COVID-19 FAMSA TECHNICAL WORKING GROUP

BULLETIN #9

WHO Dashboard

GLOBALLY (as of 24 August 2020)

23,279,683 cases

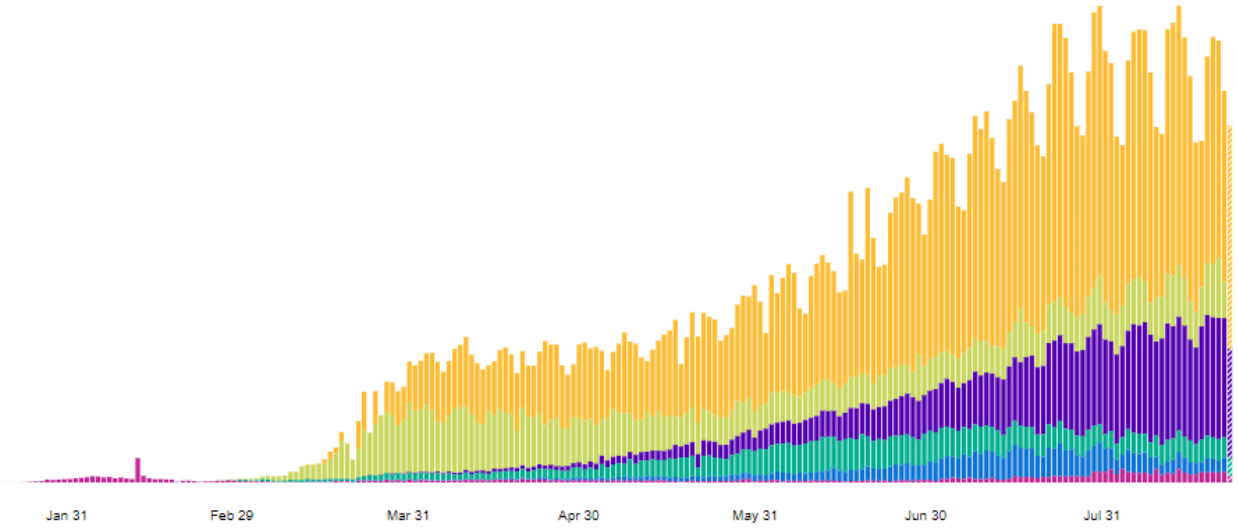
222,395 new cases

802,902 deaths

Americas	12,423,028	confirmed
Europe	3,970,890	confirmed
South-East Asia	3,602,066	confirmed
Eastern Mediterranean	1,827,441	confirmed
Africa	1,000,379	confirmed
Western Pacific	455,138	confirmed

Source: World Health Organization

Data may be incomplete for the current day or week.



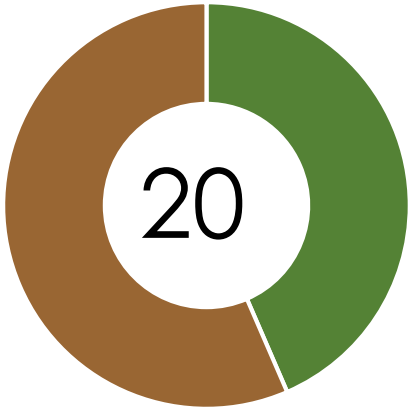
Africa!

