Alhikma الحكمة

SPECIAL Covid-19 ISSUE

الهيئة النقابية للأطباء السودانيين بالمملكة المتحدة
SUDAN DOCTORS' UNION U.K. BRANCH

Issue No. (51) February 2021

- Reflections on Sudan's assets and potential for better health for all its people
- View from the field: Risk communication for the COVID-19 pandemic
- Leadership at different levels to manage COVID-19 pandemic
- Doctors' Wellbeing – time to look after you
- Spotlight on Primary Care and Covid-19
- COVID-19 and the Global Economy
- Research on COVID-19 in Sudan
- COVID vaccines: An Overview

About this issue:

Alhikma is an annual journal published by the Sudanese Doctors Union in the United Kingdom (SDU-UK). It reflects the general activities of the members of its members.

This issue is dedicated to writing about the COVID-19 pandemic and its impact on daily life; it is both educational and informative. The issue covers epidemiology, pathology, and psychological impact on both doctors and the public.

By no means have we exhausted all the aspects of this pandemic. By providing a platform to our members, we aim to increase pandemic awareness and its effects on our lives.

We are delighted to have an excellent article written by a renowned Sudanese economist based in Geneva.

In the future, we will endeavour to produce and publish at least two issues per calendar year to cover our members' academic and creative activities.

Ibrahim A. H.Mohamed

The editor.

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Retired public health consultant,
Involved in numerous academic projects with Liverpool, Birmingham and Warwick University.
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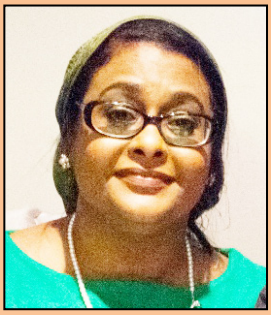

Consultant Virologist
Public Health Laboratory,
Birmingham
University Hospitals
Birmingham Foundation
Trust
Birmingham Heartlands
Hospital
Bordesley Green East
Birmingham B9 5SS

Dr. Ishraga M. A. Awad

MPH FFPH
MRCGP
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of Sudan SIG, FPH
London

Mayada Abu Affan

Chair of Sudan
Interest Group 9 SIG)
of the UK faculty of
Public Health /
Public Health
Consultant, Dudley
Council

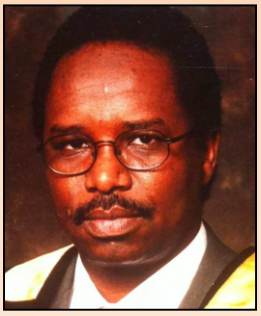
Dr. Muna Abdel Aziz

MBBS
MD MPH PhD FFPH
PGCert Med Ed
Director of Public Health for Salford UK.
Member of Sudan Special Interest Group, Faculty of Public Health, UK
Chair Scientific Committee, Sudanese Community Physicians initiative

Nazik M. Nurelhuda

MFPH-UK, PhD
Member of Sudan Special Interest Group – Faculty of Public Health- UK
Member of Sudan COVID-19 Research Group
Assistant Professor at the University of Khartoum

Ibrahim A. H. Mohamed

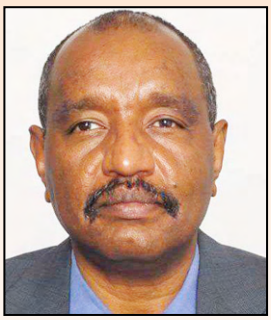


FRCSED,
FRCS (RCPS),
FRCS(Cth), FICS
DIP (art).

Dr. Ahmed Elleithi

MRCP, MS
Consultant
physician
President of Sudan Doctors Union -
UK branch

Mutasim Elagraa



is a Sudanese economist with the United Nations Conference on Trade and Development (UNCTAD), in Geneva. His views do not necessarily represent those of the United Nations secretariat.

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Birmingham Heartlands Hospital / Bordesley Green East
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A MESSAGE FROM THE SDU-UK PRESIDENT TO THE SUDANESE DOCTORS LIVING IN THE UK

DEAR COLLEAGUES,

I hope this message finds all of you well and in good spirits.

We live amidst a sad crisis as the UK's COVID-19 rate has reached disturbing and unprecedented levels during its second wave. As frontline workers, we are challenged by this overwhelming situation, yet we hope for the best as the country is facing another full national lockdown.

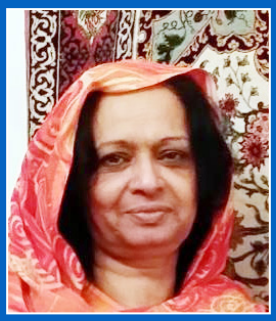
Allow me to take this opportunity to pay tribute to our UK Sudanese heroes whom we have lost, with deep sorrow, during the first wave of the pandemic. We mourn their loss, yet honour the great sacrifice they made for the NHS.

Last year, our health and well-being survey revealed the profound psychosocial impact of the pandemic on our colleagues with a significant majority reporting stress related to their work pattern and anxiety due to the risk of COVID-19 on BAME healthcare workers. We are aware that a lockdown can take its toll on our mental health and wellbeing. Bearing these issues in mind, the SDU-UK has announced the relaunch of its online gathering (The SDU-UK Café) and invite you all to utilise this virtual platform for meeting and voicing any concerns regarding the burden imposed by this catastrophic pandemic. We will also be introducing a helpline soon to assist and support those struggling during these challenging times.

The SDU-UK will continue to liaise and work closely with the other BAME representative bodies to safeguard our colleagues' interest and ensure that any potential health or social disparities related to this pandemic are appropriately addressed.

president@sdu.org.uk

Historical Overview of Global Pandemics during the last decades.



Dr Huda Hassan Mohamed

Retired public health consultant,

Involved in numerous academic projects with Liverpool, Birmingham and Warwick University.

A lead in Africa for public health capacity building

Introduction

Pandemics occurred in different time span during the last decades. A pandemic is an epidemic of an infectious disease that spread across the world. It can be spread across continents and worldwide. It affects a substantial number of people. A widespread endemic disease with a stable number of infected people is not a pandemic.

The most common pandemics during the first known pandemics were malaria, tuberculosis, leprosy, influenza, smallpox appeared during this period. It was noticeable that the more the communities were civilized, and trade routes were developed the more possibilities of pandemics to occur. It was also related to post wars and this was documented during the early pandemics.

165 A.D – 541 A.D.

One of the earliest recorded pandemics was the typhoid fever it first started in Athens and spread to Libya, Egypt and Ethiopia; it was estimated that two-thirds of the population who were affected at those countries died. In Europe during the 165 A.D. a pandemic started in Germany which were plague and smallpox. This pandemic spread to Italy and this was one of the longest pandemics that continued till the 180 A.D.

The Cyprian Plague took place during the 250 A.D which was named after the Christian bishop of Carthage. It was presented by diarrhea, vomiting, throat ulcers, fever and gangrenous hands and feet. People who were living there crossed to other countries which led to the spread of the disease to Ethiopia, Northern Africa, Rome, then onto Egypt and northward.

During the 541 A.D. the Justinian Plague started in Egypt, then spread through Palestine and spread to the Mediterranean. It continued for number of centuries with a high mortality almost 26% of the world population died because of this pandemic. It was associated with environmental factors as rats and spread of fleas were contributing factors. It caused significant economic consequences which took a long time for recovery.

1100 – 1889 Period

During the 11th Century leprosy affected all ages and spread across Europe. There was a dramatic improvement on the health service as

leprosy hospitals were built to ensure isolation of the affected people from the rest of the population. This was the first move of having the concept of quarantine which one of the most important public health initiatives to control the pandemic.

The Black Death which occurred during the 1350 was responsible for the death of one-third of the world population. It started in Asia and then spread to Europe, it was documented that dead bodies remained rotting on the ground and created serious environmental consequences across the affected countries. These countries suffered economic collapse as well demographic changes,

During 1492 diseases as smallpox, measles and plaque were passes to the Caribbean by the infected population which went there and resulted in 90% death rate among those affected.

In 1520, Spain was affected by smallpox infection which affected the country and all the adjacent countries. In UK during the 1665 was the Great Plague of London led to the deaths of 20 percent of London's population. It was believed that it was contributed to cats and dog which were slaughtered as the cause of the disease. It spread along the Thames and it was one of the devastating things happened during this period with the other destructive event the Great Fire of London.

During 1817 was the first cholera pandemic which was one of the seven cholera pandemics which continued for 150 years. It affected one million people died and it spread to India by the British soldiers and it was estimated one million people died. Spain. It spread to Africa, Indonesia, China, Japan, Italy, Germany and America, in total there were 150,000 deaths. During this period Cholera vaccine was introduced which was in 1885, but pandemics continued for a significant period.

The Third Plague Pandemic started in China and spread to India and Hong Kong. It affected 15 million people. It was stated that one of the environmental factors was the fleas which was transmitted from them to humans. This was one of the longest pandemics which continued till 1960. In1875 started the Fiji Measles Pandemic, 1889 the Russian Flu which both affected many cases.

1918 -1990 period

During this period most of the pandemics were respiratory diseases and most of them were flu pandemics. It was estimated that the avian flu had a very high mortality 50 million deaths worldwide. It started in Spain, Europe, USA and spread to Asia. This was called the Spanish flu. In 1957 the Asian Flu started in Hong Kong and was then spread worldwide. It was estimated 1.1 million deaths globally and, in the USA, around 116,000 deaths were recorded. The Flu vaccine was developed which had a high efficacy and contained the pandemic in most of the countries affected.

