World Health Organization

COVID-19

Virtual Press conference

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GR	Gracia
TR	Translators
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LA	Laurent
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AN Antonio

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CA Carlo

00:00:12

TJ Hello, everyone, from WHO headquarters in Geneva and welcome to our regular press conference on COVID-19. I welcome all of you watching us on different WHO social media platforms and all journalists who are watching us online. As we've had for the previous couple of weeks we have simultaneous translation in six UN languages plus Portuguese and Hindi so journalists who are online should just go to settings and select the language and feel welcome to ask questions in their language.

Today we had announced that we will have a number of guests on the anniversary of smallpox eradication. We had to change this for different reasons and I'm sure Dr Tedros will mention this event and this anniversary in his opening remarks so I will give the floor to Dr Tedros.

TAG Thank you. Thank you, Tarik. Good morning, good afternoon and good evening. Exactly 40 years ago today on 8th May 1980 the World Health Assembly officially declared that the world and all its peoples had won freedom from smallpox.

Smallpox is the first and to date the only human disease to be eradicated globally. Until it was wiped out smallpox had plagued humanity for at least 3,000 years, killing 300 million people in the 20th century alone.

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Its eradication stands as the greatest public health triumph in history. As the world confronts the COVID-19 pandemic humanity's victory

over smallpox is a reminder of what's possible when nations come together to fight a common health threat.

Many of the basic public health tools that were used successfully then are the same tools that have been used to respond to Ebola and COVID. This is surveillance, case finding, contact tracing and mass communication campaigns to inform affected populations.

The smallpox eradication campaign had one crucial tool that we don't have for COVID-19 yet; a vaccine; in fact the word's first vaccine. As you know, WHO is now working with many partners to accelerate the development of a vaccine for COVID-19, which will be an essential tool for controlling transmission of the virus.

But although a vaccine was crucial for ending smallpox it was not enough on its own. After all the vaccine was first developed by Edward Jenner in 1796. It took another 184 years for smallpox to be eradicated.

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The decisive factor in the victory over smallpox was global solidarity. At the height of the Cold War the Soviet Union and the United States of America joined forces to conquer a common enemy. They recognise that viruses do not respect nations or ideologies. That same solidarity built on national unity is needed now more than ever to defeat COVID-19.

The stories like the eradication of smallpox have incredible power to inspire but there are many more untold stories about health around the world. Next Tuesday, 12th May, WHO will announce the five winners of our inaugural Health For All film festival. The winning films were chosen by a distinguished panel of jurors from almost 1,300 entries from 110 countries.

The shortlisted films can be seen on WHO's YouTube channel and we invite everyone to join us on our social media channels next Tuesday for the announcement of the winners.

Yesterday I announced the resources WHO estimates it needs to deliver our updated Strategic Preparedness and Response Plan for COVID-19. The updated plan estimates that WHO requires US$1.7 billion across the three levels of the organisation between now and the

end of 2020. This estimate includes the funds that WHO has already received to date, leaving WHO's COVID-19 response with a funding gap of US$1.3 billion for 2020.

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To be clear, this estimate only covers WHO's needs, not the entire global need. WHO is deeply grateful to the countries and donors who responded to WHO's initial Strategic Preparedness and Response Plan and to the hundreds of thousands of individuals, corporations and foundations who have contributed to the COVID-19 Solidarity Response Fun and we thank you so much for your commitment and support.

Our updated Strategic Plan takes into account the lessons we have learned so far, strengthening WHO's role in global and regional co-ordination. It's built on five strategic objectives; first, to mobilise all sectors and communities; second, to control sporadic cases and clusters by rapidly finding and isolating all cases; third, to suppress c community transmission through infection prevention and control and physical distancing.

Fourth, to reduce mortality through appropriate care; and fifth, to develop safe and effective vaccines and therapeutics. To support these objectives WHO will continue to provide technical, operational and logistic support to countries and we will continue to update and adjust or guidance according to local needs.

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In certain fragile settings and countries with weaker health systems WHO will continue its operational work as a provider of essential health services. As we reflect today on the eradication of smallpox we're reminded of what is possible when nations come together to confront a common foe, to confront a common enemy.

The legacy of smallpox was not only the eradication of one disease. It was the demonstration that when the world unites anything is possible; if there is a will there is a way. It gave us the confidence to pursue the eradication of other diseases like polio and guinea-worm.

