



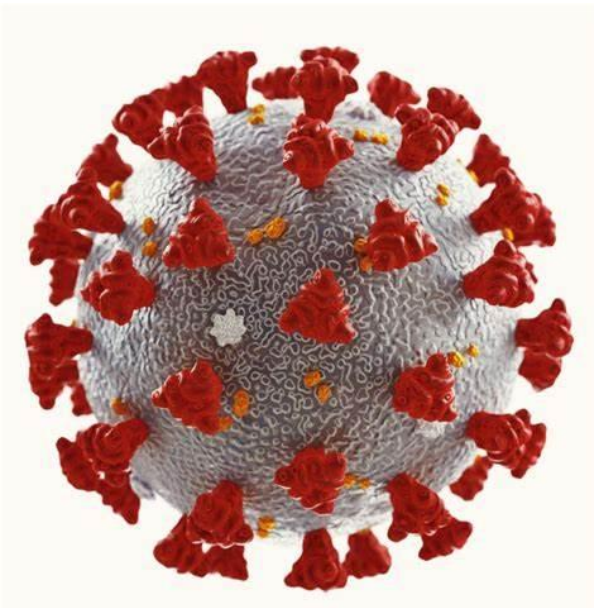
COVID-19 Pandemic



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October 2026



Learning Objectives

- *Learn the following about COVID-19*
- *Clinical characterization*
- *Symptoms*
- *Lab diagnosis*
- *Management*
- *Prevention*
-
- *Challenges of Iraqi Healthcare System in COVID-19 Pandemic*

WHO Coronavirus (COVID-19) Dashboard

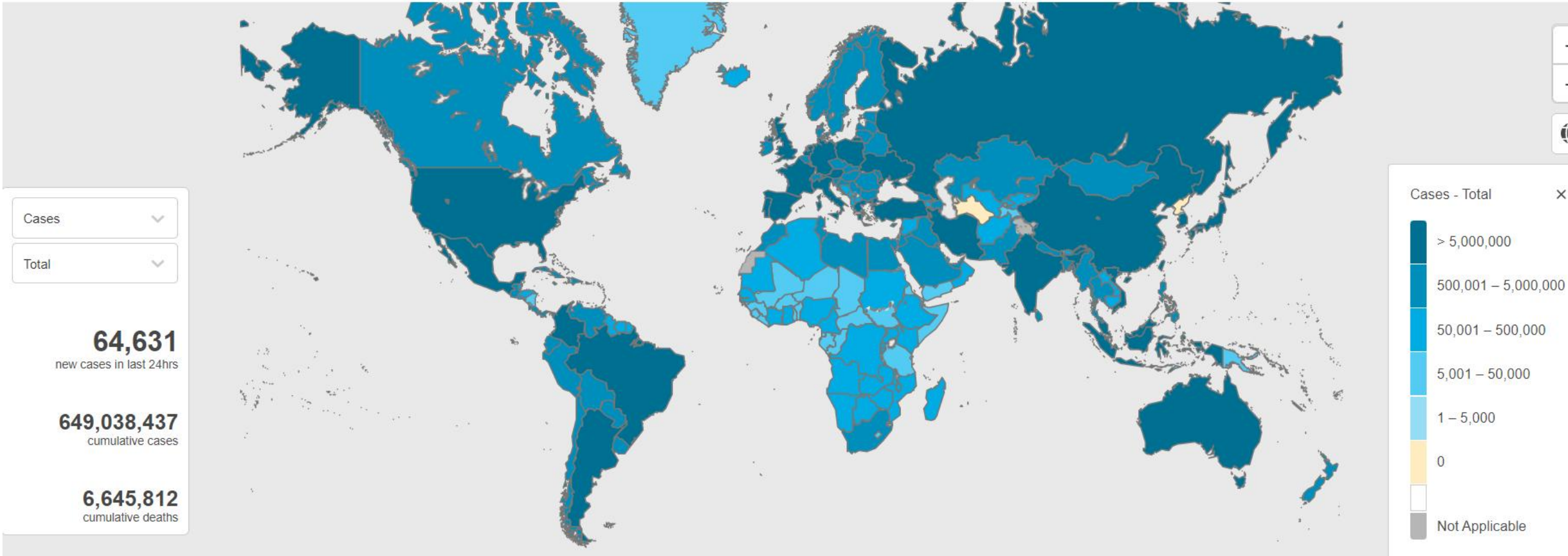
Overview

Measures

Table View

Data

More Resources



Globally, as of **4:54pm CET, 19 December 2022**, there have been **649,038,437 confirmed cases** of COVID-19, including **6,645,812 deaths**, reported to WHO. As of **12 December 2022**, a total of **13,008,560,983 vaccine doses**

Background

- As of 18 August 2022, over 590 000 000 people worldwide have been diagnosed with COVID-19, with over 6.4 million deaths according to the WHO dashboard.
- A new variant, Omicron, that emerged in late November 2021 is now the dominant strain across the world and has contributed to the ongoing surge in several countries.
- Vaccination is having a substantial impact on case numbers and hospitalizations in a number of high-income countries, but limitations in global access to vaccines mean that many populations remain vulnerable.
- The COVID-19 pandemic is a global outbreak of coronavirus, an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus.
- The first cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led WHO to declare a Public Health Emergency of International Concern on 30 January 2020, and to characterize the outbreak as a pandemic on 11 March 2020

Clinical management of COVID-19

LIVING GUIDELINE
15 SEPTEMBER 2022

Clinical characterization

- **Asymptomatic infection with SARS-CoV-2:**
- The proportion of persons who become infected with SARS-CoV-2 and remain asymptomatic remains to be better understood.
- A meta-analysis from earlier in the pandemic reported an overall estimate of 31%, from seven studies with predefined screened populations, prediction interval ranging between 26–37%.
- **Severity classification:** In those patients that do become symptomatic, most people with COVID-19 develop only mild (40%) or moderate (40%) disease.
- Approximately 15% develop severe disease that requires oxygen support, and 5% have critical disease with complications such as respiratory failure, ARDS, sepsis and septic shock, thromboembolism, and/or multi-organ failure, including acute kidney injury and cardiac injury.

Clinical characterization

- **Mental and neurologic manifestations:** COVID-19 is associated with a spectrum of mental and neurological manifestations, including anxiety, depression, sleep problems, headache, dizziness, impaired sense of smell or taste, myalgias, delirium/encephalopathy, agitation, stroke, hypoxic ischaemic brain injury, seizures, coma, meningo-encephalitis and Guillain-Barré syndrome.
- In many cases, neurological manifestations have been reported even without respiratory symptoms.
- Over 80% of COVID-19 patients in a hospitalized United States' cohort experienced neurological symptoms during the course of their illness and these manifestations were associated with a four-fold higher risk of severe COVID-19 in this cohort.
- **Clinical characterization in children:** The clinical manifestations of COVID-19 are similar in children and adults, but generally milder with varying frequency of symptoms.
- Although severe cases of COVID-19 in children, including fatal cases, have been reported, most children appear to have asymptomatic, mild, or moderate disease and recover within 1 to 2 weeks of disease onset.

Symptoms of COVID-19

- Possible symptoms include:
- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

Post COVID-19 condition

- WHO released *A clinical case definition of post COVID-19 condition is* known as “Long COVID-19.”
- **Post COVID-19 condition** occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.
- A recent meta-analysis of 10 cohort studies suggests the following factors may be associated with post COVID-19 condition: female gender, poor pre-pandemic mental health, poor general health, asthma, or being overweight or obese.
- Three meta-analysis suggest the following symptoms to be more common: fatigue, dyspnoea, cough, sleep disturbances, anxiety, depression, cognitive impairment, and difficulty concentrating.

Post-COVID-19 complications

What might COVID-19 patients experience after recovery? A comprehensive review

Rehab Elhiny^{1,✉}, Ali Azeez Al-Jumaili^{2,3,4,*} and Mohammed Jamal Yawuz²

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Table 1 Post-COVID-19 complications reported in the included studies

Complications	Symptoms	Number of reported studies	Countries of the reported studies
Respiratory complications	(1) Breathlessness/dyspnoea/ tachypnea (2) Cough (3) Lung function abnormalities (↓FEV1, ↓FEV1/FVC) (4) Pulmonary fibrosis Interstitial thickening Crazy paving (5) Residual ground-glass opacity (6) Abnormal diffusion (7) Pulmonary embolism (8) Pneumonia	36 studies	10 Chinese, 1 Egyptian, 1 German, 6 British, 3 Italian 3 Netherlands, 1 Saudi, 1 Belgian, 3 USA, 1 Australian, 1 French, 1 Belgian & Netherlands 1 Canadian, 1 Iranian, 1 Span- ish and 1 Norwegian
Nervous system complications	(1) Post-traumatic stress disorder (2) Depression (3) Anxiety (4) Memory problems: Immediate verbal memory, delayed memory, semantic verbal fluency (5) Insomnia (6) Sleeping disturbance (7) Cognitive impairment & concentration problem (8) Stigma	28 studies	5 Chinese, 1 Egyptian, 7 British, 1 German, 3 Italian, 2 Netherlands, 1 Irish, 1 Spanish, 2 Korean, 1 Bangladesh, 3 USA and 1 Indian
Musculoskeletal complications	(1) Generalized pain (2) Joint pain (3) Muscles pain (4) Fatigue/physical decline	23 Studies	1 Egyptian, 1 German, 8 British, 2 Chinese, 1 Italian, 1 Saudi, 1 Belgium, 3 U.S., 1 Bangladesh, 1 Indian, 2 Netherlands & Belgian and 1 Faroe Island
Miscellaneous complications	Headache, weight loss, alopecia, loss of taste, loss of smell, sore throat, voice and swallow abnormalities and malnutrition.	17 studies	1 Italian, 2 British, 5 Chinese, 1 Australian, 1 Mexican, 1 Helsinki, 1 Egyptian, 1 Bangladesh, 1 Netherlands+ Belgian, 1 Faroe Island, 1 French and 1

Cardiovascular complications	(1) ↑ resting rates (2) Palpitation (3) Elevation in the blood pressure (4) Pericardial chest pain (5) Chest tightness (6) T2 signal and positive late gadolinium enhancement (LGE) (7) Myocardial oedema (8) Pericardial effusion (9) Diastolic dysfunction (10) Pulmonary hypertension (11) Non-specific patterns of capillaries abnormalities (12) Hemosiderin deposits (13) Cardiac arrhythmias	9 studies	Indian 3 Chinese, 2 USA, 2 Italian, 1 Australian and 1 German
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ps://academic.oup.com/ijpp/advance-article/doi/10.1093/ijpp/riac026/6650189 by guest on 04 September 2022

Table 1. Continued

Complications	Symptoms	Number of reported studies	Countries of the reported studies
Gastrointestinal complications	(1) Nausea, vomiting and diarrhoea (2) Acute liver injury	4 studies	1 UK, 1 German and 2 Chinese
Readmission	Pneumonia, pulmonary embolism, Lumbar puncture, and cough without positive COVID-19 reinfection.	3 studies	2 Chinese and 1 USA
Urinary system complications	Residual renal impairment	1 study	1 British

Variants of concern and severity of disease

- At present, there are five variants of concern (VoC) recognized by WHO: Alpha, Beta, Gamma, Delta and Omicron.
- VoCs seem to be more transmissible with Omicron currently outcompeting the other variants.
- Omicron was observed to cause less severe disease as well as have a lower risk of mortality.
- Among vulnerable populations, i.e. patients at the extremes of age, in populations with high comorbid burden, in frail patients and among the unvaccinated.

