COVID-19 weekly update

15th August 2022

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**clinical management**

**title:** Dysregulation of the kallikrein-kinin system in bronchoalveolar lavage fluid of patients with severe COVID-19

eBiomedicine| 1st SEPTEMBER 2022

 Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) binds to the angiotensin-converting enzyme 2 (ACE2) receptor, a critical component of the kallikrein-kinin system. Its dysregulation may lead to increased vascular permeability and release of inflammatory chemokines. Interactions between the kallikrein-kinin and the coagulation system might further contribute to thromboembolic complications in COVID-19.

<https://www.thelancet.com/action/showPdf?pii=S2352-3964%2822%2900377-2>

**title:** Tolerability of COVID-19 Infection and Messenger RNA Vaccination Among Patients With a History of Kawasaki Disease

JAMA |12th august 2022

Question What are the clinical outcomes of patients with a history of Kawasaki disease after exposure to SARS-CoV-2 infection or vaccination?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795162>

**title:** Comparison of Pregnancy and Birth Outcomes Before vs During the COVID-19 Pandemic

JAMA |12th august 2022

Question Was the COVID-19 pandemic associated with changes in pregnancy-related outcomes?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795158>

**title:** Understanding Acute Obstetric Morbidity Associated With SARS-CoV-2 Variants—Unwrapping the Layers of an Onion

JAMA |12TH AUGUST 2022

The study by Mupanomunda et al1 presents a thoughtful analysis of the association between severe maternal morbidities (SMM) and SARS-CoV-2 infection in a retrospective cohort spanning 4 time periods that represent dominant circulating SARS-COV-2 variants in the US. Specifically, 3129 patients with SARS-CoV-2 infection diagnosed during the delivery hospitalization were compared with a propensity-matched cohort of 12 504 patients without infection at the delivery hospitalization.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795166>

**title:** COVID-19: Study provides further evidence that mRNA vaccines are safe in pregnancy

BMJ| 12TH august 2022

Pregnant women experienced lower rates of significant adverse events after vaccination with a COVID-19 mRNA vaccine than a group of similarly aged women who were not pregnant, a Canadian study has concluded.1

The researchers found that 7.3% of pregnant women experienced health events requiring time off work or school or needing medical attention within a week of the second dose of an mRNA vaccine, which compared with 11.3% of vaccinated non-pregnant women.

<https://www.bmj.com/content/378/bmj.o2013>

**title:** Safety of COVID-19 vaccines in pregnancy: a Canadian National Vaccine Safety (CANVAS) network cohort study

The lancet infectious diseases | 11TH august 2022

Background
Pregnant individuals have been receiving COVID-19 vaccines following pre-authorisation clinical trials in non-pregnant people. This study aimed to determine the frequency and nature of significant health events among pregnant females after COVID-19 vaccination, compared with unvaccinated pregnant controls and vaccinated non-pregnant individuals.

<https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900426-1>

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The lancet infectious diseases | 11TH august 2022

Background
Pregnant individuals have been receiving COVID-19 vaccines following pre-authorisation clinical trials in non-pregnant people. This study aimed to determine the frequency and nature of significant health events among pregnant females after COVID-19 vaccination, compared with unvaccinated pregnant controls and vaccinated non-pregnant individuals.

<https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900426-1>

**title:** Effectiveness of BNT162b2 Vaccine against Omicron in Children 5 to 11 Years of Age

NEJM | 11TH august 2022

Since it was first identified in early November 2021, the B.1.1.529 (omicron) variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread quickly and replaced the B.1.617.2 (delta) variant as the dominant variant in many countries. Data on the real-world effectiveness of vaccines against the omicron variant in children are lacking.