Like smallpox COVID-19 is a defining challenge for public health. Like smallpox it's a test of global solidarity. Like smallpox COVID-19 is giving us an opportunity not only to fight a single disease but to change the trajectory of global health and to build a healthier, safer, fairer world for everyone, to achieve universal health coverage, to achieve our dream from the establishment of WHO in the 1940s; health for all.

00:08:57

I thank you but before we move on to questions, Tarik, I would like to mention one small way we're commemorating the eradication of smallpox. When WHO's smallpox eradication campaign was launched in 1967 one of the ways countries raised awareness about smallpox was through postage stamps when social media - Twitter, Facebook - was not even on the horizon.

To commemorate the 40th anniversary of smallpox eradication the United Nations Postal Administration and WHO are releasing a commemorative postage stamp to recognise global solidarity in fighting smallpox. I especially want to thank my friend, Mr Atul Khare, United Nations Under-Secretary-General for Operational Support, for making this commemorative stamp possible. Thank you again, Tarik, and back to you.

TJ Thank you very much, Dr Tedros, for these opening remarks on this very remarkable anniversary day. I forgot to introduce the speakers today but I think you know them already. It's Dr Mike Ryan and Dr Maria Van Kerkhove and we have Mr Steve Solomon, who is WHO Principal Legal Officer. We would also like to thank our interpreters who are with us today, helping journalists to ask questions in their language.

00:10:28

We will start with questions now. Please be short, concise; one question per person. We will start with Deutsche Welle and we have George. George, can you hear us?

GE Yes, Tarik, I can hear you. May I ask; French scientists have found that cigarette smokers are less likely to be hospitalised with COVID-19. What do you make of these findings?

TJ Thank you very much, George, for this question.

MK Thank you very much for the question. We know the harms of tobacco are well-known and we know that millions of people die every year from the use of tobacco. COVID-19 is a respiratory illness and smoking causes damage to the lungs and there are a number of studies out there that have been published that have found that smoking leads to the development of more severe disease and puts people at higher risk for being put on an ventilator, being in ICU and dying.

There are some media reports of two studies in particular that have not been peer-reviewed that have looked at the prevalence of smoking in people who've been hospitalised and not. These studies did not evaluate - they were not designed to evaluate whether smoking was protective or not in any shape or form and they do not say that smoking is protective.

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We do know - I will repeat that we know the harms of smoking and we know that smokers, if they do get infected with COVID-19, have a higher risk of severe disease and death.

TJ Thank you very much, Dr Van Kerkhove. Our next question comes from Guatemala, Diaria de la Hora, and we have Gracia on the phone. Gracia, if you could unmute yourself. Hello?

GR [Spanish language].

TR Hello, good afternoon. My question is, what has been seen regarding the consequence of regenerating economies and the contagion in the countries who have opened up their economies again? Thank you.

TJ Do you want a repeat? Gracia, can you please just repeat the question because we are not sure we understood it.

TR Yes, of course. Thank you. My question was, what has been seen in countries that have reopened their economies and how has the epidemic responded to that?

00:13:31

TJ Thank you very much. I think we understood it now.

MK I can start and perhaps Mike would like to supplement. We're just beginning now to see a number of countries opening up their economies after having shown that they're able to suppress transmission.

The countries that are further alone in this are countries across Asia and we do see that countries like China, Japan, Korea, Singapore have lifted some of these public health and social measures in a slow and controlled way.

In some countries they have seen a resurgence in cases, meaning that they've seen some outbreaks and in Japan and in Singapore for example they've seen outbreaks that are taking place in certain situations. Singapore right now is dealing with outbreaks in expat dormitories where people live in close proximity to one another.

They just shared a presentation with us earlier today demonstrating how they are going into exquisite detail in terms of trying to find all of those cases and suppress transmission even in these close settings.

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What we are learning from those countries who are slowly opening up their economies again - and we've talked about this before - is that once these measures are lifted they need to be measured in a very slow and controlled way because it's possible for the virus to take off again. Countries are improving their systems to identify the virus, identify people who are infected with that virus through increasing their testing capacity, through increasing their ability to do contact tracing, where they're making sure that the beds in the hospitals are free so that they can care for patients depending on the severity of their symptoms.

So what we're seeing is even though they are lifting some of these measures they are quickly working to find cases if those cases do resurge so that they can try to suppress transmission again. I think we're going to be in a situation where we may need to lift some of these measures but be ready to quickly identify those cases. There may be a push-and-pull for some time as we try to really work and suppress this virus across the globe.