Three disease severity groups

Population

This recommendation applies only to people with these characteristics:



Disease severity

Non-severe

Absence of signs of severe or critical disease

Severe

Oxygen saturation <90% on room air

Signs of pneumonia

Signs of severe respiratory distress

Critical

Requires life sustaining treatment

Acute respiratory distress syndrome

Sepsis

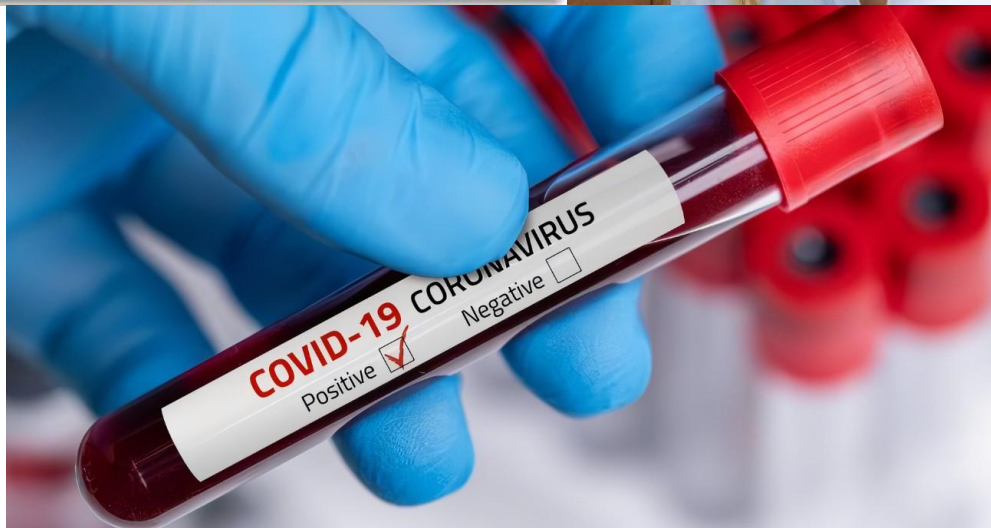
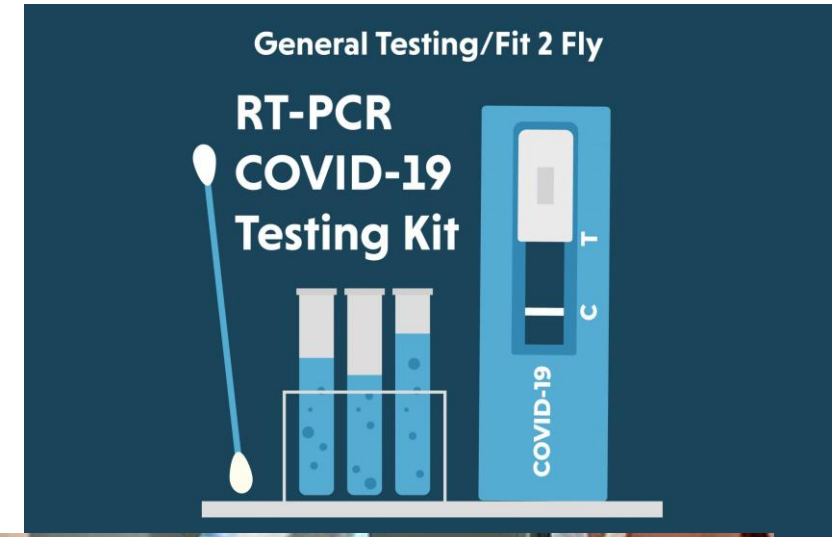
Septic shock

Infection prevention and control measures

- *Apply standard precautions according to risk assessment for all patients, at all times, when providing any diagnostic and care services.*
- *Screen all persons at first point of contact in health facility to allow for early recognition followed by immediate isolation/separation.*
- *Suspected or confirmed COVID-19 patient to wear a medical mask and placement in a separate, well-ventilated area, ideally an isolation room/area if available.*
- **Isolate and cohort patients with suspected or confirmed COVID-19**
- *Apply transmission-based precautions (contact, droplet and/or airborne precautions) where indicated.*

Laboratory diagnosis

- The WHO recommends, for all suspect COVID-19 cases, at minimum the collection of respiratory specimens for nucleic acid amplification testing (NAAT) for example reverse transcription polymerase chain reaction (RT-PCR).



Management of mild COVID-19: symptomatic treatment

- WHO recommends that patients with suspected or confirmed mild COVID-19 be isolated to contain virus transmission according to the established COVID-19 care pathway.
- This can be done at a designated COVID-19 health facility, community facility or at home (self-isolation).
- We recommend patients with mild COVID-19 be given symptomatic treatment such as antipyretics for fever and pain, adequate nutrition and appropriate rehydration.
- Counsel patients with mild COVID-19 about signs and symptoms of complications that should prompt urgent care.

Management of moderate COVID-19: pneumonia treatment

- The location of isolation will depend on the established COVID-19 care pathway and can be done at a health facility, community facility or at home.
- The decision on location should be made on a case-by-case basis and will depend on the clinical presentation, requirement for supportive care, potential risk factors for severe disease, and conditions at home, including the presence of vulnerable persons in the household.
- For patients at high risk for deterioration , isolation in hospital is preferred.

Management of severe COVID-19: severe pneumonia treatment

- **We recommend immediate administration of supplemental oxygen therapy to any patient with emergency signs during resuscitation to target $\text{SpO}_2 \geq 94\%$ and to any patient without emergency signs and hypoxaemia (i.e. stable hypoxaemic patient) to target $\text{SpO}_2 > 90\%$ or $\geq 92\text{--}95\%$ in pregnant women.**
- *Deliver oxygen flow rates using appropriate delivery devices (e.g. use nasal cannula for rates up to 5 L/min; Venturi mask for flow rates 6–10 L/min; and face mask with reservoir bag for flow rates 10–15 L/min).*

Treatments

Treatment	Who	When	How
<u>Nirmatrelvir with Ritonavir (Paxlovid)</u>  <i>Antiviral</i>	Adults; children ages 12 years and older	Start as soon as possible; must begin within 5 days of when symptoms start	Taken at home by mouth (orally)
<u>Remdesivir (Veklury)</u>  <i>Antiviral</i>	Adults and children	Start as soon as possible; must begin within 7 days of when symptoms start	Intravenous (IV) infusions at a healthcare facility for 3 consecutive days
<u>Molnupiravir (Lagevrio)</u>  <i>Antiviral</i>	Adults	Start as soon as possible; must begin within 5 days of when symptoms start	Taken at home by mouth (orally)

<https://www.cdc.gov/coronavirus/2019-ncov/your-health/treatments-for-severe-illness.html>

Preventing COVID-19

- COVID-19 vaccines
- Preventive medications
- The FDA has issued an emergency use authorization for [tixagevimab plus cilgavimab \(EVUSHELD™\)](#), a medicine that can help protect you from getting COVID-19.
- EVUSHELD™ contains two different antibodies and is given as two separate consecutive intramuscular (IM) injections at a doctor's office or healthcare facility before you are exposed or test positive for COVID-19

COVID-19 Vaccines

- Four COVID-19 vaccines are approved or authorized in the United States:
- Pfizer-BioNTech
- Moderna
- Novavax
- Johnson & Johnson's Janssen (J&J/Janssen) (However, CDC recommends that the J&J/Janssen COVID-19 vaccine only be [considered in certain situations](#), due to safety concerns.)

Raise Public Awareness to enhance Vaccination



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قسم الاعلام والتوعية

A photograph showing a healthcare worker in a white coat administering a vaccine into a person's arm. The worker is using a syringe to inject the vaccine into the person's upper arm. The person's arm is resting on a surface. The background is blurred.

اللقاح ضمانك لعودة الحياة

يونيسف لكل طفل
منظمة الصحة العالمية

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Challenges facing Iraqi during COVID-19 pandemic

- Challenges in the prevention (minimize number of cases).
- Challenges in the testing/diagnosis .
- Challenges in Treatment (reduce mortality).



