/07 16:32:05	
PCR	827	Influ B	Not detected				1404/02/07 16:32:07	
PCR	840	Influ H1N1	Not detected				1404/02/07 16:32:09	
PCR	842	RSV	Not detected				1404/02/07 16:32:11	
PCR	858	Adeno Virus	Not detected				1404/02/07 16:32:14	
PCR	861	Metapnemo.V	Positive				1404/02/07 16:31:56	
PCR	862	H.Cov HKU1/O	Not detected				1404/02/07 16:32:17	
PCR	864	H.COVI NL63	Not detected				1404/02/07 16:32:19	
PCR	865	H.COVI 229-E	Not detected				1404/02/07 16:32:21	
PCR	866	H. Boca.Virus	Not detected				1404/02/07 16:32:26	
PCR	872	Parainfluenza1	Not detected				1404/02/07 16:32:28	



شماره قیض	نوزاد	درخواست	بذیرش	انجام	جوابدهی	سریال باتولوژی	تائید نهایی
✓ 6595		1404/02/06 16:09:26	1404/02/06 16:10:48	1404/02/06 18:00:00	1404/02/06		1404/02/06 19:01:03
6558		1404/02/06 13:53:42	1404/02/06 13:57:42	1404/02/06 13:53:00	1404/02/06		
6501		1404/02/06 09:17:50	1404/02/06 09:23:43	1404/02/06 09:17:00	1404/02/06		
6459		1404/02/06 05:26:43	1404/02/06 05:28:01	1404/02/06 06:00:00	1404/02/06		
✓ 6443		1404/02/05 22:02:46	1404/02/05 22:21:04	1404/02/06 06:00:00	1404/02/06		1404/02/06 08:24:23
✓ 6442		1404/02/05 22:02:18	1404/02/05 22:20:56	1404/02/06 06:00:00	1404/02/06		1404/02/06 08:24:20
✓ 6315		1404/02/05 11:52:29	1404/02/05 11:56:24	1404/02/05 11:52:00	1404/02/05		1404/02/06 17:15:50
✓ 6310		1404/02/05 10:26:03	1404/02/05 10:31:03	1404/02/05 10:26:00	1404/02/05		1404/02/07 06:27:53

گروه آزمایشی	کد	نام آزمایش	جواب	R	Flag	تغییر	زمان ثبت	No Answer
PCR	877	بیل تنفسی	-				1404/02/06 16:33:45	
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PCR	824	Influ A	Not detected				1404/02/06 16:33:23	
PCR	827	Influ B	Not detected				1404/02/06 16:33:25	
PCR	840	Influ H1N1	Not detected				1404/02/06 16:33:27	
PCR	842	RSV	Not detected				1404/02/06 16:33:29	
PCR	858	Adeno Virus	Not detected				1404/02/06 16:33:31	
PCR	861	Metapnemo.V	Positive				1404/02/06 16:33:11	
PCR	862	H.Cov HKU1/O	Not detected				1404/02/06 16:33:34	
PCR	864	H.COVS NL63	Not detected				1404/02/06 16:33:36	
PCR	865	H.COVS 229-E	Not detected				1404/02/06 16:33:38	
PCR	866	H. Boca.Virus	Not detected				1404/02/06 16:33:41	
PCR	872	Parainfluenza1	Not detected				1404/02/06 16:33:44	

کلیه جواب های مراجعه مورد نظر چاپ شوند

✓	6315	1404/02/05 11:52:29	1404/02/05 11:56:24	1404/02/05 06:00:00	1404
✓	6310	1404/02/05 10:26:03	1404/02/05 10:31:03	1404/02/05 11:52:00	1404
		1404/02/05 10:26:00	1404		

گروه آزمایشی	کد	نام آزمایش	جواب	R	Flag	تغییر	زمان ثبت
PCR	877	بیل تنفسی	-				1404/02/06 16:33:4
PCR	823	SARS-Cov-2	Not detected				1404/02/06 16:33:2
PCR	824	Influ A	Not detected				1404/02/06 16:33:2
PCR	827	Influ B	Not detected				1404/02/06 16:33:2
PCR	840	Influ H1N1	Not detected				1404/02/06 16:33:2
PCR	842	RSV	Not detected				1404/02/06 16:33:2
PCR	858	Adeno Virus	Not detected				1404/02/06 16:33:3
PCR	861	Metapnemo.V	Positive				1404/02/06 16:33:1
PCR	862	H.Cov HKU1/O	Not detected				1404/02/06 16:33:3
PCR	864	H.COVS NL63	Not detected				1404/02/06 16:33:3
PCR	865	H.COVS 229-E	Not detected				1404/02/06 16:33:3
PCR	866	H. Boca.Virus	Not detected				1404/02/06 16:33:4
PCR	872	Parainfluenza1	Not detected				1404/02/06 16:33:4

Human Metapneumovirus (hMPV)

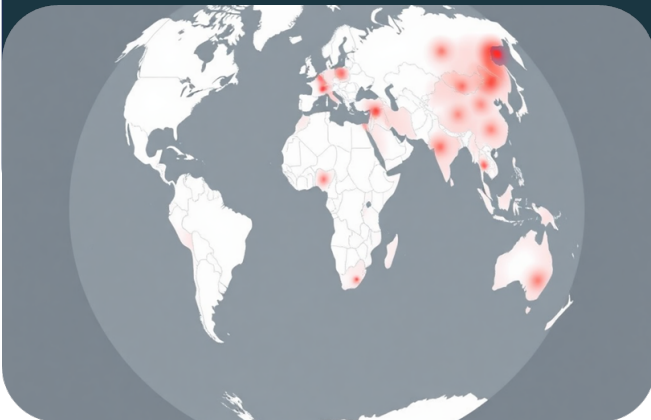
Hamid Emadi M.D

Professor of Infectious Diseases
Tehran University of Medical Science

Introduction

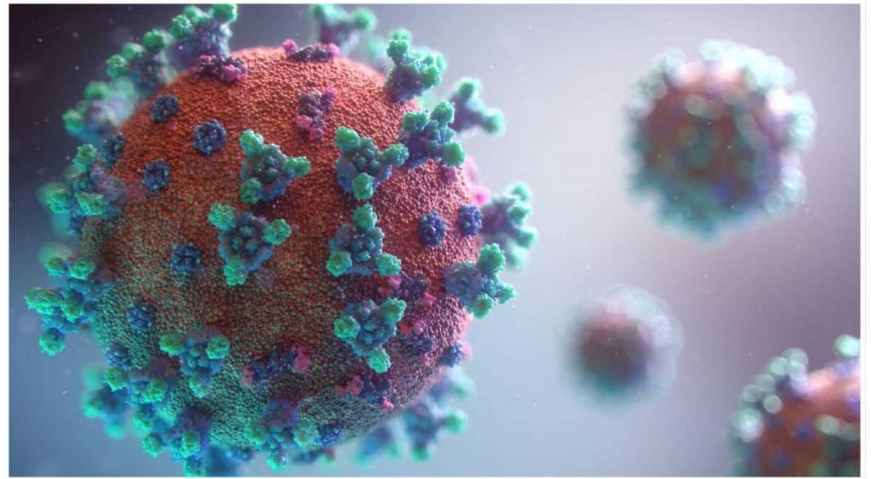
In 2001, hMPV was discovered in the Netherlands, linked to respiratory diseases in children.

It has been present for at least 60 years globally, causing respiratory infections.



VIROLOGY

hMPV belongs to the Pneumoviridae family, consisting of enveloped negative-sense RNA viruses.



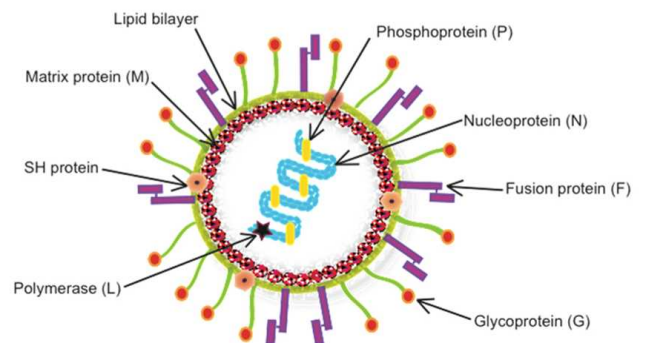
with two genera,

- **Metapneumovirus** (which includes **hMPV**)
- **Orthopneumovirus** (which includes **Respiratory Syncytial Virus**).

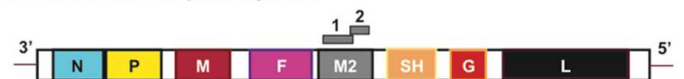
VIROLOGY

Given the close relationship between **hMPV** and avian metapneumovirus (**APV**), it was speculated that hMPV