00:15:56

TJ Thank you very much. Next question is for our friend, Geneva-based journalist, Peter Kenny, representing South African media. Peter, can you hear us? Peter, can you unmute yourself, please? Do we have Peter Kenny? You really need to unmute yourself. We will try to come back to Peter maybe later. Let's try Bianca Rotir from Globo, Brazilian media. Bianca.

BI Hi, Tarik. Can you hear me?

TJ Yes, please go ahead.

BI Thanks a lot. My question is about Brazil. I will ask it in Portuguese.

TR The Brazilian Government has said that they don't have enough respiratory devices and the WHO has talked about the need for this protective equipment. Could they also help Brazil with ventilators and what are the guidelines of WHO on this issue?

President Bolsonaro is organising an event for over 30 people. What are WHO guidelines about that and what does WHO think about the situation in Brazil? The Lancet issued a warning about the possibility of doubling the number of deaths in just five days in the country. Thank you.

00:17:43

MR That's about five questions in one so I think it's going to be difficult to address. WHO always responds to requests from assistance from our member states. I think it's important to clarify here that the WHO is an agency made up of its member states and we respond to any request for assistance from those member states.

We're not entitled or empowered to come into any country, provide any specific standards or guidance or to deliver any particular material unless we're invited to do so by the government of that country and I'm sure that the Government in Brazil is working closely with our colleagues in our American regional office, the Pan-American Health Organization and we will respond promptly to any request for materials, supplies, technical assistance or strategic guidance regarding the

nature of mass gatherings or any other control measure if Brazil wishes us to do so.

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TJ Thank you very much. Yes, please, if we can have one question per journalist that would be really good. The next question is coming from Greece; Kostas from ERT Television. Kostas, please unmute yourself and we will be able to hear you.

KO Hello to everybody. Thanks for taking my question. Since the beginning of the pandemic states have been called upon to identify cases and test citizens. PCR and antibody tests are already in use. Lately we have been observing groups of researchers analysing city waste water to determine the degree of contamination of areas by coronavirus.

Can this innovative tool give us a faster and more heuristic picture of the pandemic versus the usual tests? Thank you.

TJ Kostas, if you can just repeat the question; the question is about the new antibody tests or...?

KO No. It's a question about analysing cities' waste water to determine the degree of contamination of areas. Can this give a faster and more realistic picture of the pandemic?

TJ Thank you very much for that.

MK I could start and maybe Mike will want to add. Yes, sorry, I didn't hear the question before. There are a number of ways in which we are looking to evaluate how the virus is circulating globally. You mentioned two of those; the use of molecular tests or PCR tests which are measuring active infection in people.

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There's the use of the antibody tests which are also testing people but that's testing past infection. We have a unit here that's looking at waste water, that is looking at if the live virus or fragments of the virus are found in waste water.

We do understand that there are fragments of virus - this is not live virus or infectious virus - that can be found in waste water so it's

possible that that might be something that could be used to look at where the virus may be but it's important that we focus our attention on looking for the virus in people.

Countries have demonstrated the ability to, if you aggressively look for human cases and find those individuals, isolate those individuals, care for them depending on the severity of their illness in a healthcare facility or at home if that can't be done, and identify all of their contacts and quarantine those contacts; we know that that works and that can stop transmission.

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MR If we could maybe just emphasise that point; I think we've said this a couple of times. Science and discovery is very important and looking for the virus in different samples and being able to find different ways to monitor the presence of the virus, be it in environmental samples - very important - in antibody tests in recovered patients - very important.

They all have an importance and they're all very important for understanding the long-term trajectory of the pandemic. But we seem also to be avoiding the uncomfortable reality that we need to get back to public health surveillance. We need to go back where we should have been months ago; finding cases, tracking cases, testing cases, isolating people who are tested positive, doing quarantine for contacts.

We have seen time and time again that countries that have contained this virus and brought it under control without the need for massive lock-downs have done it through the application of principled, human rights-driven but sometimes quite aggressive public health surveillance.

I think we sometimes - and I think this is something we do in society - look for the answers where they're not. We need to go back to the basic principles of how we control this disease; a comprehensive strategy that matches basic public health surveillance, community education, knowledge and empowerment with a strengthened healthcare capacity to treat cases and we are able to pull those three things together and develop a vaccine in the medium to long term. That's the core.