1981 HIV/AIDS was first identified, and treatment have been developed to slow the progress of the disease. There were 35 million deaths, there was significant development in treatment but still it is one of the main causes of death in number of African countries.

In 2003 the Severe Acute Respiratory Syndrome (SARS) pandemic started. It was linked with bats, cats which was first occurred in China and then spread to 26 countries. The main method of control and prevention was the Quarantine and travel restrictions. The lessons from the SARS pandemic were implemented to control H1N1, Ebola and Zika pandemics.

The World Health Organization announced on the 11.3.2020 that the COVID-19 virus was officially a pandemic after spread to 114 countries in a period of three months and infecting over 118,000 people.

COVID-19 is caused by a novel coronavirus which is a new coronavirus strain which was not

previously detected in humans. It presents with respiratory symptoms, fever and cough, spread through droplets.

By the end of 2020 more than 75 million people were infected and more than 1.6 million deaths worldwide.

Conclusion

Pandemics have a long historical presence which had been observed since165 A.D. There were different public health interventions have been instigated but all around the self-isolation concept.

Quarantine was the first line of control measure which started since half a millennium. It was the core of a multicomponent strategy for controlling pandemics. It was adapted to the nature of each diseases and to the degree of risk for transmission. It has been documented as being effectively used to contain the 2003 SARS and the 2009 influenza A(H1N1) pandemic.

The most significant public health measures that managed to control and prevent these pandemics was the introduction of the vaccines. The current Covid-19 had a significant health, environmental, economic and political implications. The development of the vaccine had reassured all the countries to control the pandemic and it has been announced that it is the first priority across the world that vaccination is at the top of the agenda.

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Research on COVID-19 in Sudan

February 2021

The stakes in the COVID-19 pandemic have never been higher as lives are lost and economies stagger. This pandemic highlights the importance of research, stable research infrastructure and funding. The number of studies related to COVID-19 increases daily and the extent of global collaboration is unprecedented.

There is a wealth of global and national surveillance data that has remained at the core of decision-making during the COVID-19 pandemic. Despite the research challenges in Sudan, researchers in collaboration with communities and non-state actors have tried to fill in the evidence gaps to inform national and local response. They contributed to the accumulating evidence by publishing commentaries, original research and study protocols, in peer-reviewed or preprint formats. The published work, focused mainly on the prevention of COVID-19, demonstrated international collaborations with national institutions across Sudan, namely in Khartoum, Gezira and Darfur.

Editorials and commentaries called for action, especially during the first wave. Suleiman et al. presented a detailed overview of the Government of Sudan's (GoS) response to the first wave and the local challenges facing the implementation of that strategy.[1] Ahmed et al. underlined the significant role that the community can and should play in the response to the pandemic.[2] This role was modelled by Abdelmagid et al., in a qualitative study on the acceptability and feasibility of shielding of high risk groups for COVID-19 in the Sudanese context, through a successful research partnership between youth networks and academics.[3] Musa et al. called the government to improve testing while focusing on protecting the vulnerable people who were severely impacted by the lockdown.[4] Altayb et al., while emphasizing the importance of testing again, also warned against the impact of protests and social gatherings on the viral transmission, in June 2020.[5] Other experts called the GoS to design country-compatible measures, and other tailor-made strategies for effective responses.[4,6] In particular, Gezira university, led by example and showcased a model of how the provision of housing for homeless children could support vulnerable groups.[7] Pharmacists pleaded for the direction of efforts towards the provision of immediate access to pharmaceutical products and other essential health commodities.[8] Proposals were made by Sudanese researchers to study the effect of Acacia Senegal (Gum Arabic) [9], broad beans (Vicia faba)[10] and convalescent plasma on COVID-19.[11,12]

Data and mathematical models were leveraged to inform decision making [13,14], where Elsheikh et al. estimated case detection ratio, the impact of the non-pharmaceutical interventions and death rate of the undetected

Nazik M Nurelhuda

MFPH-UK, PhD

Member of Sudan Special Interest Group – Faculty of Public Health- UK

Member of Sudan COVID-19 Research Group

Assistant Professor at the University of Khartoum

cases.[15] Watson et al. also modelled mortality to predict undetected COVID-19 deaths between April and September 2020 to be much higher than reported.[16]

During periods of high community transmission, researchers were able to successfully replace high risk in-person data collection methods with phone interviews and electronic tools administered via social media platforms. This methodology was employed in behavioural studies, wherein hand hygiene and washing practices were explored on several occasions in the early days of the pandemic, among the general population [17-21] and specifically among health care providers.[22,23] Researchers also investigated the physical and psychological impact of COVID-19 on frontline health care workers such as pharmacists [24], pharmacy students [25], medical doctors [26,27] and medical students.[28] In addition, there were also reports on the significant impact of the pandemic on blood supplies and donors' behaviour.[29,30]

Most of the studies did not report data on the geographic location of the study participants, possibly because they were online based surveys. A few mentioned that the studies were based in Khartoum. However, Abdelmagid et al. studied six illustrative communities in the states of Khartoum, Gezira, Red Sea, Blue Nile, North Kordofan and an internally displaced person's camp in South Darfur.[3]

Without a doubt, there is more research on COVID-19 in Sudan that is not covered in this overview; research that is still in the pipeline, has not been published or not appropriately indexed and thus not searchable.

The Federal Ministry of Health's National Health Ethics Research Committee, the only body mandated to provide ethical approval on national epidemic related research, continued functioning remotely during the first wave of the pandemic. They dedicated several sessions to COVID-19 research review, but with the overall large work load, the committee strived, especially in the second wave, to provide timely approvals and support, and trade-offs with respect to reviewing research from other disciplines were made.

COVID-19 mitigation and crisis resolution is dependent on high-quality research aligned with top priority societal goals. The fundamental plan of the GoS to cope with the COVID-19 pandemic included the control of the source of infection and blocking transmission.[1] A research agenda to guide the work of independent researchers was absent. Thus, the research conducted may not have been aligned with the GoS's needs to strengthen the response.

Researchers in Sudan are working in complex health, economic and political challenges with limited access to resources. Despite this, they continue to generate evidence to support the response and strengthen their capacity and resilience. To support research and researchers, the research response should be coordinated to maximise benefits.

The GoS is encouraged to: 1- continue to make good use of, and invest in, the generation of high quality evidence 2- develop national COVID-19 research priorities that promote interdisciplinary research on social, cultural, technological, environmental, and economic issues 3- create a COVID-19 research database to keep the community informed about the various COVID-19 related research questions that have been answered and that are being explored 4- create a national platform for COVID-19 research to promote collaborations between experts in different fields and to incorporate the voices of researchers to shape the COVID-19 response 5- identify practical procedures to facilitate rapid yet robust ethics review of research proposed during the COVID-19 pandemic, and future infectious disease outbreaks.

In the future, lessons learned from the research process during this pandemic could benefit the research enterprise in the country. For now, it has already underlined the dire need for a National Research Council to serve the nation's strategic research interests.

Acknowledgement: I am grateful to Dr Muna I Abdel Aziz, Dr Mai Eltigany and to the members

of Sudan COVID-19 Research Group[31] for reviewing this paper.

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Reflections on Sudan's assets and potential for better health for all its people

Andy Beckingham

FFPH FRSPH, Consultant in Public Health and Research Fellow

Member of the Sudan Special Interest Group of the Faculty of Public Health

In 2015 and 2018 I lived in Khartoum and worked at the Federal Ministry of Health. I had many opportunities to experience Sudanese culture and hospitality and to find how good it was for my own wellbeing, while getting to know all the medical and health professions and health systems. I developed a lasting affection for Sudan, and now I want to see the country flourish and enjoy better health for all in the wake of the revolution. As a member of the Sudan Special Interest Group of the Faculty of Public Health, I set out here a few observations about the strong base which I believe Sudan already has and could build upon further to improve health for all.

I have avoided filling this brief article with academic references, because every country's Public Health departments already publish many easily-found reports and recommendations, based on a wealth of global research evidence, and all basically saying the same things. The big challenge is not to keep putting the recommendations into reports, but instead for government and communities to work together to put them into action. They are as follows: Build on Sudan's remarkable social capital, narrow your economic and social inequalities, put 'Health For All' into every national policy, strengthen education for all your people, and invest in a strong preventive health system rather than a hospital-based one. That's all you have to do in order to increase everyone's life expectancy and largely avoid the rise of chronic diseases. Don't let wealthy countries and big industries replace Sudan's resilient culture of kindness, welcome, strong families and faith with their illness-promoting ethics-free cultures and products.

My suggestions are based on my 25 years of experience in Public Health, and grounded in my epidemiological knowledge of Sudan's patterns of health and illness and of the country's health policies and plans, plus my studies of what has worked (and also what has failed) in many countries, The Sudanese people have taken the profound step of making the Revolution happen, and hence now have a major chance to rebuild a society in which everyone shares in better health and in longer, illness-free life expectancy. You have a window of opportunity to show the world how to do things differently and better, and to set us a good example by taking collective national action to promote health and wellbeing for all, not just the few. A number of African countries have already shown that they can take far more decisive, determined and effective action against the pandemic than could the UK and US, resulting in mortality far lower than that of those far wealthier countries. Sudan has a similar opportunity to show how a country with a strong culture of kindness and cohesiveness can similarly put wealthier countries to shame by mobilising to create better health and longer life for its whole population, and not just for a minority.