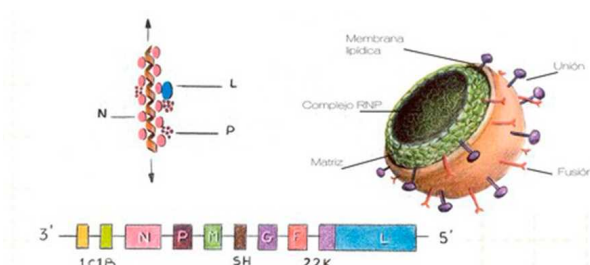
a. Model structure of hMPV

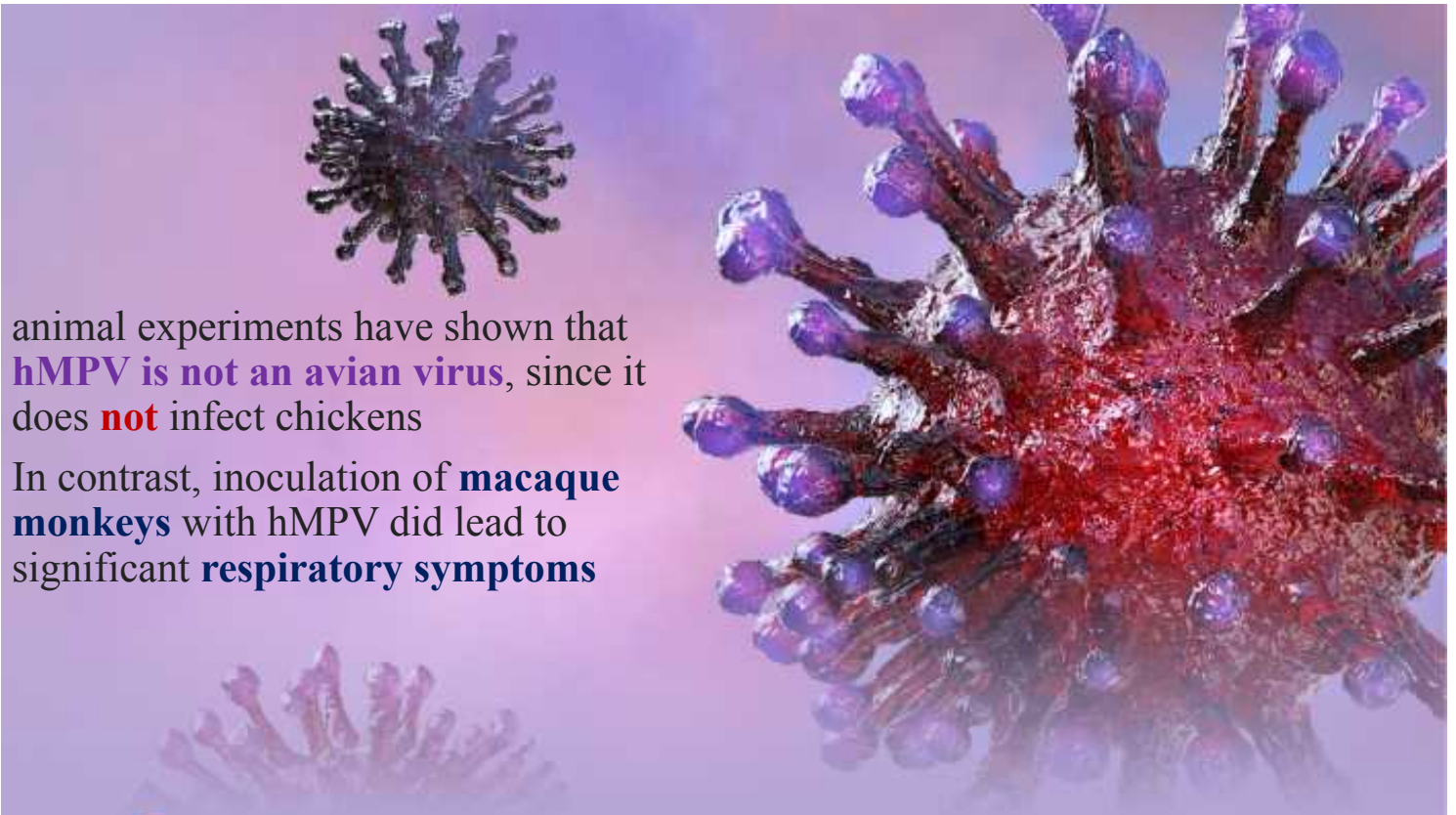


b. Proteins encoded by hMPV genome



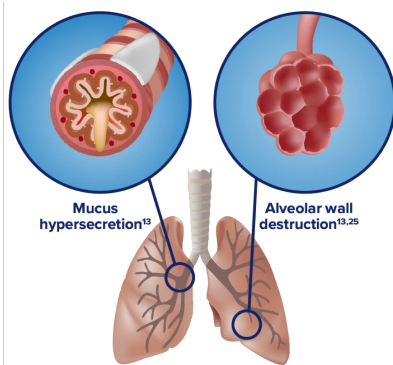
L - Polymerase	M2-2 and M2-1 - Matrix protein	M - Matrix protein
G - Glycoprotein	F - Fusion protein	P - Phosphoprotein
SH - Small hydrophobic protein		N - Nucleoprotein





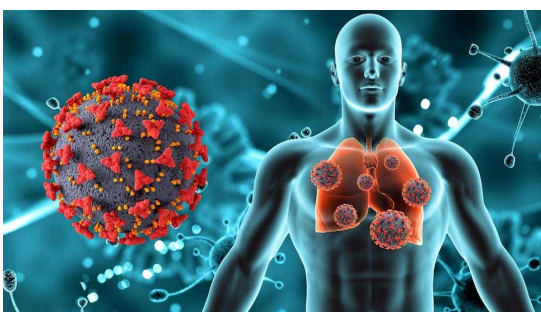
animal experiments have shown that **hMPV is not an avian virus**, since it does **not** infect chickens

In contrast, inoculation of **macaque monkeys** with hMPV did lead to significant **respiratory symptoms**



Pathogenesis of hMPV

- Viral replication occurs in the respiratory tract, leading to mild symptoms.



- Infection is associated with
- **airway inflammation**
- and
- **mucus hyperproduction**

Transmission of hMPV

- Transmission likely occurs through
 - **direct contact** with **contaminated secretions**

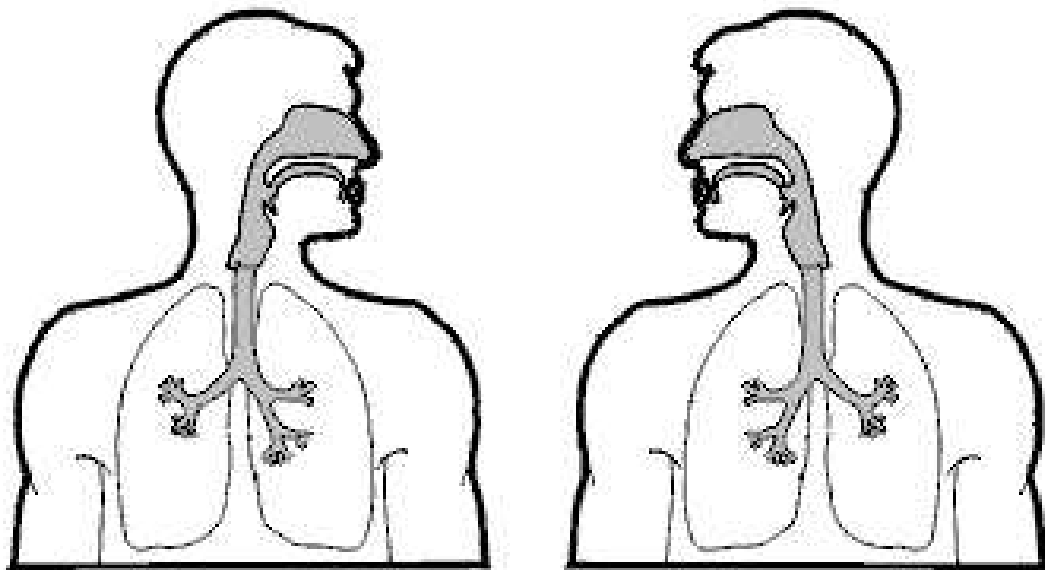
which may involve

- large particle aerosols
- Droplets
- fomites

- but **not** small particle aerosols



Airborne



Measles



chickenpox





lungs, but can also affect other parts of the body. It is spread through the air when people who have an active TB infection cough or sneeze. The bacteria, short for tubercle bacillus, is a common and in many cases lethal, in

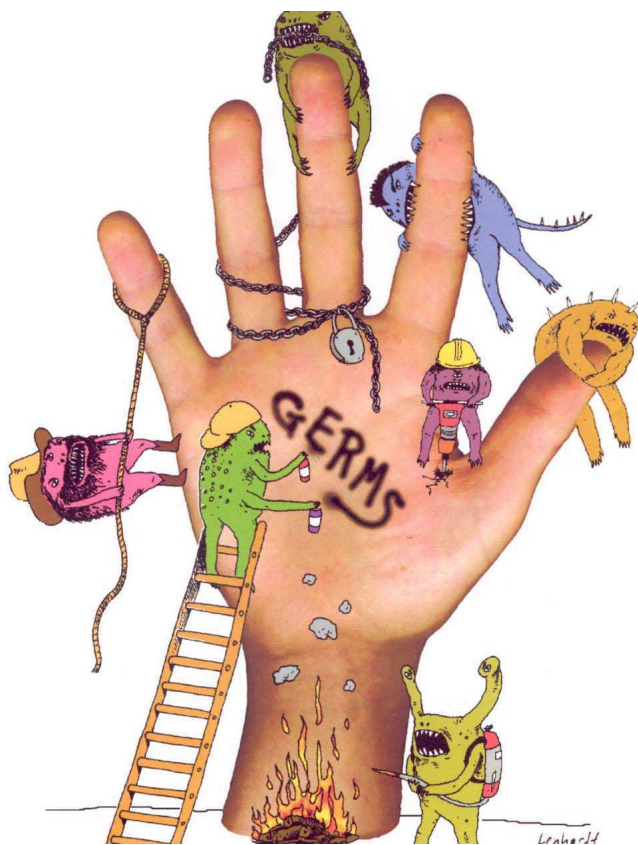
TUBERCULOSIS

strains of mycobacteria, usually Mycobacterium tuberculosis. Tuberculosis, or short for tubercle bacillus, is a common and in many cases lethal, in

Droplet borne











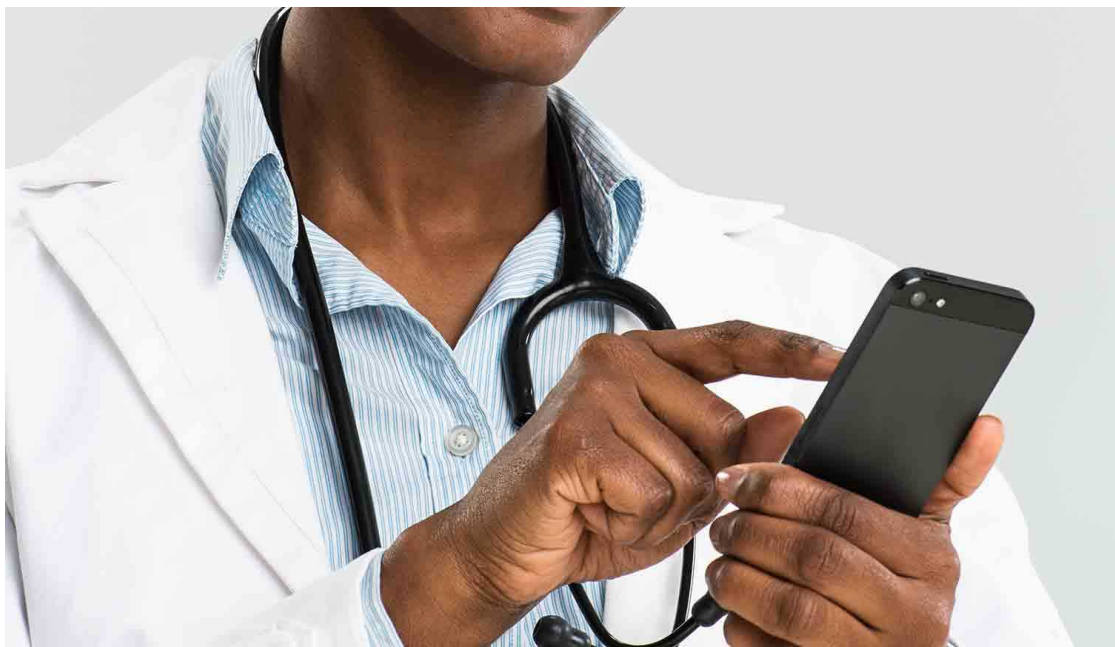
Direct Contact



Direct Contact



Indirect Contact



Indirect Contact



Transmission of hMPV

Physical **separation at distances ≥ 6 feet** therefore interrupts aerosol transmission

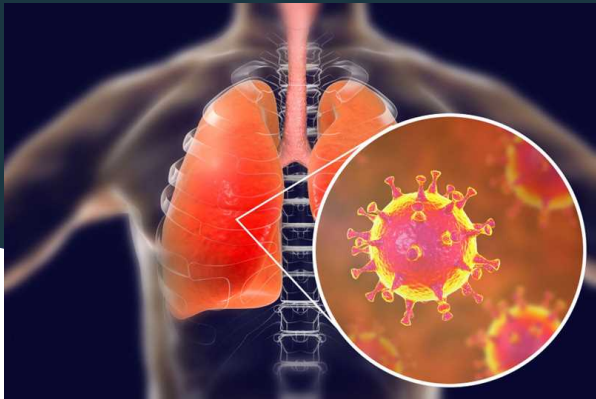
Physical separation can interrupt transmission, especially in healthcare settings.