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There's a lot of other information and science that needs to be discovered around that but we need to stick to the core strategy or else we really will risk looking for answers where the answers to the questions we're asking are not going to solve the problem we have. We know the problem we have.

TJ Thank you very much, Dr Ryan and Dr Van Kerkhove. Now we will go to Laurent Seron from Swiss news. Laurent, can you please unmute yourself?

LA Can you hear me?

TJ Yes, please go ahead.

LA Yes, thank you for taking my question. Since you raised the question of sero-tests the last time the Swiss pharmaceutical group, Roche, got approval from the FDA and they pretend to have a product which is trustful and 99% more efficient.

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At the same time there was a study by the University of Zurich published in the Lancet that tends to show that COVID-19 is not only a pneumonia but also a systemic vascular inflammation. What do these two components tell us and what might that change in terms of response? Thank you.

MK I'll start with the first part of that question. There are hundreds of tests that are available. A number of them are serologic tests which are measuring the amount of antibodies in an individual and some of these are undergoing different forms of validation, which is very important.

This means that each of the tests that are developed are assessed and evaluated for how well they work and you use a known quantity of sera, of biological material to look and see how well the tests perform; do they actually measure what they're supposed to measure? That's important.

We are working with a number of labs and also FIND to help do validation of molecular tests as well as serologic tests and as those

validation results become available then we will have more and more confidence in each of these tests that are out there.

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There are more than 90 countries that are currently conducting seroepidemiologic studies - we've mentioned that previously - and this is an important part of understanding the extent of infection in a population, in a country and across the world.

MR On the issue of the clinical syndromes associated with COVID-19, I think this is an important issue because I think we've very often seen with new emerging diseases that they don't always just have one target organ. They tend to cause a much more disseminated disease; they may affect multiple organs.

It is sometimes only over time, many, many generations of transmission, sometimes decades, sometimes hundreds of years, where some diseases establish what looks like a preferred organ or it becomes an endemic disease with one organ that's affected more than any other organ in the body.

We tend to often call those diseases after the organ they affect. We often call the hepatitis viruses, because they cause hepatitis, inflammation of the liver but there are many different types of virus that cause that same problem.

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But however there are diseases like measles and we often think of measles as a fever with a rash, a mild, self-limiting illness in children. I can tell you that measles in an unvaccinated child who's undernourished and living in a refugee camp is a serious disease that can affect their lungs, their eyes, their brain; it can cause so many different organs to fail it's quite frightening.

So I think when we look at COVID-19 we need to see that as a disease that obviously is a respiratory disease - it's spread by a respiratory route, it causes a respiratory syndrome. It is clear that in a proportion of patients it is causing a broader inflammatory response, either within the vascular, blood-carrying system or in other parts of the body.

We've also seen reports of encephalitis or swelling or inflammation of the brain. We've seen other reports of other effects of the disease and that's why it's so important, as Maria has said previously, that we continue to collect clinical data from across the world on all of these different impacts of the virus.

But it's still primarily causing a respiratory syndrome and you see that, unfortunately and tragically, repeated day after day in intensive care units around the world, patients struggling to breathe with their oxygen levels falling and having demonstrable damage by CAT scan and X-ray to their lung tissue.

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That is a major part of the syndrome but clearly the vascular effects or the effects on the blood-carrying system or the cardiovascular system are there, they're real and they need to be studied further.

TJ Thank you. The next question is from David Andelmann from CNN. David, you have the floor.

DA Yes, thank you. Can you hear me?

TJ Yes.

DA Can you suggest why Russia's infection rate has been rising so dramatically and whether the WHO figures really reflect the totality of Russia rather than largely Moscow and whether Russia is following WHO guidelines for containment, as Dr Tedros has just outlined?

TJ Thank you, David.

00:28:58

MR I think Russia is probably experiencing a delayed epidemic and we've seen this in many contexts. We've seen how Italy was one of the first countries in Europe to experience a large-scale epidemic and it was followed by Spain, followed by the UK and others and we believe that in that sense Russia has experienced a delayed beginning to the epidemic and is now seeing that increase in cases.

Russia's also increased its testing, both in the urban areas and outside and the increased numbers may reflect partly that but there's also been an increase in deaths which means the disease is clearly having an

impact. I think the Government has really shifted its response into a much more aggressive mode over the last week or so because I think there's a growing realisation that this disease is requiring a scaled-up response.

