مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

# SCIENTIFIC RESEARCH MONITORING ON COVID-19

## 17 AUGUST 2021

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**https://www.doh.gov.ae/ar/covid-19/Healthcare-Professionals/Scientific-Publication**

# SCIENTIFIC RESEARCH MONITORING ON COVID-19

(Issue 430)

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Abu Dhabi Public Health Center (ADPHC) is gathering the latest scientific research updates and trends on coronavirus disease (COVID-19) in a daily report. The report provides summaries on breakthrough or updated research on COVID-19 to allow health care professionals and public health professionals get easy and fast access to information.

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**Research**
Titles

**Statistics**

**Articles**
Summary

Note : All articles presented in this report represent the authors' views and not necessarily represents Abu Dhabi Public Health Center views or directions. Due the nature of daily posting , some minor language errors are expected.
For further inquiries you may communicate with us as PHR@adphc.gov.ae

# RESEARCH UPDATES

**The views and opinions expressed in this report are those of the authors and do not reflect the official policy or position of the Abu Dhabi Public Health Center (ADPHC).**

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- Countries administrating COVID-19 Vaccination In Children & adolescence
- Countries Authorizing COVID-19 Vaccination In Children below 12 Years
- Official Statements In EUA Of Covid-19 Vaccines In Age 12 And Older
- Adverse Events Of COVID19 Vaccine In Adolescent
- Countries Conducting COVD-19 Vaccine Clinical Trial On Children
- Reports on Delta variant & children
- Expert Opinions & RATIONALS On Covid19 VACCINATIONS

# EPIDEMIOLOGY

FROM 21 JAN 2020 TO 16 August 2021

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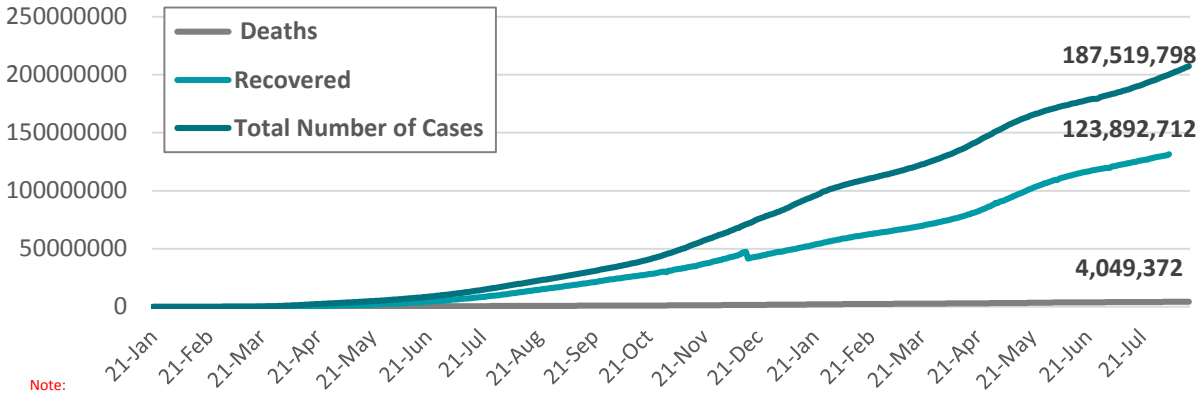
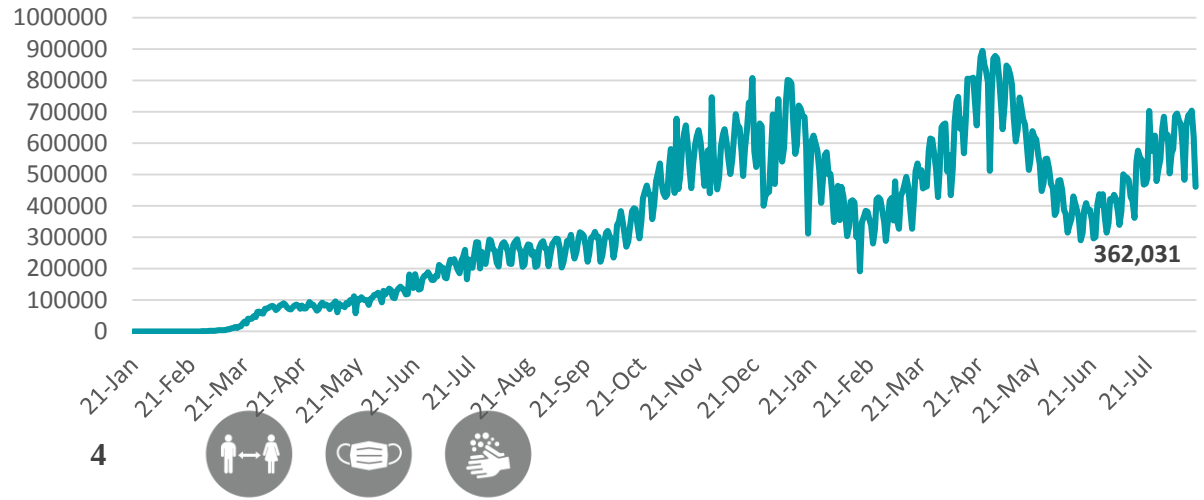
## Figure 1: Total Number of Infected, Recovered, and Death Cases



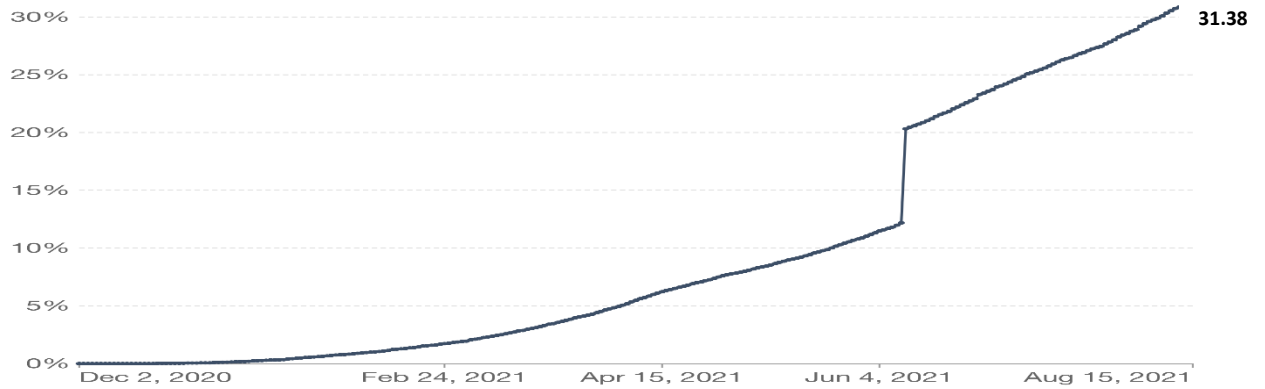

Note:
* the number of recovered cases in 31th October recorrected from 30 million to 29 million, and in 15th December recorrected from 47 million to 41 million in Johns Hopkins website
* No update on recovered cases since 5th of August