COVID-19 cases, deaths and vaccination

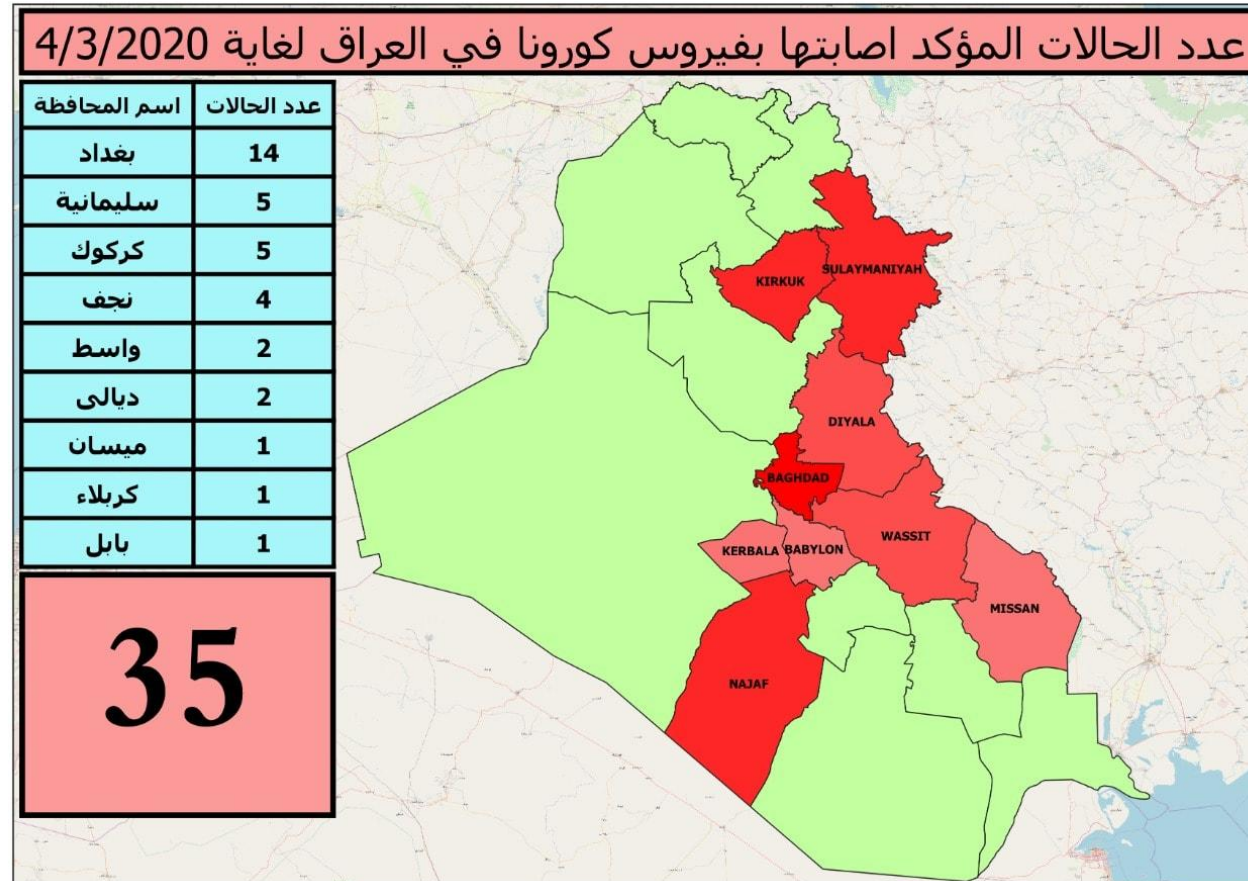


First Case of COVID-19 in Iraq

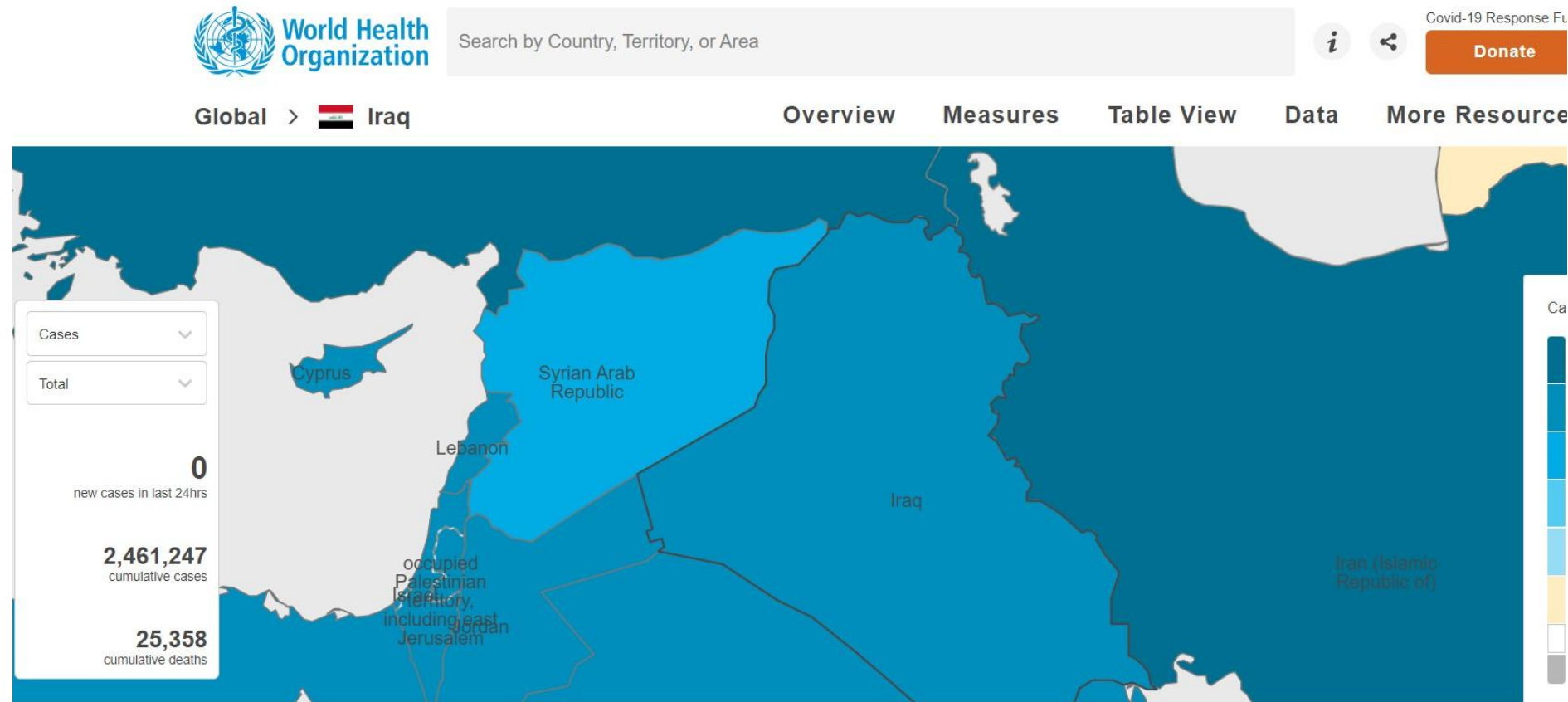
- Iraq, along with other six Arabic countries (Lebanon, Bahrain, Kuwait, Oman, Qatar and Saudi Arabia) obtained COVID-19 mainly via people who have visited Iran.
- The first case of COVID-19 in Iraq was detected on Feb 24, 2020 in Al-Najaf city, south of Baghdad for an Iranian religious student.



Number of Confirmed Cases on March 4, 2020



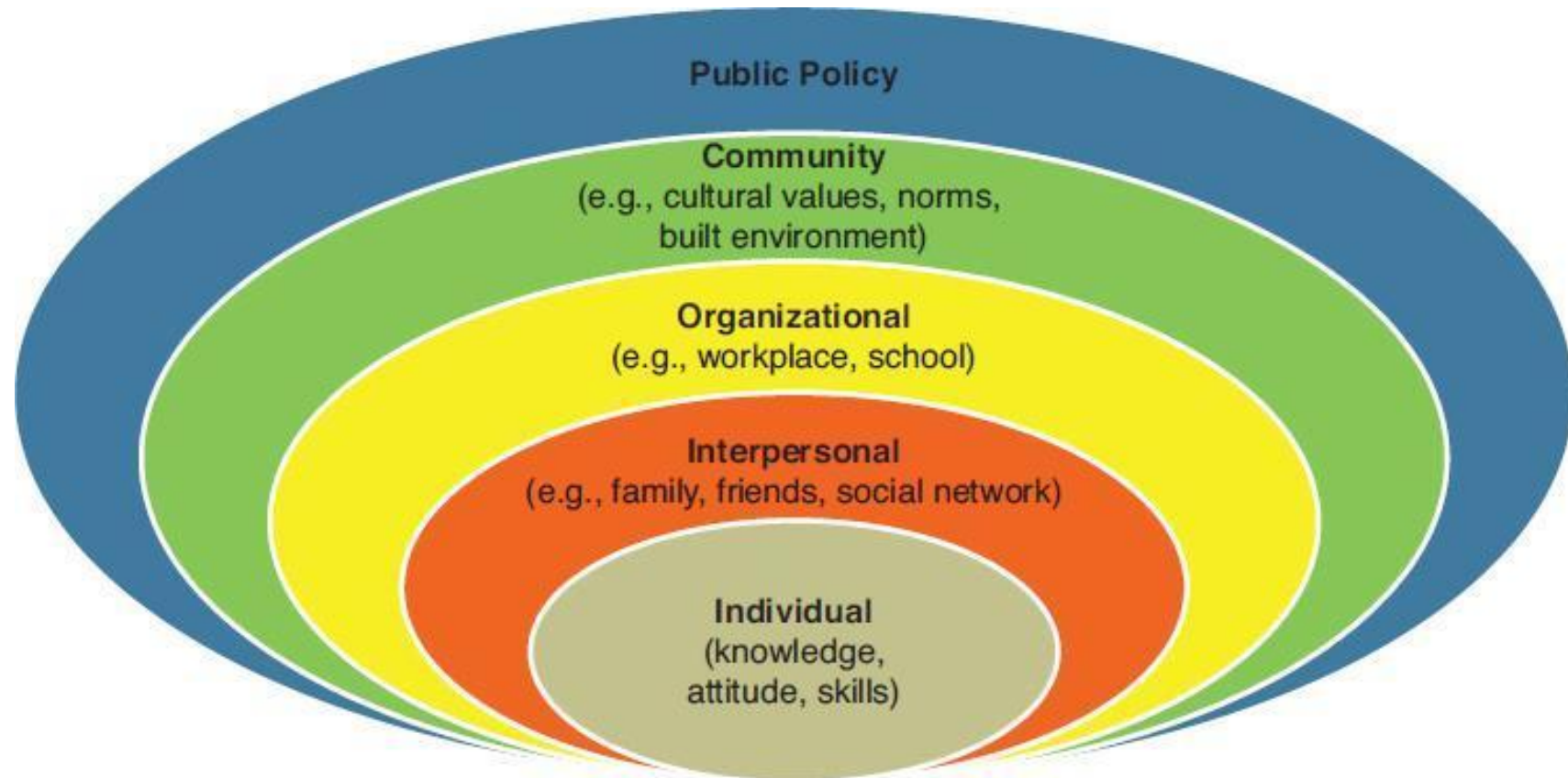
Current Number of Reported COVID-19 cases (Nov 1, 2022)



In **Iraq**, from **3 January 2020** to **4:53pm CET, 1 November 2022**, there have been **2,461,247 confirmed cases** of COVID-19 with **25,358 deaths**, reported to WHO. As of **22 October 2022**, a total of **19,394,050 vaccine doses** have been administered.

Source: <https://covid19.who.int/region/emro/country/iq>

Socio-ecological Model (preventive measures)



Complete
curfew (lockdown)
for 4 weeks then during
weekends (Spring 2020)
(Governmental policy level)

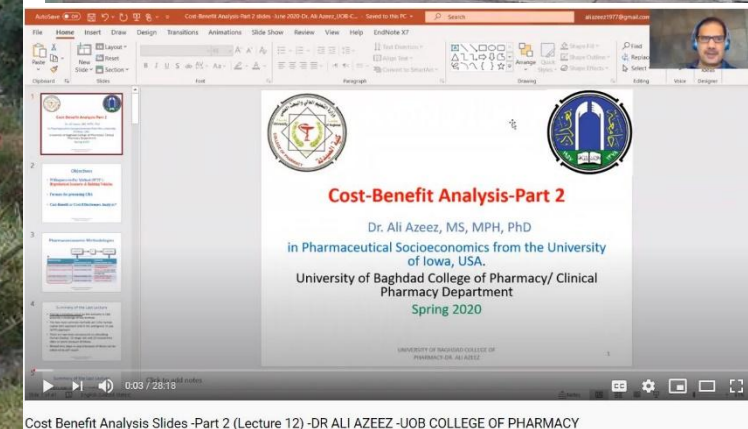


Economical crises due to the lockdown



(Governmental policy level)

University of Baghdad College of Pharmacy pictures



Cost Benefit Analysis Slides -Part 2 (Lecture 12)-DR ALI AZEEZ-UOB COLLEGE OF PHARMACY

Screenshot from the College YouTube Channel

CREATE

Your channel
Pharmacy

- Dashboard
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Channel videos

Uploads Live

Filter

☐	Video	Visibility	Restrictions	Date ↓	Views	Comments	Likes (vs. dislikes)
☐	SKIN 20:23 Summer Training - Skin Add description	Unlisted	None	Nov 22, 2020 Uploaded	70	0	100.0% 5 likes
☐	37:59 General method of preparation video 2020-11-18	Unlisted	None	Nov 18, 2020 Uploaded	12	0	100.0% 2 likes
☐	20:57 Summer training Eye Add description	Unlisted	None	Nov 16, 2020 Uploaded	136	0	100.0% 10 likes
☐	18:14 Muscles and joints Pain Add description	Public	None	Nov 15, 2020 Published	191	0	100.0% 16 likes
☐	12:34 المرحلة الثالثة تدريب صيفي المحاضرة الرابعة Add description	Unlisted	None	Nov 12, 2020 Uploaded	73	0	100.0% 4 likes
☐	Review of solid dosage forms powder and cap...	Unlisted	None	Nov 11, 2020 Uploaded	27	0	100.0% 2 likes

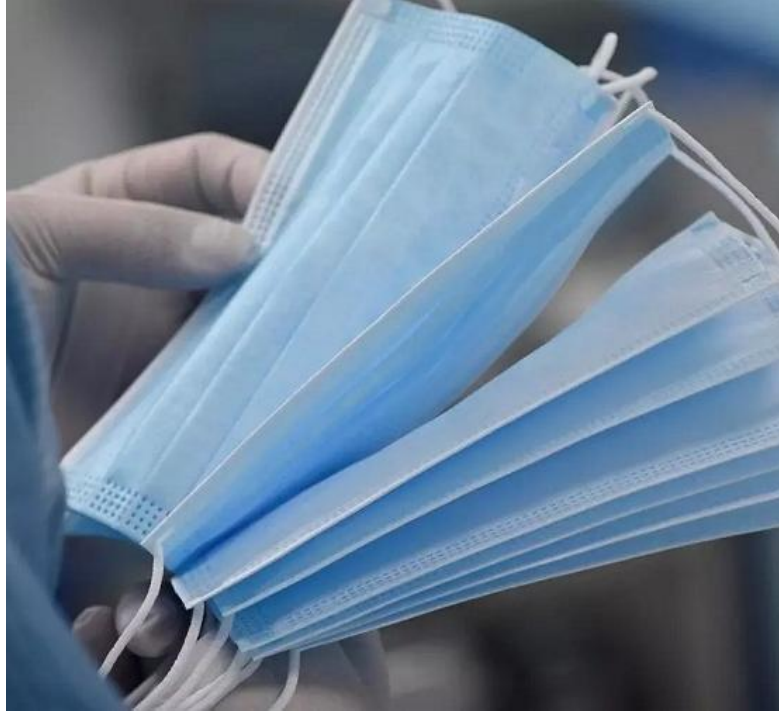
Challenges Face Iraq to control COVID-19 (in 2020)

- [1] A shortage in personal protective equipment (PPE) and ambulances
- [2] A low level of public awareness
- [3] A shortage in number of quarantine facilities
- [4] Limited number of PCR testing labs
- [5] A shortage in hygiene preparations and
- [6] A shortage in some COVID-19 treatment.