1,0003,435 CUMULATIVE CASES

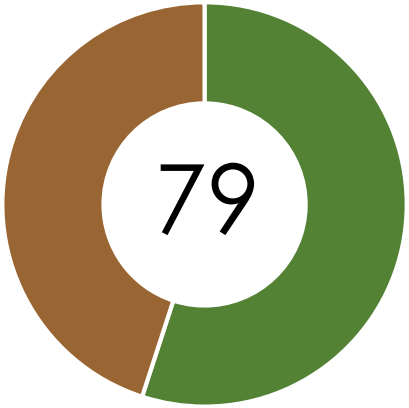
6,345 DEATHS

787,200 RECOVERIES

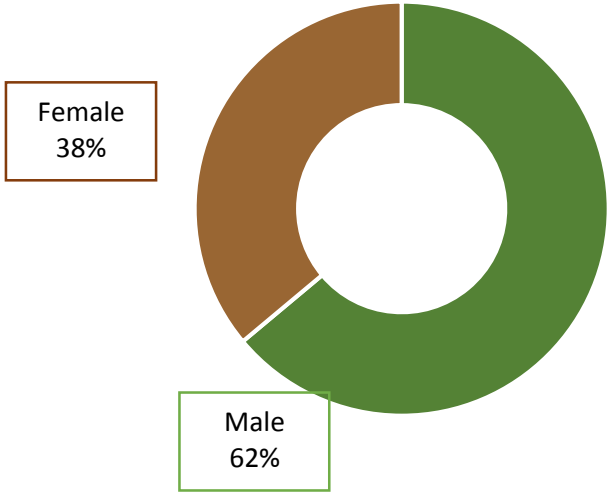
Active cases (%)



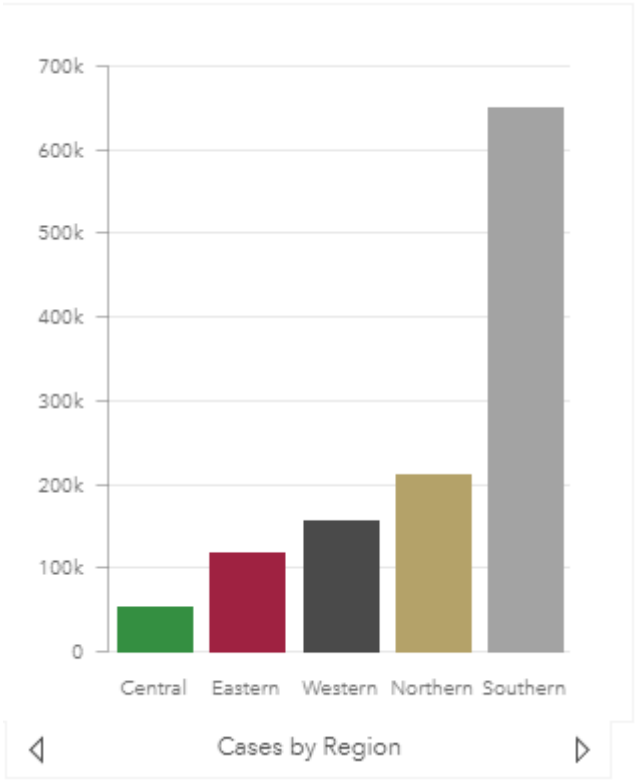
Recoveries (%)