## Figure 2: Daily New Infected COVID-19 Cases

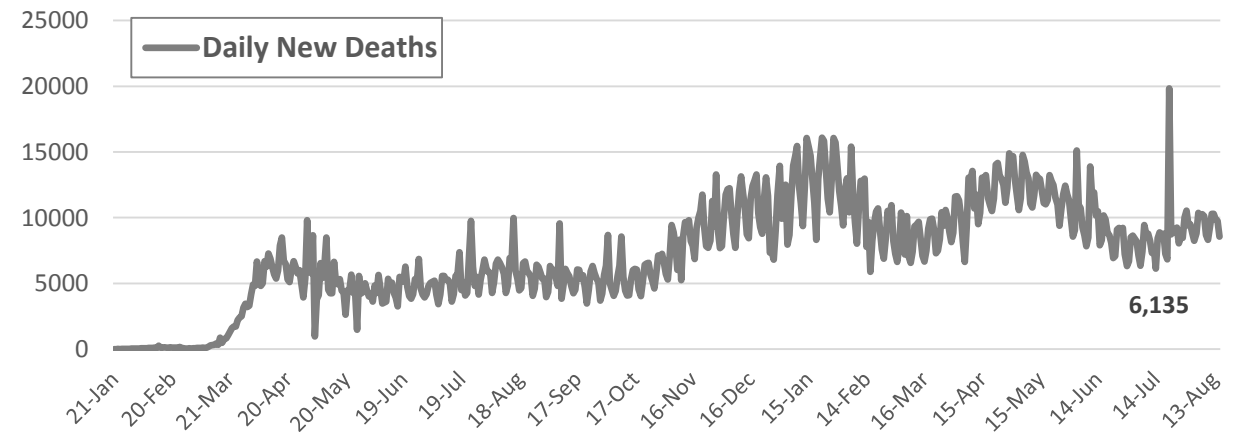



4

## Figure 3: % of people who received at least one dose of COVID-19 vaccine around the world




## Figure 4: Global Daily New Deaths Due to COVID-19




**Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: John Hopkins, WHO Our world in data**

# EPIDEMIOLOGY

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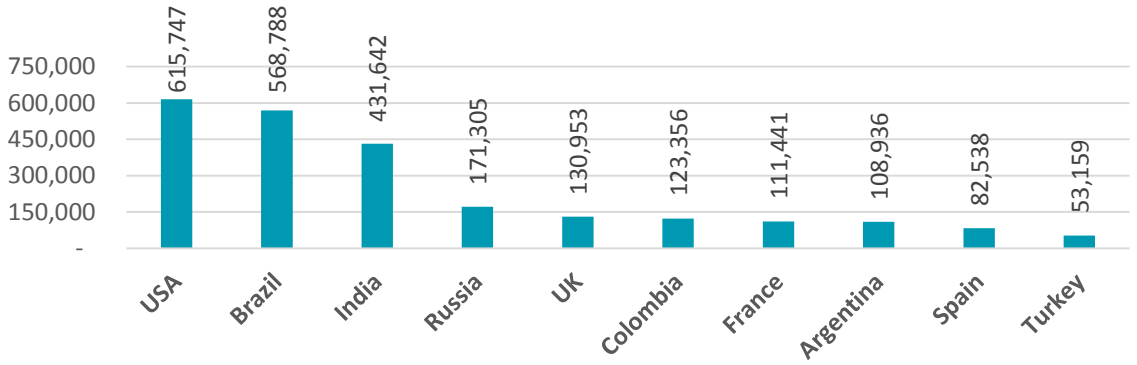
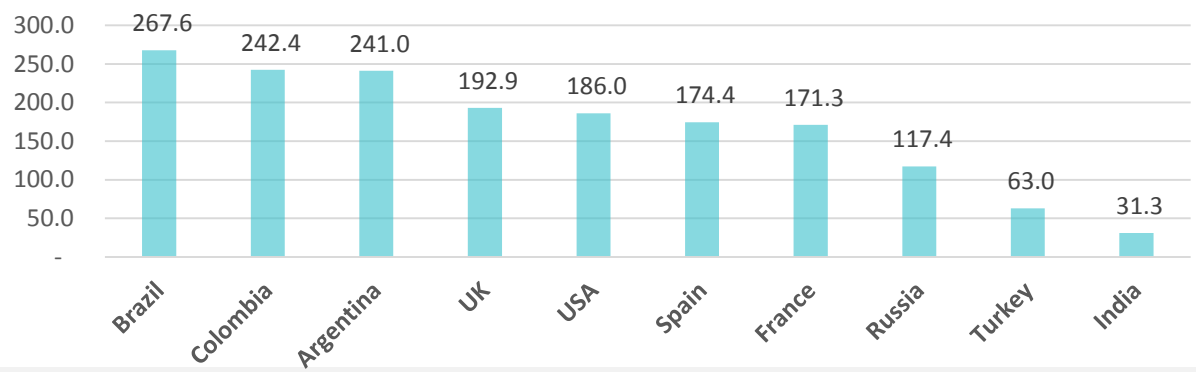
## Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

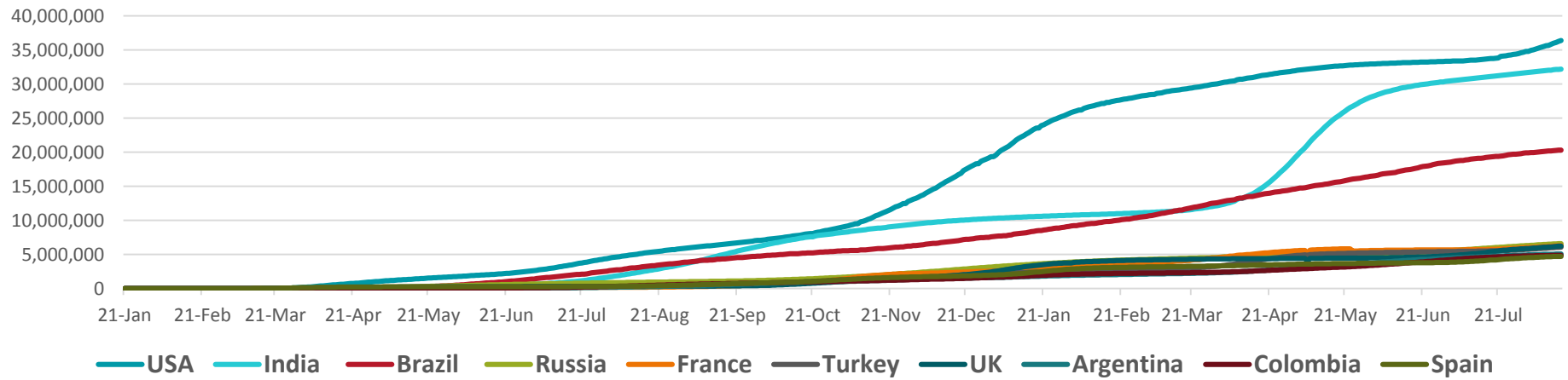
### TOTAL DEATHS




### DEATHS PER MILLION




### TOTAL INFECTED CASES




| | |
|---|---|
| USA | 36,385,257 |
| India | 32,225,513 |
| Brazil | 20,350,142 |
| Russia | 6,621,601 |
| France | 6,311,301 |
| UK | 6,267,441 |
| Turkey | 6,078,653 |
| Argentina | 5,080,908 |
| Colombia | 4,864,629 |
| Spain | 4,710,009 |



Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: WHO

**Figure 8: COVID-19 Status in the UAE** (Federal Competitiveness and Statistics Authority Dashboard)

**Daily Tests**
**281,146.4** Average Tests
**2,842.6** per 100k population
**0.4%** Positive Rate

**Daily Cases**
**1,228.6** Average Cases
**12.4** per 100k population

**Daily Recovered**
**1,416.0** Average Recovered
**14.3** per 100k population

**Daily Deaths**
**3.6** Average Deaths
**0.0** per 100k population
**0.3%** Case Fatality Rate

**Figure 6A: TOTAL Number Of Infected And Recovered Cases Due To Covid-19 Reported By The UAE**

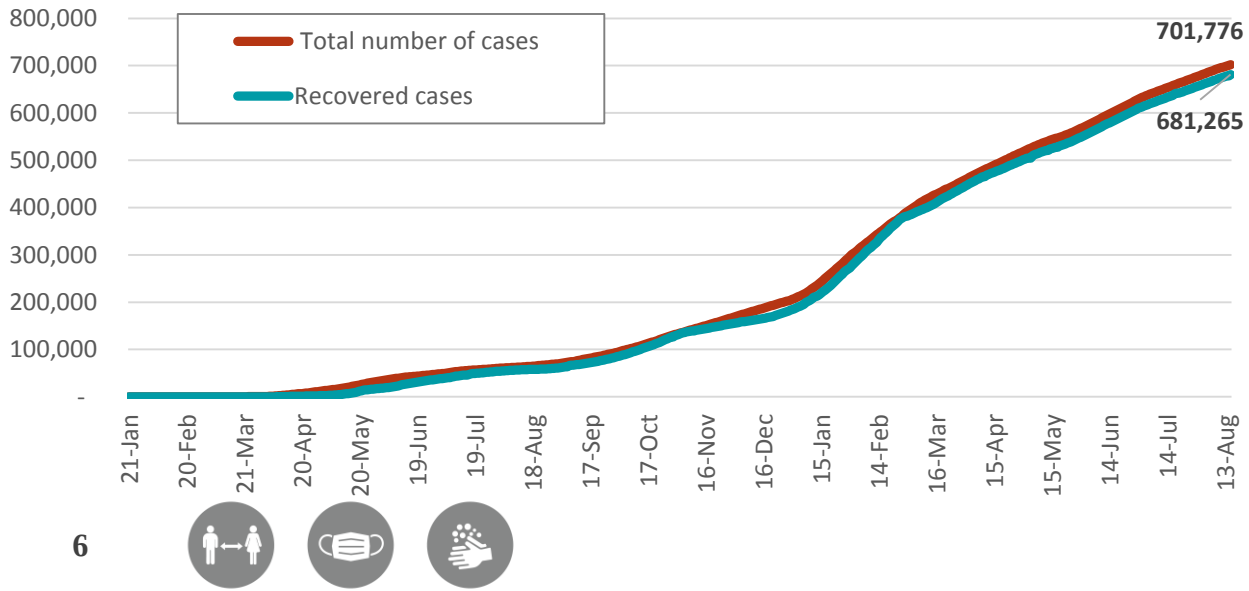
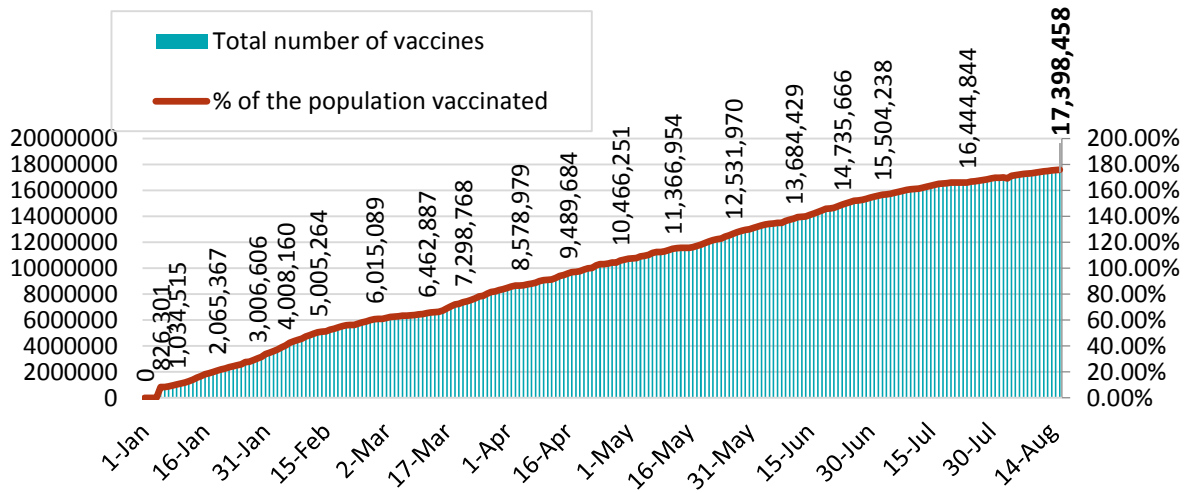