In terms of the strategy that's been implemented, Russia has implemented fairly large-scale public health and social distancing measures. It is increasing its lab testing across the country. I think where all countries have struggled, quite frankly, is with systematic contact tracing, particularly when numbers begin to rise very quickly and I think this has happened.

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If you remember, we spoke about the four Cs before where you have cases and you have clusters and then you have this widespread community transmission. I think when you have cases and clusters of cases it's quite straightforward with some targeted investment in public health services to do the kind of containment activities we've spoken about before.

Once you reach intense community transmission it becomes very, very difficult at that point to do systematic and comprehensive surveillance. I think the exceptions to that are countries like Korea that managed to do incredible contact tracing in the middle of a very intense community outbreak.

So it is possible to do but it requires a very coherent, very well-resourced and very well-trained public health workforce with a lot of resources and the support of government and of the community to achieve that.

I think that's maybe for Russia, for other countries in Europe... Once you get behind the curve and once the disease has spread at community level the only options that have remained open to countries in those situations have been pretty severe public health and social distancing measures.

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Those measures have had an impact and they have suppressed infection and as those numbers have fallen and restrictions are lifted

the danger is always, as Maria has said before, of a jump back. That disease will probably jump back unless you continue suppressing the virus by those public health measures; by those cluster investigations, by that contact tracing, that testing and by continuing to support the community to maintain physical distance and appropriate measures if not a total lock-down.

In the case of Russia I think Russia's just in a different phase of the pandemic and can learn some of the lessons that have been learned at great cost in Asia, in North America and in western Europe.

TJ Thank you, Dr Ryan. The next question comes from Maya Plans from the Shift. Maya, you need to unmute yourself, please.

MA Yes, thank you very much for taking my question. My question is still regarding the cardiovascular issues that have been reported. If you could elaborate a bit more on how you are looking at these issues that patients report; how does the WHO record this and collect data on this?

Because I've heard that some people came to hospital not with respiratory problems but with cardiovascular problems and then they went back home and later they found out those were part of the symptoms that they exhibited, having those cardiovascular issues.

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MK Thank you for the question. It's a really important question. As Mike has just said, as we learn more and more about this virus I have to remind myself that we're in month five of this pandemic and although it has seemed like an incredibly long time we're at the very, very early stages of our understanding of how this virus affects the body, how disease progresses, what diseases this infection causes.

We have a global clinical network that we've brought together. We bring the same group of clinicians across the globe together for other diseases. We activated this group very early in January to bring together clinicians who have experience with treating COVID-19 patients and the value in doing that is you're talking to clinicians with first-hand experience of what they're actually seeing in terms of the patients, in terms of what those patients are dealing with and what those doctors and nurses and medical professionals are doing to try to

save their lives and to try to prevent them from progressing to severe disease.

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The way in which we gather information about symptoms or disease is through a standardised set of data that needs to be collected from patients. It's very difficult to collect a standardised set of data from patients when you're in the middle of a very intense outbreak and you're just trying to save as many lives as you can.

But in some countries and in many countries that don't see intense transmission right now - and especially in the beginning what we did was we set up a clinical case report form, which is something that was developed by WHO and ISARIC, which is the International Severe/Acute Respiratory Infection Consortium, and many partners, many clinicians and nurse and medical practitioners across the globe; a cast report form that collected a set amount of data from each patient.

In doing so that helps us gather information so that we can analyse it and say, is this common, is that not common, is it associated with COVID-19 infection, what does the presence of smoking or an underlying condition do to make that condition worse?

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So we set up this case report form. It is being used now. It took some time to get going and there're more than 10,000 case records in this and we are hoping that more and more case records can be obtained so that we could better understand this.

In addition we're working with a number of countries who are conducting their own studies in their hospitals. Some of these are coming out through peer-reviewed publications but those are done by individual hospitals and that information is really critical for us to gather an evidence base to really understand what's happening.

But with these new syndromes that we hear about, those are identified by astute clinicians, astute nurses, astute medical professionals and it's important that that's characterised. You've heard of this hyper-inflammatory syndrome in children, a very rare condition that seems to be among children. This is being looked at globally now and

there will be a case report form specifically for that so that we can collect standardised information and be able to understand this disease further.