Sudan has one huge asset that so many countries lack, and it is one that you could use as the foundations of a better base for health for all the population. It is also the first thing that strikes any visitor to Sudan, and I speak of your culture of inclusion, kindness, faith, welcome and charity. This is profound, and it has a massive protective effect on health. Yet so few countries have it. In my own country – the UK - the first thing people do when they get to work is to check their emails, often ignoring their colleagues. But what I saw by contrast every day at work in Khartoum was that everyone's first act was to go around and greet each other and find out how they were. Prayer and a concern for others was also a part of everyday working life. You may take the sharing of food for granted, but I will never forget my experiences of sitting around the small table with all my colleagues at lunch time, sharing the fuul and bread we had all contributed. For the first time in years, I felt like I belonged. It is so normal to you, and yet most countries cannot do this simple thing, so indicative of collective concern for each other. But this 'social capital' adds years to life expectancy. The free water jars at the roadside implicitly tell the Sudanese poor that they are cared about. There is good evidence from research around the world that kindness is infectious, and improves everyone's health and wellbeing, but in Sudan you already have a long legacy of kindness and inclusion. Sadly, in my own country we are only now discovering the health benefits of kindness, and taking a few small steps to introduce it into social policies. Whereas in Sudan it is a basic part of your culture, and enormously protective of your population health. Powerful countries, corporations and industries will want to replace it with products and services that instead promote financial interest, excess profit, and unhealthy living, while trying to sell you armaments instead of sustainable development, trying to replace your social cohesion with individual consumerism, and aiming to divert your young people towards ethics-free social media that turns them into westernised consumers and promotes trolling, with negative impacts on their mental health and their connections with their families. It would be a tragedy if Sudan lost its culture of kindness and welcome because of economic pressure from amoral industries and countries, especially those that denigrate their Muslim citizens. Treasure your social cohesion, and build your country's health future on it. That collective concern for others is the foundation that would make it easier for Sudan to take community-wide or national action to help them. Divided countries cannot do that because that do not have that collective trust and concern for all others.

Many countries have charities, but they don't have charity as one of the basic building blocks of their societies. I saw instead how Islam in Sudan exerts a huge protective effect by binding people together around basic values, promotes a shared interest in the wellbeing of others, and recognises everyone's humanity. This is such a huge contrast with the divisions readily apparent in the large cities of many wealthy countries, where consumer culture and the profit motive have replaced religion and concern for others, where people often distrust anyone who doesn't look or dress like them, where racial groups live in completely separate neighbourhoods, and hence where crime, hatred, addictions and mental illness thrive. These countries will be all too eager to export to Sudan their products and consumerism, and I hope you will resist.

Following the revolution, Sudan has a unique opportunity to rebuild a fairer and more equitable society. There is overwhelming evidence from around the world that three factors have enormous impacts on health and wellbeing, on health risks and avoidable mortality, and on whether good health is enjoyed by most, or instead by just the few. Firstly, countries that pursued greater income equality not only have greater health equality but also have much better health overall – and greater overall happiness. Secondly, countries that invest more in primary and preventive care than in high-tech hospitals cost-effectively improve their country's health, rather than

expensively diagnosing and treating illnesses that could have been avoided and prevented years earlier. Thirdly, countries that made the greatest reductions in premature mortality from infectious, vector-borne and respiratory diseases, especially those in childhood, largely achieved them through concerted Public Health-driven improvements, such as clean water, better housing, infectious disease control, more and better food for the disadvantaged, and environmental improvements. Many African and Middle Eastern countries have mobilised whole communities to work together with public health groups to effectively tackle major diseases such as onchocerciasis, and Sudan, with its wealth of communities and concern for others, has major opportunities for community action to reduce and prevent these problems that afflict so many people. This requires a government to implement a Health In All Policies drive, as well as communities to decide they will take on a public health role.

Yet it is economic and social factors such as education, income and housing that also have huge impacts on a country's health and life expectancy. Those resources can be shared out more equitably, and where this happens, health improves, crime diminishes, and wellbeing increases. By contrast, countries that protected only the financial interests of the few now have massive inequalities in health. In the UK for example, life expectancy has been high, but not for everyone, and our homeless people have a life expectancy of only 47 years – 30 fewer than the UK average.

Divided societies also inevitably have higher crime rates and poorer mental health. The US has long had massive wealth but instead of using it to create a universal health system or adequate social safety nets, most of it has remained in the hands of the few. The result has been a life expectancy gap between their richest and poorest of about 30 years. Following the Revolution, Sudan has a rare opportunity to look at the glaring mistakes of the UK and the US, and say 'No thanks – we'll build a much better and fairer society, and thereby create a much healthier one.' Unlike many countries, Sudan has a good chance of achieving this, because you start from the base of a society that is welcoming and mostly safe, neighbourly and where people are more willing to come together for the public good and where many families know many other families and would want to help them.

Contrast this with large wealthy cities in Western countries where few people know or speak with their neighbours, where a large proportion of the population live in one-person households, where trust is low, drug and alcohol use high, and where mental health is often poor. Those cities would find it very hard to build a more cohesive society where people look out for each other, and where health flourishes. Whereas for Sudan it would not be so hard since you already have the social capital. Your culture of cohesion, and care for everyone will be a vital element for creating a shared national endeavour to all work together for Sudan's healthier future. The fact that you have an abundance of faith and community leaders and so many revolutionary groups dedicated to a better future gives Sudan a determined base on which can be built a national health-promoting alliance. Multi-agency working needs to be accompanied by national policy driving it and underpinned by a Health In All Policies approach, in which the plans of every government department – transport, finance, environment and so on should all have to show how they will actively contribute to more equitable health across Sudan. For example, doctors can treat people with lung and heart disease, but ideally these would be prevented by transport, environment and urban development ministries reducing the air pollution that is a major cause.

Back in the 1950s, society in my own country, the United Kingdom, was economically much more equal, and I went to junior school with children whose parents were labourers, coal miners, shopkeepers, farmers and doctors, but as the country made the pursuit of wealth the

national priority, UK society became more and more divided. Nowadays in my country no children of the professional or affluent families will EVER even accidentally meet a child from poorer families, and they certainly won't go to school with them. Those affluent children will grow up to be affluent adults, working in the financial industries, and they will accumulate enough wealth never to have to live a 'normal' life again. If they become politicians, lacking any experience of how the poorest people live, how could they ever understand how to design legislation that would help the most disadvantaged? Consequently, in the UK government policies have made it impossible for the poor to work their way out of poverty or get a university education. They are stuck because the UK now has one of the most divided societies in the world, and our Governments keep it that way because they are utterly disconnected from the lives of the poor. But we always had a choice. Sadly, the UK made the wrong one, and it would be very hard to now reverse the damage of many decades. But Sudan has opportunities to make much better choices, because you have a more cohesive, more generous culture to start with.

Sudan has a robust and highly protective family culture. Many Sudanese people would be horrified by what passes for 'family' in the UK, where 40% of 16-14 year-olds report feeling lonely. In 2012 a survey of children found that almost 60% didn't feel they got enough time with their parents, longing for more, whilst in the US in 2019, that figure was a shocking 73%. It is nowadays unusual in the UK for families to have more than two generations living under the same roof. Children rarely spend time with grandparents, but spend hours glued to a screen instead. A huge percentage of old people in the UK live alone, never seeing anyone from one day to the next. In 2011, a quarter of old people in the UK reported feeling lonely and isolated. Massive numbers of old people live instead in 'care homes', attended by strangers and wondering whether their family will visit this month. Or this year. Family cohesion has been replaced by a pervasive consumer culture, in which different age groups have as little to do with others as possible. When I conducted a large survey about whether people would want to use a large leisure centre, most of the young people said that they might, as long as there were no old people there. The older people said they'd like to use it, but they'd be too scared to go if they saw groups of young people hanging around outside. Sudan has something very much better, where the family culture gives everyone a sense of belonging, which is protective of mental health.

Education has possibly the biggest impact of all on health. The considerable difference in life expectancy between the most and least educated can be measured in years, and thus the challenge for Sudan is to increase it for everyone by making good education available to all. Moreover, countries with a highly literate and educated population are able to be technically capable and strong and can build major sustainable industries, universities, food and other resources for their people, instead of acting as cheap labour pools for other countries. Sudan is a country where women have had educational opportunities earlier than any other country in the Region, with female lawyers, engineers, politicians, doctors and public health leaders at all levels. This is a good example of Sudan's capability for achievement, and if the country was similarly determined to increase its school and university capacity, while at the same time building an infrastructure to specifically enable people from disadvantaged backgrounds to get that education, a large section of the population would automatically lift themselves out of poverty. They would also reduce their risks of disease, disability, and avoidable mortality. You can see a fascinating interactive tool that projects what happens to a country's life expectancy, poverty rates, obesity and low birthweight if good education is extended to more people, at:

Common Good Forecaster | United Way Worldwide

Wealthy countries and corporations often see Middle Eastern & North African countries as places from which to take raw materials and labour at the lowest prices, whilst tempting abroad their smartest young people for lucrative careers, thus draining the country's resources while leaving little capacity behind. There are much better ways to trade, and the Faculty of Public Health has published guidance on Healthy Trade Policy. There are also excellent examples from around the world of Fair Trade, in which groups of small coffee, chocolate and fruit growers for example sell their products at good prices to wealthier countries, enabling them to reinvest in their businesses, but also to support their communities' education. Sudan has opportunities to change its deals with other countries, maximising income and investing it in better education for all Sudanese and using it to build a family doctor and primary care-based health system for the good of everyone.