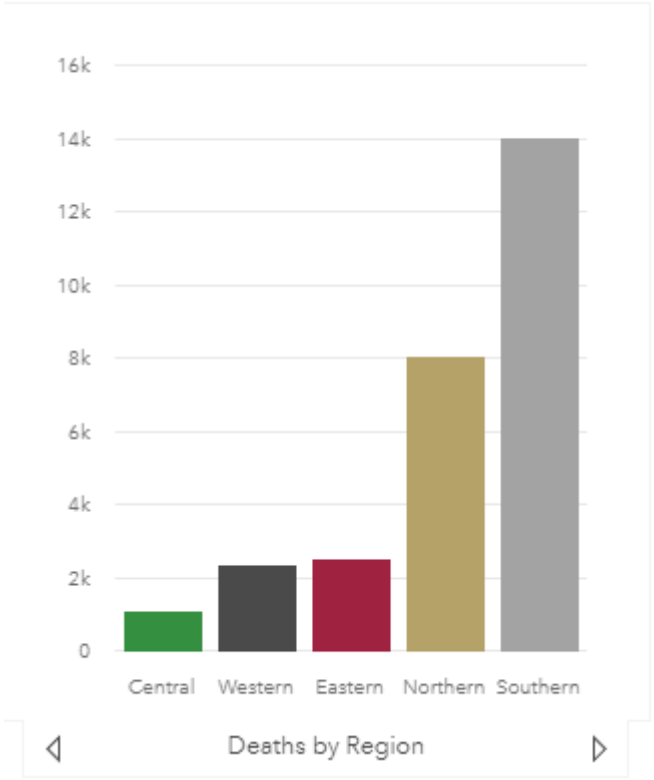


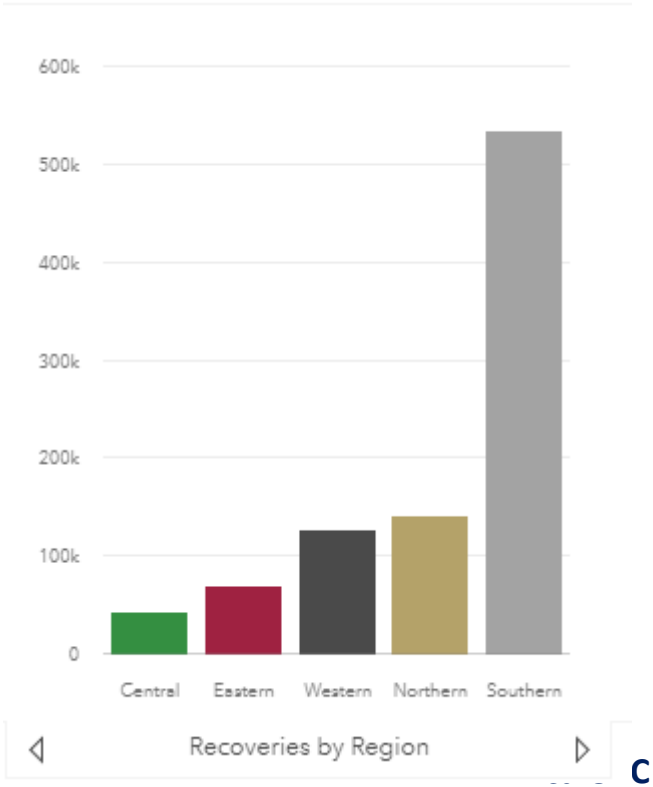
Sex



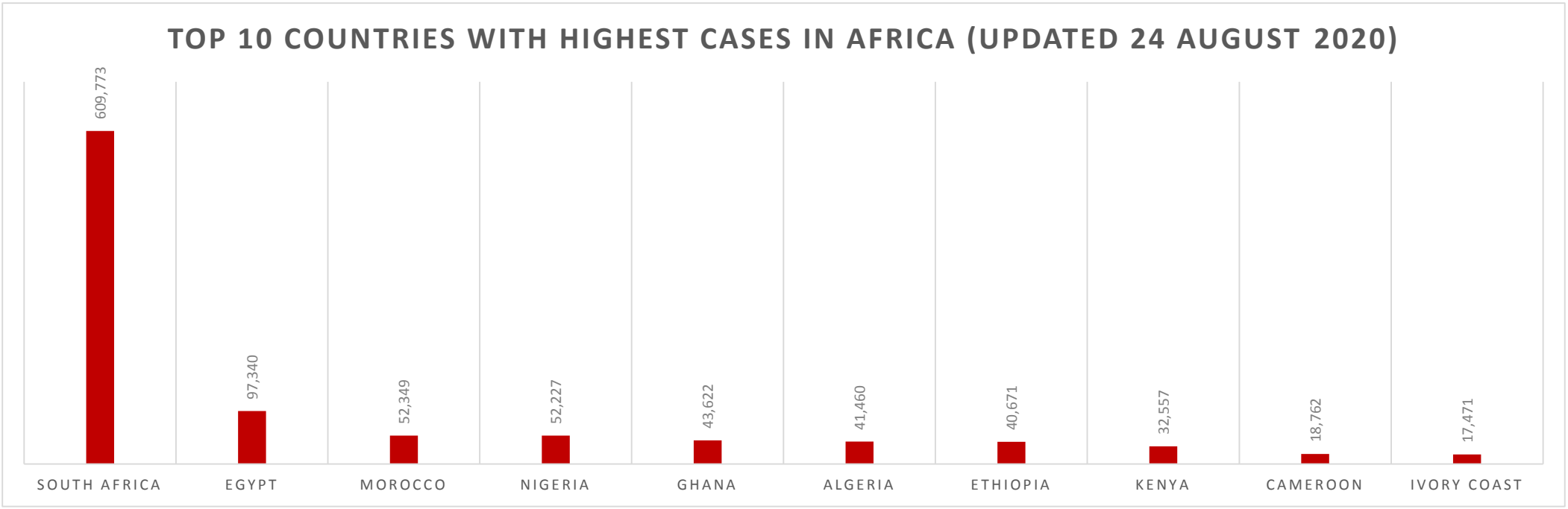
Source: WHO Africa Dashboard







C



Worldometers

COVID-19 OXFORD VACCINE CANDIDATE TRIGGERS IMMUNE RESPONSE

A preliminary report of a phase I/II, single blind randomised controlled trial of the chimpanzee adenovirus-vectored vaccine (ChAdOx1 nCoV-19) expressing the SARS-CoV-2 spike protein revealed an immune response. This trial involved 1 077 healthy people (with no history of confirmed COVID-19 infection or symptoms) between the ages of 18-55 over 5 sites in the United Kingdom and randomly assigned (1 :1). A meningococcal conjugate vaccine (MenACWY) was used as control. A single intramuscular injection was administered. Furthermore 10 participants assigned to a non-randomised, unblinded ChAdOx1 nCoV-19 prime-boost group received a two-dose schedule, with the booster vaccine administered 28 days after the first dose. Co-primary outcomes were to assess efficacy, as measured by cases of confirmed COVID-19, and safety, measured by serious adverse events. Safety was assessed over 28 days after vaccination.