**Figure 6 B: TOTAL NUMBER and Percentage of UAE population Vaccinated**






Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: FCSA, WHO, John Hopkins, National Emergency Crisis and Disaster Management Authority

# EPIDEMIOLOGY

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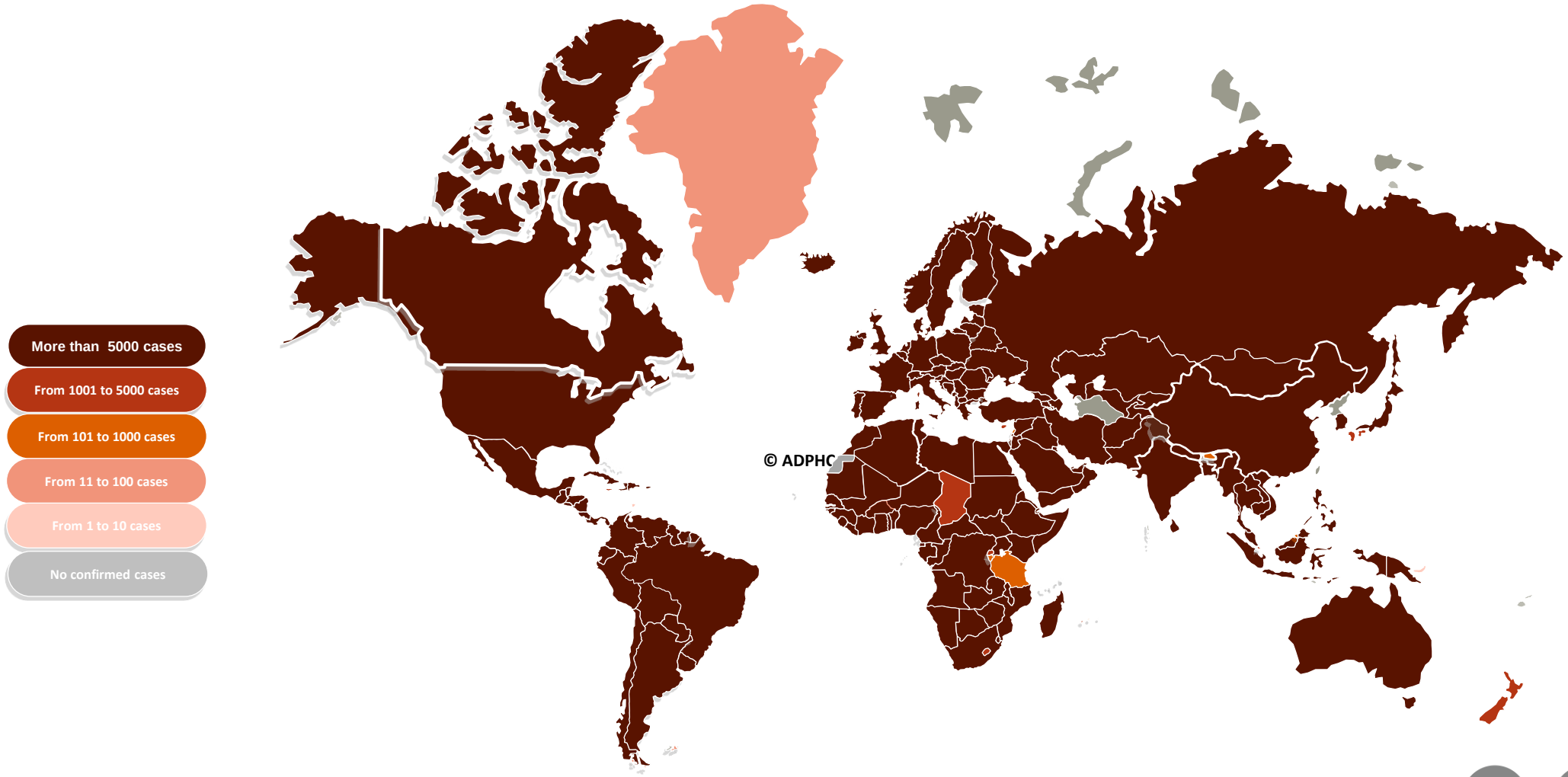
## Figure 7A : Global Distribution of COVID-19 Cases




**Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: WHO**

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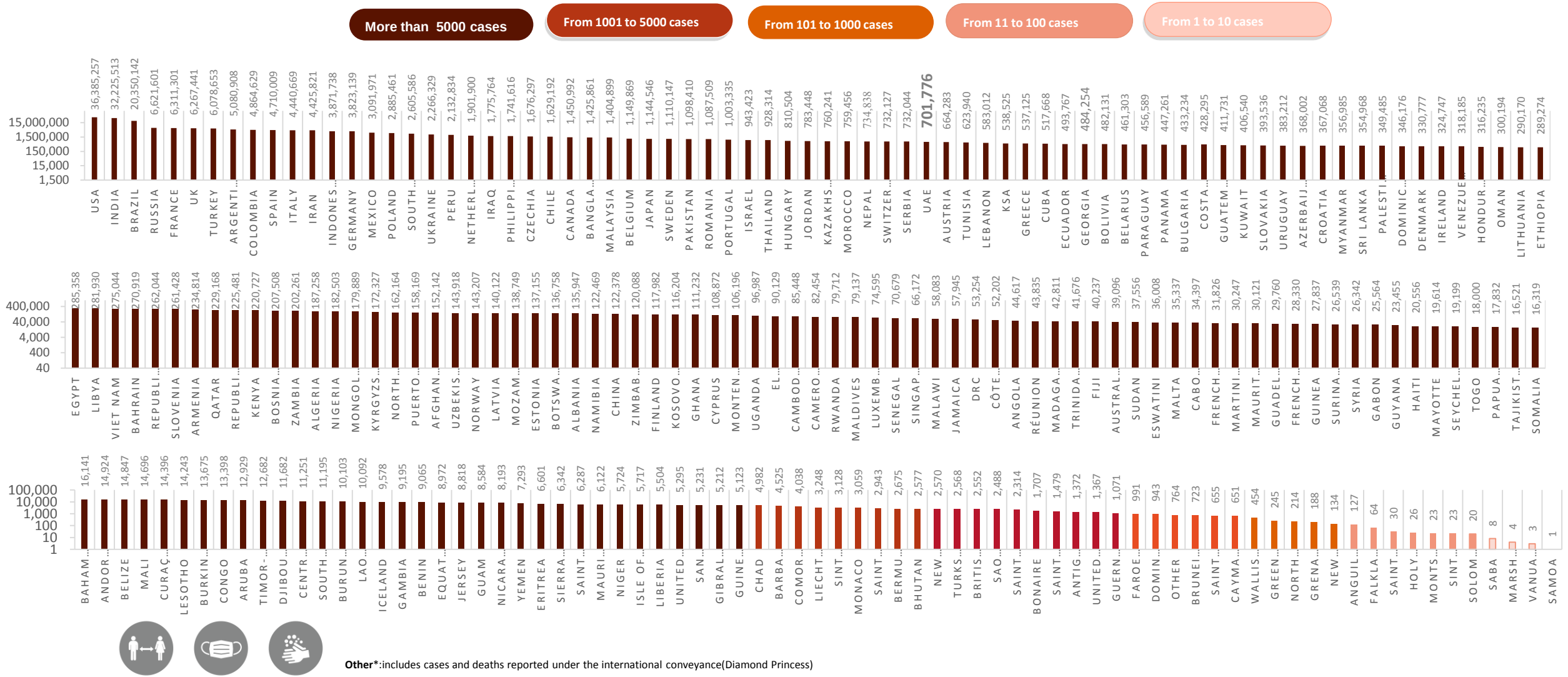
## Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases




**Other***:includes cases and deaths reported under the international conveyance(Diamond Princess)

**Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: WHO**

# EPIDEMIOLOGY

FROM 21 JAN 2020 TO 16 August 2021

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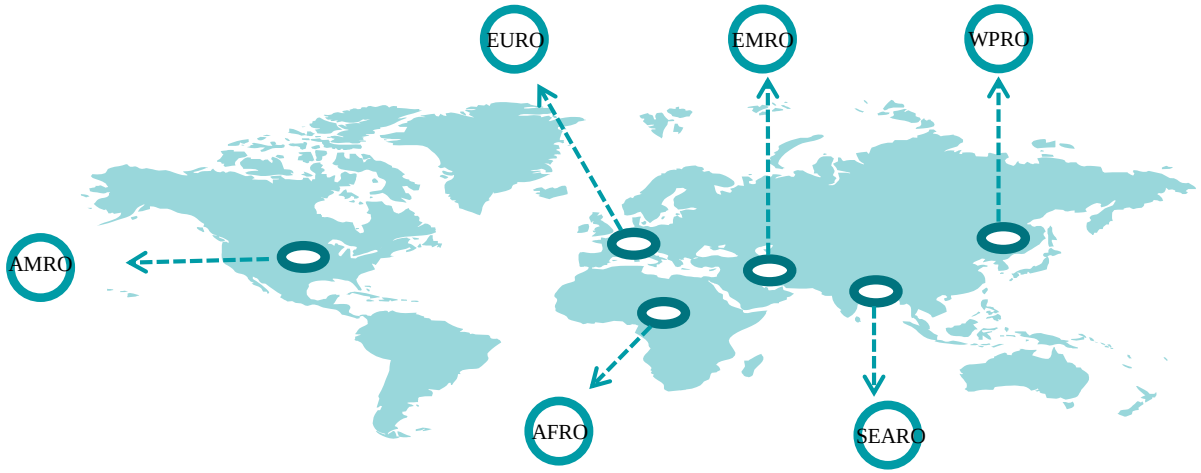
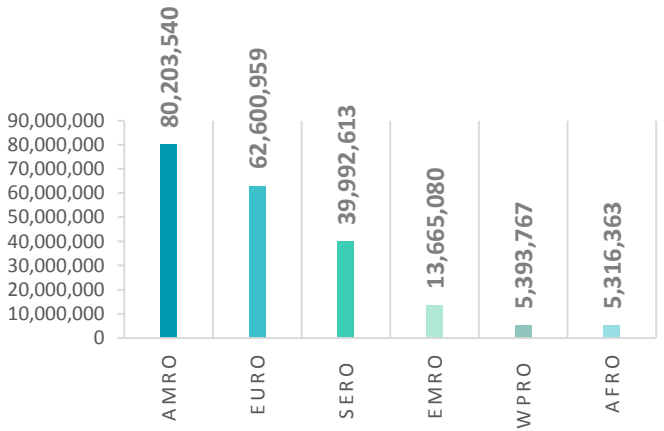
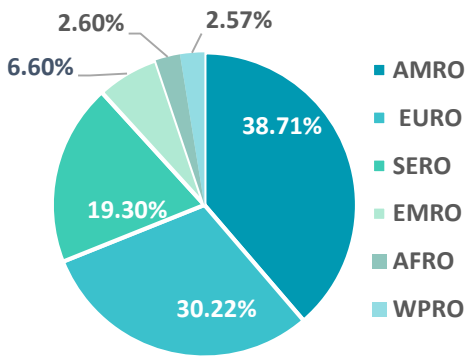
## Figure 6: Global Distribution of COVID-19 Cases per Region

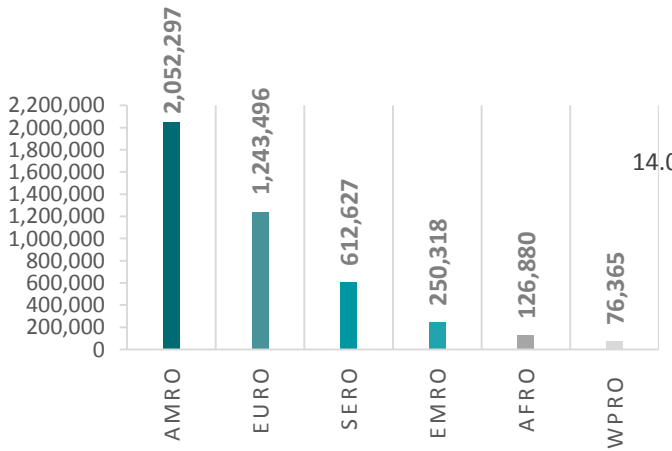


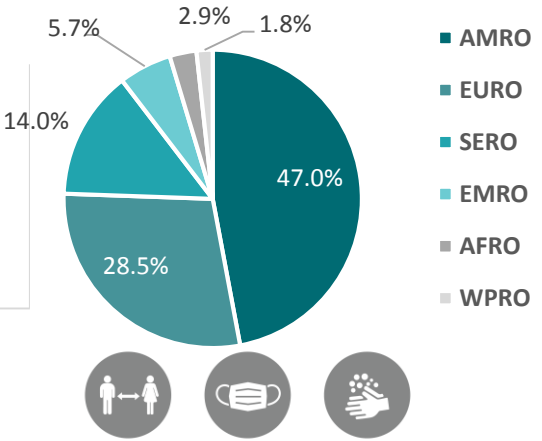

## INFECTED




## DEATHS




**Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: WHO**

# EPIDEMIOLOGY

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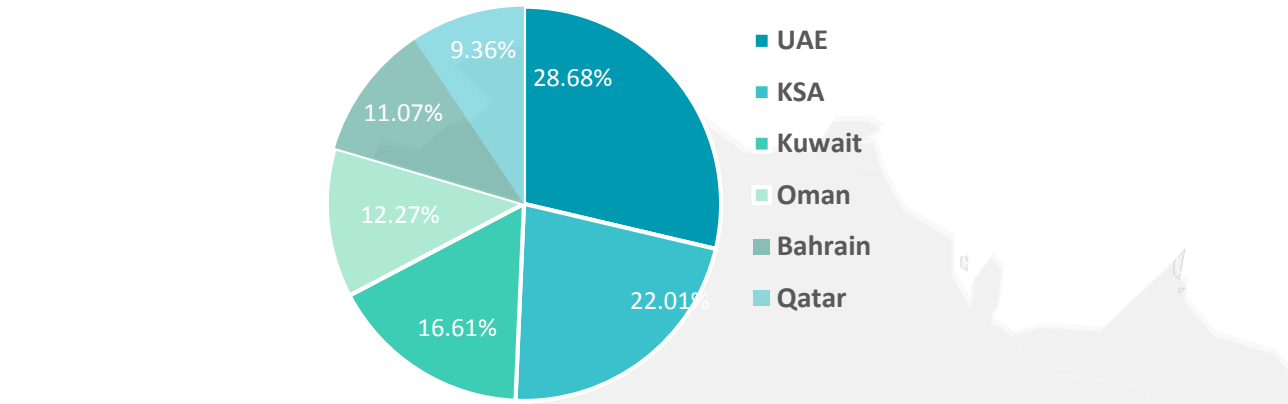
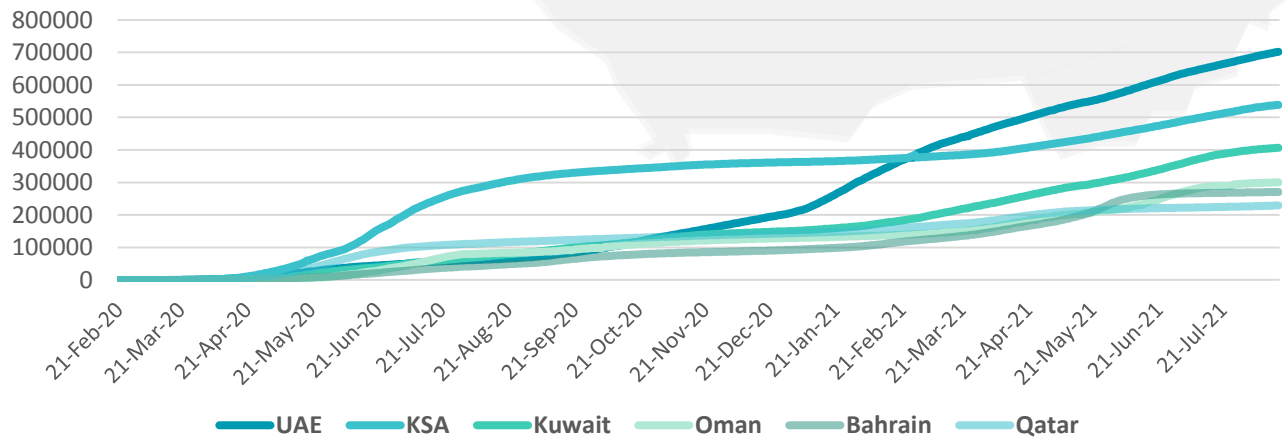
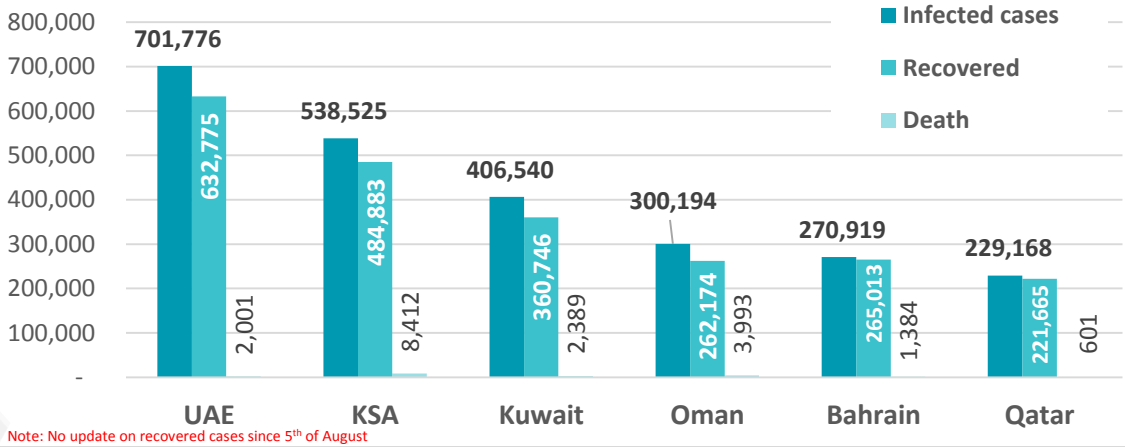
## Figure 7: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