1-Shortage in PPE: Facemasks in 2020

- Facemask was sold per piece



Limited Personal Protective Equipment in 2020



2-Inadequate awareness-Normal daily behaviors (without facemask)



Normal daily
behaviors
(without facemask)



Challenging awareness campaign



Challenging awareness campaign



Awareness webinars to healthcare providers



Iraqi Association for Medical
Research and Studies
IAMRS

**Friday
September,4th
2020
4:00 PM**



Certificates will be
sent to attendants via
E.mail soon after

IAMRS cordially invite you to join the upcoming 4th
webinar entitled

COVID-19 VACCINE, INVENTION & PROSPECTIVES



Speaker

Prof. Dr. Kıvanç Şerefhanoglu
Infectious Diseases Specialist (Turkey)
Gazi Osmanpaşa Hospital
COVID-19 Candidate Vaccines: Where We're at



Iraq



Turkey



India



Speaker

Dr. Neelam Mohan
Gastroenterologist (India)
Medanta Medicity Hospital
**COVID-19: Prevention / Eradication
"Is Vaccine a Hype or Reality ?"**



Speaker

Dr. Ali Azeez Ali Al-Jumaili
Clinical Pharmacist (Iraq)
University of Baghdad, College of Pharmacy
Updates about COVID-19 Vaccines



Speaker

Dr.Hussein Katai Abdul-Sada
Molecular & Cell Biologist (Iraq)
University of Basrah Al-Zahraa College of Medicine.
**How we can prepare SARS-COV-2 vaccine
and its potential effectiveness**



Moderator

Dr.Basim A.AIHijaj
Basra Center for Hereditary
Blood Diseases
IAMRS Secretary





To join use the following

Webinar ID: 912 9427 5589
Passcode: iamrs



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3- Challenges in testing (COVID-19 diagnosis) in 2020



A polymerase chain reaction (PCR) test is used to diagnosis people who are currently infected with SARS-CoV-2, which is the coronavirus that causes COVID-19.



One Central Public Health Lab in Baghdad -March 2020



Later-New COVID-19 testing labs



Challenges facing testing mobile clinics

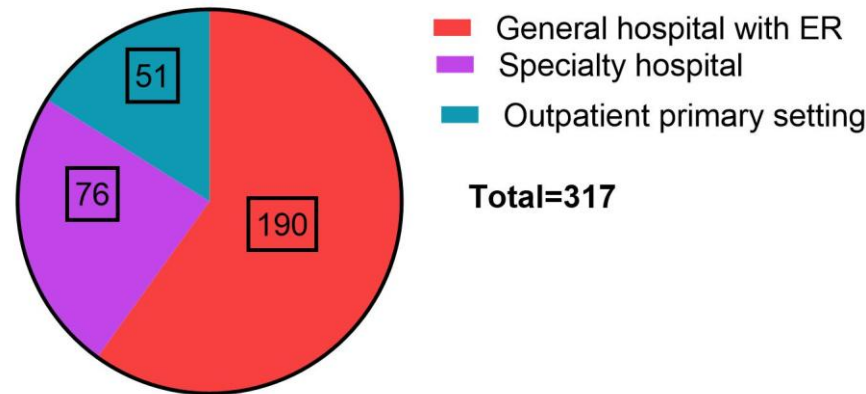


Limited COVID-19 testing at the airports



The Preparedness of Iraqi Public Healthcare Settings and Providers for COVID-19 Pandemic (2020)

Sumayah Ghassan Sami, BS Pharm, Ali Azeez Al-Jumaili, MPH, PhD



■ General hospital with ER
■ Specialty hospital
■ Outpatient primary setting

Total=317



The Preparedness of Iraqi Public Healthcare Settings and Providers to Face COVID-19 Pandemic

Sumayah Ghassan, BS Pharm ¹, Ali Azeez Al-Jumaili, MS, MPH, PhD ^{1,2}

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Introduction:

- Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the previously unidentified Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) that was first identified in Wuhan, China, in December 2019.
- COVID-19 is highly infectious particularly among healthcare providers (HCPs) and exhausts medical supplies and staff.
- In present, there are no FDA/WHO approved vaccines.
- COVID-19 seems to be containable if prevention strategies are well implemented.
- Rapid diagnosis of the disease and isolation of infected people are the most important steps for prevention.
- Effective COVID-19 prevention and control depends on awareness and training of HCPs in addition to the preparedness and protective measures of healthcare settings.
- **The objectives** of this study were to measure the preparedness of public healthcare settings and providers to face COVID-19 pandemic in Iraq.

Methods:

- This was a cross-sectional study based on an electronic survey (Qualtrics) in English distributed among HCPs.
- The target participants were healthcare providers working in public healthcare settings across Iraq.
- The authors adopted with modifications the awareness and preparedness items from five previous studies of SARS-CoV, Middle East Respiratory Syndrome (MERS) and H1N1 influenza outbreaks.
- The survey includes 3 main sections: HCP characteristics (8 items), HCP preparedness (7 items), and setting preparedness (12 items).
- The survey was distributed via two professional Facebook groups between March 22 to April 7, 2020.

Statistical Analysis:

- Descriptive data were expressed as frequencies and percentages.
- 5-point Likert scale was used (strongly disagree to strongly agree).
- Strongly agree and agree responses =adequate.
- Strongly disagree and disagree= inadequate.

Results: 317 healthcare providers (52.4% female and 47.6% male) were from 17 provinces with an average experience years of 7.2 ($\pm$ 6.3)

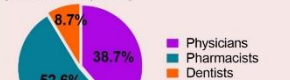


Figure 1: The participant professions



Figure 2: The participants' workplaces

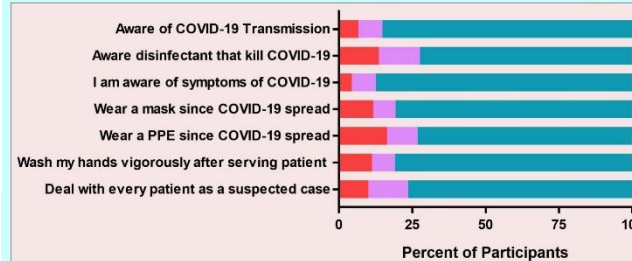


Figure 3: Healthcare providers' knowledge about COVID-19 and preventive measures

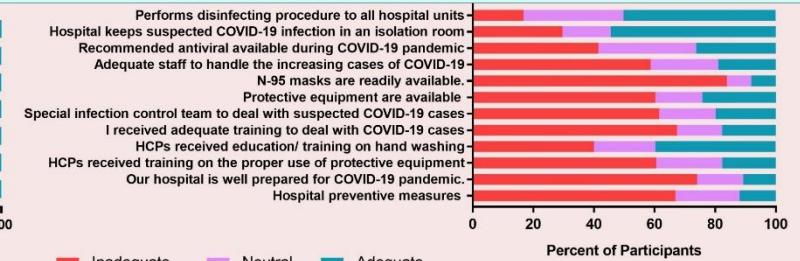


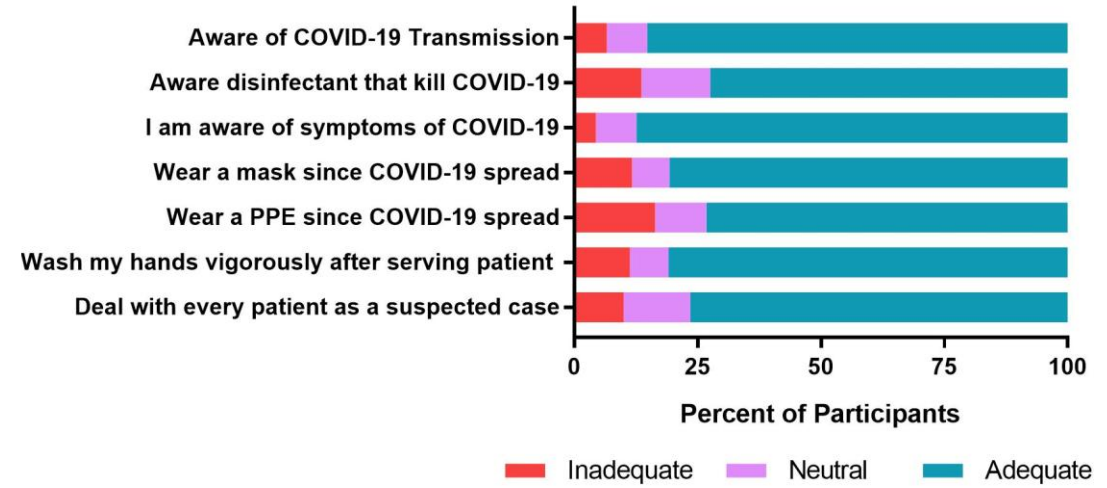
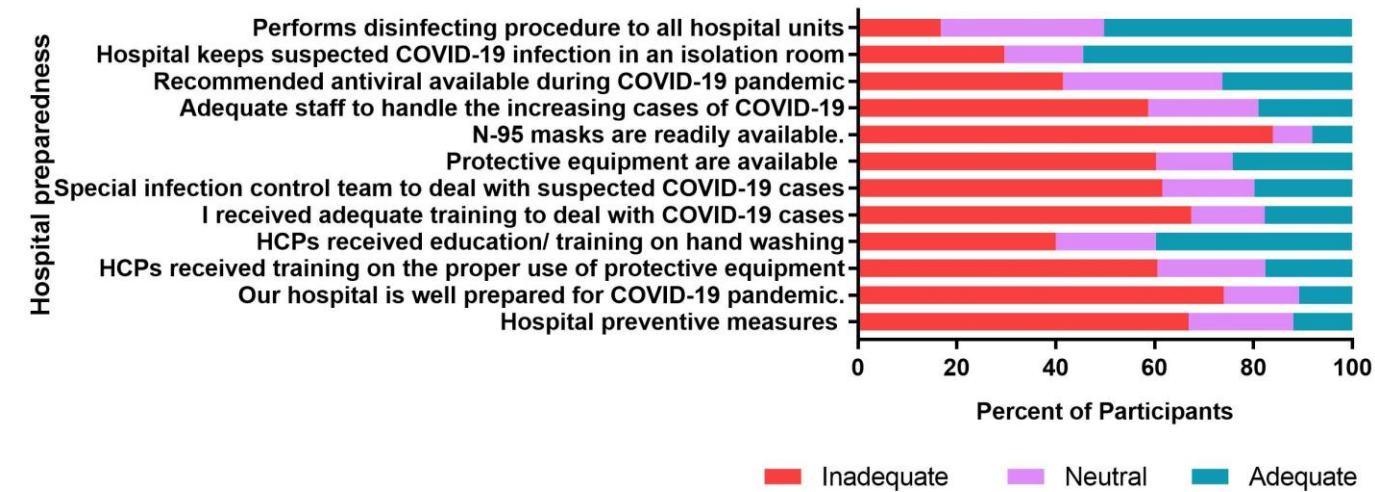
Figure 4: Hospital preparedness and preventive measures to face COVID-19 pandemic

Conclusions:

- The awareness of the healthcare providers (HCPs) of protective and preventive strategies was adequate with the majority wearing their personal protective equipment (PPE).
- All the seven items measuring HCP awareness of COVID-19 pandemic were above average with total mean of 27.91 ($\pm$ 4.21) out of 35 points (adequate).
- Ten out of 12 items measuring the public hospital preparedness to COVID-19 were below the average score (between 1.73 and 2.7 out of 5)(inadequate).
- The overall average of the total 12 hospital preparedness items was 29.1 ($\pm$ 8.3) which was below the neutral response' total score (36).
- Only two items were above the average: "Keeping suspected COVID-19 patients in an isolating room" and "disinfecting hospital units regularly".
- Public hospitals need to address the gap in the staff training and provide adequate PPE to HCPs.