There were more local and systemic reactions reported in the ChAdOx1 nCoV-19 group but many were reduced by use of prophylactic paracetamol, including pain, feeling feverish, chills, muscle ache, headache, and malaise (all $p<0{\cdot}05$). No serious adverse events in this group were reported.

In the ChAdOx1 nCoV-19 group, spike-specific T-cell responses peaked on day 14 and Anti-spike IgG responses rose by day 28, and were boosted following a second dose Neutralising antibody responses against SARS-CoV-2 were detected in 32-35 (91-100%, dependant on assay used) of 35 participants after a single dose. After a booster dose, all participants had neutralising activity. This reflects an acceptable safety profile, with homologous boosting increasing antibody responses. These results support large scale evaluation of this vaccine candidate in the current ongoing phase 3 programme.

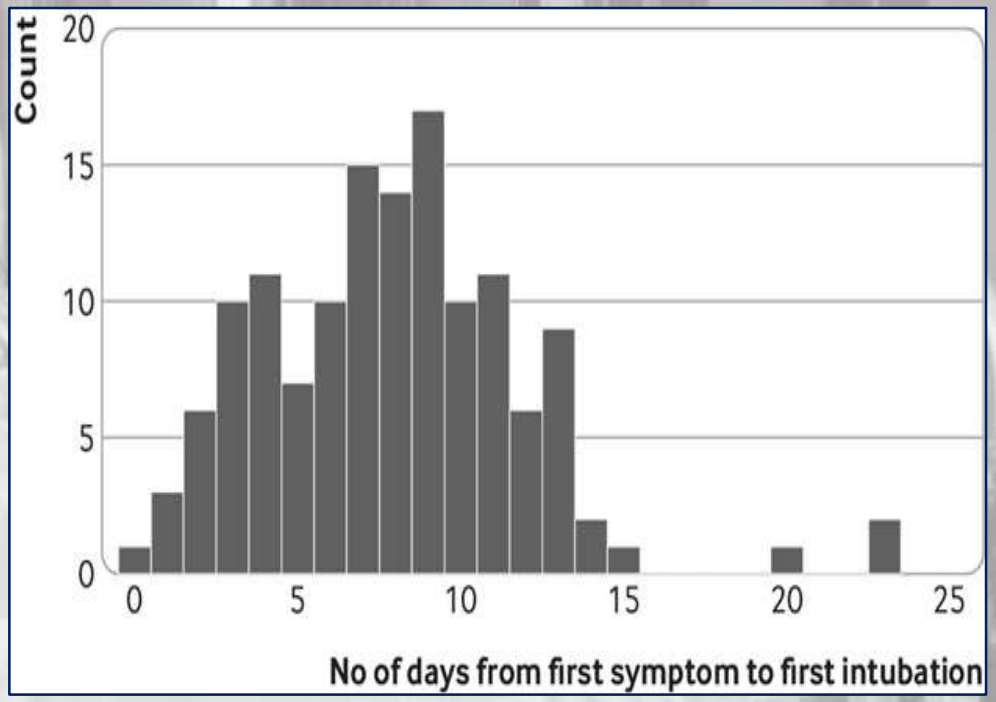
(Lancet)