Incubation Period

The incubation period is estimated to be 5 to 9 days.

Transmission to family members is efficient, with a 5-day interval for symptom onset.



Epidemiology of hMPV

- hMPV is widespread, causing infections in all **age groups**, particularly in **young children** and **older adults**.
- Seasonal variations are noted, with peaks in **late winter** and **early spring**



CLINICAL MANIFESTATIONS

Serosurveys suggest that hMPV is usually associated with **mild, self-limited** respiratory infections in **children** and **adults**



Runny or stuffy nose.



Cough.



Shortness of breath.



Sore throat.



Wheezing.



Fever.



Rash.

CLINICAL MANIFESTATIONS

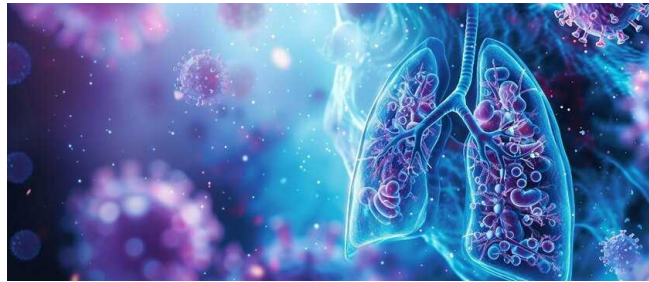
The typical course of mild disease probably involves

- asymptomatic period of several days after inoculation,
- followed by a week of upper respiratory symptoms,
- with gradual resolution



CLINICAL MANIFESTATIONS

- In **severe disease** involving the lower respiratory tract,
- a **brief asymptomatic** period after **inoculation**,
- followed by **a day or two of upper respiratory symptoms**,
- **progress to wheezing** and/or other signs of lower respiratory tract involvement
- In many patients, the **wheezing lasts for several days**;

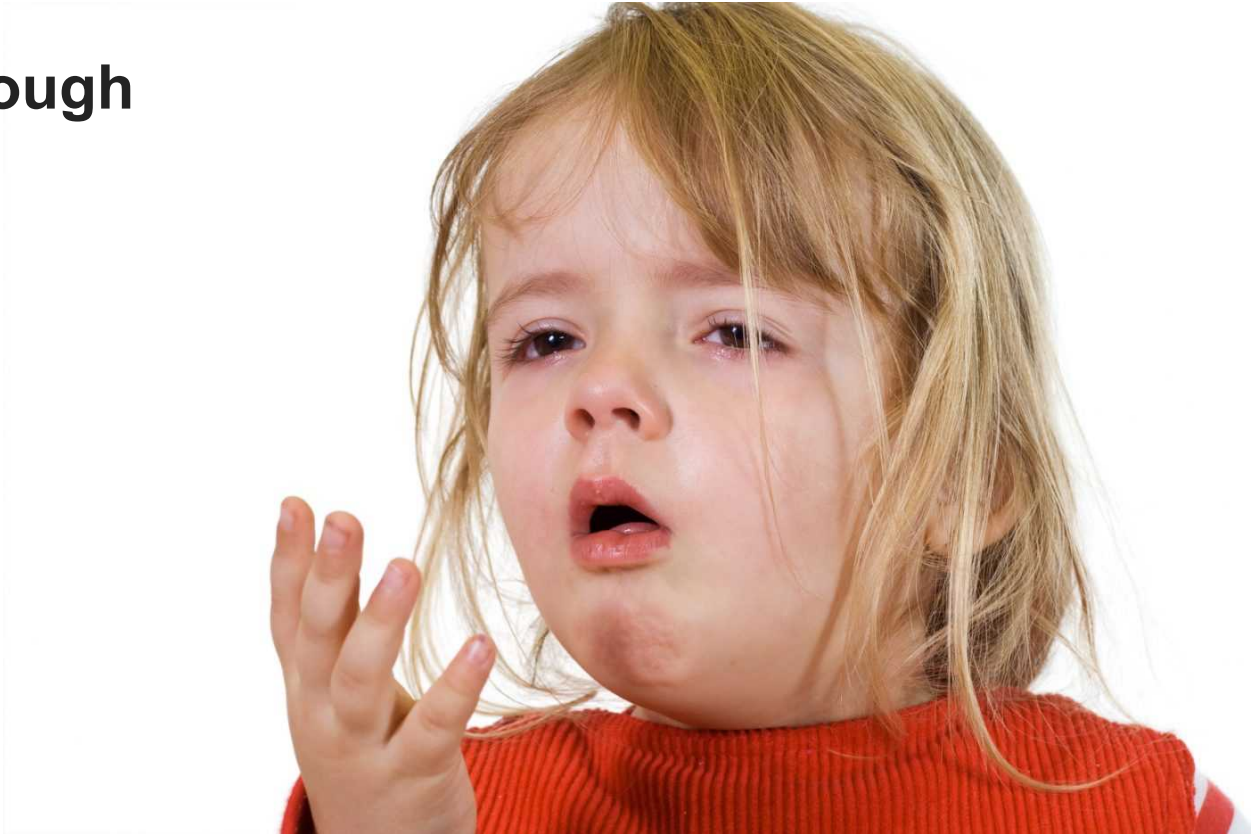


Clinical manifestations in children

Symptoms of upper respiratory infection include **Rhinopharyngitis** and **laryngitis**



Cough



Rhinitis



Fever



Wheezing



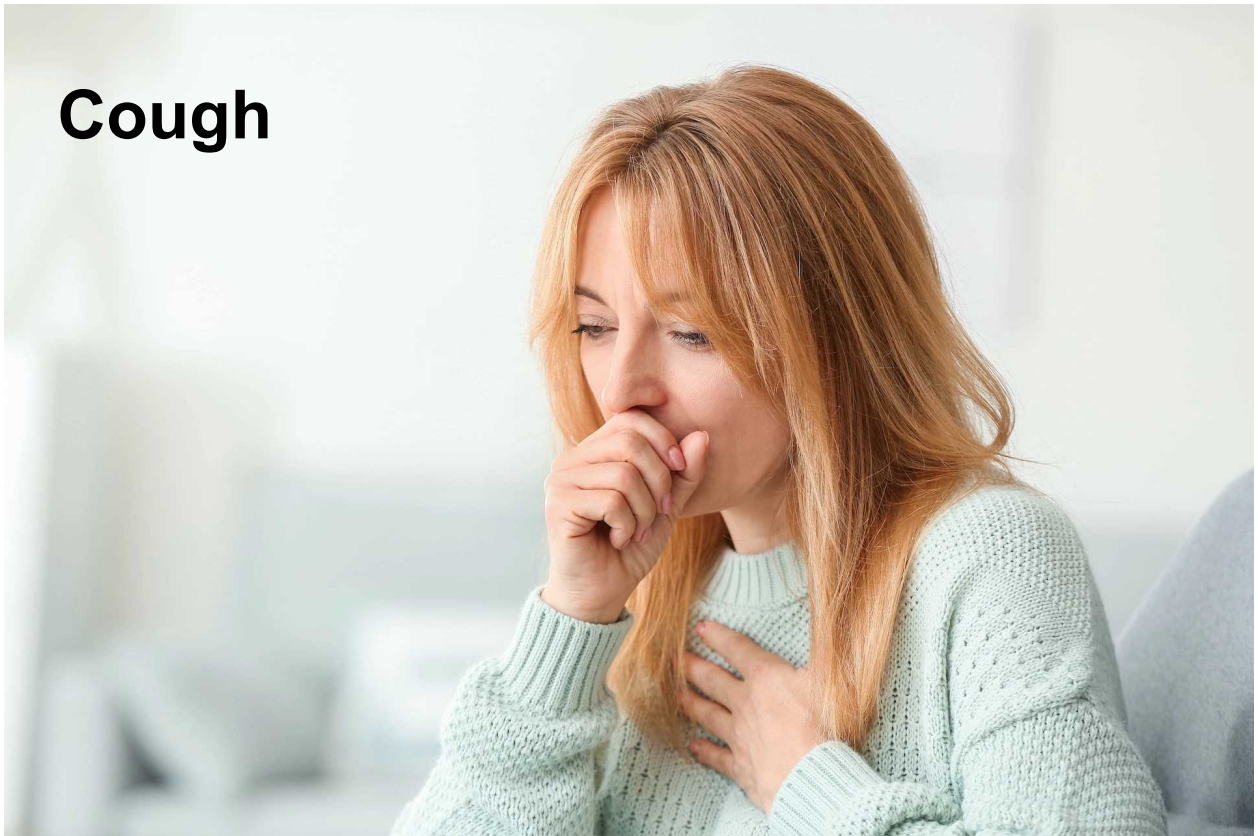
Severe cases can lead to bronchiolitis or pneumonia