The Preparedness of Iraqi Public Healthcare Settings and Providers for COVID-19 Pandemic

Sumayah Ghassan Sami, BS Pharm, Ali Azeez Al-Jumaili, MPH, PhD



4- Challenges facing COVID-19 treatment

- Shortage in treatment and equipment
- Lack of national COVID-19 treatment database
- Rumors/ myths about hospital treatments
- Misleading information from some healthcare workers

Iraq had limited number of specialized COVID-19 centers



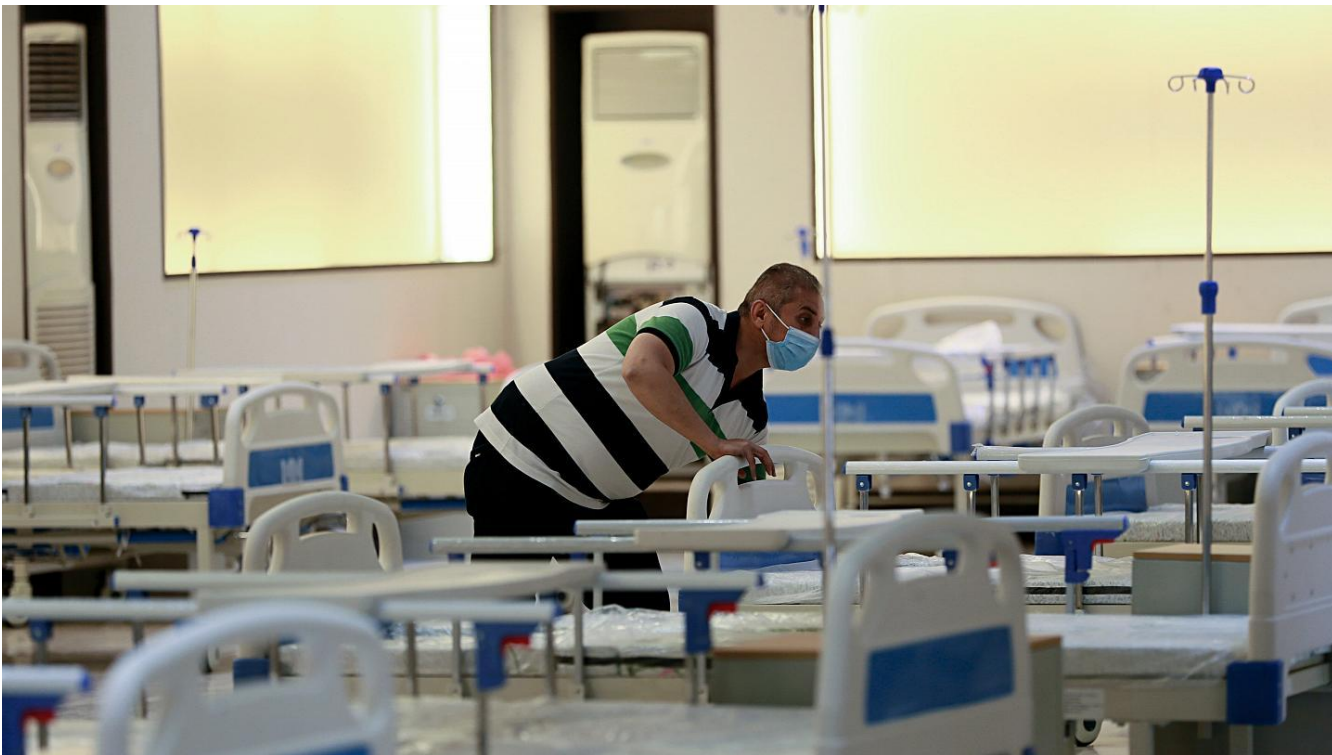
Used public hospitals as COVID-19 centers



The Ministry of Health built new temporarily centers with time



Temporary COVID-19 centers



Newly built COVID-19 centers



Iraqi COVID-19 treatment protocol (updated twice)

جمهورية العراق وزارة الصحة / الوزارة مديرية الشؤون الطبية قسم العلاج كومياري عراقي وه زارعتي لتدورستي فهرمانكه ي كاروبازيهونهرى وزارة الصحة العراقية (Iraqi Ministry of Health) Established 1959 العدد: / / التاريخ: / / ٢٠٢٠م	
Clinical presentation	Suggested Treatment protocol
Mild :	Same protocol
Moderate: (Fever, respiratory symptoms, imaging manifestations of pneumonia, systemic manifestations)	- Favipiravir: - Favipiravir tab 1600 mg / dose twice a day on the first day (loading dose) , followed by 600 mg/dose twice a day (up to 7 days). - Plasma therapy : to be considered and can be used depending on clinical judgment (Clinical Guideline)
Severe: patient meets any of the following criteria: A-respiratory distress RR > than 30/m in adults, RR > than 40/m in children less than 6 years B-blood oxygen saturation less than 93% on ambient air C-PaO2/FiO2 less than 300 D-lung infiltrates >50% of the lung field within 24 hours.	1- Remdesivir: Dosage (weight 40 kg or more) -Requires mechanical ventilation . Day 1 loading dose: 200 mg IV infused over 30-120 min, Then Days 2-10 maintenance dose: 100 mg IV daily. -Does not require mechanical ventilation . Day 1 loading dose: 200 mg IV infused over 30-120 min, Then Days 2-5 maintenance dose: 100 mg IV daily. If clinical improvement not demonstrated, treatment may be extended for up to 5 additional days (ie, up to 10 days total). 2- Favipiravir: - Favipiravir tab 1600 mg / dose twice a day on the first day (loading dose) , followed by 600 mg/dose twice a day (up to 10 days). 3-Immune modulating drugs such as Tocilizumab can be used for cytokine storm or in special clinical condition guided by scientific committee (Guidance for the use of Tocilizumab). 4-Corticosteroids can be used. It is strongly recommended for patients who are mechanically ventilated and moderately recommended for patients who require supplemental O₂. Dexamethasone 6 mg per day up to 10 days, Or methylprednisolon 1-2 mg /kg per day (3-5 days) .

Sever:

patient meets any of the following criteria:

A-respiratory distress
RR > than 30/m in adults,
RR > than 40/m in children less than 6 years

B-blood oxygen saturation less than 93% on ambient air

C-PaO₂/FiO₂ less than 300

D-lung infiltrates >50% of the lung field within 24 hours.

1. Antiviral therapy:

- **Lopinavir-Ritonavir** (200/ 50 mg) 2 tablets PO BID and **Ribavirin** 400 m PO BID for 7 days.
- **Interferon beta-1b** (optional depending on clinical judgment)

2. **Plasma therapy** to be considered and can be used depending on clinical judgment.

3. Immune modulating drugs such as **Tocilizumab** can be used for cytokine storm

4. Antibiotics should be used as empirical and then deescalated according to culture and sensitivity. if C/S not available initial antibiotics should be reconsidered.

5. **Anticoagulant** is essential (low molecular weight heparin is preferable) providing that there is hyper-coagulable state.

6. In the absence of hypoxia, patient should be evaluated actively, providing sufficient oxygenation

7. **Corticosteroids** can be used.

8. Supportive: (antipyretic and vitamins D and C ...)



Treatment challenge: Shortage in some COVID-medicines

Zena Hassan 21h

Murtadha Al Ebadi
Yesterday at 9:56 PM · 2

السلام عليكم اخوان .. حالة طارئة 🚨
الدكتور عباس القاضي اخصائي جراحة عامة في مستشفى الكندي
والد زميلنا الدكتور ياسر عباس القاضي [Yasir Abbas AlQadhi](#)
اصيب بفايروس كورونا وحالته الصحية تعبانة ..
محتاجين Tocilizumab و Remdivire ضروري الي يعرف اي
صيدلية عدها ليقتصر والله يبعد عنكم الشر ..



Actemra®
(tocilizumab)
Injection
80 mg / 4 mL
(20 mg/mL)
For intravenous infusion only after dilution.
Single-Use Vial; Discard unused portion.
ATTENTION PROVIDER: Each patient is required to receive the enclosed Medication Guide.
No Preservative
R only
Genentech

Reply to Zena...



Treatment challenge:

High demand for oxygen



Treatment challenge:

Difficulties to get national treatment data

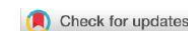
Lack of
electronic
medical records



TABLE 5 The effect of treatment on clinical condition and biochemical parameters of patients with COVID-19

Parameters	Before treatment	After treatment	P-value
Symptoms	N (%)	N (%)	
Cough	104 (64.60%)	14 (8.70%)	.0000*
SOB	76 (47.21%)	11 (6.83%)	.0000*
Fever	38.25 ± 0.64	36.53 ± 0.39	.0000*
Vital signs	Mean ± SD	Mean ± SD	
RR	23.43 ± 5.55	19.66 ± 2.32	.0000*
SBP	129.27 ± 16.68	126.57 ± 14.88	.1260
DBP	83.77 ± 10.64	84.76 ± 10.46	.4015
PR	96.36 ± 8.31	78.21 ± 3.05	.0000*
Lab tests			
FBS mmol/L	9.61 ± 5.65	6.95 ± 1.72	.0000*
WBCs × 10 ³	11.20 ± 3.33	6.67 ± 1.97	.0000*
Hg g/dl	12.74 ± 1.75	12.70 ± 1.54	.7969
S.Cr	1.00 ± 0.94	0.95 ± 0.69	.6451
Urea	26.04 ± 34.77	25.61 ± 33.85	.9112
AST	25.32 ± 13.16	27.20 ± 9.34	.1387
ALT	33.63 ± 28.36	34.80 ± 20.15	.6925
ALP	106.47 ± 71.16	107.27 ± 47.38	.9054
Bilirubin	0.73 ± 0.70	0.75 ± 0.57	.7391

Local studies about COVID-19 treatment



Received: 25 June 2020 | Accepted: 18 November 2020

DOI: 10.1111/ijcp.13856

ORIGINAL PAPER

Infectious diseases

THE INTERNATIONAL JOURNAL OF
CLINICAL PRACTICE WILEY

Assessment of COVID-19 Treatment containing both Hydroxychloroquine and Azithromycin: A natural clinical trial

Hassan M. Abbas¹ | Ali Azeez Al-Jumaili^{2,3}  | Kawthar F. Nassir⁴  |
 Muhammed Waheeb Al-Obaidy⁵ | Adnan Mohammed Al Jubouri^{5,6} |
 Basim Dhawi Dakhil⁷ | Mohammed Mahir Abdulelah⁸ | Qutaiba Ahmed Al Khames⁹

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²College of Pharmacy, University of Iowa, Iowa City, IA, USA

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⁴Therapeutic Drug Monitoring Center, Baghdad Teaching Hospital, Medical City Complex, Baghdad, Iraq

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⁸Baghdad Teaching Hospital, Medical City Complex, Baghdad, Iraq

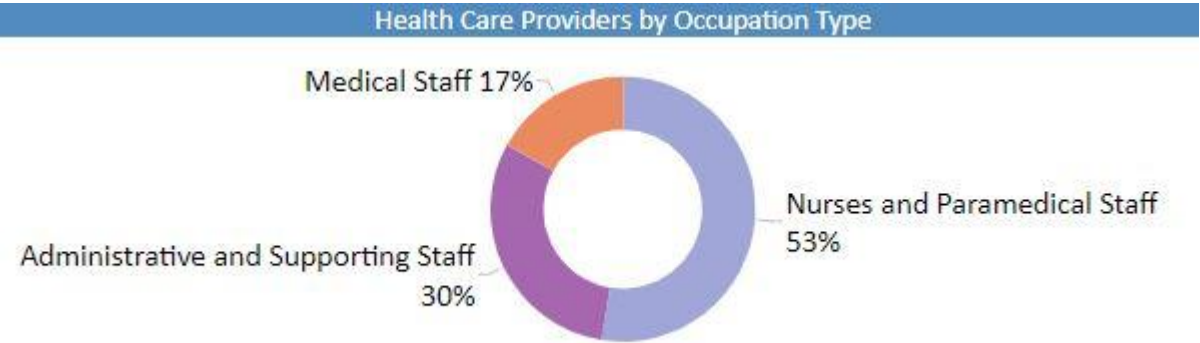
⁹Baghdad Teaching Hospital, Medical City Complex, Baghdad, Iraq