The countries that tend to have the best health also tend to be the ones in which most health system spending focuses on prevention and early treatment of illness in the community, and the reverse is true for those countries that concentrate their health budgets on high-tech urban hospitals instead. 75 years ago, a small group of inspired leaders in the UK created what may be the country's greatest ever achievement – a free national health service open to all. A key part of was the family doctor system of general practice in small community settings. These doctors got to know the generations of the families they served and for decades were able to help them stay healthy, to notice early signs of illness and provide them with preventive care and early treatment. And this largely kept people out of hospital unless they really needed it. It also had a massive positive impact on life expectancy. Located close to people's homes in a nationwide network, family doctors would play a major role in preventing and treating early illnesses, helping people avoid travelling to city hospitals and getting into debt from high-cost tests and treatments, and also helping them manage their own illnesses. Sudan has a major opportunity to develop such a system.

In many countries, Sudanese doctors have a reputation for excellence. Unfortunately, Sudan has greater health needs than the wealthier countries, and urgently needs government modernisation of its health system and a rewarding career and salary structure for medical and health professionals. Otherwise, Sudan will be forever training them but finding that the UK, US and Saudi Arabia tempts them away with more realistic salaries. Sudan still has a major burden of infectious and vector-borne diseases, and will have an increasing additional burden of non-communicable diseases created by imported food and consumer lifestyles and culture, driven by corporate media. Sudan already has an excellent National Health Plan, but now needs reinvestment in a national prevention-focused primary care-led health system, supported by modernised and properly-resourced medical and health professions all invested in working together. Sudan has a choice about the sectors it invests its wealth in, and a national decision to prioritise a robust preventive health system with sustainable careers for professionals would pay massive dividends for the whole country for years to come.

Finally, I urge Sudan's government, community leaders, and health professionals to engage with my Sudanese colleagues in the Sudan Special Interest Group of the Faculty of Public Health. They combine decades of work experience as Public Health and clinical professionals in Sudan, as health leaders in the UK and other countries, and have long experience in effective strategic partnership working for health with communities, the health ministry, and the medical specialties. And they are dedicated to improving health for all in Sudan. Currently they are working to help reduce the pandemic spread and impact, but in the future their expertise will be available to contribute to building Sudan's population health and reducing inequalities.

Leadership at different levels to manage COVID-19 pandemic

Introduction:

Dr Mayada Abu Affan

Chair of Sudan Interest Group 9 SIG) of the UK faculty of Public Health /

Public Health Consultant, Dudley Council

COVID-19 as a global pandemic presented a real challenge for every healthcare system from the most sophisticated to the most under-developed. The World is not prepared for a problem of such a scale; a highly spreadable infection with no treatment that fully works or readily available vaccine at the start of the pandemic. A sudden need for personal protective equipment and other resources at a scale and sudden pressure on hospitals and other healthcare settings destabilised many governments. Furthermore, reducing the spread of the infection relies heavily on population compliance and behavioural change. The psychological and economic impact of the lockdown are immense.

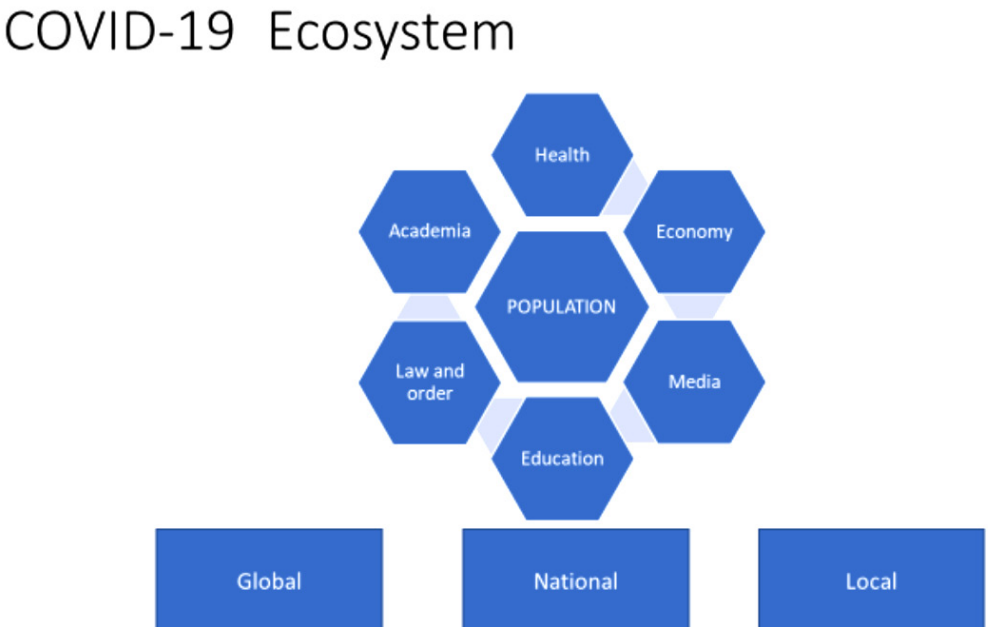
Leaders need to influence at a scale; across organisations, countries and globally . they have to deal with unprecedent levels of uncertainties, manage demand and scarce resources and build strong partnerships at all levels; local communities , nationally and at global levels

This article is thoughts and reflections of many leaders working in managing COVID-19 in the UK. It details various aspects and styles of leadership they find necessary and effective in managing the pandemic and how to keep staff motivated and able cope with the ever rising workload.

Very early on in the pandemic leaders realised that no one organisation is able to control this disease and its wider impact. As a result, health organisations and its partners had to build strong alliances and collaborations and think beyond boundaries.

Due to the fast-evolving pandemic and its dynamic nature, leaders have to adopt the principles of agile leadership. To be able to manage the rapidly expanding workload and keep staff motivated leaders have to focus on productivity, lean processes and transformative leadership styles;

The Ecosystem of COVID-19 pandemic (figure 1) expands beyond health. It includes drivers to influence population behaviours at a scale such as the media and law and order. There is a strong need to connect nationally and globally in order to manage cross- countries transmission and of course the need to develop strong partnerships with academic institutions to understand the best ways of managing the pandemic. To lead and manage such complex ecosystem, leaders at all levels need to think and work as one unit with various parts linked very closely together i.e. as a ***System***



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System leadership is defined as a set of skills and capabilities individuals or organisations can use to affect change at a large scale.

The core values of system leaders include an overriding interest of service users and quality of service, outcomes focus and drive.

System leaders have strong personal and emotional commitment and investment in the work which will yield the energy and resilience to continue working and manage through the hardest times.

Their perception and performance are based on their ability to understand the bigger picture but also be able to manage the minute details. They are sensitive to diverse voices and perceive challenges and failures as opportunities

Their thinking is characterised by having an open mind set, being very curious and are continuously learning. They have high level of intellectual flexibility and are deep thinkers

They master the art of building relationships with others because they are empathetic and have high integrity and authenticity. They are able to maximise existing resources, have high ability of sense checking and simplify complex problems.

System leaders are energetic, brave and risk takers. They are able to take unpopular decision, they are professionally mature , patients , and are able to take the long view.

The second style of leadership needed in such a complex and ever-changing scenario is" Agile Leadership"; a style of leadership that is influenced by changing the permeability of boundaries, demand and scenario shift. It is task orientated and relationship focused.

Many times, during the pandemic leaders have to change direction and tactics due to emerging evidence. To be able to achieve this successfully they need to focus on the relationships , not the processes , be flexible on contracts , adopt working solutions not excessive documentations and have flexible and fluid plans.

They need to set flexible goals and focus on execution with calculated speed. Have the ability of strategic thinking and operational delivery at the same time. They need to lead from within , inspire others to achieve impossible goals and put others first .

One of the main advantages` of agile leaderships is that it generates greater participation of teams and simplify the decision-making process..

Leaders need to focus on productivity and lean processes utilising following dimensions of productivity;

- Prioritise effectively
- Be clear on roles and responsibilities
- Be Clear on expectations
- Focus on simple communications
- Adopt a Solution focus mind
- Delegate effectively
- Use project management tools

In spite of the unprecedent challenge COVID-19 has presented to the globe, it has united the world. It has presented many advantages and positive learning such as the ability to produce safe and effective vaccines in a very short period of time. One of the most important and effective lesson is the need to work together as a Globe , the need to manage the risk not only on our own areas and countries but also on the whole humanity because if we ignore the risks on the smallest part of humanity it will adversely affect the largest parts of it .