Clinical manifestations in Adult



Cough



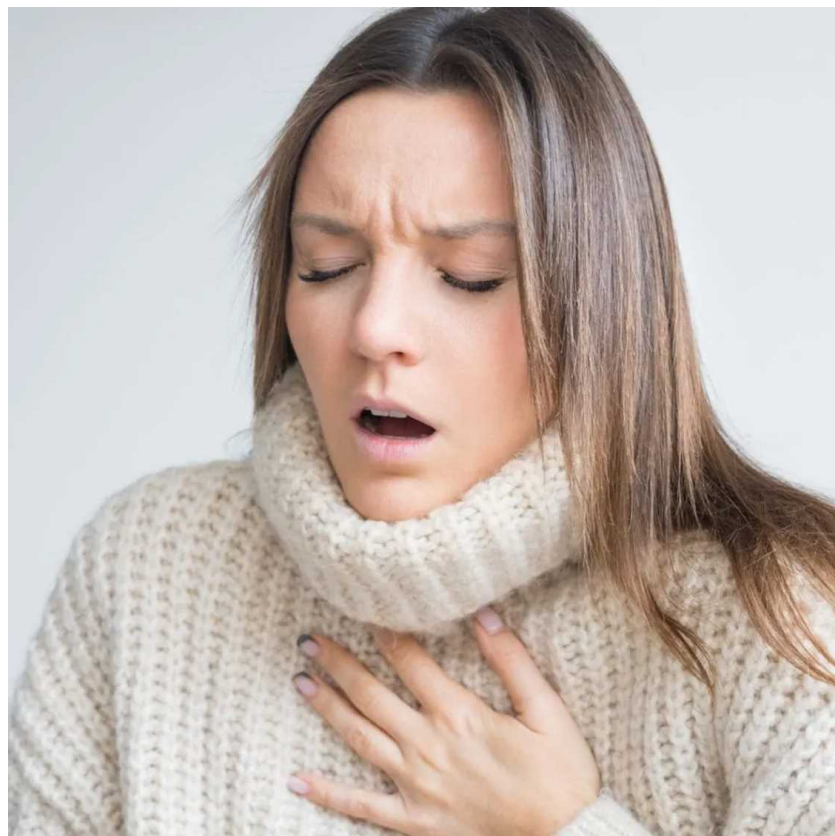
Nasal congestion



Rhinorrhea



Dyspnea



Hoarseness



Wheezing



Dyspnea and wheezing were more common in older adult patients



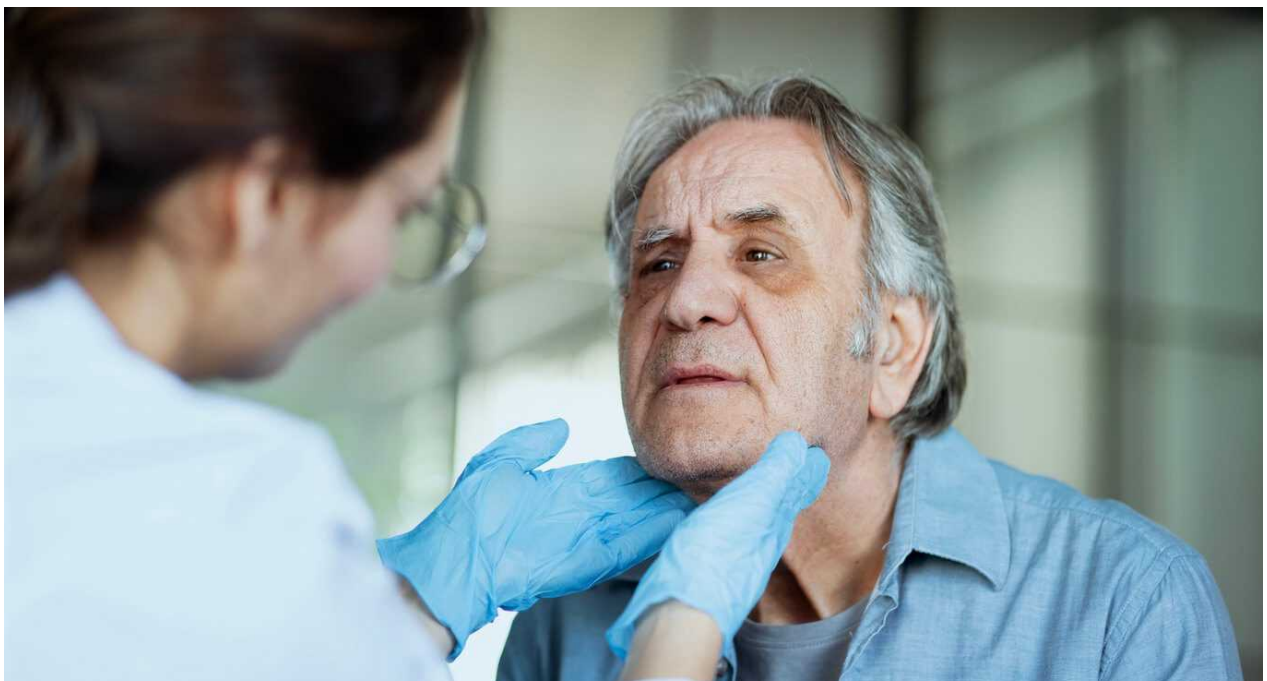
while hoarseness was more common in young adults



hMPV is less frequent as a cause of lower respiratory illness compared to children



hMPV is in COPD and asthma exacerbations



Immunocompromised hosts



Diagnosis of hMPV

Diagnosis is primarily through RT-PCR, the most sensitive method.

Testing is crucial to avoid unnecessary antibiotic use and ensure proper isolation.



Diagnosis of hMPV

Respiratory Panel assay
multiplex PCR panel

گروه آزمایشی	کد	نام آزمایش	جواب
PCR	877	پنل تنفسی	-
PCR	823	SARS-Cov-2	Not detected
PCR	824	Influ A	Not detected
PCR	827	Influ B	Not detected
PCR	840	Influ H1N1	Not detected
PCR	842	RSV	Not detected
PCR	858	Adeno Virus	Not detected
PCR	861	Metapnemo.V	Positive
PCR	862	H.Cov HKU1/O	Not detected
PCR	864	H.COVS NL63	Not detected
PCR	865	H.COVS 229-E	Not detected
PCR	866	H. Boca.Virus 1	Not detected
PCR	872	Parainfluenza1	Not detected



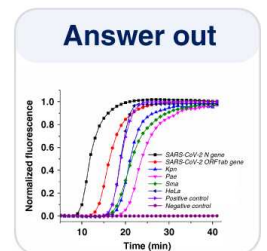
Swab in



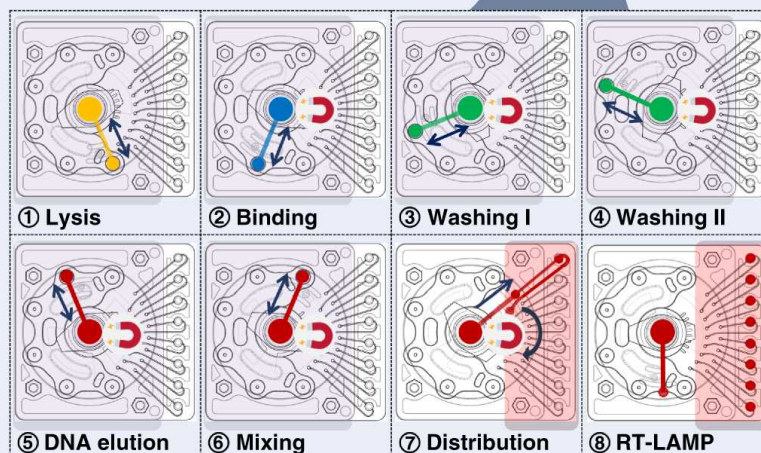
Cassette



Analyzer



Answer out





Treatment of hMPV

- Treatment is supportive, focusing on symptom management.



Treatment of hMPV

- The rate of **secondary bacterial lung infection** or bacteremia in patients with hMPV infection has not been defined but is **thought to be low**
- As a result, the **use of antibiotics** is **not** usually indicated in the treatment of patients hospitalized with hMPV bronchiolitis or pneumonia





PREVENTION

Infection control measures include

➤ **hand hygiene**

and

➤ **contact precautions** in healthcare settings.



PREVENTION

Immunocompromised individuals should avoid contact with infected children.



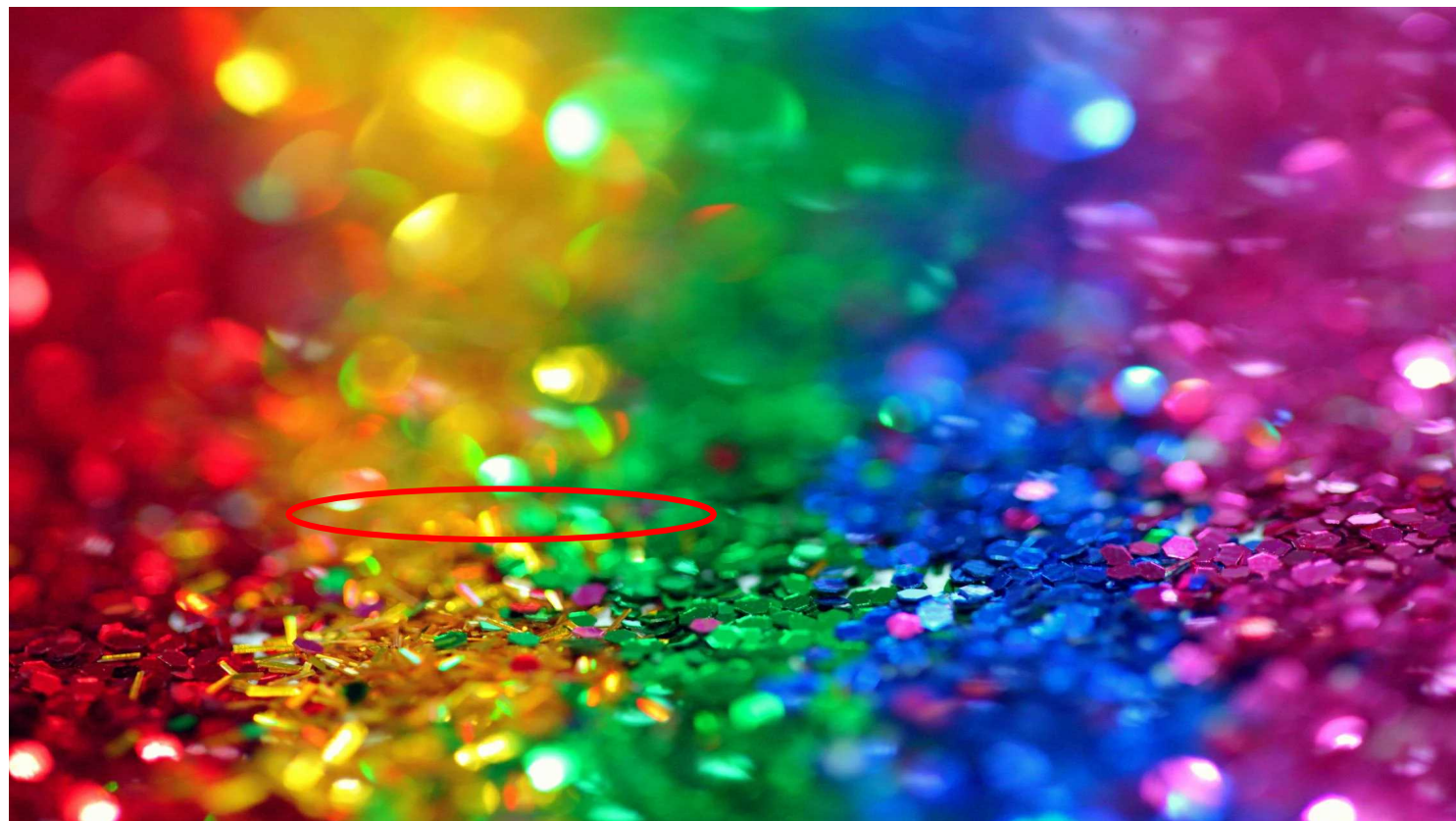
Future Directions

- Cases of this respiratory illness are surging in China
- But human metapneumovirus is a normal seasonal illness
- **not a new pandemic threat**

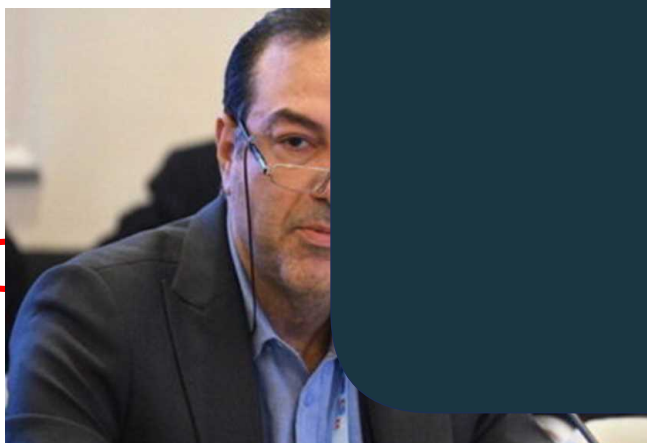


✓	6621	1404/02/06 18:52:11	1404/02/06 18:58:07	1404/02/06 18:52:00	1404/02/06
✓	6620	1404/02/06 18:50:44	1404/02/06 18:51:10	1404/02/06 18:50:00	1404/02/06