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TJ Thank you, Dr Van Kerkhove. The next question is from Alagabiel Hazat. We have online Doha El-Zohairi. Can you hear us?

DO Yes, I can hear you. Can you hear me?

TJ Please go ahead. Yes.

DO Okay. My question is about any promising cure or vaccine. We heard reports about negative side-effects on patients who used hydroxychloroquine and now eyes are on remdesivir. Any updates concerning that?

MK I can start on this and Mike or DG may want to supplement. There are hundreds of clinical trials that are currently underway looking at different therapeutics, different drugs that could be used for COVID-19. What is important is that any of these potential therapeutics need to be evaluated properly through what are called randomised clinical trials to ensure that whatever agent is used provides safe and effective treatment.

You mentioned side-effects. It's not only important to look at how well this works at maybe preventing infection or helping prevent someone progress to more severe disease or preventing death. It's also very important that it doesn't have side-effects.

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There are a number of clinical trials underway. We have initiated with partners the Solidarity trial, which is a clinical trial that is evaluating a number of therapeutics including remdesivir, including chloroquine and there are more than 2,500 patients that have been enrolled in this clinical trial from, I think, 15 countries so far but there are more than 100 countries that are willing to participate in this clinical trial.

The beauty of this is that by doing a clinical trial across multiple countries and across multiple hospitals we can have enough patients to

be able to evaluate the answer to which drugs are safe and effective quicker.

As of right now we don't have any drugs that have fulfilled all of their criteria through these randomised control trials but it is incredible that there are so many that are underway and we look forward in the coming months to finding out more about which drugs are safe and effective for COVID-19.

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TJ The next question is from Antonio from EFE Spanish-speaking news agency. Antonio, can you please unmute? Let's try one more time with Antonio.

AN Si.

TR Hello, thank you. My question is about social distancing measures in the opening-up phase after lock-down. Do you think we'll be going through months or even years before people can actually hug or kiss each other again or shake hands even? Thank you.

MR Yes, I think you reflect the fervent desire of all human beings to reconnect what each other and we share that sentiment. We haven't shaken hands or hugged our friends in 18 weeks either or seen our families, some of us, and therefore it's really important that we work hard to get back there but also we need to be careful.

We've seen what this virus can do in situations where the virus has spread unstopped so yes, I think there is a pathway out and I think many countries are taking a very careful, stepwise approach, relying on the patience and perseverance of their citizens to continue to suffer what is a difficult process socially, psychologically and economically for many people.

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But I think everyone is doing that because we want to protect those we love and we want to ensure that we end this as quickly as possible. We're going to have to monitor this very carefully. As WHO it's very difficult but we've tried to work out the whole selection of measures that have been put in place by countries and as those measures are

lifted we're looking at which countries are taking away which and we will monitor the epidemiology in those countries.

With them we will look at and examine if certain measures, if they're lifted, may cause a jump in cases and we'll have to think about that again, one being the schools as a very good example; as people return to work.

I think the thing we're seeing is that a careful and measured return to those kind of normal activities of work and school, especially if they're done with density reduction, physical distancing and hygiene in place, seem to be very prudent and practical.

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Where we're going to maybe have to accept a little bit more time is going to be around mass gatherings, large-scale gatherings, things like concerts. We're coming into the summer time in Europe, North America and other places in Asia and this is the time when people gather en masse. We go to big events and it's going to be much more difficult to make those perfectly safe and life is life; there's no zero risk.

We all have to - we do it every day - manage the risks in our lives and what we need to do collectively is reduce the risks associated with COVID transmission to an absolute minimum and then recognise what risk is left and be able to mitigate that risk. We would at this point in countries where we see downward trends in disease, where we see a strong public health surveillance in place, where we see a healthcare system that's capable of treating cases, where we see a committed community willing to continue with personal and community measures, I believe there's a path out but it may involve partial school openings, partial workplace openings, those working from home that can, those that need to go to work being properly protected in place.

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Especially those people who have to work in high-density conditions; we have to make special provision for their occupational health and safety. Then we have to look very carefully at events that bring people together en masse and see how best we can bring...

For example we spoke the last day about football and other spectator sports. Maybe the sports can start again but the spectators may have to stay away for a little bit longer. I think everyone has a stake in this. This isn't just the purview of scientists. This is a dialogue with communities. This isn't just science spitting out orders that then are implemented by people.