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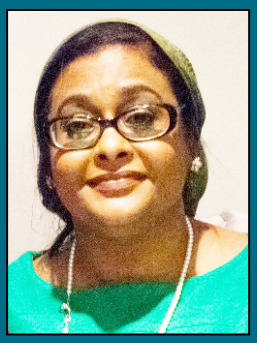
COVID vaccines: An Overview



Dr. Sowsan F. Atabani

Consultant Virologist

Public Health Laboratory, Birmingham

University Hospitals Birmingham Foundation Trust

Birmingham Heartlands Hospital

Bordesley Green East

Birmingham B9 5SS

Introduction

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is a novel coronavirus that is responsible for the Coronavirus Disease 2019 (COVID-19), first described on 31st December 2019 and declared a pandemic by the WHO on 11th March 2020. The clinical syndrome ranges from asymptomatic infection in up to 30% of cases, to a mild upper respiratory tract infection, to a severe pneumonia and even multi-organ failure. Older persons and persons will certain co-existing conditions such as hypertension and COPD, Black and Asian ethnic minorities (BAME) and healthcare workers are at highest risk for severe disease. As of 5th February 2021, there have been 105 million global cases and it is responsible for 2.2 million deaths worldwide1

Vaccination is a well-known public health tool for the prevention of infectious diseases, not only by the protection of the individual, but also by reduction of microbial transmission in the population. To date, smallpox is the only viral disease eradiated, achieved by mass vaccination. It therefore stands to reason to use a vaccine as a means of curbing the severity of this pandemic, which has led to serious medical, economic and social consequences.

Vaccines typically require years of research and testing before reaching clinical use, but in 2020, scientists worldwide embarked on concerted effort to produce safe and effective coronavirus vaccines in record time. As of 8th February 2021, researchers are currently testing 67 vaccines in clinical trials on humans, and 20 have reached the final stages of testing. Three vaccines have received approval for emergency use in adults, with a couple more having received approval for use in a limited number of countries.

Vaccine strategies

Traditionally, vaccines have fallen into these broad categories: a) live, attenuated formulations such as measles, mumps and rubella, b) inactivated such as rabies and Salk polio, c) inactive toxins such as diphtheria and tetanus, as well as d) recombinant subunit proteins such as hepatitis B vaccine. Inactivated virus and recombinant spike protein are methods that have been introduced for SARS-CoV-2 vaccines, Sinopharm and CoronaVac and Novavax, respectively. Their main advantages are that they can be stored in a standard refrigerator.

Compared to conventional vaccines, novel vaccine strategies utilize the genetic code of the virus, either as "naked" viral positive sense RNA or DNA or embedded in a replication-deficient viral vector. It is important to bear in mind that these RNA and viral vector SARS-CoV-2 vaccines do not cause the disease they protect against and have undergone the same rigorous safety standards and checks as any other vaccine, prior to licensing for use.

Modified SARS-CoV-2 RNA vaccines

The RNA vaccines (Pfizer and Moderna) are injected in a lipid particle, taken up by the host cell and use the host cellular machinery to express viral protein on the cell surface. The advantages of using modified RNA is that it mimics the natural cellular replication processes occurring in the cytoplasm and once it is translated into protein, RNA is rapidly degraded. mRNA remains in the cytoplasm and hence does not integrate into the host genome, which is located in the nucleus. This approach is not necessarily new as researchers have been working with them for decades and their use as vaccines has been studied in Phase 1 and 2 clinical trials for viruses like Ebola, HIV, Zika and CMV, as well as for some cancer vaccines. As soon as the genetic code for SARS-CoV-2 was sequenced, scientists began designing a COVID vaccine expressing the spike (S) protein using this technique. In Phase 3 clinical trials, these vaccines have shown up to 95% efficacy of COVID-19 disease prevention after two doses. Other advantages of this method include their relative rapid development speed, so in case new variants emerge; it is relatively easy to adapt the RNA vaccine accordingly. In addition, this type of vaccine can be manufactured and scaled up much quicker than conventional vaccines. However, this is associated with a complexity of distribution, including storage requirements e.g. -20 OC or -70OC and the necessity of more than one dose to achieve maximal immunity.

Viral Vector SARS-CoV-2 Vaccines

This strategy utilizes a "harmless" carrier virus (vector) to express and deliver the spike protein to the host immune cells to trigger an immune response. Like RNA vaccines, these viral vectors do not cause COVID-19 disease nor can they cause the virus vector disease. In the case of the Oxford-AstraZeneca vaccine, the virus vector is a chimpanzee adenovirus, whereas for the Johnson & Johnson (J&J) vaccine, it is a human adenovirus which acts as the carrier for the spike protein.

The Oxford-AstraZeneca vaccine is a two-dose regime which has been shown to have an average efficacy of 67% in adults in clinical trials, although a smaller number of recruits were above 55 years of age or from the BAME community. Its requirement for standard refrigeration and ease of worldwide shipment are attractive advantages to its use in health resource poor settings.

The J&J vaccine efficacy against moderate to severe COVID-19 disease was found to be about 66% globally, with varying efficacies in different countries: as low as 57% in South Africa while it was 72% effective in the United States. This difference in vaccine efficacy in different countries is probably a reflection of the circulating SARS-CoV-2 variants. The significant advantages of the J&J vaccine are that it is administered as a single dose, and only requires standard refrigeration for storage.

Viral Variants and Vaccines

RNA viruses, by nature, mutate readily and quickly. A mutation may alter virus function e.g. making it bind more readily with the host cell receptors or making it more easily evade the immune response, or it may make no discernable changes. A new variant emerges when one or more mutations differentiate it from the parent virus which is predominant in that population. To date, three main SARS-CoV-2 variants has been identified as the Kent, South African (SA) and Brazil variants, based on the sites in which they have originated. So far, the RNA vaccines have been shown to have an equal efficacy against the Kent and SA variants, whereas the Oxford Astra-Zeneca has been described to have a lower efficacy against mild and moderate disease due to the SA variant.

By remaining vigilant worldwide to all the virus variants that arise, the discussion will be on-going as to means of enhancing vaccine protection either by the use of additional boosters or tweaking the vaccine components.

Other SARS-CoV-2 vaccines in Development

Some non-injectable SARS-CoV-2 vaccines e.g. intranasal, inhaled and oral formulations made up of either RNA or viral vector subunits are in Phase 1 clinical trials at the moment. Whatever the repertoire of vaccines available, availability and distribution for global mass vaccination will always remain vital.

The urgency of the COVID-19 pandemic has encouraged global partnerships and collaborations and allowed acceleration of the vaccine development process, with clinical trials conducted simultaneously rather than sequentially in order to reach these conclusive and effective vaccines. We are fortunate to live in an era in which the worldwide scientific, social and political communities can unite to tackle the common enemy in the form of an emerging infectious disease.

Spotlight on Primary Care and Covid-19

Dr Ishraga M. A. Awad,

MPH FFPH MRCGP

Founder/ member of Sudan SIG, FPH London

The challenge

The Global toll of Covid-19 on healthcare is massive and unprecedented. The Media report 110.3 million confirmed infections and 2.4 million deaths globally1 (Source: John Hopkins University National Public Health Agency – quoted by BBC News).

The UK's share of this burden (on 21/2/21) was 4,117, 739 infections and 120,593 deaths since the pandemic started2.

The majority of cases (up to 80%) are mild to moderate in severity, 20% need hospital care.

For instance, between 14 February 2021 and 20 February 2021, 78,570 people had a confirmed positive test result3. Potentially, in that week, up to 62,856 people could need care in the community for mild to moderate symptoms of covid-19 or related health concerns. The first point of contact for these people is primary care. This is an example of the extra burden over and above routine care provision.

Fortunately, daily cases (and deaths) have started to decline since the peak on January 7th, 20213 but there is still some fluctuation within the downward trend.

The above figures reflect the huge potential and important role of primary

care in the pandemic, which this article will shed some light on.

The Response[4, 5]

The World Health Organisation (WHO)4 recognises primary care as "an essential foundation" in the pandemic response. We are lucky to have a strong primary care service, often depicted as the "jewel on the crown" of the NHS.

Primary care being the gateway to the health service, most people with suspected covid-19 will approach primary care first. As highlighted above, the majority - with mild to moderate symptoms - remain in the community and continue to be cared for by primary care teams.

They get advice on symptom management and self-care, safety netting on what to do in case of deterioration and preventing the spread of infection within their households and further afield.

Another emerging need is mental health support. Managing mental health challenges is rapidly becoming a key feature in GP consultations as the social and economic impacts of the pandemic unravel. Fear, worry, and stress which are normal responses in the context of perceived or real threats have been exacerbated by the pandemic

Over and above the fear of contracting the virus, the pandemic dictated significant changes to peoples' daily lives as repeated lockdowns resulted in unprecedented movement restrictions and lack of physical contact with family, relatives and friends in efforts to contain and slow down the spread of the virus. Furthermore, new realities emerged - working from home, temporary unemployment and supporting children at the same time with home-schooling and care. These have affected people variably, profoundly in some cases and led to an increase of safety concerns for children as they faced neglect and domestic violence. GPs are at the forefront of practitioners dealing with such safeguarding concerns.

GPs already care for an ageing population, managing multi-morbidity and health risks that were exacerbated by the pandemic. Social prescribing in primary care has contributed invaluable needs' assessment and support to such vulnerable people (elderly and others including families with children) through providing access to community and voluntary services and support to maintain healthy behaviours.

This role has evolved during the course of the pandemic as safer models of consulting have become established like telephone and video consultations.