<https://www.nejm.org/doi/full/10.1056/NEJMoa2203209>

**title:** Durability of Heterologous and Homologous COVID-19 Vaccine Boosts

JAMA |10th august 2022

Question What is the durability of humoral and cellular immune responses in individuals who originally received the BNT162b2 vaccine and were boosted with Ad26.COV2.S or BNT162b2?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2794985>

**long term effects**

**title:** Menstrual irregularities and vaginal bleeding after COVID-19 vaccination reported to v-safe active surveillance, USA in December, 2020–January, 2022: an observational cohort study

THE LANCET DIGITAL HEALTH| 09TH August 2022

Anecdotal reports of menstrual irregularities after receiving COVID-19 vaccines have been observed in post-authorisation and post-licensure monitoring. We aimed to identify and classify reports of menstrual irregularities and vaginal bleeding after COVID-19 vaccination submitted to a voluntary active surveillance system.

<https://www.thelancet.com/action/showPdf?pii=S2589-7500%2822%2900125-X>

**title:** Long COVID: which symptoms can be attributed to SARS-CoV-2 infection?

THE LANCET |06th august 2022

Mortality rates following sars-cov-2 infection have decreased as a consequence of public health policies, vaccination, and acute antiviral and anti-inflammatory therapies.1 however, in the wake of the pandemic, post-acute sequelae of COVID-19, or long COVID, has emerged: a chronic illness in people who have ongoing multidimensional symptomatology and disability weeks to years after the initial infection.2 early reports of long covid prevalence, summarised in a systematic review examining the frequency and variety of persistent symptoms after COVID-19, found that the median proportion of people who had at least one persistent symptom 60 days or more after diagnosis or at least 30 days after recovery from COVID-19 infection was 73%.3 however, the estimated prevalence depends on the duration, population, and symptoms used to define long covid. More recently, community-based studies have suggested a lower prevalence of persistent symptoms;4 whereas among people who were hospitalised following covid-19 infection, a high proportion do not fully recover (50–70%).

[https://www.thelancet.com/action/showpdf?pii=s0140-6736%2822%2901385-x](https://www.thelancet.com/action/showPdf?pii=S0140-6736%2822%2901385-X)

**title:** Covid-19: One in eight adults develops long covid symptoms, study suggests

BMJ |04th august 2022

One in eight covid-19 patients (12.7%) is likely to experience long term symptoms, a study from the netherlands has reported.

<https://www.bmj.com/content/378/bmj.o1946>

**rates & variants**

**title:** Seroprevalence and infection fatality rate of the SARS-CoV-2 Omicron

THE LANCET REGIONAL HEALTH |01ST OCTOBER 2022

Introduction of the Omicron variant caused a steep rise in SARS-CoV-2 infections despite high vaccination coverage in the Danish population. We used blood donor serosurveillance to estimate the percentage of recently infected residents in the similarly aged background population with no known comorbidity.

<https://www.thelancet.com/action/showPdf?pii=S2666-7762%2822%2900175-2>

**title:** Comparison of Severe Maternal Morbidities Associated With Delivery During Periods of Circulation of Specific SARS-CoV-2 Variants

JAMA |12TH AUGUST 2022

Question Does the association between SARS-CoV-2 infection and severe maternal morbidity (SMM), including nonrespiratory complications, vary by viral strain?

 [https://jamanetwork.com/journals/jamanetworkopen/fullarticle/27951609](https://www.bmj.com/content/378/bmj.o1969)

**title:** COVID-19 Vaccination Rates Among US Adults With Vision or Hearing Disabilities

JAMA |11TH AUGUST 2022

Question Is a third mRNA-1273 vaccination associated with SARS-CoV-2 antibody concentration levels in immunocompromised patients with hematologic cancers similar to levels in healthy adults after the standard 2-dose mRNA-1273 schedule?

<https://jamanetwork.com/journals/jamaoncology/fullarticle/2795176>

**title:** Antibody Response in Immunocompromised Patients With Hematologic Cancers Who Received a 3-Dose mRNA-1273 Vaccination Schedule for COVID-19

JAMA |11TH AUGUST 2022

Question What is the prevalence of COVID-19 vaccination among US adults with vision or hearing disabilities?