Community activities and social life is a dynamic process and there needs to be a good dialogue and we need to have that at national level, we need to have that at provincial level and it needs to be had at local level. Communities are very often best placed to look at what's important and look at what's relevant for them but always with risk in mind and listening to the science and listening to the public health advice.

I'm sorry; I've been long-winded in my response because I think the issue is so important. There is a path out but we must remain ever vigilant and we may have to have a significant alteration to our lifestyles until we get to a point where we have an effective vaccine and effective treatments.

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But that doesn't mean it's all bad. I think we've seen some benefits to our environment, we've seen some benefits to our connectedness, strangely enough. Even though we've been disconnected physically I think many of us have recognised how important those connections are.

So I think we need to move forward, recognising that it's been and is and will be for many populations and countries with weak health systems still... This is a big challenge and we're not through it yet in many countries. As some countries come out of lock-down and come out of these measures they can offer hope to communities who are entering into epidemic situations.

Learn lessons from what everyone has done. Transfer resources and help other countries to fight the fight they have to fight and in the end of this, as Dr Tedros says again and again, through solidarity we'll win the fight and nobody is safe until everybody's safe.

TJ Thank you, Dr Ryan. We can take a couple more questions maybe before we conclude. Now we go to India; United News of India with Ajeet.

00:46:35

AJ Thank you so much. My question's related to temperature range. Is there any study, any experiment or any lab research into what is the temperature range at which this virus can survive within the human body as well as in the open environment?

MK That is a very good question and a very specific question and I don't have the data in front of me. There are studies that have evaluated virus survival on different types of surfaces - on wood, on steel, on fabric - that have found that the virus can survive hours to days depending on the temperature and the humidity.

I don't have the details of the temperature and humidity off the top of my head so I will be very happy to provide that answer if you get the name and the contact information. But what we do know is that the virus, if it is on a surface, can be inactivated, can be killed with disinfectants in a matter of minutes and that is important and it is important that people know that because if they do touch a surface that is contaminated they can wash their hands or use an alcohol-based rub and protect themselves or they can clean their surfaces regularly.

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So it's important that surfaces are cleaned regularly and that you wash your hands but I'll have to get back to you on the specifics of the temperature and humidity.

MR Just one important point because you mentioned two things; one about environmental situations and you also mentioned body temperature. This is important for people because I've heard various stories about people saying that it's important to be very hot or be very cold.

This has no impact on the virus. Viruses and infectious diseases cause people to have fevers and very often it's the breakdown products of the virus or the immune response that trick the body into being hot.

Having a temperature in itself is not necessarily a bad thing but also that temperature has to be carefully monitored, especially in children.

The idea that one should have a very high temperature and that's helping to get rid of the virus is not true. The body is responding to the virus that's present. Equally the idea that you would try to cool someone down to get rid of the virus is not true but there are certain situations where there's a high temperature and it's important for doctors and nurses to get the temperature down because very high temperatures - and I mean very high temperatures - can be associated with convulsions and other effects.

00:49:17

So the monitoring and the management of temperature in a person who's got an illness is very important and it's very important that clinicians can manage a very high temperature but the idea that temperature itself is affecting the way the virus will behave in the body is not true.

So people managing themselves by trying to make themselves very cold or make themselves very hot will not affect the process of the virus in your body but managing the temperature is very important for the outcome for the patient.

TJ Thank you. Maybe we'll go to the last question. That would be Politico and it's Carlo who is with us tonight. Carlo.

00:50:04

CA Yes, hello. Thank you for taking my question. I had a question about the different rates of the virus geographically. For example even in Europe you see very different rates in eastern Europe versus western Europe and sometimes even within the same country, for example the north of Italy versus the south of Italy. Do we have any idea what's causing this extreme variability even in small geographies?

MR If that was the last question we could be here all night. It's an important question but it's not one that one can answer in a single sentence or in a number of sentences but it does go to the heart of some of the issues associated with the transmission of this virus.

Obviously the virus transmits in different situations with different degrees of intensity and what we've seen in mass gatherings or situations where people have been pulled together in large groups; we can see an amplification of disease that can seed disease in a community very quickly, therefore generating a very large wave of infection.

In some situations we have very small waves and the number to infected builds up more slowly. That can occur because of a particular type of event that triggers the transmission in a large number of people in a community at one time but it can also happen because of the conditions that a community live in.