The principles of primary care in the COVID19 response[5]

In the UK, primary care has had to undergo rapid change and development in order to cope with the pressures of the pandemic, prioritising resource allocation to balance routine services with pandemic care.

New models of working and pathways of care rapidly became established.

The principal tasks have shifted to provide care that is covid-19 safe, timely and efficient.

An urgent need to identify and manage potential cases as soon as possible emerged which had to be balanced with the risks of infection transmission to other attendants and practice staff. With the need to maintain essential services to non covid patients, a review of infection control procedures and enhancing them to protect staff and attendants from the virus had to be undertaken rapidly.

Proactive care and risk assessment as well as risk communication with the most vulnerable populations was undertaken e.g. developing care plans for elderly patients.

To ensure safety – there was a shift away from routine face to face consultations to remote patient triage using phone and video consultation platforms. Special clinics were set up to segregate suspected covid from non covid patients.

Alongside this, healthcare premises had to be adapted with clear signage at entrances and exits guiding attendants, ensuring social distancing and hand cleaning facilities are clearly visible.

Moreover, primary care is currently spending considerable resources on vaccinating its registered population against the virus.

The new ways of working have improved access in some ways but delayed access where a physical examination was deemed important to ascertain diagnoses and decide management plans. It remains to be seen what the true long-term impact of the pandemic has been on the provision of routine services to non-covid patients.

The solution

As most people (health professionals and public alike) know, general practice is usually the start and end (and almost everything else in between) of their healthcare journey.

"Generalism describes a philosophy of practice which is person, not disease centred; continuous, not episodic; integrates biotechnical and biographical perspectives; and views health as a resource for living and not an end in itself" (Reeve J, 2010)6

Primary Care (general practice) is the medical speciality that fronts the health service in the UK - the gateway to every individual with a health concern.

It contributes hugely to the prevention and management of ill health in populations throughout the life course.

Some of the key functions of primary care or general practice include:

Primary prevention services – immunisation and advice on preventing ill-health through adopting healthy lifestyles.

Secondary prevention services – cancer screening, early diagnosis, management and follow up of people long-term conditions e.g. diabetes, hypertension, ischaemic heart disease and chronic neurological disease to name a few.

Secondary care referrals - of cases that need investigation and management by specialists in secondary care.

End of life care for those with life limiting illnesses – supporting quality of care; dignity and comfort at the end of life, to supporting families before and during bereavement.

Facts and Figures

In 2018/ 19 – there were 312 million GP consultations in England compared to 96 million outpatient appointments in hospitals.

About 82% of GP consultations would be in primary care surgeries, sited within local communities, and 4% would be in patient's homes.

97% of the British Population are registered with a GP of their choice, close to where they live and caring for whole families for ease of access and continuity of care.

These features and figures put primary care at the heart of population healthcare including the pandemic response.

The solution is simple, strengthening the role of primary care services equals better .population health

Primary Care in a Global Context[8, 9]

"Good health allows children to learn and adults to earn, helps people escape from poverty, and provides the basis for long-term economic development" (WHO, January 2019).

The World Health Organisation (WHO) recognises health as a fundamental human right (1948 WHO Constitution).

The Global challenge

However, the sad fact is that 50% of people globally cannot access essential health care due to poverty. Around 100 million people are being pushed into extreme poverty (defined as living on 1.9 US dollars or less a day) because of health care expenses.

The Global Solution

Universal Health Care (UHC) provision through strong primary care services was agreed upon

globally in the Declaration of Astana (October 2018, Global Conference on Primary Health Care). It is also one of the targets of the Sustainable Development Goals set in 2015.

It protects people from having to use up their life savings, sell their assets or borrow monies to cover unexpected illness.

Alongside this, there is growing recognition that strong primary care is a cornerstone of sustainable development.

Strong primary care can address >80% of peoples' health needs throughout their life-course from health promotion, prevention and treatment to rehabilitation and end of life care.

It is cost effective, hence could be easily scaled up to provide equitable healthcare across countries.

The Recommendations

The WHO has called for universal health coverage (UHC) to be adopted by ALL countries so that individuals and communities can receive health services without suffering financial hardship.

There is an urgent need in developing countries to understand their local context and the situation of primary care provision; hence measurement of what is there, assessing what works and what needs to be developed.

There is an urgent need for honouring the commitment to the Astana Declaration with strong and sustained political will to invest in the primary care workforce, good governance, effective systems for the supply of essential medicines and functional health information systems.

For Sudan;

All the above is most urgently needed – drawing from the NHS experience and the Global recommendations above, we need to look at our health care system with fresh eyes and open our hearts and minds to embrace, initiate and sustain good change.

As the pandemic marches on, we hope our primary care system will evolve quickly to tackle it and keep our people in good health.

Conflicts of interest: the author is a practicing GP in the NHS

The views shared in this article are the author's own.

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View from the field: Risk communication for the COVID-19 pandemic

28 Feb 2021

Acknowledgements:

In liaison with the Sudanese Community Physicians initiative and in collaboration with the various stakeholders in Sudan and abroad, a small group met to discuss Risk Communication for the COVID-19 pandemic.I have been the Chair of the Scientific Committee for this initiative which started in December 2020.This was not the only effort – in reality it was just one of many diaspora initiatives. The reason this one is specifically highlighted is because right at the centre has been the Federal Ministry of Health with their continuing efforts to raise awareness of the seriousness of the pandemic, and they partnered with Sudanese public health experts across many countries who are leading the pandemic response.

Introduction:

My role as Director of Public Health in the UK, founding member of the Faculty of Public Health Sudan Special Interest Group, and a member of the Sudanese Community Physicians initiative has offered a privileged birds-eye view. From what I have seen, I acknowledge all the good work of colleagues in the Sudanand the genuine efforts of the various diaspora initiatives; many of which I have not been party to. In fact, reality dictates that the collective efforts are the ones that navigate us through the pandemic, and I hope that this summary viewpoint may assist others embarked on similar journeys.

Aims:

Due to the multitude of initiatives, one of the clear barriers to risk communication is the number of conflicting messaging that circulate on social media; all purporting to come from an official, expert or credible source. This has led to inadvertent duplication and conflict as experts have tried to dispel the myths; while others have spread mistrust feeding fears of the unknown and propagating self-fulfilling prophecies like the anti-vaccination movement compounded by stigma and the many reasons why some communities are unable to or reluctant to access testing.

The purpose of this article is to unpick the different messages around COVID-19 identifying how and why different audiences react differently, and using these insights to recommend how and why we should communicatethe risks. As there will always be an element of residual risk and uncertainty, this is not about proving others wrong or knowing the answers with righteous conviction.

Gaps in the messages:

Thinking about the three domains of prevention (Primary, Secondary and Tertiary prevention) we can consider the impact of COVID-19 at

Dr Muna Abdel Aziz, MBBS

MD MPH PhD FFPH PGCert Med Ed

Director of Public Health for Salford UK.

Member of Sudan Special Interest Group, Faculty of Public Health, UK

Chair Scientific Committee, Sudanese Community Physicians initiative

all stages before illness right through to end of life.By breaking down the various messages for key audiences and settings, we can identify gaps and areas for development that have not been sufficiently addressed in Risk Communication. For example, from the tables below it can be seen that:

1) The familiar messages for COVID-19 are Hands, Face, Space and Isolate when unwell. Occasionally risk communication messages focused entirely on the first three especially at the start of the pandemic and also where there is reluctance or lack of testing.

2) The management of the environment is a key aspect of being COVID secure. This is often missed with occasional cleaning only once a day or less. People often asked how frequently should regular cleaning take place, and this should be as often as practicable after each user or bubble, and especially the shared spaces and high touch points. This will mean that the cleaning responsibility is shared by everyone and cannot be undertaken solely by the job role of a cleaner. Environmental management also includes ventilation, and the one-way system and arrangements within a setting to keep bubbles separate so they are not sharing the same corridors, toilets or kitchen spaces.

3) COVID has had an undeniable impact on the environment by overuse of single useplastic and disposable items,and has resulted inlittering of public spaces and landfill. The ecological cost to the planet should be kept as low as possible by re-using cloth face coverings and keeping medical masks for people who need to wear them as personal protective equipment (PPE) in health, care and cleaning services. For infection risk and to reduce the litter and waste, people are encouraged to keep their own waste in plastic bags for disposal at home (or kept to one side for 72 hours before disposal into open rubbish bins or sites)