Abstract

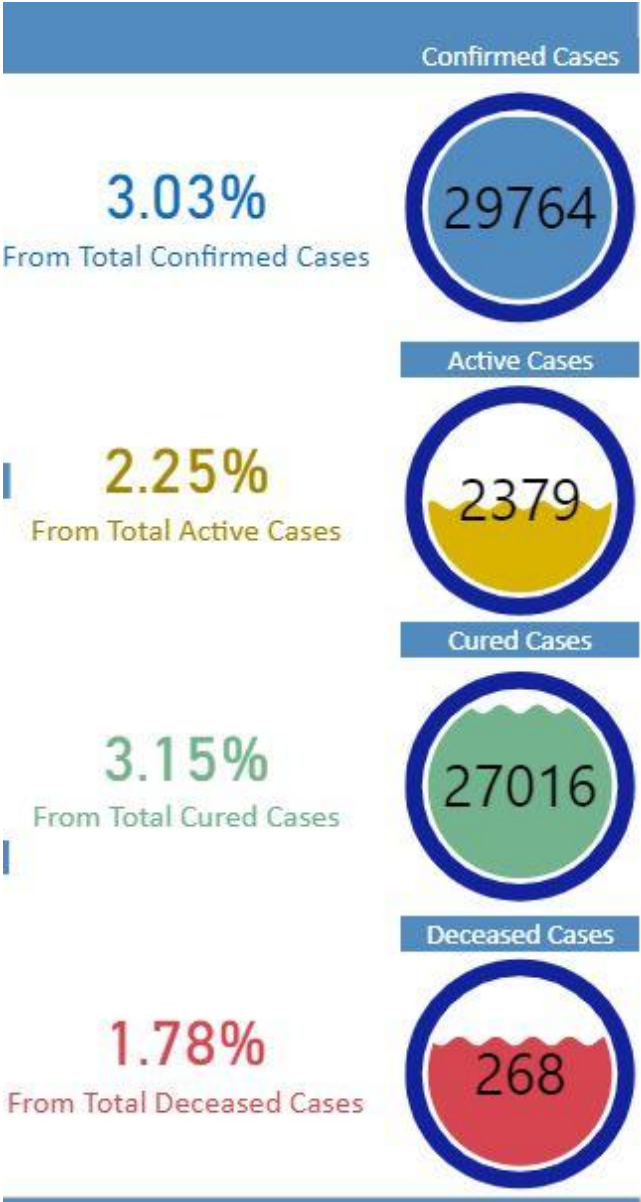
The goal of this study was to assess the clinical effectiveness and safety profile of the COVID-19 treatment protocol (containing both hydroxychloroquine (HCQ) and azithromycin) in an Iraqi specialised hospital.

Methods: This prospective study used a pre- and post-intervention design without a comparison group. The intervention was routine Ministry of Health (MOH) approved the management of COVID-19 for all patients. The study was conducted in a public healthcare setting in Baghdad, Iraq from March 1st to May 25, 2020. The study outcome measures included the changes in clinical and biochemical parameters during the hospitalisation period. Paired t-test and Chi-square test were used to compare

Treatment challenge: Impact of COVID-19 on Healthcare provides



Source: [Microsoft Power BI](#) (April 2021)



Research Paper

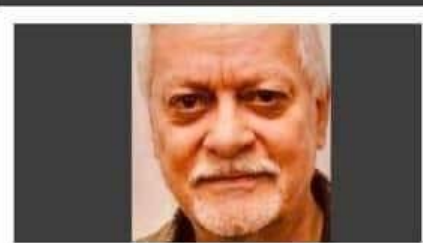
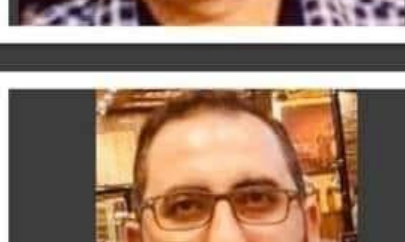
Impact of COVID-19 pandemic on healthcare providers: save the frontline fighters

Ali Azeez Al-Jumaili^{1,2,*}, Bashar Al-Fatlawi³, Ahmad K. Al-Jalehawi⁴,
Fadya Yaqoob Al-Hamadani¹ and Uday Sajjad Aziz⁵

- More than 80% perceived high risk of infection and stress due to the COVID-19 pandemic.
- Additionally, 86% of the HCPs had concerns of putting family and close friends at risk due to their job during the COVID-19 crisis.

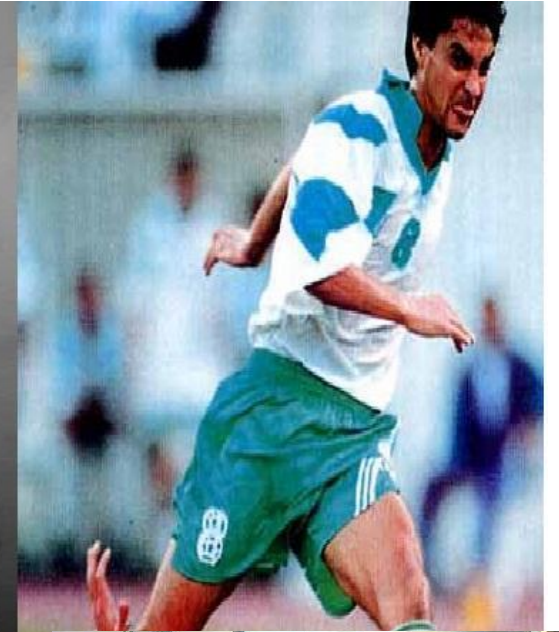
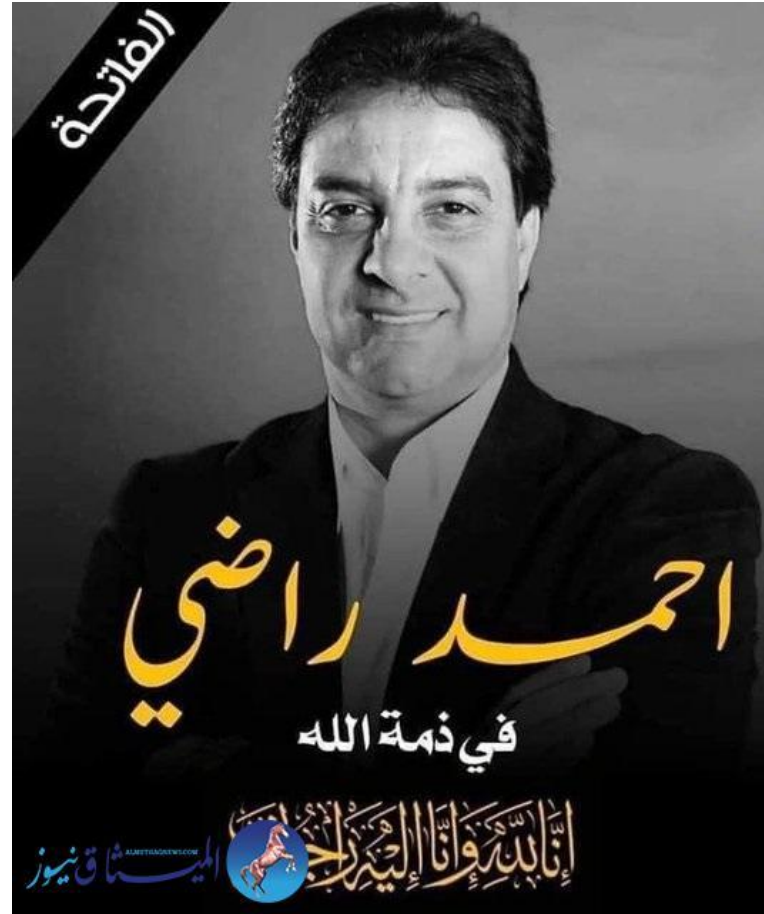


Healthcare providers died due to COVID-19





Famous soccer players that died due to COVID-19-(impacted people trust in hospitals)



4-Misleading by some healthcare workers on media regarding COVID-19 treatment



Misleading example: An immunologist discouraged people on media from going to hospitals to avoid dying from wrong treatment and their adverse effects



Misleading example: A physician claimed there is no need for a facemask because it has negative impacts



Misleading example: An orthopedic doctor claimed that Lidocaine solution can be used for COVID-19 treatment and Lidocaine gel can prevent COVID-19 infection instead of facemask.



**Lidocaine
nebulizer for
COVID-19**

الزايكوكين تبخير
لمرضى الكورونا



برنامج الرقيب • Follow

14h •

لا كمادات بعد اليوم هكذا قال الدكتور [redacted] شاهد ما هو البديل (على مسؤوليته تحدث)



لقاء
خاص

Unofficial treatment regimen for COVID-19 through social media

Please check this method from Dr. Amjed Hammodi, from Baghdad-Iraq

<https://www.facebook.com/amjed.hammodi>



English	عربي
To do the treatment session we need: All the Ampoules SHOULD be GLASS not Plastic ✓ Ventolin Ampoules (Chemical Name Salbutamol Ampoules) ✓ Lidocaine ampule 2% (Another Name Xylocaine Ampule) ✓ Lidocaine Gel 2%/4%/5% ✓ Distilled Water Medical Use ✓ Nebulizer	لعمل العلاج نحتاج الى: كل الامبولات يجب ان تكون زجاجية وليست بلاستيكية • امبولة فنتولين (اسم الكيميائي سالبوتامول) • امبولة ليدوكاين تركيز 2% (اسم اخر زابلوكين) • جل ليدوكاين تركيز 2% او 4% او 5% • ماء مقطر استخدام طبي • جهاز البخار نيبولايزر
Session 1: ➢ Mix 1CC Ventolin(Salbutamol) + 4CC Distilled Water ➢ Put the mixture in the nebulizer and breath for 20mins ➢ Move to session 2 Session 2: ➢ Mix 2CC lidocaine (Xylocaine) + 4CC Distilled Water ➢ Put the mixture in the nebulizer and breath for 30mins ➢ Move to session 3 Session 3: ✓ Use Lidocaine Gel 2%/4%/5% and past it inside the nose in between 1 hour once.	الجلسة 1: • اخلط 1 سي سي فنتولين (سالبوتامول) + 4 سي سي ماء مقطر استخدام طبي • ضع المحلول المخلوط في جهاز البخار نيبولايزر وتنفس به لمدة 20 دقيقة • انتقل الى الجلسة 2 الجلسة 2: • اخلط 2 سي سي ليدوكاين تركيز 2% (اسم اخر زابلوكين) + 4 سي سي ماء مقطر استخدام طبي • ضع المحلول المخلوط في جهاز البخار نيبولايزر وتنفس به لمدة 30 دقيقة • انتقل الى الجلسة 3 الجلسة 3: • استخدم جل ليدوكاين تركيز 2% او 4% او 5% وادهن انفك من الداخل كل ساعة مرة واحدة

نتمنى لكم الصحة والسلامة والشفاء لمرضاكم والرحمة لموتاكم

Treatment challenge: Increase in-home treatment even for severe cases due to rumors against hospital care



Prevention challenge: COVID-19 vaccines

Leading vaccines

Developer	How It Works	Phase	Status
 Pfizer-BioNTech	mRNA	2 3	Approved in several countries. Emergency use in U.S., E.U., other countries.
 Moderna	mRNA	3	Approved in Switzerland. Emergency use in U.S., E.U., other countries.
 Gamaleya	Ad26, Ad5	3	Early use in Russia. Emergency use in other countries.
 Oxford-AstraZeneca	ChAdOx1	2 3	Approved in Brazil. Stopped use in Denmark. Emergency use in U.K., E.U., other countries.
 CanSino	Ad5	3	Approved in China. Emergency use in other countries.
 Johnson & Johnson	Ad26	3	Emergency use in U.S., E.U., other countries. Paused in some states and countries.
 Vector Institute	Protein	3	Early use in Russia. Approved in Turkmenistan.
 Novavax	Protein	3	
 Sinopharm	Inactivated	3	Approved in China, U.A.E., Bahrain. Emergency use in other countries.
 Sinovac	Inactivated	3	Approved in China. Emergency use in other countries.
 Sinopharm-Wuhan	Inactivated	3	Approved in China. Limited use in U.A.E.
 Bharat Biotech	Inactivated	3	Emergency use in India, other countries.