### TOTAL NUMBER OF INFECTED CASES



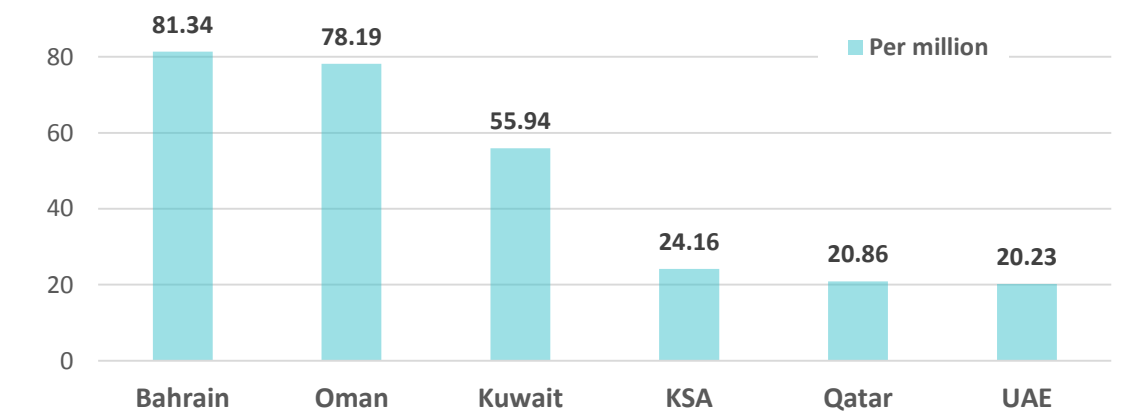




### TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS




Note: No update on recovered cases since 5th of August

### DEATHS PER MILLION

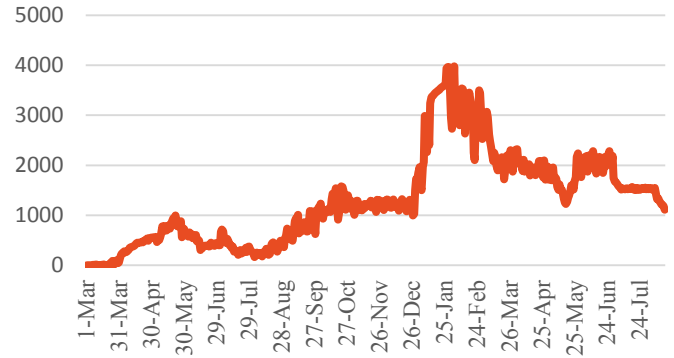





Graphs published by Abu Dhabi Public Health Center 2021 | Data resources: John Hopkins, WHO

## Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

### UAE




Source : National Emergency Crisis and Disaster Management Authority

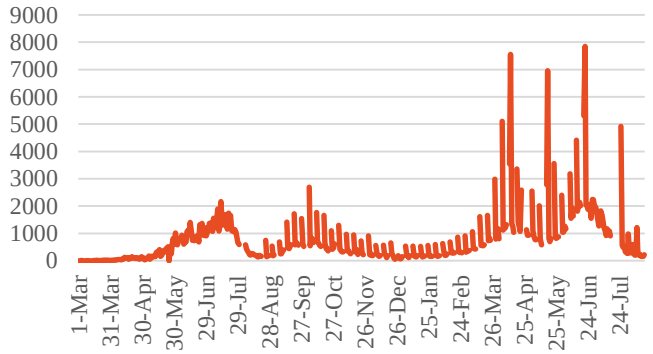
### KSA


Source : KSA ministry of health

### Bahrain

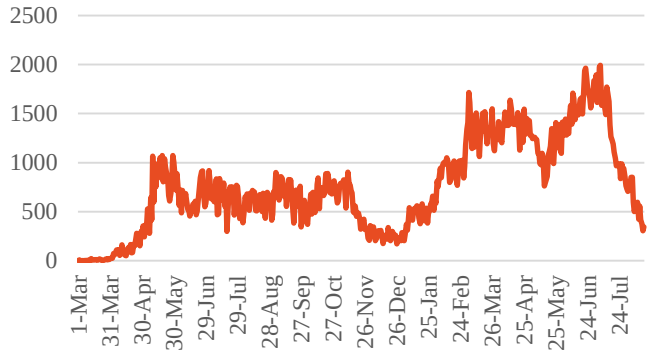

Source :WHO

### Oman



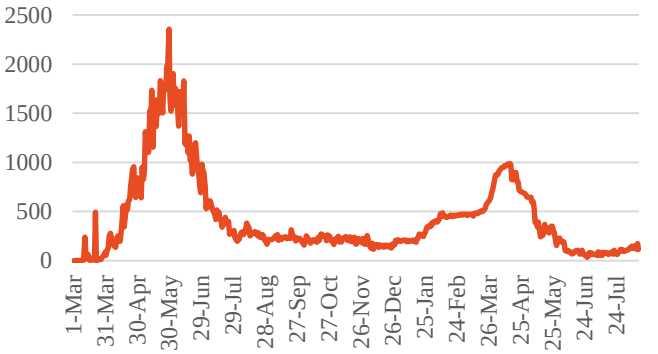

Source :Oman ministry of health

### Kuwait



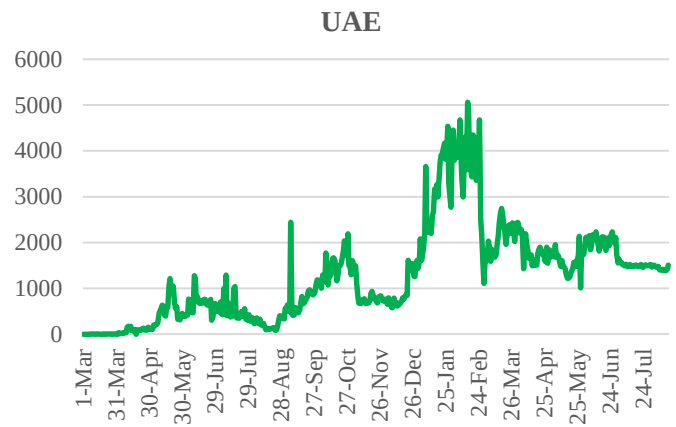

Source : Kuwait ministry of health

### Qatar

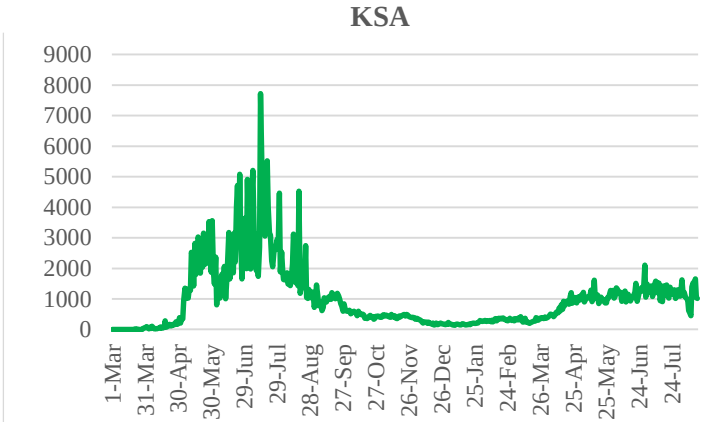



Source : Qatar ministry of health

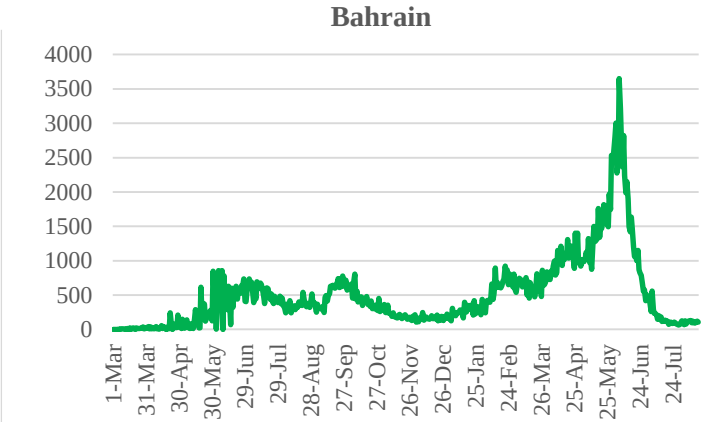
# Figure 11: Comparative Analysis of the Distribution of COVID-19 Recovered Cases in GCC Countries