#CFTWG

CHARACTERIZATION AND CLINICAL COURSE OF 1000 PATIENTS WITH COVID-19 IN NEW YORK: RETROSPECTIVE CASE SERIES.

This was a retrospective manual medical record review that characterized patients with Covid-19 at New York-Presbyterian/Columbia University Irving Medical Centre, New York City.

The study extracted and analysed data from electronic medical records of the first 1000 consecutive patients with a positive result on the reverse transcriptase assay for SARS-COV-2 who presented to the emergency department or were admitted to hospital between March 1, 2020 and April 5, 2020. A bimodal distribution for time to intubation from symptom onset was observed. Patients also had high rates of baseline comorbidities and complications from acute kidney injury which necessitated inpatient dialysis and prolonged intubations.



(British Medical Journal)

#CFTWG

COVID-19: HERD IMMUNITY IS “UNETHICAL AND UNACHIEVABLE,” SAY EXPERTS AFTER REPORT OF 5% SEROPREVALENCE IN SPAIN.

An epidemiological study of SARS-CoV-2 seroprevalence conducted in Spain have shown only a 5% seroprevalence nationwide. It makes global efforts to deliver herd immunity through natural infection both “unethical and unachievable,” according to experts.
The survey was carried out between 27 April and 11 May and involved more than 61 000 participants in nearly 36 000 households. Two methods were used to detect anti-covid-19 antibodies: a point of care test and a laboratory immunoassay. They yielded similar results with the point of care test detecting a 5.0% (95% confidence interval 4.7-5.4) nationwide seroprevalence and the immunoassay a 4.6% seroprevalence (95% CI 4.3-5.0).

Similarly, a study conducted in Sweden revealed a low seroprevalence of 7.3% in late April. It is also thought that immunity after SARS-CoV-2 infection is only temporary and incomplete lasting only a few months or years. It would be unethical and impossible to achieve herd immunity through natural infection. Even if it were possible, it would come at a great cost to lives, complications of the disease, and a huge strain on already overstretched health facilities and resources.

(British Medical Journal)

#CFTWG

TYPE I INTERFERON ACTIVITY IN SEVERE COVID-19 PATIENTS

An integrated immune analysis was conducted on 50 COVID-19 patients and 18 healthy controls. The expression of immune-related genes in peripheral white blood cells was quantified.

The IFN response was high in mild-to-moderate patients while it was reduced in more severe patients. Multiplex gene expression analysis showed an up-regulation of genes involved in type I IFN signaling (such as IFNAR1, JAK1, TYK2) contrasting with a striking down-regulation of interferon-stimulated genes (ISGs) (such as MX1, IFITM1, IFIT2) in critical SARS-CoV-2 patients. IFN activity in serum was significantly lower in severe or critical patients as compared to mild-to-moderate patients.

ISG score and plasma levels of IFN-α2 from blood collected prior to respiratory failure requiring mechanical ventilation revealed that the low type I IFN response preceded clinical deterioration to critical status. The response of whole blood cells to IFN-α stimulation was evaluated and the observation was a comparable increase in ISG score upon IFN-α stimulation between groups of any severity and controls, suggesting that the potential for response to type I IFN was not impacted in COVID-19 patients.