Coronavirus Vaccine Tracker

By Carl Zimmer, Jonathan Corum and Sui-Lee Wee Updated April 23, 2021



Source: <https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>



Vaccine Tracker

Global ↗

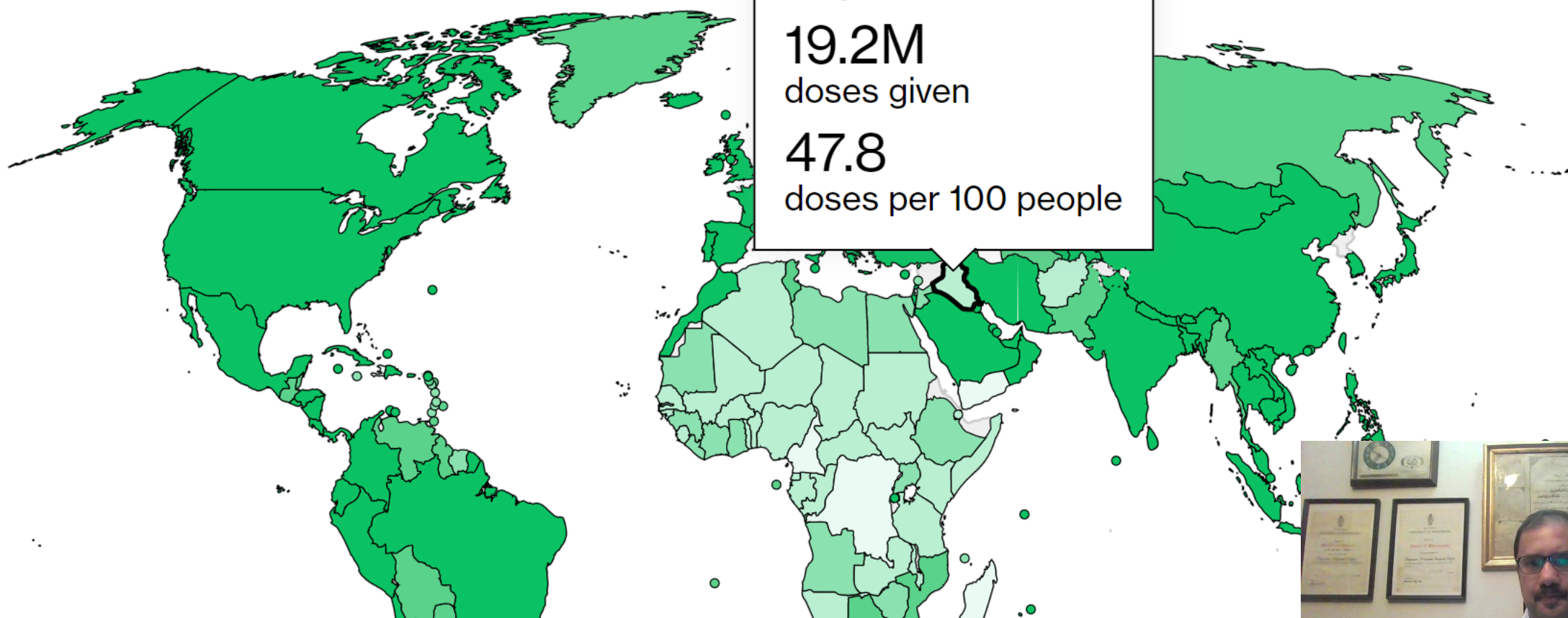
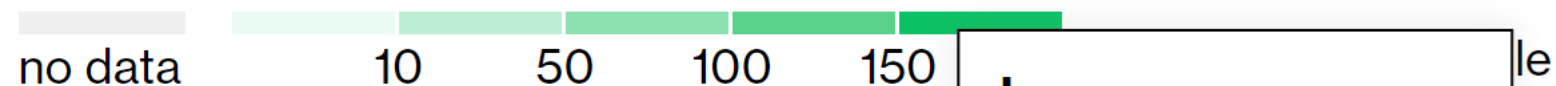
US ↗

US Vaccine Demographics ↗

FAQ ↗

Covid-19 Tracker ↗

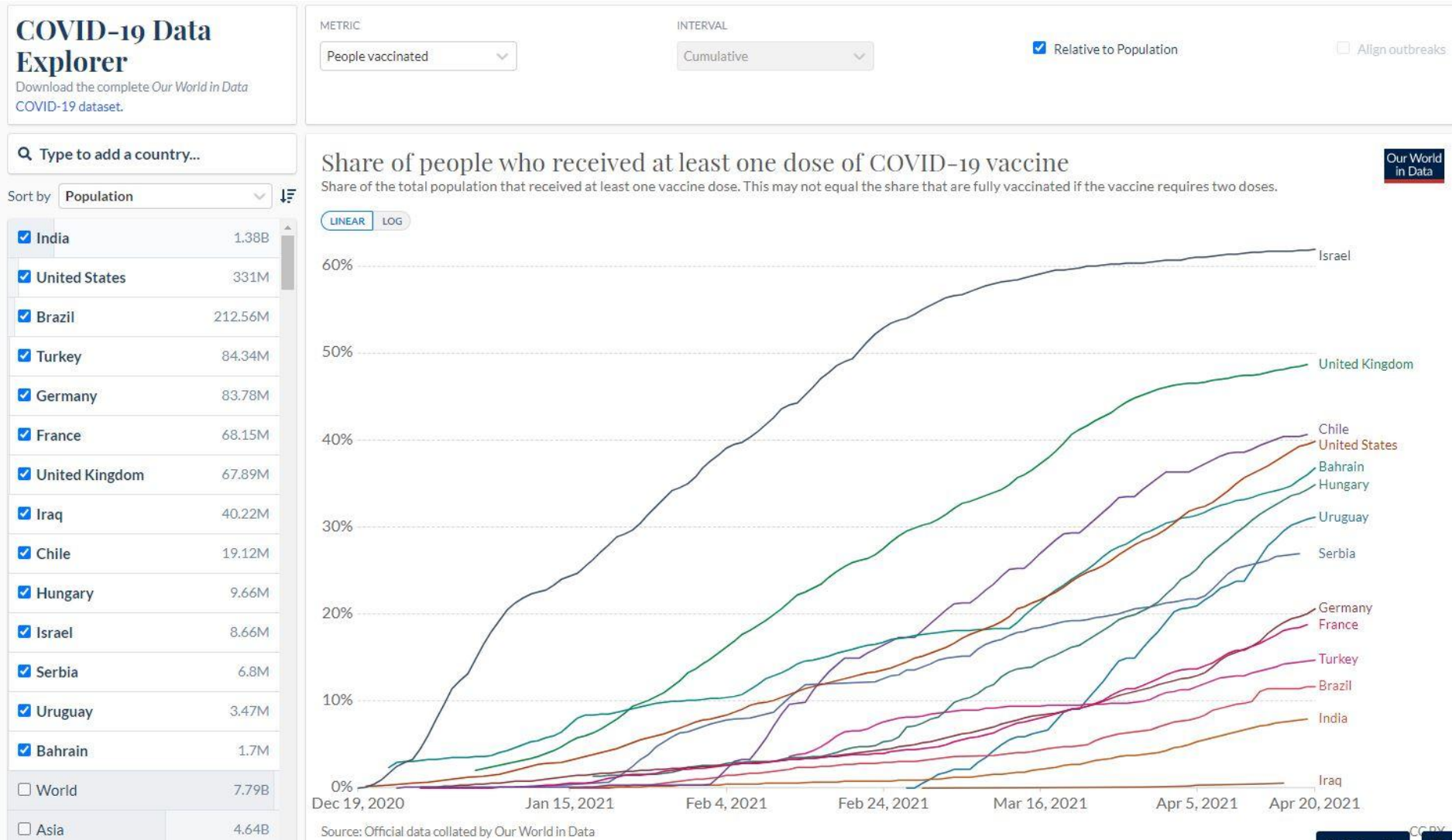
More than 12.7 billion doses have been administered—162 shots for every 100 people worldwide



Iraq
19.2M
doses given
47.8
doses per 100 people



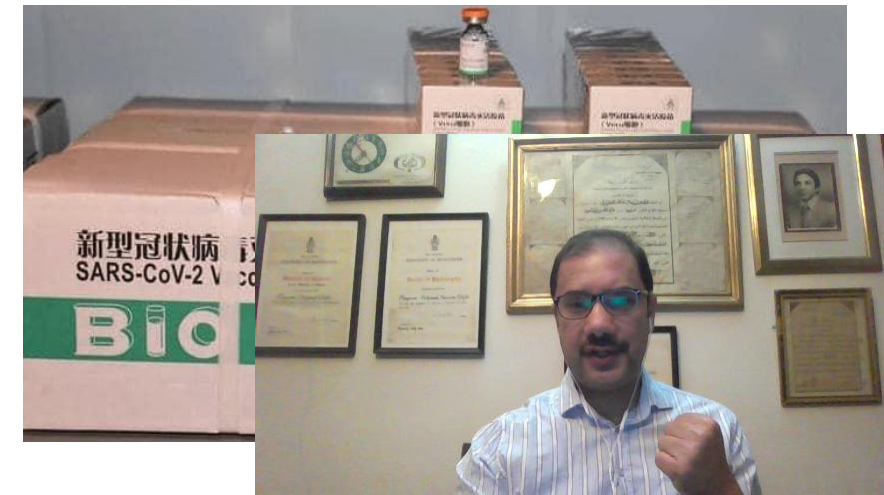
High-income countries vaccinated first



COVID-19 Vaccines have arrived since Feb 28, 2021

As of January 20, the National Committee for Drug Selection at Iraqi Ministry of Health (MOH) approved three vaccines for emergency use: **Pfizer/BioNTech, AstraZeneca and Sinopharm.**

Thereafter, the MOH ordered millions of doses from the Pfizer/BionTech, AstraZeneca and Sinopharm vaccines. The Chinese vaccine “Sinopharm”(50, 000 doses) was first vaccine received by Iraqi MOH on Feb 28, 2021.



COVID-19 Vaccine arrival

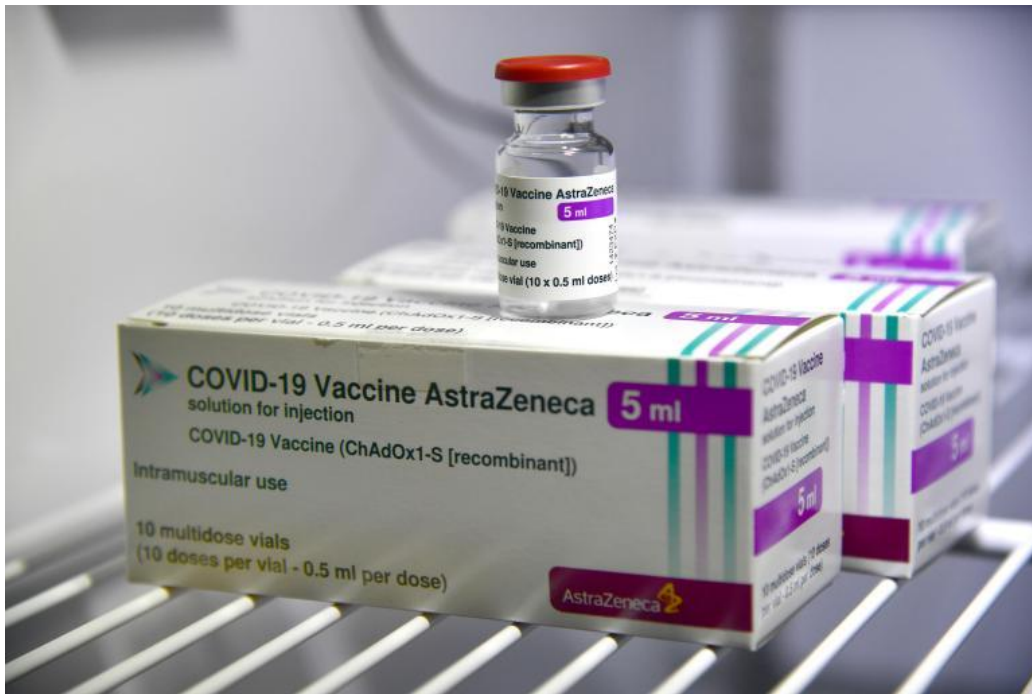
Consequently, 336,000 doses of AstraZeneca vaccine were received on March 25, 2021 through the COVID-19 Vaccines Global Access (COVAX) facility.