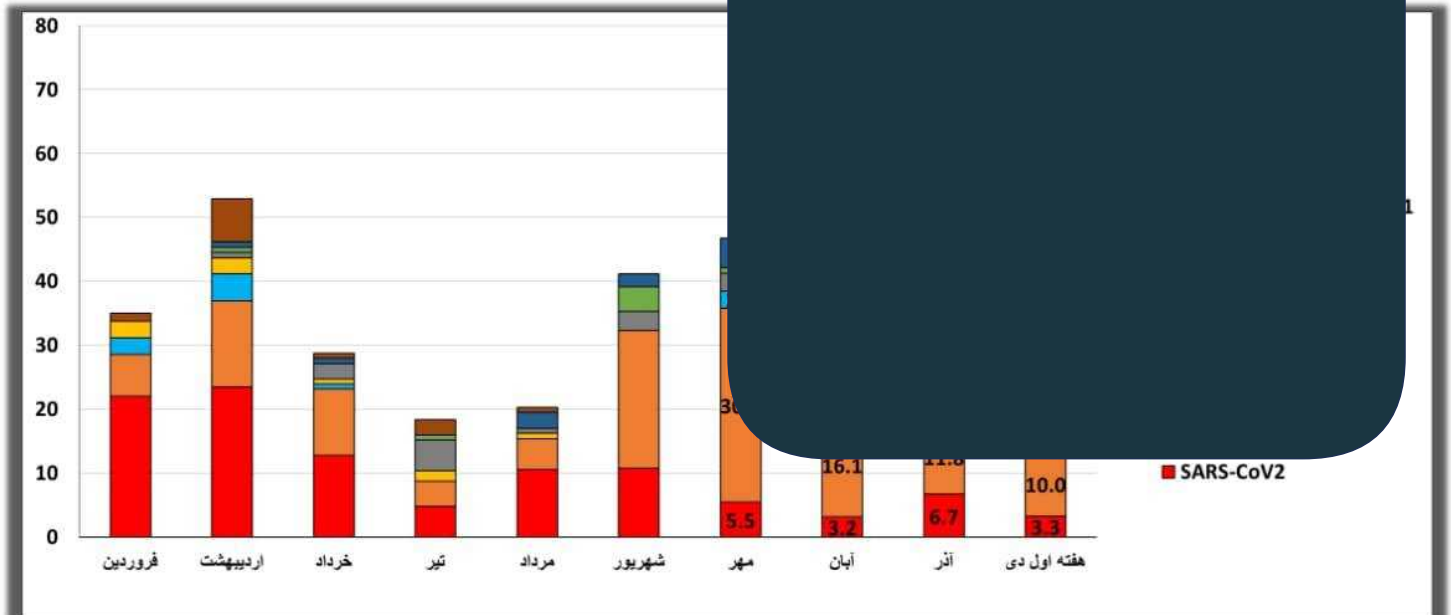
گروه آزمایشی	کد	نام آزمایش	جواب	R	Flag	تغییر	زمان ثبت	No Answer
PCR	877	پنل تنفسی	-			*	1404/02/07 16:32:35	
PCR	823	SARS-Cov-2	Not detected				1404/02/07 16:32:02	
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PCR	840	Influ H1N1	Not detected				1404/02/07 16:32:09	
PCR	842	RSV	Not detected				1404/02/07 16:32:11	
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PCR	861	Metapnemo.V	Positive				1404/02/07 16:31:56	
PCR	862	H.Cov HKU1/O	Not detected				1404/02/07 16:32:17	
PCR	864	H.COVI NL63	Not detected				1404/02/07 16:32:19	
PCR	865	H.COVI 229-E	Not detected				1404/02/07 16:32:21	
PCR	866	H. Boca.Virus	Not detected				1404/02/07 16:32:26	
PCR	872	Parainfluenza1	Not detected				1404/02/07 16:32:28	



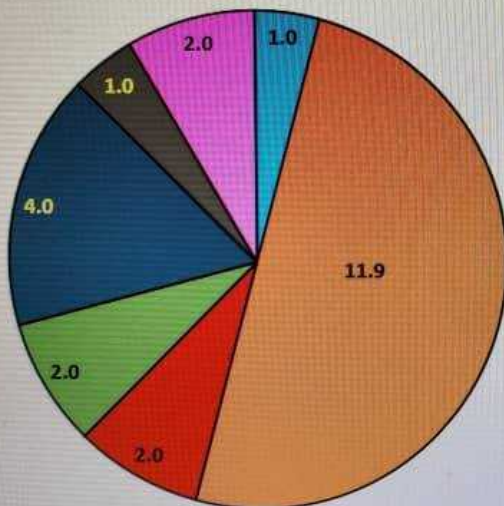
شش ویروس کرونا در کشور



21 پاتوژن تنفسی

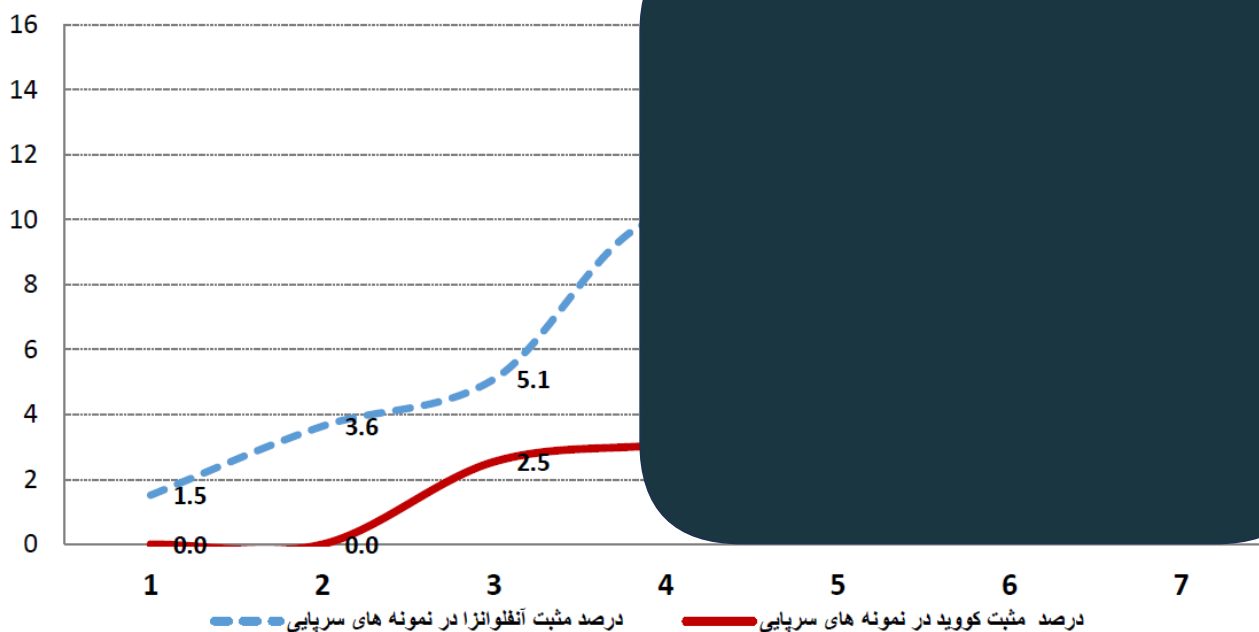


دیده وری ۲۱ پاتوژن تنفسی

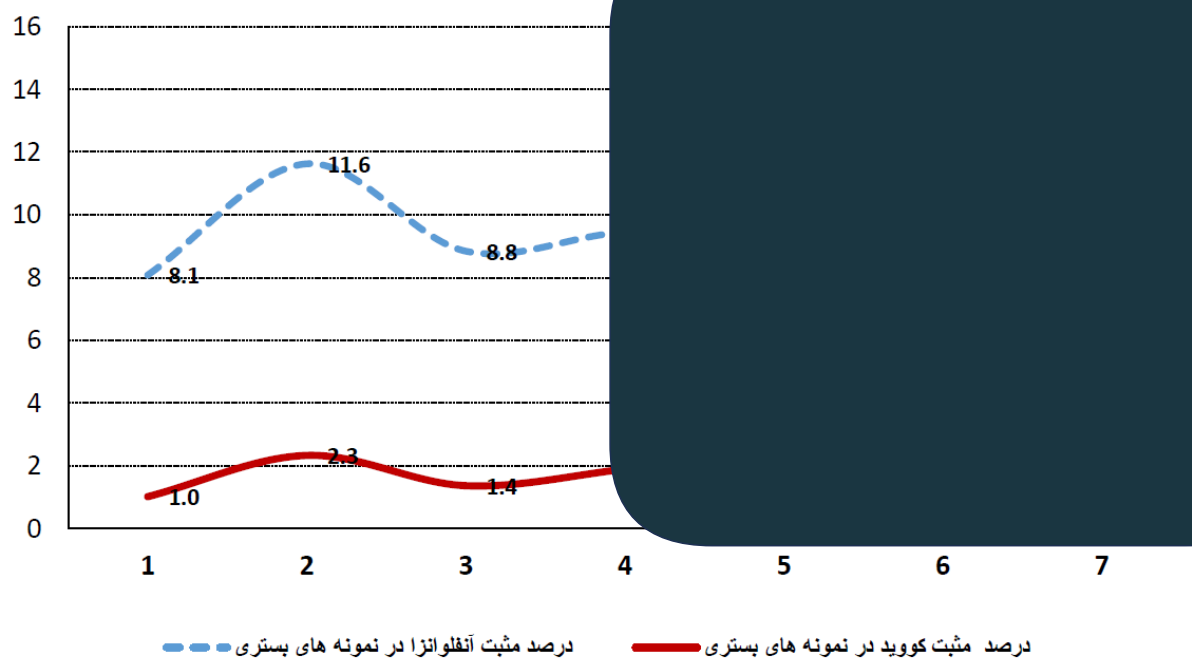


لازم به ذکر است در ۱۰۱ نمونه بررسی شده در فروردین ۱۴۰۴، ۲ مورد از ویروس HMPV شناسایی گردید.