<https://jamanetwork.com/journals/jamaophthalmology/fullarticle/2795317>

**title:** Covid-19: What we know about the BA.4 and BA.5 omicron variants

BMJ |09TH AUGUST 2022

Two omicron subvariants have come to dominate infections worldwide. Elisabeth Mahase summarises what we know about them so far

<https://www.bmj.com/content/378/bmj.o1969>

**TITLE:** ASSESSMENT OF HETEROLOGOUS AND HOMOLOGOUS BOOSTING WITH INACTIVATED COVID-19 VACCINE AT 3 MONTHS COMPARED WITH HOMOLOGOUS BOOSTING OF BNT162B2 AT 6 MONTHS

JAMA |10TH AUGUST 2022

Question What are the risks of SARS-CoV-2 infection associated with heterologous and homologous boosting of CoronaVac at 3 months compared with homologous boosting of BNT162b2 at 6 months?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2794986>

**infection control**

**title:** MYCOPLASMA PNEUMONIAE BEYOND THE COVID-19 PANDEMIC: WHERE IS IT?

THE LANCET |11TH AUGUST 2022

Mycoplasma pneumoniae is a major bacterial cause of respiratory tract infection.1 in early 2021, we established a collaborative global network to assess the effect of non-pharmaceutical interventions against covid-19 on the transmission of m pneumoniae. Data collected through this network showed a significantly reduced incidence of m pneumoniae in the first year after the implementation of non-pharmaceutical interventions (1·69%; april 1, 2020–march 31, 2021) compared with previous years (8·61%; 2017–20),2 as observed for other respiratory infections.3 the lifting of non-pharmaceutical interventions has led to the resurgence of many respiratory pathogens.4, 5 we used this network to track m pneumoniae in the second year after the implementation of non-pharmaceutical interventions (april 1, 2021–march 31, 2022), during which these interventions were relaxed or discontinued.

<https://www.thelancet.com/action/showPdf?pii=S2666-5247%2822%2900190-2>

**title:** COVID-19 vaccination in pregnancy

BMJ |10TH AUGUST 2022

Pregnancy is an independent risk factor for severe COVID-19. Vaccination is the best way to reduce the risk for SARS-CoV-2 infection and limit its morbidity and mortality. The current recommendations from the World Health Organization, Centers for Disease Control and Prevention, and professional organizations are for pregnant, postpartum, and lactating women to receive COVID-19 vaccination. Pregnancy specific considerations involve potential effects of vaccination on fetal development, placental transfer of antibodies, and safety of maternal vaccination. Although pregnancy was an exclusion criterion in initial clinical trials of COVID-19 vaccines, observational data have been rapidly accumulating and thus far confirm that the benefits of vaccination outweigh the potential risks. This review examines the evidence supporting the effectiveness, immunogenicity, placental transfer, side effects, and perinatal outcomes of maternal COVID-19 vaccination. Additionally, it describes factors associated with vaccine hesitancy in pregnancy. Overall, studies monitoring people who have received COVID-19 vaccines during pregnancy have not identified any pregnancy specific safety concerns. Additional information on non-mRNA vaccines, vaccination early in pregnancy, and longer term outcomes in infants are needed. To collect this information, vaccination during pregnancy must be prioritized in vaccine research.

<https://www.bmj.com/content/bmj/378/bmj-2021-069741.full.pdf>

**title:** Ma Safety and immunogenicity following a homologous booster dose of a SARS-CoV-2 recombinant spike protein vaccine (NVX-CoV2373): a secondary analysis of a randomised, placebo-controlled, phase 2 trial

THE LANCET INFECTIOUS DISEASES | 10th AUGUST 2022

Emerging SARS-CoV-2 variants and evidence of waning vaccine efficacy present substantial obstacles towards controlling the COVID-19 pandemic. Booster doses of SARS-CoV-2 vaccines might address these concerns by amplifying and broadening the immune responses seen with initial vaccination regimens. We aimed to assess the immunogenicity and safety of a homologous booster dose of a SARS-CoV-2 recombinant spike protein vaccine (NVX-CoV2373).