Ultrasensitive droplet based digital PCR (ddPCR) found an increased plasma viral load in severe and critical patients, a possible surrogate marker of uncontrolled lung infection, while viral load in nasal swabs using classical RT-PCR was comparable between groups. Overall, these data suggest that infected patients had no detectable circulating IFN-β and that an impaired IFN-α production characterized the most severe COVID-19 cases. Hadjadj et al identified an impaired type I IFN response in severe and critical COVID-19 patients, accompanied by high blood viral load and an excessive NF-κB-driven inflammatory response. The results suggest that SARS-CoV-2 has developed efficient mechanisms to shut down host IFN production.

(Science)

INDEPENDENT PANEL FOR PANDEMIC PREPAREDNESS AND RESPONSE (IPPR).

The initiation of an independent panel for pandemic preparedness and response (IPPR) was announced by the WHO-director general to evaluate the world's response to the COVID-19 pandemic.

The panel will be co-chaired by the former prime minister of the New Zealand, Helen Clark and the former president of Liberia, Ellen Johnson Sirleaf. They will be operating independently to choose other members of the panel and members of an independent secretariat to provide support. In May, at the 73rd World Health Assembly, the Member States adopted a landmark resolution that called on WHO to initiate an independent and comprehensive evaluation of the lessons learned from the international health response to COVID-19.

According to the WHO-Director General, "The magnitude of this pandemic, which has touched virtually everyone in the world, clearly deserves a commensurate evaluation." Dr Tedros proposed a special session of the Executive Board in September to discuss the Panel's progress.

In November the Panel will present an interim report at the resumption of the World Health Assembly and in May 2021, at the next World Health Assembly, the panel will present its substantive report. The Director-General noted that the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme will also continue its existing work.

(WHO)

COVID-19 VACCINE GLOBAL ACCESS (COVAX) FACILITY

COVAX is co-led by Gavi, the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO, working in partnership with developed and developing country vaccine manufacturers. COVAX aims to accelerate the development and manufacture of COVID-19 vaccines, and to guarantee fair and equitable access for every country in the world. It will achieve this by sharing the risks associated with vaccine development, investing in manufacturing upfront so vaccines can be deployed at scale as soon as they are proven successful, and pooling procurement and purchasing power to achieve sufficient volumes to end the acute phase of the pandemic by 2021.

The goal of COVAX is by the end of 2021 to deliver two billion doses of safe, effective vaccines that have passed regulatory approval and/or WHO prequalification.

These vaccines will be delivered equally to all participating countries, proportional to their populations, initially prioritising healthcare workers then expanding to cover 20% of the population of participating countries. Further doses will then be made available based on country need, vulnerability and COVID-19 threat. Seventy-five countries have submitted expressions of interest to protect their populations and those of other nations. Through joining the COVAX Facility, they will partner with up to 90 lower-income countries that could be supported through voluntary donations to Gavi's COVAX Advance Market Commitment (AMC). Together, this group of up to 165 countries represents more than 60% of the world's population. Among the group are representatives from every continent and more than half of the world's G20 economies.

A process of consultation with all 165 countries is on, with countries funding vaccines through their own domestic budgets having to provide an upfront payment and a commitment to purchase doses by the end of August to secure involvement in the COVAX Facility.

(WHO)