هفتگی بیماریهای حاد تنفسی - سرپایی - 1404



هفتگی بیماریهای حاد تنفسی - بستری - 1404

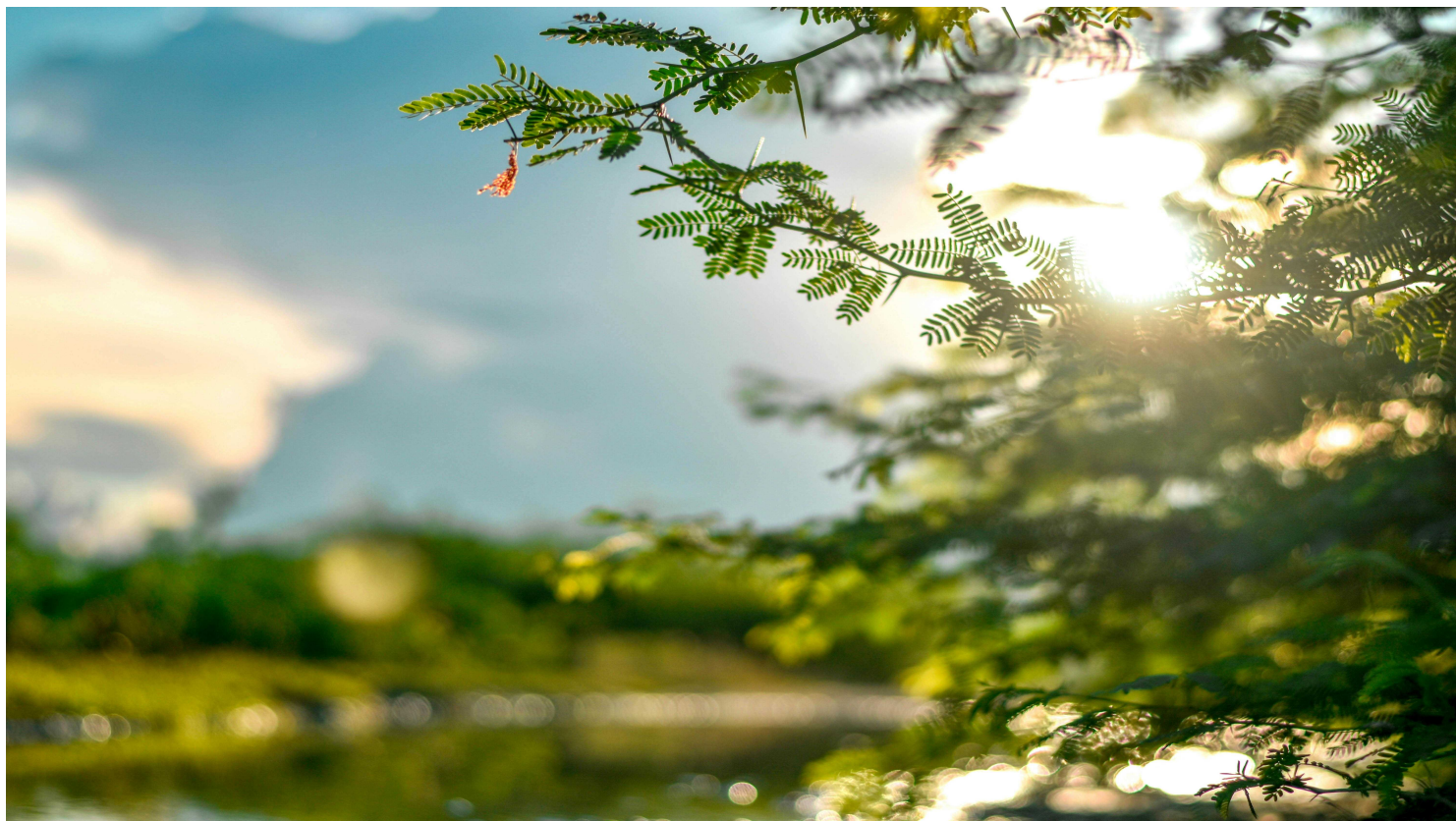




سلامت
حمایت همگانی از مدافعان

جمهوری اسلامی ایران
وزارت بهداشت، درمان و آموزش پزشکی

ردیبهشت جم نمونه ناکافی



آخرین وضعیت بیماری سرخک در ایران و سایر کشورهای دنیا

- فروردین ۱۴۰۴، ۷۰ مورد ابتلاء به سرخک در هرمزگان
- سه مورد ابتلاء در یزد
- در استان هرمزگان، ۲۸۳ مورد بیمار مشکوک به سرخک شناسایی شده بود که از این تعداد، ۷۰ مورد به طور قطعی به بیماری سرخک مبتلا بوده‌اند. این موارد در شهرستان‌های بندرعباس، جاسک، قشم، میناب، بشاگرد، بندر خمیر و رودان گزارش شده است.
- بیشترین مبتلایان از جمعیت حاشیه‌نشین و افرادی هستند که فاقد سابقه واکسیناسیون بوده‌اند. تنها دو کودک با سابقه دریافت واکسن ضد سرخک به این بیماری مبتلا شده‌اند.

WHO declares countries measles and rubella free



Apr 22 2023 - 08:52 Views : 767 Study time: Less than one minute

World Health Organization Congratulates Iran for The Elimination of Measles and Rubella Diseases

The Director General of International Cooperation of the Ministry of Health announced the congratulations of the World Health Organization to Iran for its continued success in eliminating measles and rubella diseases.

According to WEBDA, Dr. Mohammad Hossein Niknam announced that the World Health Organization congratulated the Minister in a letter, for the continued success in eliminating measles and rubella.

In the letter of Dr. Al Manzari, head of the eastern Mediterranean region of this organization, to Dr. Ain Allahi, while confirming the continuation of Iran's significant success in eliminating measles and rubella during the years 2018 to 2022, especially in the Corona epidemic, the officials of the Immunization Development Program in Iran are appreciated.



Islamic Republic of Iran | News | WHO and ECHO partner to strengthen measles diagnostic capacities in Islamic Republic of Iran



WHO in Islamic Republic of Iran

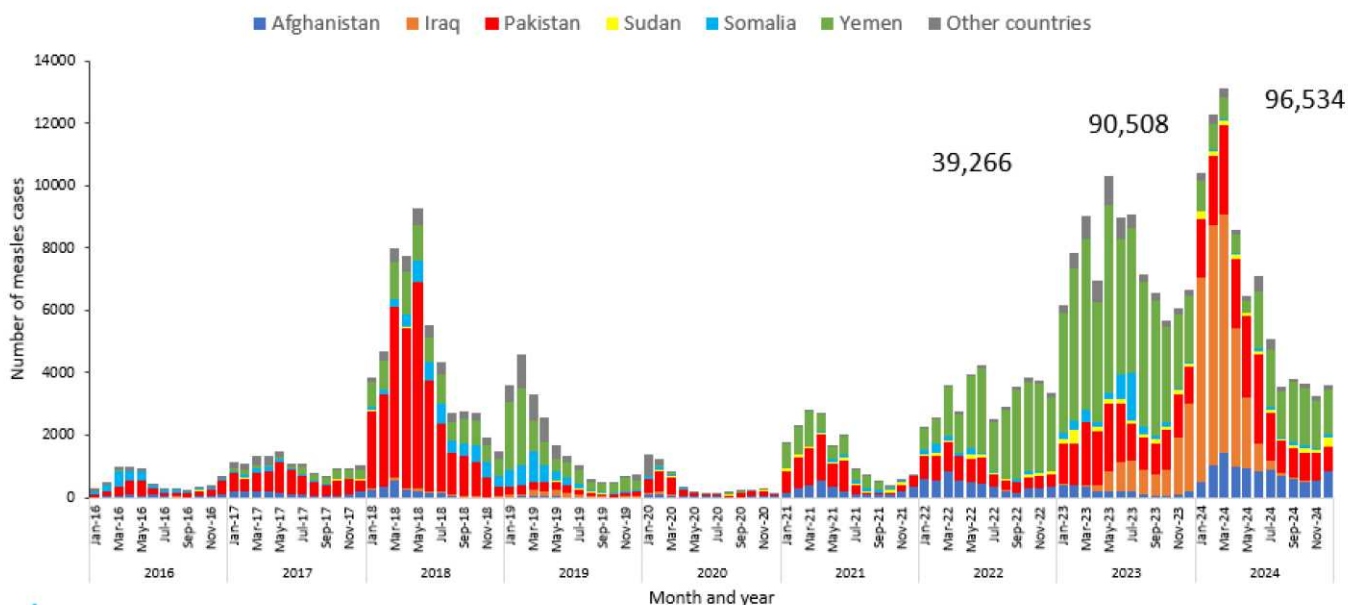
[Islamic Republic of Iran](#) | [News](#) | [Priority areas](#) | [Information resources](#) | [Donors and partners](#) | [WHO Representative](#)

Since April 2022, the Islamic Republic of Iran has experienced several measles outbreaks following the influx of Afghan refugees and migrants. Thanks to its timely and comprehensive response, however, the Islamic Republic of Iran has been able to keep free of measles as a public health concern.

مهمترین چالش‌های حذف سرخک و سرخجه کشور

- پوشش ضعیف واکسیناسیون در کشورهای همسایه به‌ویژه افغانستان و پاکستان که سبب شیوع بالای بیماری و انتشار آن به ایران می‌شود.
- جمعیت بالای اتباع غیرایرانی در سال‌های اخیر و عدم وجود اطلاعات دقیق از تعداد و پراکندگی آنان در کشور
- فعالیت گروه‌های ضدواکسن و شبه‌علم در تولید محتوای اینفودمیک و فاقد شواهد برای ایجاد ترس در جامعه

6 countries constitutes the (96%) high measles case load since 2023

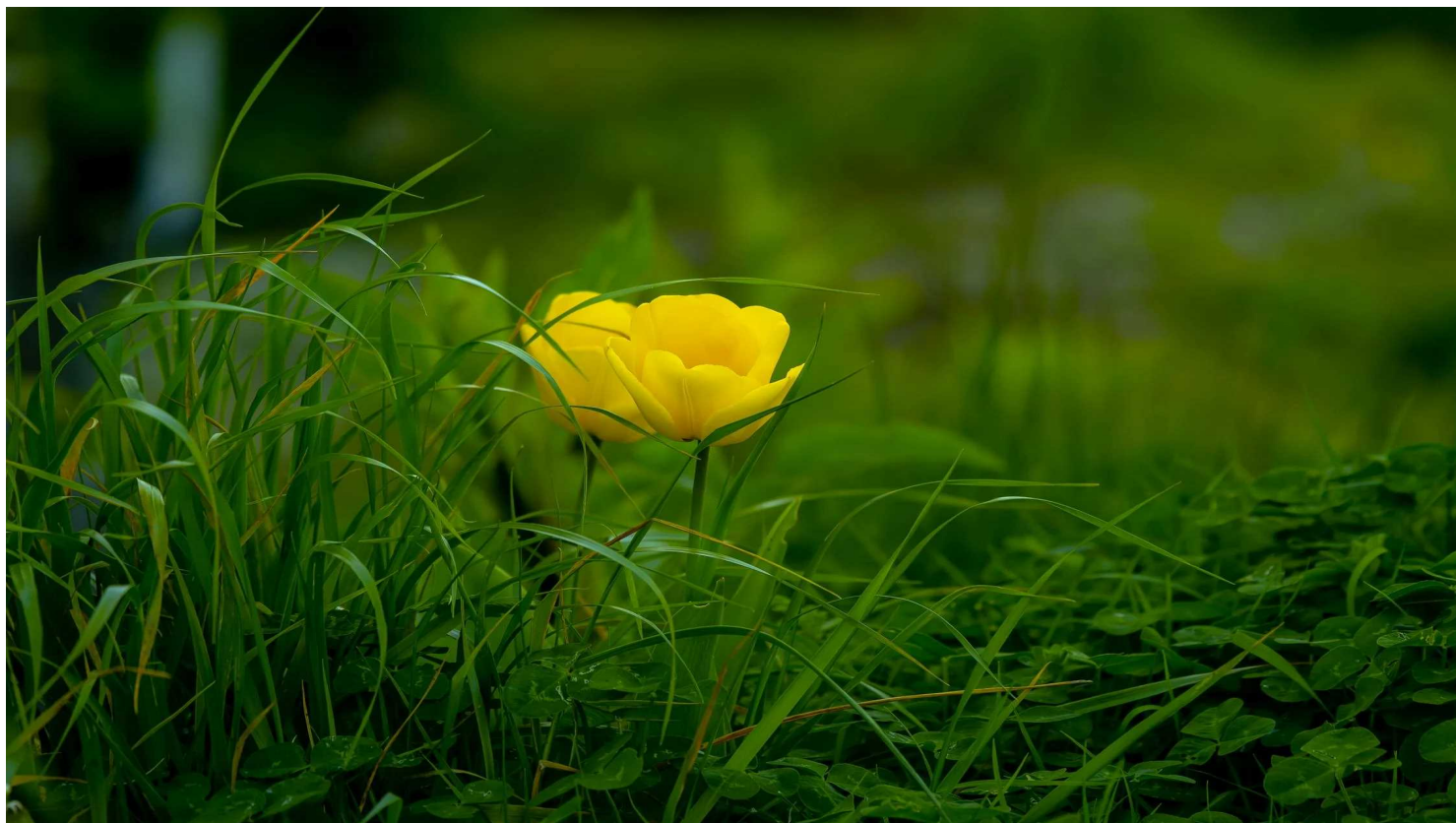
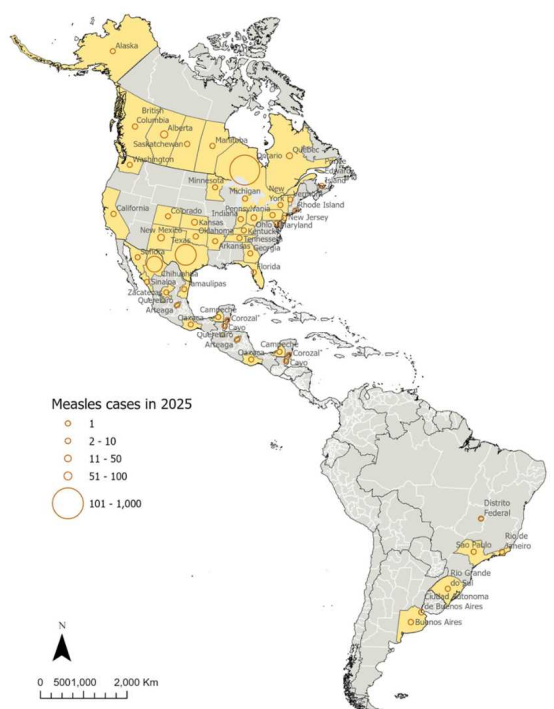