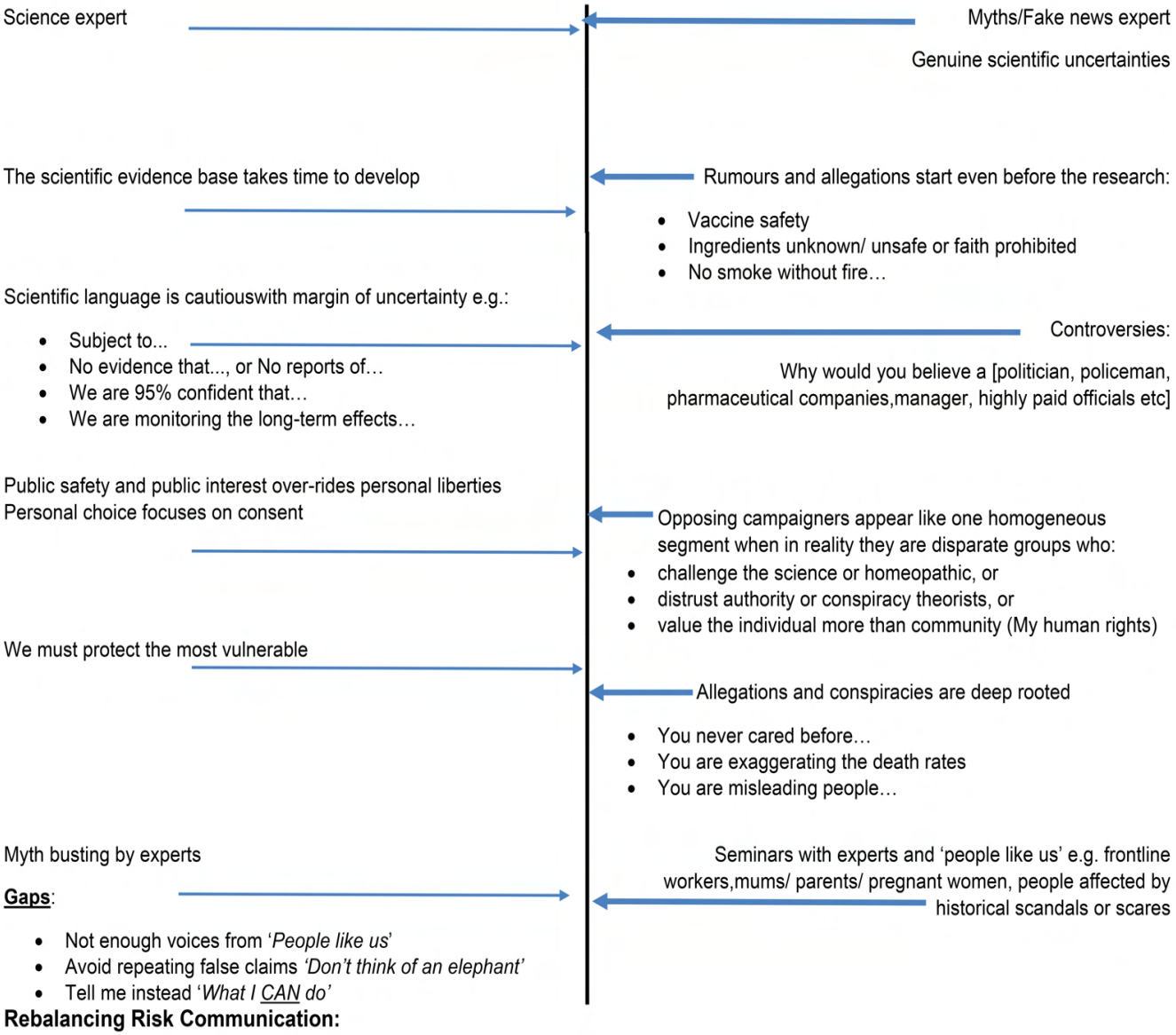
4) The case definition of COVID-19 in each country may diverge from the standard WHO case definition. In secondary prevention, this will mean unwell persons may spread the virus either due to lack of access to testing or because they do not suspect COVID and therefore do not act like they have it. The category of people who are unwell must also isolate if they do not access testing to rule out COVID. This is different to asymptomatic persons who do not have any symptoms whatsoever yet may be shedding the virus.

5) The duration and location of isolation and quarantine is also important to reduce the risk of spreading the virus at either end of the isolation periods. Isolating contacts before they are unwell means they will not be infecting others prior to symptoms and at the time of starting to shed the virus. This will break secondary transmission. When the length of isolation for contacts is short or they leave before the end of isolation or they access vulnerable settings (e.g. test to release initiatives or discharged from hospital where they have been exposed), then the risk of infecting others can be high.

Prevention	Outcome	Examples of application
Primary	**Hands** Frequent hand washing Use of hand hygiene/ disinfection Keeping hands away from the face	• **messages for key audiences:** Young and old • **messages for key settings**: Each time you leave or return home, going shopping, schools, public places and wudu facilities
	Face Wearing cloth face coverings Catch it, Bin it, Kill it (respiratory hygiene)	• **messages for key audiences**: Male and female cultural clothing – Why buy when you can wear your head scarf or traditional cloth wrapped around your face • **messages for key settings**: Public transport, shopping, schools, places of worship. Minimise the waste in public areas
	Space Social distancing 1 -2 metres Minimise numbers of people Essential access only Digital solutions as first choice Designating bubbles Different bubbles on different days	• **messages for key audiences:** Managers and owners of premises to mark the ground for one-way systems, Minimum numbers in each space at a time including arrangements for remote or delivery arrangements • **messages for key settings**: Queue marshals in shops and telephone purchasing with delivery options, Leaving empty seats in public places and transport, Schools designating bubbles, Workplaces designating bubbles and restricting numbers in shared spaces, Ventilation and face coverings where spacing is difficult.
	Environment Environmental cleaning Shared spaces Ventilation	• **messages for key audiences**: Cleaning after each user or bubble is everyone's responsibility. Suitable PPE for cleaners especially after someone unwell. Length of time and ventilation are as important as space. • **messages for key settings**: COVID spreads easily in closed crowded places. Open windows and outdoor spaces are safer for longer on public transport, shopping, schools, places of worship and workplaces.
	Shielding of clinically extremely vulnerable individuals • Identifying them on the basis of age and health conditions • Managing their medical needs • Personal care needs • Living essentials • Physical shielding • Mental health support • Dedicated carer • Use of PPE for carers	• **messages for key audiences:** Young and old family members to agree who will go out for essentials and who will dedicate caring responsibility for person being shielded. • **messages for key settings:** Managers to discuss COVID risk with employees to agree bubble arrangements and shielding arrangements e.g. to work from home or redeployment to alternative duties that are not exposed to members of the public. Travel advice for clinically vulnerable people.
Secondary	**Isolation of people who have symptoms** • Unwell persons • Suspected cases • Probable cases • Confirmed cases	• **messages for key audiences**: Recognition of suspected cases without testing (unwell with any symptoms), Personal responsibility to protect others, Friends and family to arrange essential living needs and medical supplies. Local neighbourhood volunteers to help. Safe management of waste. • **messages for key settings**: Business continuity for workplaces is protected when unwell people stay away. Workplaces to discuss pay arrangements.
	Quarantine/ Isolation of contacts • Travel related quarantine • Isolation of contacts of suspected or confirmed cases or deaths • Isolation of contacts of suspected or sudden deaths • Combating stigma • Circuit breakers for geographical areas or settings	• **messages for key audiences**: Incubation period at least 2 weeks, and deaths will follow in the third week, Recognition that sudden deaths are suspected COVID, Consecutive and mass deaths are the tip of the iceberg at the peak of the pandemic wave, Circuit breakers are Tipping points to be able to halve interactions and halve them again. Essential travel only. No stigma to becoming unwell – the Stigma is if you don't isolate • **messages for key settings**: Faith settings to advise against gatherings especially funerals so family can isolate, Unwell people to stay at home away from work, school, worship and transport. First aid arrangements in workplaces and public spaces with PPE. Workplaces with two or more linked cases are an outbreak – may need deep cleaning and circuit breaker.
	Management of the deceased in community settings • Funeral arrangements • Washing deceased • Burial arrangements • Mourning and cultural norms	• **messages for key audiences**: Alternative ways to get in touch following a death, immediate contacts only, older people to shield elsewhere. • **messages for key settings**: Faith settings to train volunteers for the washing and burial with full PPE, advise against funeral gatherings
Tertiary	**Health care seeking behaviours** • Home management and monitoring • Oxygen support and monitoring • Primary care management • Intensive care • Palliative care • Cultural norms and myths	• **messages for key audiences**: Hydration and rest, oxygen monitoring (where available), Contact numbers to call for advice, contacts in emergency, safe transport arrangements for suspected or confirmed cases e.g. protecting driver with PPE • **messages for key settings**: Primary health care settings and pharmacies having minimum essential medicines and supplies, hospital RAG rating (red, amber, green zones and monitoring bed occupancy). Non COVID issues needing urgent care e.g. accidents and long-term conditions, early detection of cancer and other serious complications. Safe management of waste

How we communicate risk and the opposing views: **FORCE FIELD ANALYSIS IN RISK COMMUNICATION**