<https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900420-0>

**title:** PROTEIN-BASED VACCINE AS THE BOOSTER DOSE FOR ADULTS: EVIDENCE AND BEYOND

THE LANCET INFECTOUS DISEASES| 10TH august 2022

Since the pandemic began, there have been more than 500 million COVID-19 cases and 6 million deaths.1 Despite the large number of previous infections and vaccinations (more than 11 billion doses in total), omicron (B.1.1.529)and its sublineages have caused several waves of infection outbreak globally since the end of 2021.1 There are many potential reasons that might contribute to the ongoing pandemic, such as the waning of immune protection from vaccine or past infection with time, immune escape of the emerging variants, vaccine hesitancy, and the global inequity of vaccine distribution. Booster dose vaccines have been shown to reinforce the immune reaction and elicit increased protective antibodies.2, 3 The need for one or more booster doses will further increase the demand for vaccines. Given the disparities in economic status, health-care systems, and decision-making processes among different countries or regions, besides vaccines' inherent efficacy and safety profile, global vaccine distribution, accessibility, and uptake as well as vaccine-related policies might be influenced by factors such as costs, manufacturing capacity, and vaccine storage requirements.4, 5 Meanwhile, different vaccine platforms might cater to different settings and have a disparate extent of acceptance in the public. Therefore, it is crucial to explore a diversity of vaccine candidates from different platforms to tackle unpredictable challenges in the pandemic.

<https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900447-9>

**title:** COMPARATIVE NEUTRALISATION PROFILE OF SARS-COV-2 OMICRON SUBVARIANTS BA.2.75 AND BA.5

THE LANCET INFECTOUS DISEASES| 10TH august 2022

Following the emergence of the SARS-CoV-2 omicron variant in November, 2021, several omicron subvariants have been circulating globally, including BA.1, BA.2, BA.2.12.1, BA.2.75, BA.4, and BA.5. Unique spike mutations in omicron subvariants have resulted in the substantial ability of the virus to escape neutralising antibodies.

<https://www.thelancet.com/action/showPdf?pii=S2666-5247%2822%2900220-8>

**title:** INTENSITY AND LONGEVITY OF SARS-COV-2 VACCINATION RESPONSE IN PATIENTS WITH IMMUNE-MEDIATED INFLAMMATORY DISEASE: A PROSPECTIVE COHORT STUDY

THE LANCET RHEUMATOLOGY| 09TH august 2022

Concerns have been raised about the reduced immunogenicity of vaccines against SARS-CoV-2 in patients with immune-mediated inflammatory diseases and the higher risk of breakthrough infections. The objective of our study was to investigate the intensity and longevity of SARS-CoV-2 vaccination responses in patients with immune-mediated inflammatory diseases, and to assess the effects of diagnosis, treatment, and adapted vaccination schedules.

<https://www.thelancet.com/action/showPdf?pii=S2665-9913%2822%2900191-6>

**title:** SARS-COV-2 VACCINE-INDUCED ANTIBODY LEVELS: WHAT LIES BENEATH

THE LANCET RHEUMATOLOGY| 09TH august 2022

SARS-CoV-2 vaccine-induced antibodies are an immune correlate of protection against infection and are considered an appropriate metric to study susceptibility to infection.1 To date, studies of SARS-CoV-2 vaccine-induced antibody responses in patients with immune-mediated inflammatory diseases have only examined a few diagnoses and treatments, or only monitored participants for a short duration after vaccination. Moreover, few studies have addressed factors that modulate inter-individual antibody levels such as age,2 sex,2 vaccine modality,3 homologous or heterologous vaccination,4, 5 time interval between vaccinations,4 infection before or after vaccination,6 and the infecting variant.7

<https://www.thelancet.com/action/showPdf?pii=S2665-9913%2822%2900225-9>

**workforce wellbeing**

**title:** Mentoring early-career scientists in academic psychiatry during the COVID-19 pandemic

the lancet psychiatry | 01st September 2022

Along with seemingly every aspect of our lives, academic mentoring has been damaged by the COVID-19 pandemic. Mentors and mentees are exhausted from the long period of uncertainty about health and wellbeing, burned out from Zoom meetings, and struggling to collaborate effectively. Faltering productivity combined with the rise in mental health problems have made it a challenge simply to get along with others at work. Starting a career as a scientist was difficult in the most stable of times, but it has become unusually gruelling now.