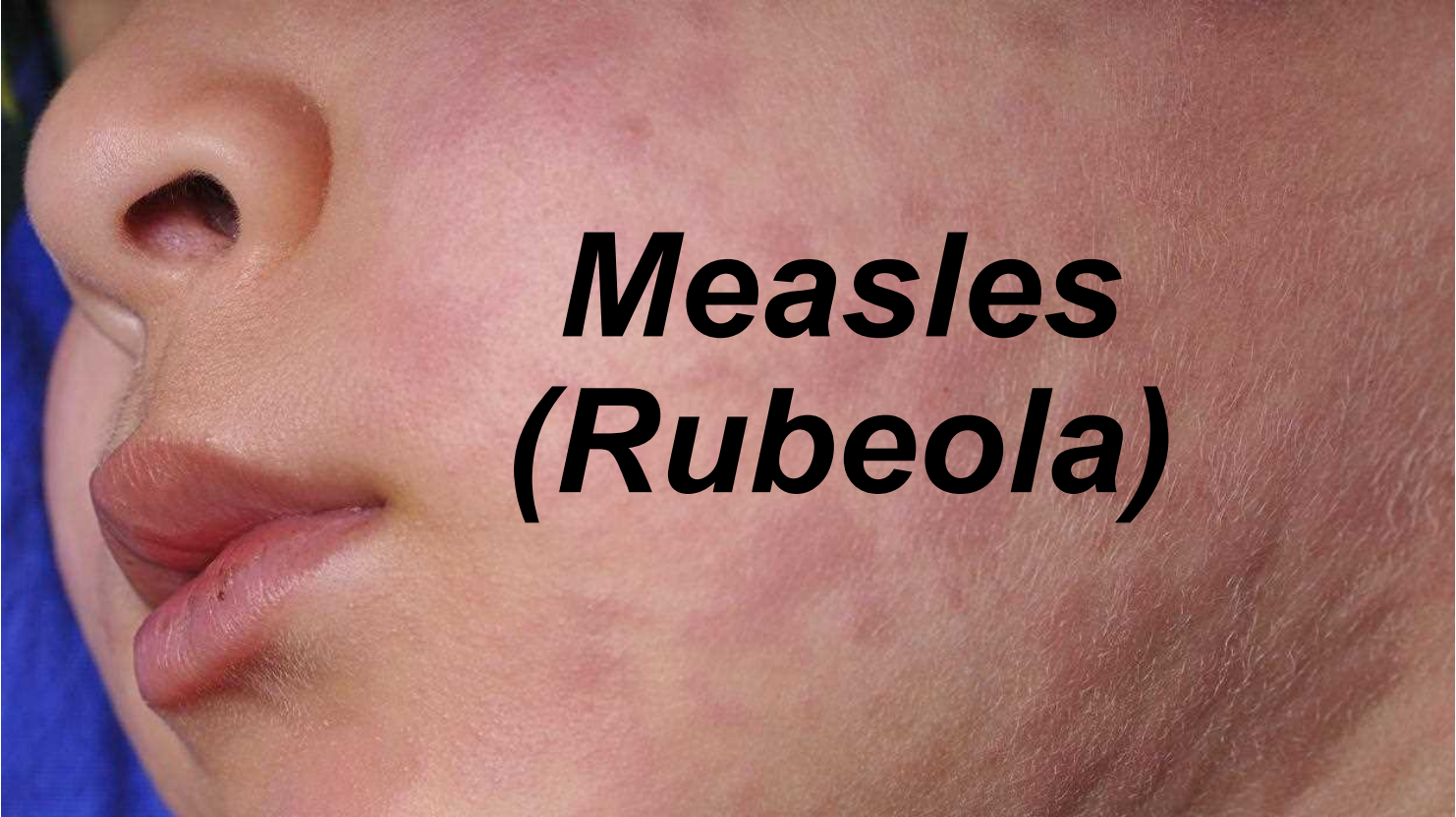
توزیع ماهانه موارد سرخک در کشورهای منطقه مدیترانه شرقی (EMR) از سال ۲۰۱۶ تا ۲۰۲۴ (سازمان جهانی بهداشت)

Figure 2: Geographical distribution of the confirmed cases between 1 January-18 April 2025

Disease Outbreak News

Measles – Region of the Americas

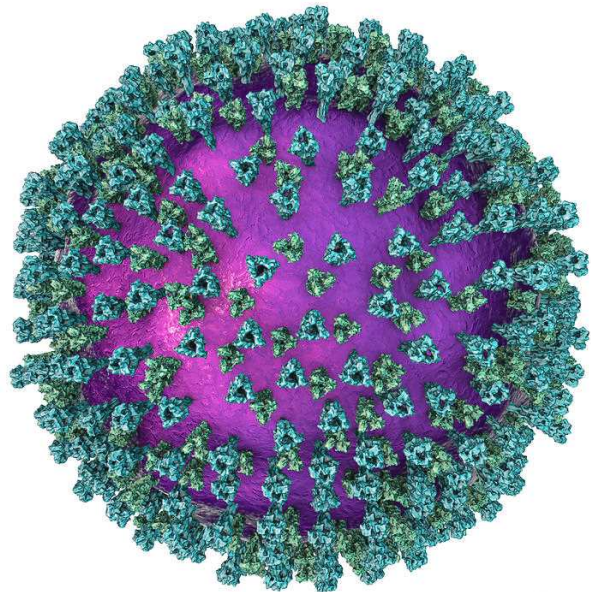




Measles (Rubeola)

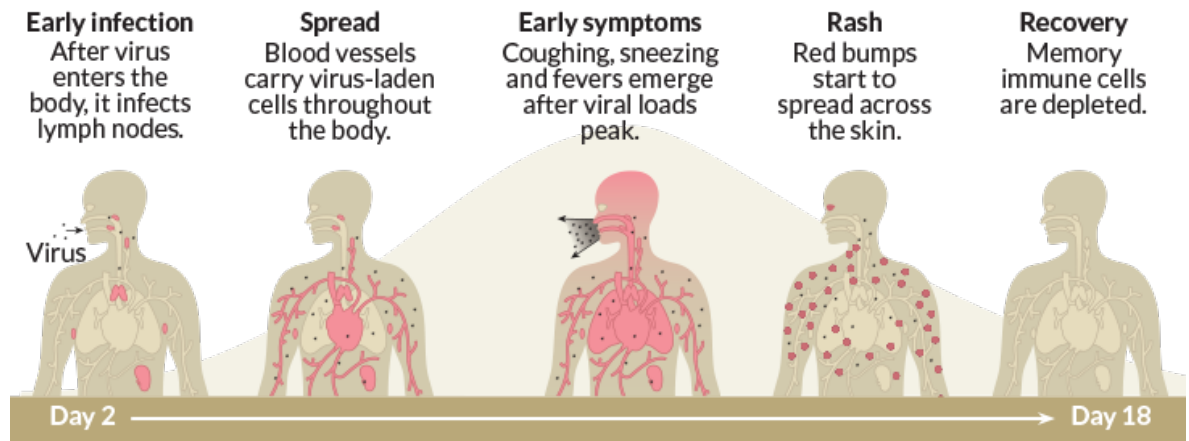
Measles virus is a spherical, single-stranded, RNA virus and a member of the Morbillivirus

Measles virus is one of the **most highly contagious directly transmitted** pathogens



Stages of infection

- Incubation 8 – 10 days
- Prodrome
- Exanthem
- Recovery



Prodrome

The appearance of symptoms which typically include

- Fever
- Malaise and Anorexia

followed by

- conjunctivitis,
- coryza,
- cough.

- The prodrome usually lasts for **4 days**

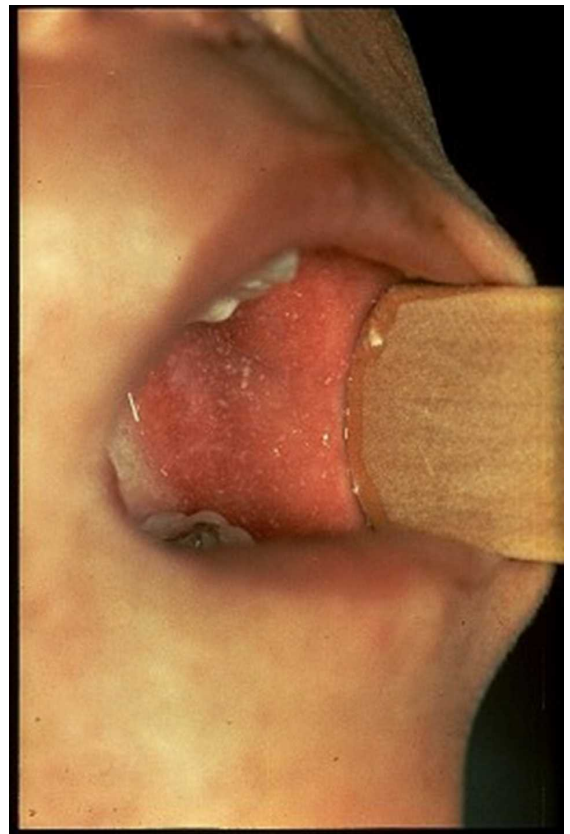






Koplik's spots

develop on the buccal mucosa ~2 days before the rash appears.