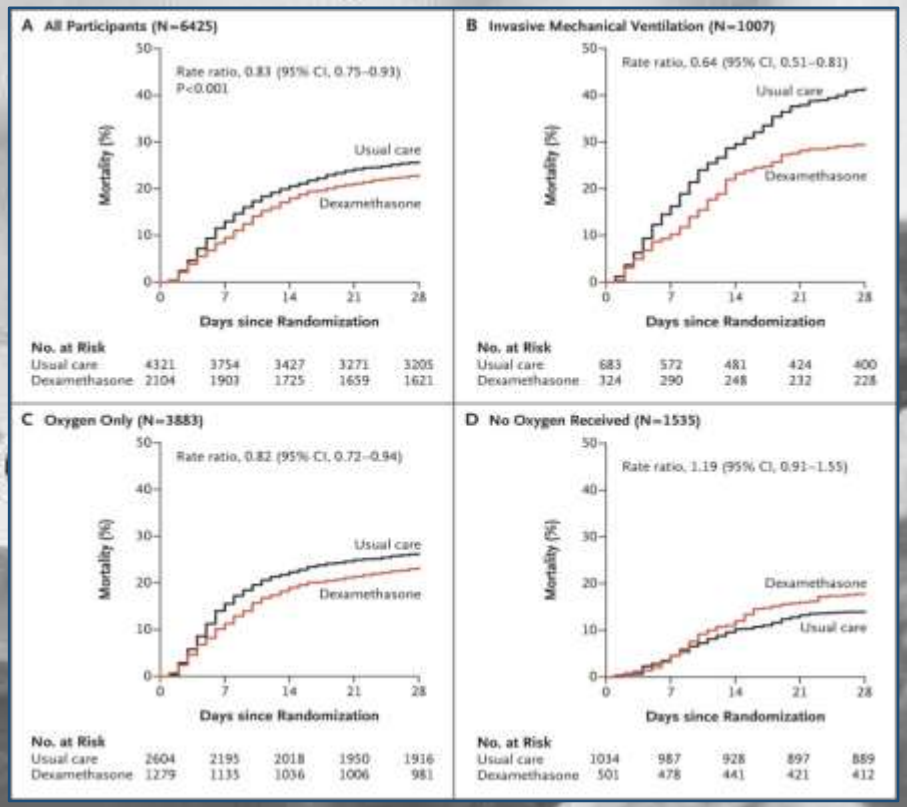
#CFTWG

DEXAMETHASONE IN HOSPITALIZED PATIENTS WITH COVID-19.

Coronavirus disease 2019 (Covid-19) is associated with diffuse lung damage. Glucocorticoids may modulate inflammation-mediated lung injury and thereby reduce progression to respiratory failure and death.

In this controlled, open-label trial comparing a range of possible treatments in patients who were hospitalized with Covid-19, patients were randomly assigned to receive oral or intravenous dexamethasone (at a dose of 6 mg once daily) for up to 10 days or to receive usual care alone. The primary outcome was 28-day mortality. A total of 2104 patients were assigned to receive dexamethasone and 4321 to receive usual care. Overall, 482 patients (22.9%) in the dexamethasone group and 1110 patients (25.7%) in the usual care group died within 28 days after randomization. In the dexamethasone group, the incidence of death was lower than that in the usual care group among patients receiving invasive mechanical ventilation, and among those receiving oxygen without invasive mechanical ventilation, but not among those who were receiving no respiratory support at randomization.

Mortality at 28 Days in All Patients and According to Respiratory Support at Randomization.



(New England Journal of Medicine)

#CFTWG

SARS-COV-2-SPECIFIC T CELL IMMUNITY IN CASES OF COVID-19 AND SARS, AND UNINFECTED CONTROLS.