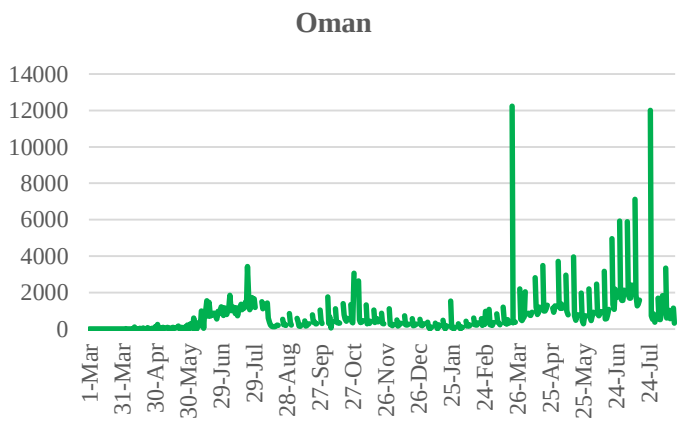

Source : National Emergency Crisis and Disaster Management Authority



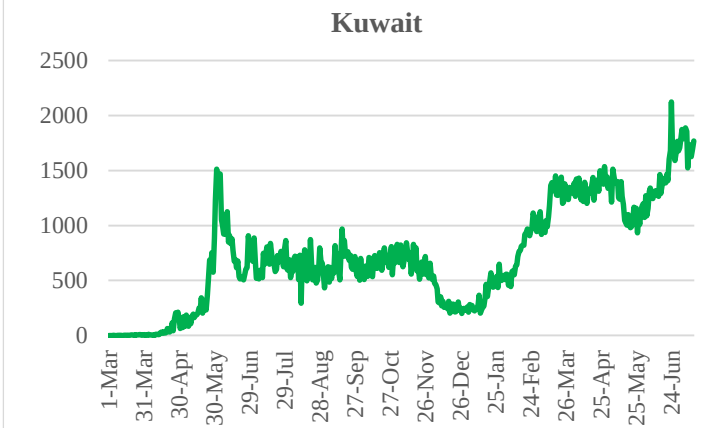

Source : KSA ministry of health



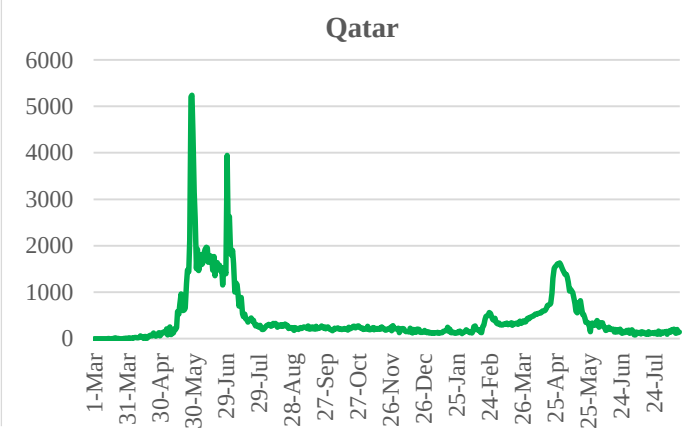

Source : Bahrain ministry of health




Source :Oman ministry of health

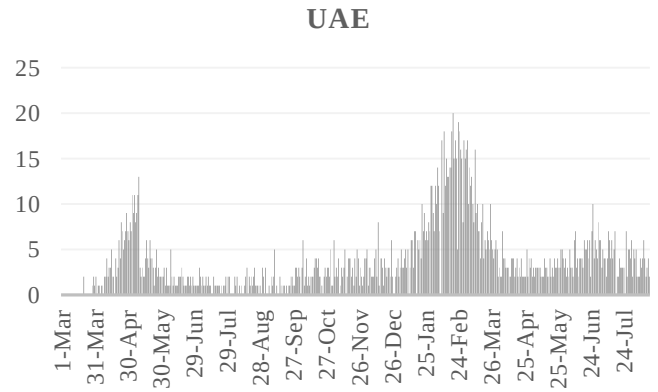



Source : Kuwait ministry of health

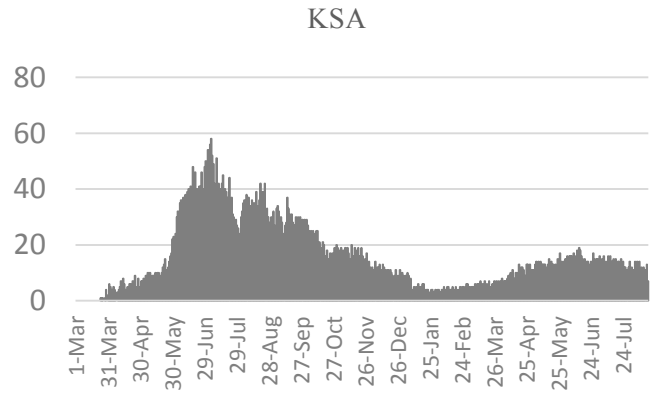



Source : Qatar ministry of health

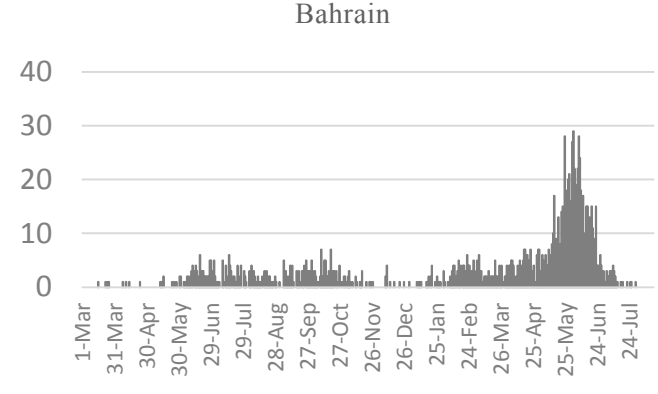
# Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries



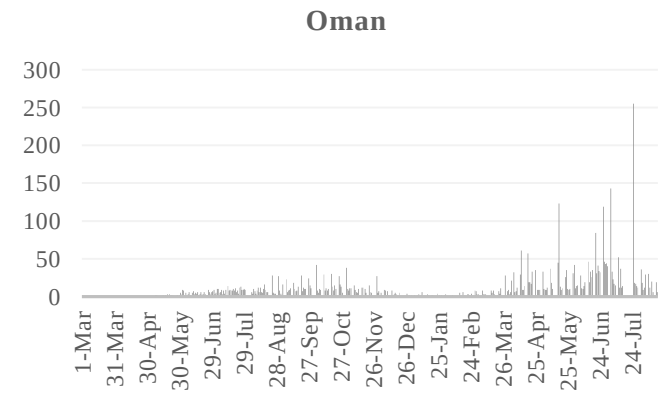

Source : National Emergency Crisis and Disaster Management Authority



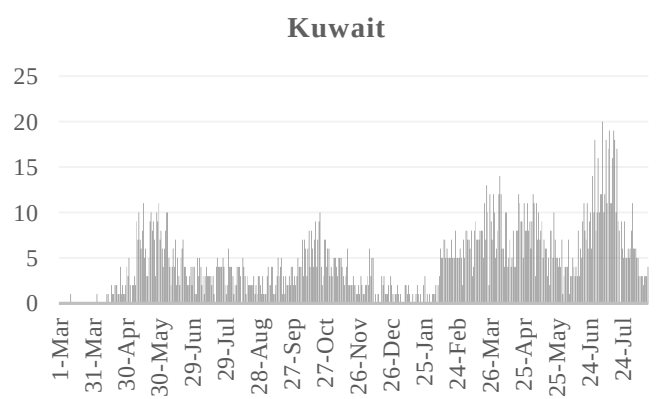

Source : KSA ministry of health



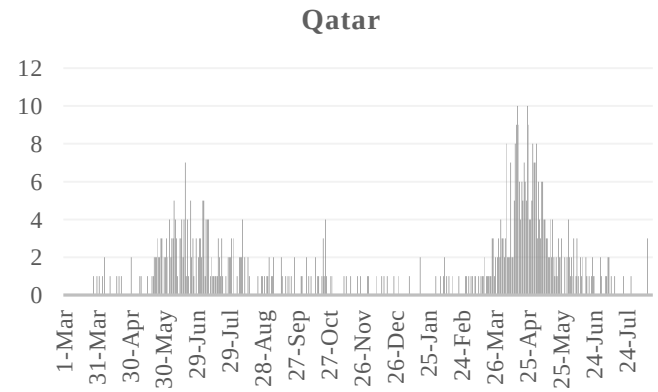

Source :WHO




Source :Oman ministry of health




Source : Kuwait ministry of health




Source : Qatar ministry of health

# VACCINE IN CHILDREN

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

## COUNTRIES ADMINISTRATING COVID-19 VACCINATION IN CHILDREN & ADOLESCENT

### WORLDWIDE

| May | June | July | August |
|---|---|---|---|
| Age: 12-15 Early may | Age: 12-18 June, 1 | Age: >12* June, 10 | Age: 12-15 June, 17 | Age: >12* July, 17 | Age: 12 August, 17 |
| Age: >12 28 May | | | | | |
| Age:12-15 Early may | Age: >12 June, 3 | Age: >12 June, 11 | Age: 12-15 June, 21 | | |
| Age: 12-15 31, May | | | | | |
| Age:12-15 Mid may | Age: 12-15 June, 4 | Age: >12 June, 12 | Age: >12* June, 22 | | |
| Age: 12-16 31, May | | | | | |
| Age:16-18 Mid may | Age: 3-17 June, 5 | Age: 12+ June, 15 | Age: 12-17 June, 29 | | |