Lately, on April 11, 2021, the MOH received 50,000 doses of Pfizer/BionTech vaccine and 200,000 doses of Sinopharm vaccine



Iraq received AstraZeneca and Pfizer vaccines

News about AZ vaccine clotting adverse effects may discourage some people from vaccination. Later in 2021, AstraZeneca vaccine was permitted for patients above 40 years old.



- <https://www.aljazeera.com/news/2021/2/10/south-africa-to-sell-or-swap-astrazeneca-shots-minister>

Source: <https://www.basnews.com/en/babat/665519>

ORIGINAL PAPER

Iraqi People hesitancy toward COVID-19 vaccination

Exploring the acceptance of COVID-19 vaccine among healthcare workers and general population using health belief model

Basma Zuheir Al-Metwali PhD¹ | Ali Azeez Al-Jumaili MPH, PhD^{1,2} |
Zahraa Adel Al-Alag Pharm D³ | Bernard Sorofman PhD²

¹University of Baghdad College of Pharmacy, Baghdad, Iraq

²The University of Iowa College of Pharmacy, Iowa City, Iowa

³Total Life Care Rx Pharmacy (TLCRX) Clinical Team, Orlando, Florida

Correspondence

Ali Azeez Al-Jumaili, University of Baghdad College of Pharmacy, Baghdad, Iraq.

Abstract

Rationale, aims and objectives: Little is known about hesitancy to receive the COVID-19 vaccines. The objectives of this study were (1) to assess the perceptions of healthcare workers (HCWs) and the general population regarding the COVID-19 vaccines, (2) to evaluate factors influencing the acceptance of vaccination using the health belief model (HBM), and (3) to qualitatively explore the suggested intervention strategies to promote the vaccination.

- Our findings expressed some hesitancy to receive the COVID-19 vaccine with the acceptance rate of 61.7%.
- The HCWs perceived significantly higher susceptibility and severity of the COVID-19 compared to the general population.
- The HCWs were significantly more likely than the general population to receive COVID-19 vaccine.
- Concerns with proper storage was the biggest barrier to vaccine receipt



Vaccination brings some hope





Challenges facing universities while returning to in-class teaching



In-class Final exam -Spring 2021



Returning to in-class



Strategies to promote vaccination in 2021

- Vaccination card (2 doses) is required for all governmental employees since October 1, 2021.
- Vaccination dose is required for all university faculty and students since October 12, 2021.
- Children between 12 and 17 years are eligible to take Pfizer vaccine started Nov 1, 2021.
- Vaccination card is required for all passengers using the airports starting Nov. 22, 2021.



The Ministry of Health about the COVID-19 cases and Vaccination Statistics

- As of April 27, 2022, about 10,516,000 Iraqis get vaccinated.
- Total number of PCR tests conducted= 18,466,576.
- Total number of reported COVID-19 cases = 2, 324,699.
- Total number of deaths = 25,208.

Republic of Iraq
Ministry of Health
Public Health Directorate
فه رمانكه ي ته ندروستي كشتي



جمهورية العراق
وزارة الصحة
دائرة الصحة العامة

الموقف الوبائي والتلقيحي اليومي لجائحة كورونا
في العراق 27 نيسان 2022

4408	عدد الفحوصات المختبرية ليوم 27 نيسان
18466576	عدد الفحوصات المختبرية الكلية

عدد الملقحين			الوفيات		الإصابات الجديدة		الشفاء	
اليومي	التراكمي	دائرة الصحة	العدد	دائرة الصحة	العدد	دائرة الصحة	العدد	دائرة الصحة
1986	1296654	بغداد/ الكرخ		بغداد الرصافة	37	بغداد الكرخ	82	بغداد الكرخ
1136	1117282	بغداد/ الرصافة		بغداد الكرخ	26	السليمانية	27	البصرة
1337	1041224	البصرة		مدينة الطب	19	بغداد الرصافة	25	السليمانية
865	791249	نينوى		النجف الأشرف	14	البصرة	20	ديالى
2350	638137	بابل		السليمانية	11	كربلاء المقدسة	16	بابل
711	602691	ذي قار		أربيل	11	ميسان	11	بغداد الرصافة
789	511125	أربيل		دهوك	10	بابل	10	دهوك
874	511006	صلاح الدين		كربلاء المقدسة	8	مدينة الطب	10	واسط
795	500882	دهوك		كركوك	8	واسط	5	مدينة الطب
706	480028	ديالى		ديالى	7	ديالى	5	النجف الأشرف
719	465274	النجف الأشرف		واسط	5	أربيل	5	أربيل
649	427676	السليمانية		البصرة	4	دهوك	5	المثنى
897	427386	كركوك		ميسان	3	المثنى	4	ذي قار
373	375945	الأنبار		بابل	2	ذي قار	4	صلاح الدين
638	325572	واسط		الديوانية	2	صلاح الدين	3	ميسان
450	322144	كربلاء المقدسة		ذي قار	1	كركوك	3	نينوى
541	255287	الديوانية		الأنبار	0	النجف الأشرف	2	الديوانية
396	214858	ميسان		المثنى	0	الديوانية	1	كربلاء المقدسة
694	178246	المثنى		نينوى	0	الأنبار	1	الأنبار
32	33406	مدينة الطب		صلاح الدين	0	نينوى		كركوك
16938	10516072	المجموع	0	المجموع	168	المجموع	239	المجموع

2297063 (98.8%)	عدد حالات الشفاء الكلي
2324699	عدد حالات الإصابات الكلي
2428	عدد الحالات تحت العلاج
20	عدد الحالات الراقدة في العناية المركزة
25208	عدد حالات الوفيات الكلي

Iceland >	851,665	309,770	90.77%
India >	2,196,335,748	1,026,856,716	74.40%
Indonesia >	439,473,016	204,306,153	74.69%
Iran >	154,595,253	65,075,871	77.47%
Iraq >	19,394,050	11,234,347	27.93%
Ireland >	11,663,862	4,097,448	82.98%
Israel >	18,253,744	7,055,466	81.51%
Italy >	141,873,936	50,849,009	84.10%
Jamaica >	1,493,518	834,720	28.18%
Japan >	331,167,335	104,276,894	82.44%
Jordan >	10,057,975	4,821,579	47.25%

Vaccination Rate
Nov 1, 2022



Children 12-17 years get vaccinated (Started Nov. 1, 2021)



4th dose of Pfizer vaccine was approved for adults in October 2022

- 4th dose of the Pfizer vaccine can be given 6 months after the 3rd dose.
- I took the 4th dose of the vaccine early in October 2022.
- The MOH also approved the Pfizer vaccine for children ≥ 5 years old, but still has not been implemented.





منظمة
الصحة العالمية



يونسف
للكل طفل



كن محمياً باللقاح!



December
2021
Graduation
without face
masks





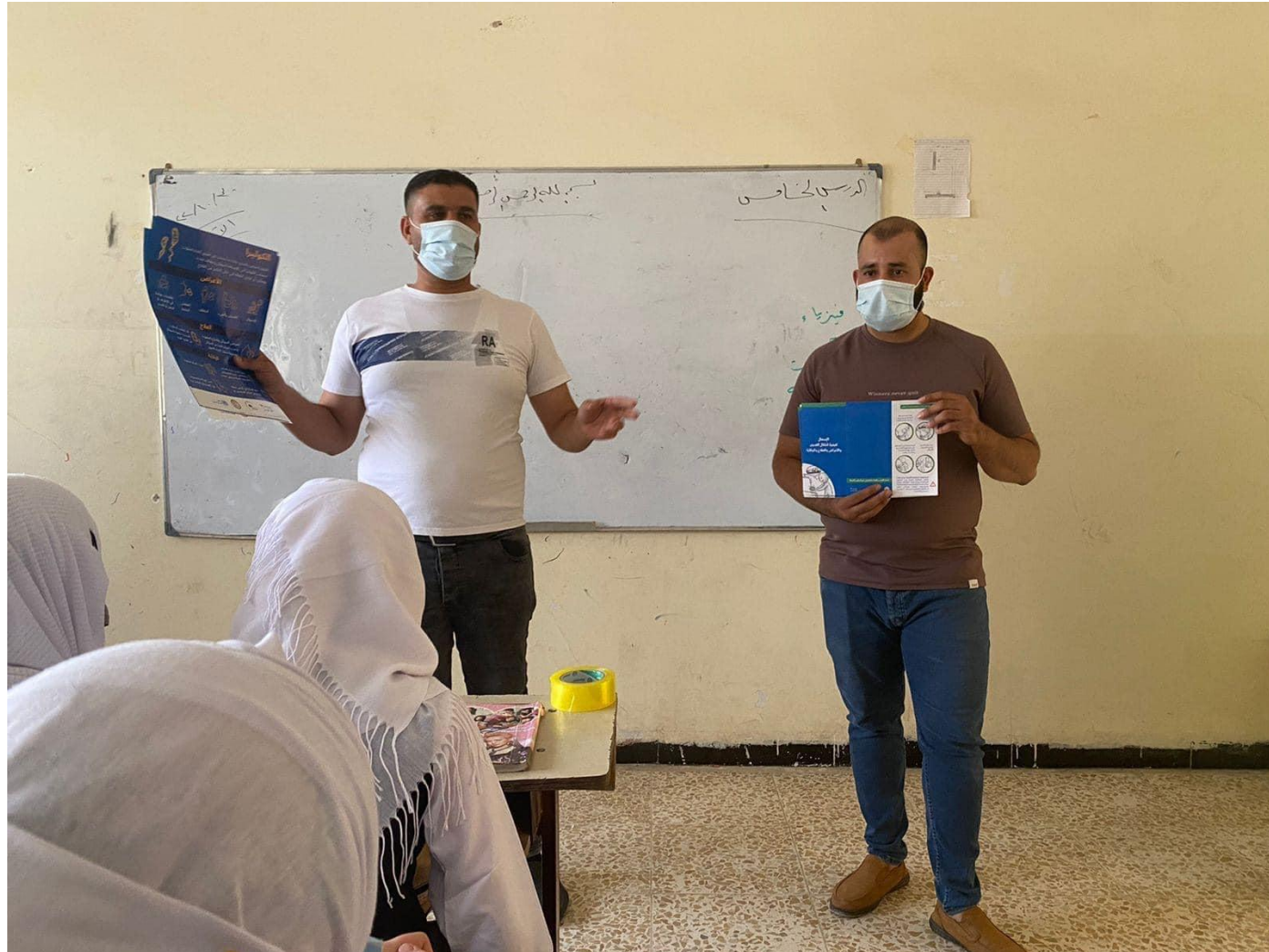




Public Hospitals



Awareness visits to schools



Take home message

- Iraq has been facing several challenges at prevention and treatment levels.
- Economy, resources and healthcare providers were exhausted after 2 years of large number of cases due the COVID-19 pandemic
- Vaccine is the only hope for prevention after relatively ineffective preventive measures and awareness campaigns.
- The Facemask is not required currently



References

Clinical management of COVID-19

LIVING GUIDELINE

15 SEPTEMBER 2022



World Health
Organization



**CENTERS FOR DISEASE
CONTROL AND PREVENTION**

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html>

The US CDC [Department of Health & Human Services](#)
Centers for Disease Control and Prevention⁹⁵