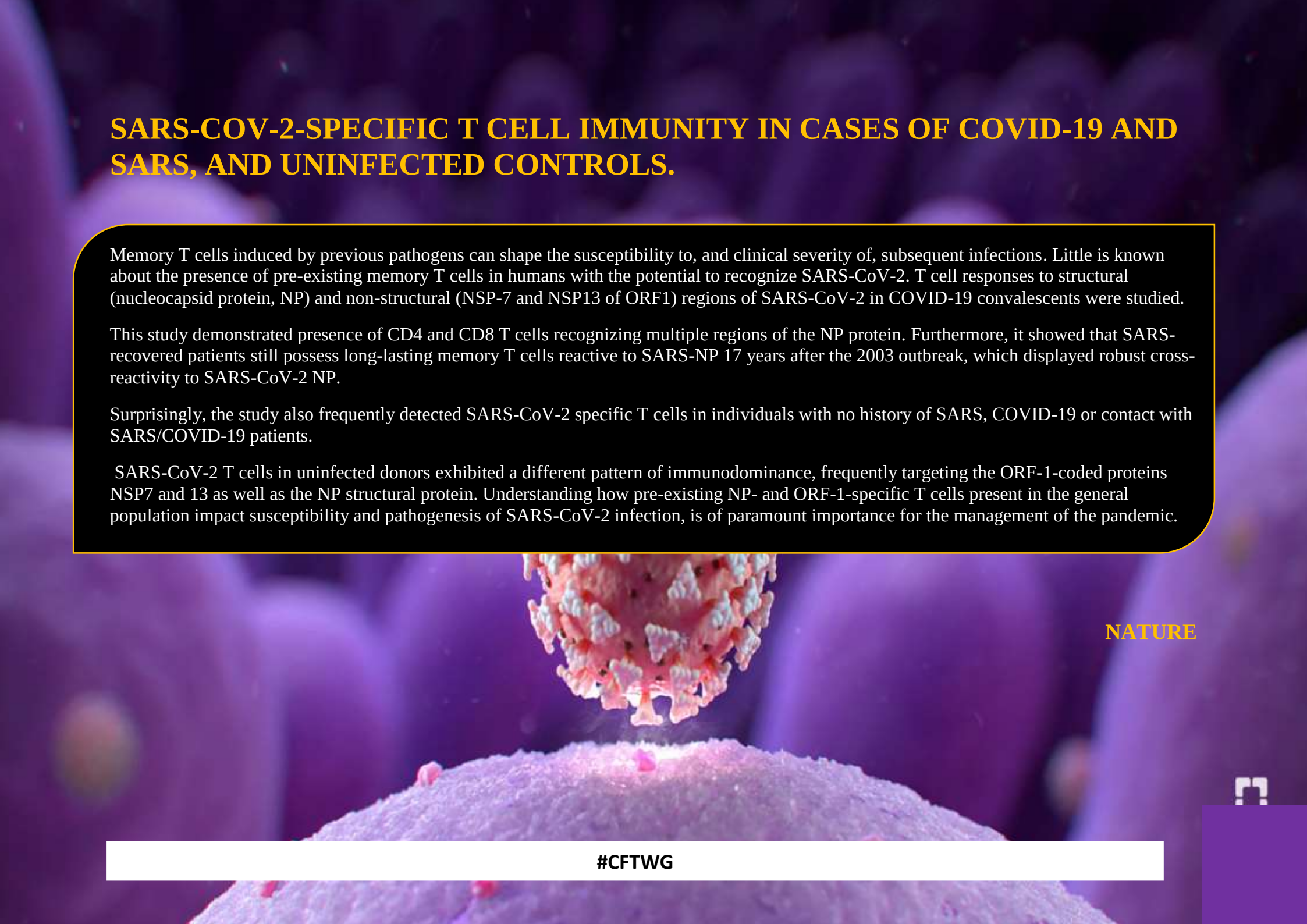
Memory T cells induced by previous pathogens can shape the susceptibility to, and clinical severity of, subsequent infections. Little is known about the presence of pre-existing memory T cells in humans with the potential to recognize SARS-CoV-2. T cell responses to structural (nucleocapsid protein, NP) and non-structural (NSP-7 and NSP13 of ORF1) regions of SARS-CoV-2 in COVID-19 convalescents were studied.

This study demonstrated presence of CD4 and CD8 T cells recognizing multiple regions of the NP protein. Furthermore, it showed that SARS-recovered patients still possess long-lasting memory T cells reactive to SARS-NP 17 years after the 2003 outbreak, which displayed robust cross-reactivity to SARS-CoV-2 NP.

Surprisingly, the study also frequently detected SARS-CoV-2 specific T cells in individuals with no history of SARS, COVID-19 or contact with SARS/COVID-19 patients.

SARS-CoV-2 T cells in uninfected donors exhibited a different pattern of immunodominance, frequently targeting the ORF-1-coded proteins NSP7 and 13 as well as the NP structural protein. Understanding how pre-existing NP- and ORF-1-specific T cells present in the general population impact susceptibility and pathogenesis of SARS-CoV-2 infection, is of paramount importance for the management of the pandemic.

NATURE



#CFTWG

This Report has been prepared by the

COVID-19 FAMSA TECHNICAL WORKING GROUP

(CFTWG)

@official_famsa

famsanet.org

FOR COMMENTS:
Covid19twg@famsanet.org