00:51:35

The number of people who live in a household can often affect that. The transmission of, for example, disease in somewhere like Sweden versus somewhere like Italy may just as much be affected by the fact that 50% of Swedish people live alone in apartments or live in apartments of fewer than two people whereas many people in Italy socially live in much larger households.

I'm not saying that's the reason but you have to look at population density; you have to look at the way people live; you have to look at the way they interact. That may be affecting the way disease is transmitted in many countries. You have to look at the way in which people use public transport and use transit. If a large proportion of people are using overcrowded transit in the middle of a respiratory epidemic you will see more transmission.

So you could look at any number of factors; population mobility between areas. In some countries mobility between areas is not very high. In other countries mobility, long-range commuting has become very common in Europe for example. It's not unusual to find people commuting between countries to go to work.

00:52:46

So social, economic, behavioural patterns can affect the way in which disease spreads; population density, population behaviour, social norms and the way we live our lives in general. There are differences right now, as I said before, between western Europe, which has been

through that first big wave, and eastern Europe, particularly the Russian Federation, which is now experiencing higher numbers of disease.

When I was answering the question previously about Russia I forgot to say that there'd been about 450,000 tests carried out in Russia. When you put that into the number of tests peer million population it's around 30,000 per million which, of the 57 countries in the European region of WHO, puts Russia about the tenth-highest of all the rates of testing.

The positivity rate is about 3.6%, which again is quite low compared to the positivity rates in other countries so in that sense, just to follow up on the previous question, the number of deaths also remains very low as a proportion of the overall cases for the Russian Federation.

00:54:07

But you can clearly see that the number of cases has risen in somewhere like Russia and what we have to be very careful of is that the death toll doesn't rise with those cases. The other factors around the world... I was speaking in the European context there.

There are so many other factors driving the risk of transmission in countries; the degree of compliance with public health and social measures, the availability of effective public health response like contact tracing.

We've seen countries who've been very systematic with a very comprehensive strategy. I think of countries like New Zealand, who've really done the lot and they've gone from public health measures to a very graded response to very systematic case finding and contact tracing to a high rate of testing.

When all of those factors have been put together the disease tends to be more controllable so disease epidemiology is driven by the natural history of the virus, it's driven by human behaviour and it's obviously affected by the public health or the health response to the virus.

00:55:13

So it's very hard to make hard-and-fast rules for what happens in any individual country. Maria.

MK Thanks. I just want to touch upon one aspect of this. The virus is transmitted through the respiratory route; it's transmitted through infectious droplets from an infected person to another individual who's in close proximity to that person without wearing protective gear, or through contaminated surfaces where you touch a contaminated surface and you inoculate yourself through touching your eyes, your nose or your mouth.

The parameter we look at to really evaluate how fast and how quickly this virus could spread is called the reproduction number and that number is the average number one infected individual will infect. If that number is above one then the virus can take off and you can have an epidemic.

If that reproduction number is below one it will die out and so what we're looking at in a number of countries and that they're constantly re-evaluating is what is the reproduction number. They call that the time-varying reproduction number.

00:56:17

That number is context-specific, as Mike was saying. If you prevent people from coming in contact with one another, if you isolate known contacts so that they don't have the opportunity to be in contact with someone else, if you find the contacts and you quarantine those contacts and they do become cases they don't have the opportunity to infect other people. You actually break the chain of transmission and the virus has nowhere to go.

The virus needs a person to be able to transmit to another person. If we are able to break those chains of transmission we can bring that reproduction number under one and it's very context-specific.

I brought up Singapore before but even thinking of what's happening in Singapore, they were able to bring their outbreak under control until the virus had an opportunity to start in a closed setting where you have people who are living in close contact with one another.

These types of closed settings exist in all countries - in long-term care living facilities, in institutions, in prisons - and we need to find ways in which we can prevent the virus from transmitting from one person to

another and that way we can bring that reproduction number under one and we can break those chains of transmission.

00:57:38

This is the first pandemic in history that we can control by taking these measure; find, isolate, test, treat, find all of the contacts, quarantine those contacts, engage your populations, have them know what they can do to protect themselves and protect others.

TJ Thank you very much. We will conclude and I apologise to journalists whose questions have not been answered this time but obviously we will have other opportunities. The audio file will be sent in the next hour or two and the transcript will be available tomorrow. I wish a very nice weekend to all.

TAG Yes, thank you. Thank you, Tarik. Thank you for joining us, all online, and have a nice weekend.

00:58:46