Additional countries (May-August): Indonesia, Philippines, Estonia, San Marino & Mexico.
- Austria plans at end of august
- Spain plans at September

*** With conditions**

Left > bottom > right: Canada, Israel, USA, Hungary, Japan, Italy, Chile, Singapore, Hong Kong, Switzerland, china, Germany, Brazil, Lithuania, France, Denmark, New Zealand , Sweden, The Netherlands, UK, Cyprus

# VACCINE IN CHILDREN

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

## COUNTRIES AUTHORIZING COVID-19 VACCINATION IN CHILDREN & ADOLESCENT

### GCC & ARAB COUNTRIES

| May | June | July | August |
|---|---|---|---|
|  13 may Age: >12 **(Pfizer)** |  27 June Age: >12 |  18 July Age: 12-15 |  3 August Age: 3-17 **(Sinopharm)** |
|  17 MAY Age: 12-15 | |  24 July Age: >12 | |
|  18 MAY Age: 12-17 | | | |

# VACCINE IN CHILDREN

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ABU DHABI PUBLIC HEALTH CENTRE

## COUNTRIES AUTHORIZING COVID-19 VACCINATION IN CHILDREN BELOW 12 YEARS

**5 June, 2021**

China's Ministry of health has authorized the emergency use of CoronaVac, a Covid-19 vaccine manufactured by Chinese firm Sinovac, for children **aged 3 -17.**

Source: CNBC news

**27 July, 2021**

The health Ministry published a document stating that children **aged 5-11** with high probability of serious illness and death following infection with the new covid-19, can administer for covid-19 vaccine.

Source: (www.gov.il)

**3 August, 2021**

The Ministry of Health and Prevention's announced approval for emergency use of Sinopharm's COVID-19 vaccine to children **aged 3 to 17**.
Based on the clinical trials and local evaluations.

Source: WAM

Emergency authorization for Covid-19 vaccines in children **under 12** could come in early to midwinter.

Source: NBC news

# VACCINE IN CHILDREN

مركز أبوظبي للصحة العامة
ABU DHABI PUBLIC HEALTH CENTRE

## OFFICIAL STATEMENTS IN EUA OF COVID-19 VACCINES IN AGE 12 AND OLDER

### WHO

**14, July 2021**

Children 12-15 years of age with comorbidities and at significantly higher risk of serious COVID-19 disease, may be offered vaccination.

Children and adolescents tend to have milder disease compared to adults, it is less urgent to vaccinate them.

Source: WHO

### FDA

**25, June 2021**

Pediatric Emergency Use Authorization of Pfizer-BioNTech COVID-19 Vaccine in aged **12 - 18 years** is based on safety and effectiveness data.

Emergency Use Authorization of Pfizer-BioNTech COVID-19 Vaccine does not include use in below 12 years of age.

Source: FDA

### JCVI
**UK**

**19, July 2021**

JCVI does not currently advise routine universal vaccination of children and young people less than 18 years of ages.

Only people aged 12 years and over with specific underlying health conditions at risk of serious COVID-19, should be offered COVID-19 vaccination.

Source: GOV.UK

### NACI
***Canada***

**22, July 2021**

NACI recommends that a complete series with a Pfizer-BioNTech COVID-19 vaccine should be offered to individuals 12 to 15 years of age without contraindications to the vaccine

Source: Canada.ca

# VACCINE IN CHILDREN

## ADVERSE EVENTS OF COVID19 VACCINE IN ADOLESCENT 1/3

### CDC: Myocarditis and Pericarditis Following mRNA COVID-19 Vaccination

- Since April 2021, increased cases of myocarditis and pericarditis have been reported in the United States after mRNA COVID-19 vaccination (Pfizer-BioNTech and Moderna). Cases have occurred predominantly in male adolescents and young adults 16 years of age and older.
- Onset was typically within several days after mRNA COVID-19 vaccination, and cases have occurred more often after the second dose than the first dose. (1)
- Through follow-up, including medical record reviews, CDC and FDA have confirmed 716 reports of myocarditis or pericarditis. CDC and its partners are investigating these reports to assess whether there is a relationship to COVID-19 vaccination. (2)

Source: 2

### **Article:** Symptomatic Acute Myocarditis in Seven Adolescents Following Pfizer-BioNTech COVID- 19 Vaccination

Article Type: Case Report
Journal: Pediatrics

This article reported seven cases of acute myocarditis in healthy male adolescents who presented with chest pain all within four days after the second dose of Pfizer-BioNTech. None of the patients met criteria for multisystem inflammatory syndrome in children (MIS-C)

All 7 patients resolved their symptoms rapidly.

Previously summarized in ADPHC Sc. report in 14 June 2021

# VACCINE IN CHILDREN

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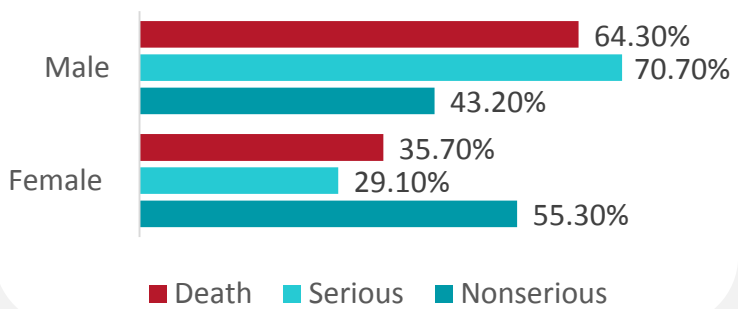
## ADVERSE EVENTS OF COVID19 VACCINE IN ADOLESCENT 2/3

**July, 30 2021**

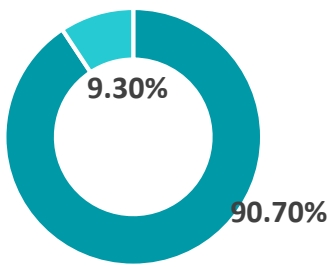
To further characterize safety of the vaccine CDC released a report on the number of reported vaccine adverse events reporting system (VARES) following Pfizer-BioNTech COVID-19 vaccine in adolescents aged 12–17 years during December 14, 2020–July 16, 2021.

**(N = 9,246)** reported symptoms out of 66,350 Pfizer vaccinated children through surveillance system

### Demographics

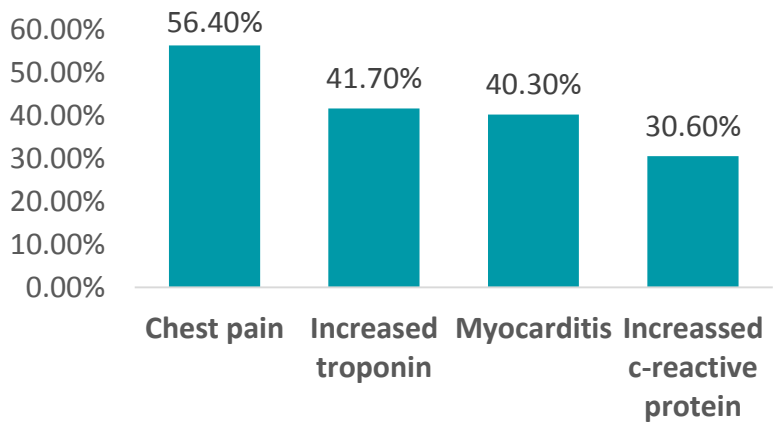



### Adverse event reports




| | |
|---|---|
| **Total** | **9,246** |
| **Non serious** | **8,383** |
| **Serious + death** | **863** |

### Most frequent serious conditions reported




Source: CDC

# VACCINE IN CHILDREN

## ADVERSE EVENTS OF COVID19 VACCINE IN ADOLESCENT 3/3

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# Clinical Considerations

**Informed consent should include discussion about very rare reports of myocarditis and/or pericarditis in the week following an mRNA vaccine dose. (1)**
**CDC Recommendations for clinicians**