<https://www.thelancet.com/action/showPdf?pii=S2215-0366%2822%2900272-3>

**Health MANAGEMENT**

**title:** Health Care Utilization in the 6 Months Following SARS-CoV-2 Infection

JAMA | 12TH august 2022

Question: is sars-cov-2 associated with health care utilization 6 months after the acute stage of infection?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795163>

**title:** Direct And Indirect Health Impacts Of COVID-19 In England: Emerging Omicron Impacts

Department of Health and social care | 12TH august 2022

Question Is SARS-CoV-2 associated with health care utilization 6 months after the acute stage of infection?

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795163>

**recovery**

**title:** The US Now Has a Research Plan for Long COVID—Is It Enough?

JAMA | 12TH AUGUST 2022

More than 2 years after patients with lingering health problems coined the term Long COVID, the US government has unveiled a research plan to understand, prevent, and treat the broad range of persistent and sometimes debilitating disease symptoms that are now known to affect many people after initial SARS-CoV-2 infection. The National Research Action Plan on Long COVID, released this August 3, has been met with a mixture of enthusiasm and disappointment

<https://jamanetwork.com/journals/jama/fullarticle/2795468>

**title:** Association Between the Relaxation of Public Health and Social Measures and Transmission of the SARS-CoV-2 Omicron Variant in South Korea

JAMA | 12TH AUGUST 2022

It is essential to effectively manage the timing of relaxing public health and social measures (PHSMs) during a pandemic while considering the available capacity of the health system.1 South Korea used a very successful SARS-CoV-2 infection mitigation strategy throughout the COVID-19 pandemic during 2020-20212 and began to relax PHSMs during the early phase of the Omicron variant (lineage BA.1) wave (mid-January 2022).3 On March 16, 2022, the daily number of COVID-19 cases was approximately 600 000, the largest increase in the number of new daily cases worldwide since the pandemic began.4 This study assessed the association of changing PHSMs with the transmissibility of the Omicron variant in South Korea.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795165>

**title:** MALAYSIAN PUBLIC PREFERENCES AND DECISION MAKING FOR COVID-19 VACCINATION: A DISCRETE CHOICE EXPERIMENT

THE LANCET REGIONAL HEALTH | 08TH AUGUST 2022

Low vaccine uptake has the potential to seriously undermine COVID-19 vaccination programs, as very high coverage levels are likely to be needed for virus suppression to return life to normal. We aimed to determine the influence of vaccine attributes (including access costs) on COVID-19 vaccination preferences among the Malaysian public to improve national uptake.

<https://www.thelancet.com/action/showPdf?pii=S2666-6065%2822%2900149-3>

**public health & health inequalities**

**title:** Considering Race and Ethnicity in Covid Risk Assessments — Legal Concerns and Possible Solutions

NEJM| 11th AUGUST 2022

Most new treatments and preventive interventions for Covid-19 have initially been in short supply, which has necessitated strategic allocation of these resources among the people who could benefit from them. The basic framework that the Centers for Disease Control and Prevention (CDC) and other government agencies have recommended for allocating scarce resources is based on a 2020 National Academies of Sciences, Engineering, and Medicine report on allocating Covid-19 vaccines, which advised consideration of risks to individual people and society and mitigation of health inequities.

<https://www.nejm.org/doi/full/10.1056/NEJMp2206524?query=featured_coronavirus>

**title:** Understanding Covid Vaccine Efficacy over Time — Bridging a Gap Between Public Health and Health Care

NEJM | 11TH AUGUST 2022

Imagine if we could track, for each patient seen at a health care facility, which covid-19 vaccine they had received when and what their clinical evaluation revealed. We could then have near-real-time insights into the efficacy of vaccines, how that efficacy changes over time, how new viral strains alter it, and which viral and host features (including underlying medical conditions) lead to breakthrough infections in immunized people. Such tracking would require robust linkage among clinical outcomes (including details of clinical interventions and laboratory studies), data on the specific vaccine administered and the date of administration, and information about the status of the pandemic in the relevant geographic area.