Koplik's spots

- 1 to 3 mm
- whitish, grayish, or bluish elevations with an erythematous base,
- typically seen on the buccal mucosa opposite the molar teeth
- **pathognomonic for measles**



They fade with the onset of rash



Exanthem

The rash of measles begins as **erythematous macules** behind the ears and on the neck and hairline. The rash progresses to involve the face, trunk, and arms







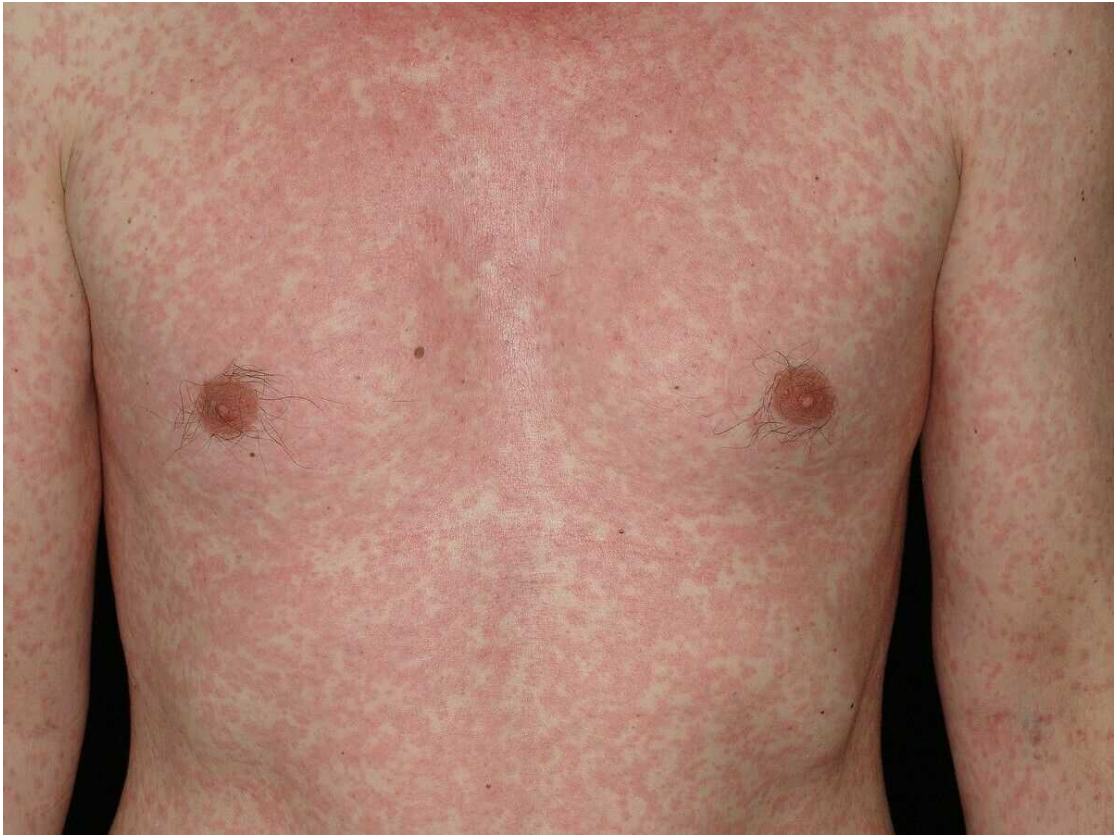
With involvement of the legs and feet by the end of the second day



Areas of confluent rash appear on the

- trunk
- and
- extremities





- The rash **fades** slowly in the same order of progression as it appeared, usually beginning on the **third** or **fourth** day after onset.



Resolution of the rash may be followed by desquamation, particularly in undernourished children





Complications

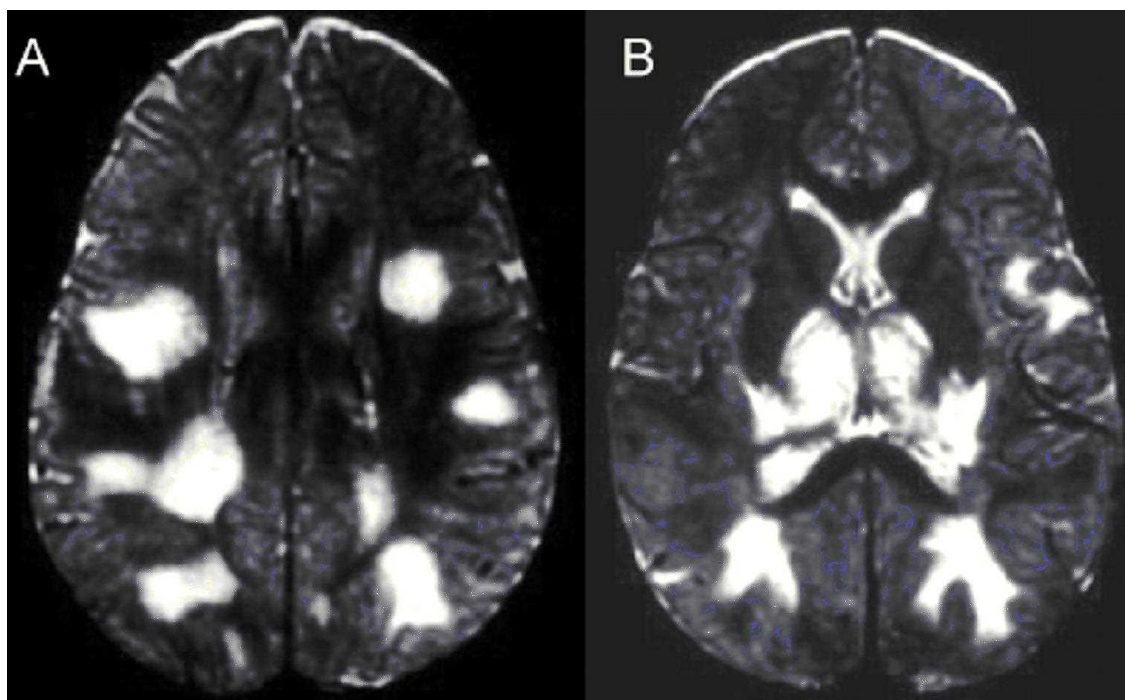
- Most complications of measles involve the respiratory tract and secondary bacterial infection
- **Otitis media** and **bronchopneumonia** are most by *S. pneumoniae*, *H. influenzae b* & *staphylococci*.
- **Acute laryngotracheobronchitis (croup)**
- **Giant-cell pneumonitis** in immunocompromised HIV-1 infection
- **diarrhea**, which contributes to undernutrition

CNS Complications

Postmeasles encephalomyelitis

- occurs within 2 weeks of rash onset
- characterized by fever, seizures, and a variety of neurologic abnormalities.
- periventricular demyelination, immune responses to myelin basic protein,
- postmeasles encephalomyelitis is **an autoimmune disorder** triggered by measles virus infection.

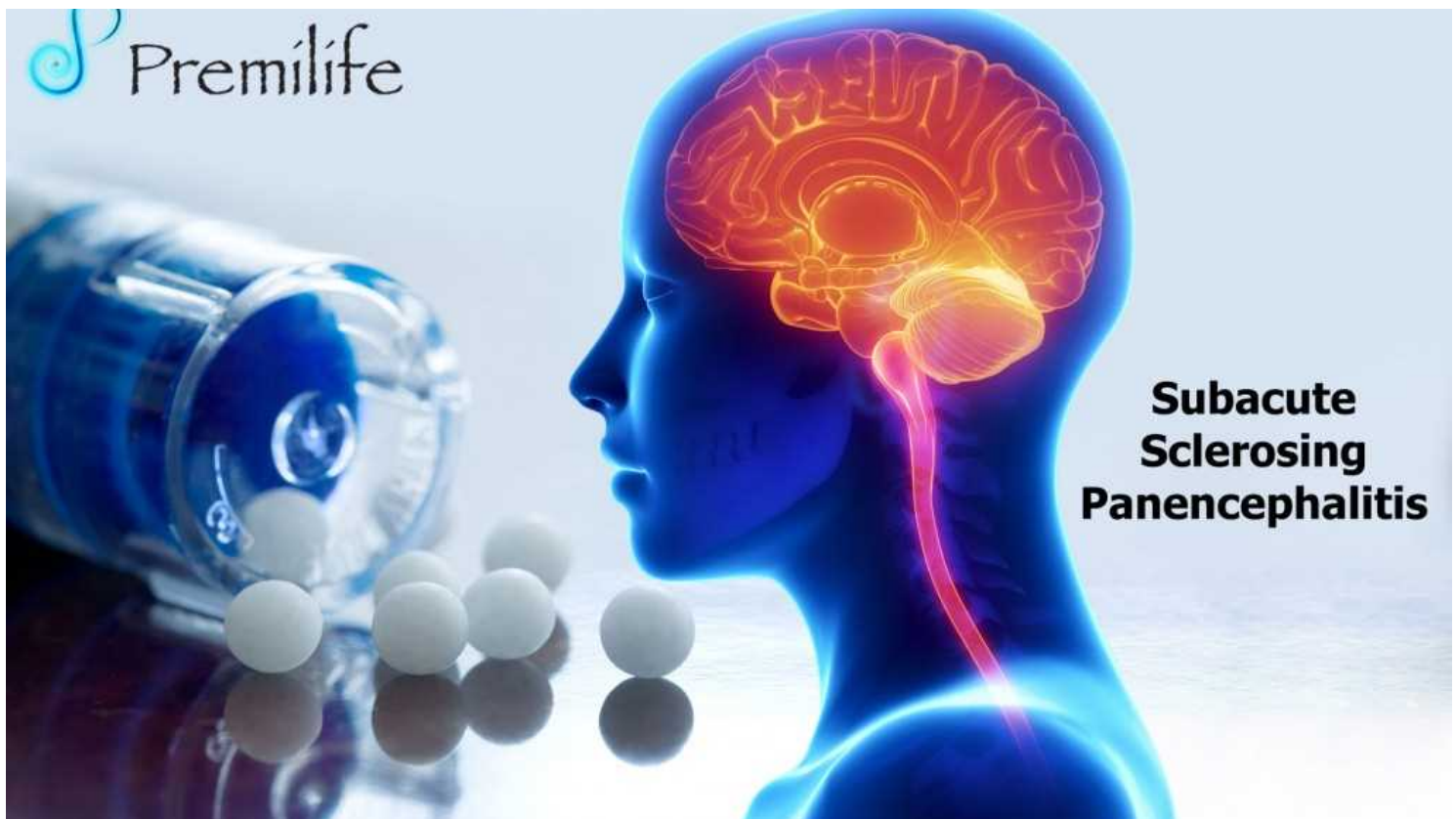
Postmeasles encephalomyelitis



Other CNS Complications

occur months to years after acute infection

- **measles inclusion body encephalitis (MIBE)**
- **subacute sclerosing panencephalitis (SSPE)**
- In contrast to postmeasles encephalomyelitis, **MIBE** and **SSPE** are caused by persistent measles virus infection.
- **MIBE** is a rare but **fatal complication** that **affects individuals with defective cellular immunity** and typically occurs months after infection



Other CNS Complications

SSPE is a slowly progressive disease characterized by

- **seizures** and
- progressive deterioration of **cognitive and motor functions**,
- **death** occurring 5–15 years after measles virus infection.

SSPE most often develops in persons infected with measles virus at **<2 years of age**.

**Thank you for
your time and attention**