- Consider myocarditis and pericarditis in adolescents or young adults with acute chest pain, shortness of breath, or palpitations. In this younger population, coronary events are less likely to be a source of these symptoms.
- Ask about prior COVID-19 vaccination if you identify these symptoms, as well as relevant other medical, travel, and social history.
- For initial evaluation, consider an ECG, troponin level, and inflammatory markers such as C-reactive protein and erythrocyte sedimentation rate. In the setting of normal ECG, troponin, and inflammatory markers, myocarditis or pericarditis are unlikely.
- For suspected cases, consider consultation with cardiology for assistance with cardiac evaluation and management. Evaluation and management may vary depending on the patient age, clinical presentation, potential causes, or practice preference of the provider. (2)

Source: 1 , 2

# VACCINE IN CHILDREN

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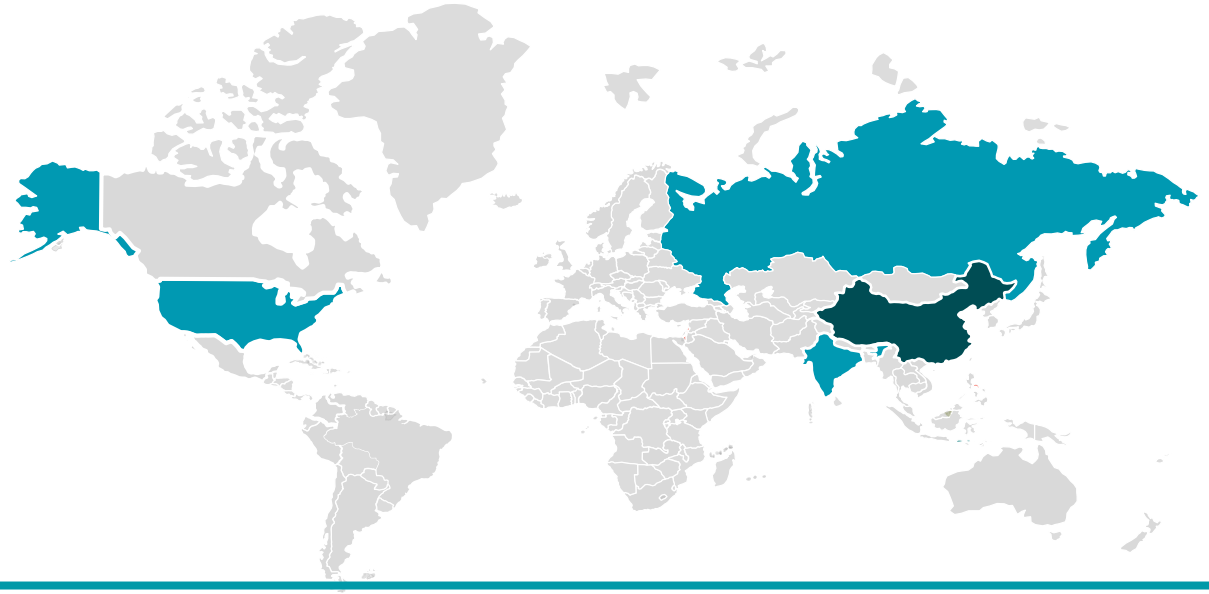
**3**
Clinical Trials
Age 2 Years & Above

**2**
Clinical Trials
Age 6 Months & Above

**4**
Clinical Trials
Age 12 Years & Above

## Countries Conducting COVD-19 Vaccine Clinical Trial On Children



### UAE clinical trial

**Sinpharm**

Phase: 3

*Participants:* 1,800
*Age:* 3-17 vs Aged 18 Years Old and Above
*Location:* UAE

*Start Date:* June 6, 2021
*End Date:* February 6, 2022

Link: Clinicaltrials.gov

## Clinical trials

Here we highlight 7 clinical trials phase **2/3 , 3 & 4:**

**mRNA-1273**

Phase2/3

*Participants:* 13,275
*Age:* 6 mon - 11 years
*Location:* USA

*Start Date:* March 15, 2021
*End Date:* June 12, 2023

Link: Clinicaltrials.gov

**mRNA-1273**

Phase2/3

*Participants:*4,500
*Age:* 6 Months - 11 Years
*Location:* USA

*Start Date:* March 24, 2021
*End Date:* October 27, 2023

Link: Clinicaltrials.gov

**BNT162b1, BNT162b2, BNT162b2SA**

Phase2/3

*Participants:*43,998
*Age:* 12 Years and older
*Location:* USA

*Start Date:* April 29, 2020
*End Date:* May 2, 2023

Link: Clinicaltrials.gov

**COVAXIN**

Phase2/3

*Participants:*525
*Age:* 2 - 18 years
*Location:* India

*Start Date:* May 26, 2021
*End Date:* January 25, 2022

Link: Clinicaltrials.gov

**Gam-COVID-vac M**

Phase2/3

*Participants:*350
*Age:* 12 - 17 Years
*Location:* Moscow

*Start Date:* July 6, 2021
*End Date:* December 31, 2023

Link: Clinicaltrials.gov

**BNT162b2**

Phase 3

*Participants:*1,530
*Age:* 12 - 50 years
*Location:* USA

*Start Date:* February 15, 2021
*End Date:* July 22, 2021

Link: Clinicaltrials.gov

**SARS-CoV-2rS /Matrix M1 Adjuvant**

Phase: 3

*Participants:*33,000
*Age:* 12 to 18
*Location:* USA & Mexico

*Start Date:* Dec 27, 2020
*End Date:* June 30, 2023

Link: Clinicaltrials.gov

**Vero Cell**

Phase: 4

*Participants:*4,400
*Age:* 3 Years and older
*Location:* China

*Start Date:* April 29, 2021
*End Date:* March 31, 2024

Link: Clinicaltrials.gov

# VACCINE IN CHILDREN

## REPORTS ON DELTA VARIANT & CHILDREN

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### Report From Canada 22, July 2021

- Adolescents 12 to 15 years and younger represent 4% of the Canadian population and constitute less than 4% of COVID-19 cases reported in Canada up to June 8, 2021.

| Less than 0.5% Covid-19 Hospitalized | Less than 0.5% Admitted To ICU | Less than 0.01% Of Death |
|---|---|---|

- However, there have been recent reports of COVID-19 outbreaks affecting children, specifically related to the B.1.617.2 (Delta) variant, in areas of relatively high rates of vaccination in the adult population. Evidence on whether specific SARS-CoV-2 variants of concern, such as the B.1.617.2 (Delta) variant, may be more infectious due to increased transmissibility or reduced indirect protection conferred by mRNA vaccination of adults is still emerging. (1)

### Report From UK 15, June 2021

Members of the Scottish government stated that children were now more at risk from covid-19 and that many had been admitted to hospital.

A consultant pediatrician at Royal Aberdeen Children's hospital, said, "As it stands there are very few children in hospital in Scotland and across the whole of the UK due to COVID. We're not seeing any evidence of an increase in pediatric admissions with COVID. "Our experience over the last 15 months is that many children who test positive have come into hospital for something else, like broken bones. At the moment the situation in the UK is stable. The number of children in hospital with COVID remains very low." (2)

Source: 1, 2

# VACCINE IN CHILDREN

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## EXPERT OPINIONS & RATIONALS ON COVID19 VACCINATIONS

### PROS

01 lowering the vaccination dose used in adults should be considered in the clinical trial for children.

02 Phase 3 trial data showing that Pfizer-BioNTech's mRNA BNT162b2 vaccine was efficacious, immunogenic, and safe in children aged 12–15 years. / These adverse outcomes of COVID-19 in children justified the necessity to vaccinate children against COVID-19, as thePfizer-BioNTech's mRNA BNT162b2 vaccine has shown 100% efficacy in children aged 12–15 years

03 Younger children seemingly less susceptible to SARS-CoV-2 and less likely to pass it on. Therefore vaccination of older children might be more beneficial than a vaccine strategy that targets all children aged 12–15 years or younger.

04 Vaccinating children and adolescents will also prevent long-term sequelae associated with SARS-CoV-2 infection, Vaccination of children might also improve their mental health and wellbeing and facilitate a return to normalcy, including resumption of education and social interactions important for child development.

**Additional opinion**: Prioritizing children of high-income countries should be for vaccination over vulnerable adults in LMICs is a matter for serious ethical and practical debate.

### CONS

01 Children are more likely to develop immune overreaction than adults such as fever and allergy.

02 Children younger than 12 years are at their key stage of growth and development; caution should be taken to evaluate the long-term effect of vaccine on children's development. safety should be the paramount factor to be considered before COVID-19 vaccine.

03 If the goal of childhood vaccination is to reduce transmission, it is important to consider and quantify the contribution of children and adolescents to transmission of SARS-CoV-2. So far in the pandemic, evidence on this role has been scarce and conflicting.

04 The study of Pfizer-BioNTech's mRNA BNT162b2 vaccine appeared well tolerated in children aged 12–15 years, although the study was too small to identify any rare side-effects.

**Additional opinion**: Overall, the ECDC report stresses that the decision to vaccinate younger age groups should consider the individual benefit–risk ratio.

Sourses : 1, 2

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