[Https://www.nejm.org/doi/full/10.1056/nejmp2201084?query=featured\_coronavirus](https://www.nejm.org/doi/full/10.1056/NEJMp2201084?query=featured_coronavirus)

**INTERNATIONAL PERSPECTIVES**

**title:** The COVID-19 pandemic and disruptions to essential health services in Kenya: a retrospective time-series analysis

THE LANCET GLOBAL HEALTH| 01ST SEPT 2022

Background
Public health emergencies can disrupt the provision of and access to essential health-care services, exacerbating health crises. We aimed to assess the effect of the COVID-19 pandemic on essential health-care services in Kenya.

<https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900285-6>

**title:** Post-COVID-19 condition 3 months after hospitalisation with SARS-CoV-2 in South Africa: a prospective cohort study

The lancet global health | September 2022

Background
Post COVID-19 condition (PCC), as defined by WHO, refers to a wide range of new, returning, or ongoing health problems in people who have had COVID-19, and it represents a rapidly emerging public health priority. We aimed to establish how this developing condition has affected patients in South Africa and which population groups are at risk.

<https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900286-8>

**title:** Pat Post-COVID-19 condition: current evidence and unanswered questions

the lancet global health | 01st September 2022

As of July 2022, over 555 million cases of COVID-19 have been recorded globally, with more than 8·5 million confirmed cases reported in the african region.1, 2 various studies have been published in the past 2 years identifying persisting symptoms in individuals who had COVID-19 in different countries across the globe.3 on the basis of this emerging condition—persisting symptoms linked to COVID-19 extending past the acute phase of infection—the uk's national institute for health and care excellence (nice) published a guideline for clinicians on the long-term effects of COVID-19.4 the nice guideline goes beyond clinical guidelines and defines the terms associated with these persistent signs and symptoms. The guideline distinguishes between the terminologies long COVID and post-COVID-19 condition, formerly used interchangeably. The term long COVID now refers to signs and symptoms that continue after acute COVID-19 disease (4–12 weeks),4 while the term post-COVID-19 condition (pcc) refers to signs and symptoms that develop during or after COVID-19 disease that continue for more than 12 weeks and cannot be explained by an alternative diagnosis.4 as the number of COVID-19 cases and survivors grows, the burden of pcc will also increase. Understanding the epidemiology and associated factors for pcc across diverse populations is crucial as the world transitions from the acute phase of the pandemic to a longer-term chronic phase.

[Https://www.thelancet.com/action/showpdf?pii=s2214-109x%2822%2900323-0](https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900323-0)

**title:** COVID-19 and microbiome diversity in sub-Saharan Africa

the lancet | 06st AUGUST 2022

We read with interest the COVID-19 forecasting team's description of the variation in COVID-19 infection–fatality ratio,1 confirming that differences in COVID-19 mortality between geographies are largely explained by the age structures of their populations. However, we fear that the lower than anticipated burden of severe COVID-19 in most of sub-saharan africa gets lost in estimations from models based on data from the few african countries that have reliable excess mortality data but are not representative of sub-saharan africa. Moreover, country-level estimates of covid-19 infection–fatality ratio hide the observation that covid-19 mortality in sub-saharan africa is highly concentrated in sections of the population with a more western lifestyle—usually wealthier individuals in urban centres.2 such disparity is obvious for most people living in sub-saharan africa, where covid-19 is sometimes popularly called “vip disease” or “rich person disease”.

We suspect that, besides a higher prevalence of obesity, hypertension, and diabetes among wealthier people, immunological factors are at play. Several studies associate chronic parasitic infection (more prevalent among people living in poverty with a less westernised lifestyle) with less severe clinical presentation of covid-19.3, 4 such findings are consistent with the importance of a diverse microbiome and chronic immune stimulation in maintaining a well trained immune system that is less likely to cause hyperinflammation, which is critical in severe COVID-19.

<https://www.thelancet.com/action/showpdf?pii=s0140-6736%2822%2901333-2>

We

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