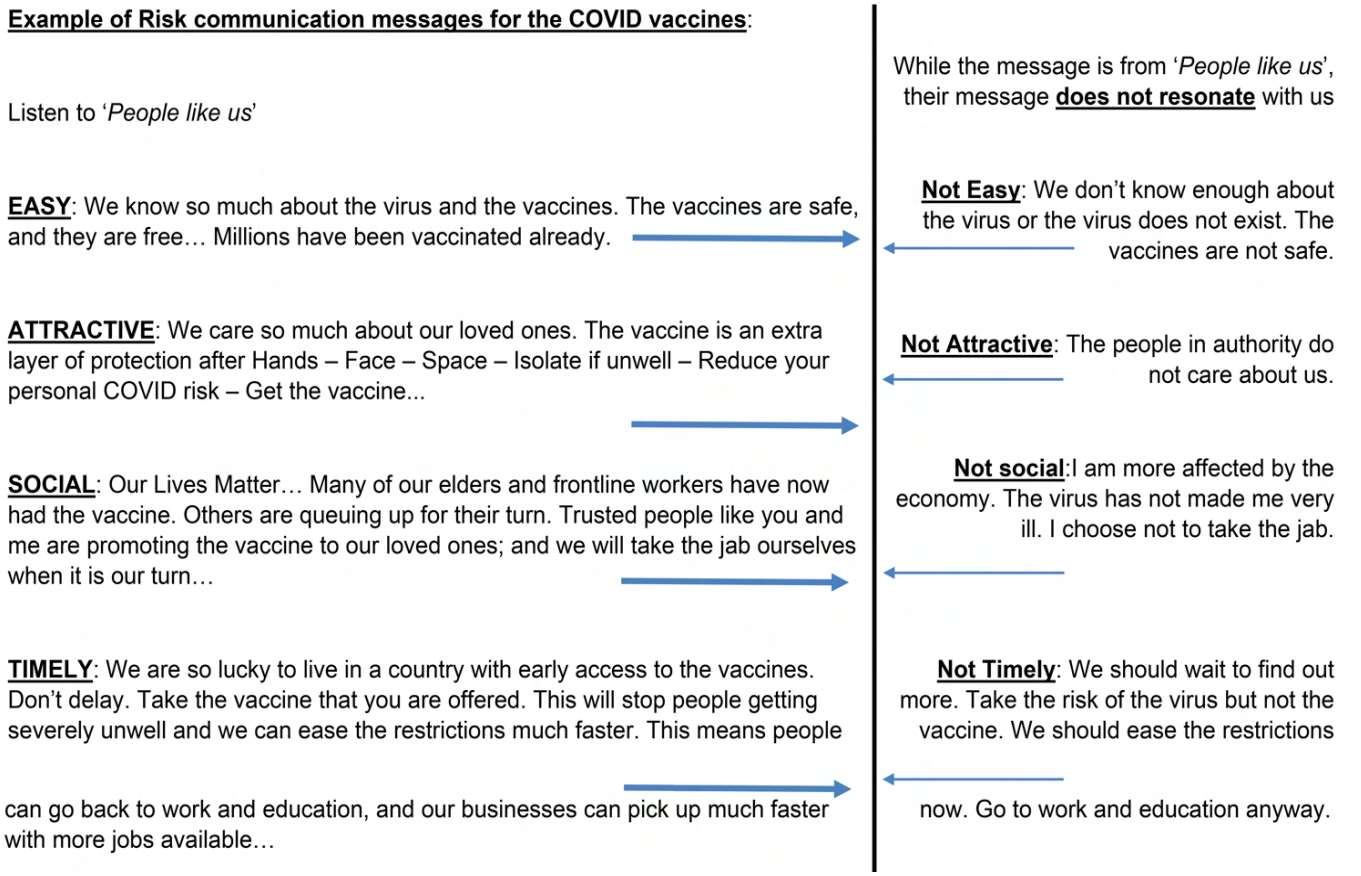
The width of the arrows represents the strength of the forces. This figure shows how myths controversies seem to overwhelm the science



Rebalancing Risk Communication:

EAST (easy, attractive, social and timely messages) is a behavioural insights methodology that appeals to policy makers and advocates who can produce relevant messages for their target audiences. It is a simple framework that can be applied to many areas in the COVID response. The example below is given for the arguments for and against the COVID vaccines. This demonstrates how the positive EAST framework can get more and more ordinary people joining the efforts to

communicate about the vaccines. Right now, millions of people who have been vaccinated can pass on the positive messages; just by word of mouth or on social media.



Recommendations for Risk communication:

Undertake gap analysis not just needs analysis. Experts always tend to go for needs assessment first – and this is not really needed to start with for risk communication. In fact you lose time compared to the fake news agenda who are also horizon scanning and communicate risks without waiting for the evidence. The forcefield analysis is an example of gap analysis.

Acknowledge different points of view, and agree commonalities not differences. We should frame all our messages positively and we should increase the volume of these positive messages so there are many more positive messages circulating than there are myths and mistrust. Exercises like role play help to view the world through the eyes of others and this helps to communicate in the language that is culturally appropriate to the audience.

Sifting through myths methodically is important to disengage the cause and effect for myth busting. Analysis is important because many of the negative messages circulating are in fact correct and truthful; just being used to bring about an unwanted outcome like vaccine hesitancy or incorrect health seeking behaviours. As an example when hospitals are overwhelmed with COVID cases, this may be used to assert that health authorities are not doing their work properly or conspiracy or those in power are oppressing the masses. These are untrue because in reality our collective behaviours have led to health care systems becoming overwhelmed.

Consider inequalities as part of the gap analysis, analysing the reach of messages and getting feedback and behavioural insights for particular communities. This will help to start to build trust; for example acknowledging the Black Lives Matter movement, and getting behind the COVAX initiative to support vaccine supply to

the poorest communities.

Create community feedback loops to ensure you are listening as well as producing messages. This helps to segment your audience to those who are compliant (taking up the right messages and right behaviours), those who are hesitant (taking up the right messages but still not the right behaviours), and those who are rigid in their position and will not shift their views. For example, 10% of people are anti-vaccination in principle. In their view, it is the scientific community and people in authority who are twisting the facts. So our messages should focus on where we can influence, like those who are hesitant or want to find out more.

Use the voices of trusted leaders and ordinary people in their circle of friends and loved ones. For example, we can produce Bucket Challenge video series where ordinary people are asked to use their voice and pass the message on quickly to their friends, family and networks because we are in a race against time. These can be mnemonics for washing hands for at least 20 seconds, or short poems as reminders for the school day or places of worship, and more serious messages about deaths management and health care seeking behaviours.

Further Resources:

Toolkit: Communication for Behavioural Impact (COMBI) • Global Health Social Science (tghn.org), UNICEF and WHO 2012

Risk Communication and Community Engagement (RCCE) Action Plan *Guidance COVID-19* Preparedness and Response (who.int). March 2020

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Doctors' Wellbeing – time to look after you

Dr Sara Beleil

MBBS FRCPsych DPM PGC DPM

Consultant Psychiatrist, UK

Sudan Doctors' Union – UK Branch

Doctors pride themselves on their ability to deal with problems. They are trained to solve their problems as well as other people's. To say Covid-19 has had a massive impact on everyone's lives would be an understatement. Doctors rose to the challenge despite the uncertainty and inexperience in managing the disaster and devastation of the pandemic across the globe.

The mental health impact of Covid-19 has resulted in a plethora of difficulties such as isolation and loneliness, distress, traumatic stress disorders, anxiety and more serious depression, substance abuse, neuropsychiatric disorders, severe mental health difficulties and emerging concerns about long Covid. It is important to note that doctors being an

integral part of the Disaster Response, are most at risk of traumatic stress exposure. Throughout the pandemic, doctors were exposed to high psychological distress whilst worrying about catching Covid themselves and taking it home to their families. Like others, they also had to deal with bereavements and for some, significant economic difficulties.

Working Under Pressure

Doctors are accustomed to working under pressure and most perform to the highest level under stress. There are many factors that trigger stress at work irrespective of the pandemic, which are usually related to the job, such as workload and shift patterns or to the doctors' role which involves a high level of responsibility. This is particularly stressful, if it is responsibility without control. Other factors include relationship difficulties at home or with colleagues and wider issues such as career development and being respected and consulted in decisions within the team and organization.

Generally, pressure and optimal levels of stress can have a positive impact, enhancing motivation, speeding up brain processing, boosting memory and improving mental functioning. However, this is in contrast to sustained chronic stress leading to exhaustion and Burnout. Burnout is defined as a state of emotional, physical, and mental exhaustion caused by excessive and prolonged stress. It occurs when you feel overwhelmed, emotionally drained, and unable to meet constant demands (Smith, Segal & Robinson, 2020).

The sustained high levels of stress due to Covid -19 has affected doctors of all specialties and grades. Prevalence of Burnout is at a high, with almost a third of UK doctors suffering from burnout, stress and compassion fatigue (BMJ, 2020). Burnout can be measured using the Maslach Burnout inventory (MBI). It is characterized by notable changes in four domains. These include changes in behavior such as clock-watching, dragging feet to work, loss of creative problem-solving ability and withdrawal from colleagues. There are also changes in feelings, with loss of humor, a persistent sense of guilt and self-blame, and feelings of discouragement and indifference with a sense of powerlessness. Changes in thinking can result in an inability to concentrate, resistance to change and having a dehumanizing attitude towards patients. Finally changes in health are demonstrated with disordered sleep, lower immunity with frequent ailments and precipitation of physical and mental health problems. Burnout can often lead to maladaptive coping strategies thereby creating further complications that are well established in the literature. These include alcohol and drug misuse, physical withdrawal from co-workers, increased absenteeism and arriving for work late and leaving early, to name a few.

A survey by Medscape explored how different generations of doctors have been affected during the pandemic and lockdown. Generation X (aged between 40-55) at 48% were the most burned out followed by baby boomers (aged between 56-74) at 39% and millennials (aged between 24-39) at 38%.

Interestingly, actions considered to reduce burnout were early retirement by older doctors. Many younger doctors stated that they would look for a different job within the medical field or consider leaving their medical career.

The pandemic saw an initial period of high morale and camaraderie among doctors whilst combatting Covid-19. This quickly dissipated with ongoing stress, compassion fatigue, struggles with personal grief and for some doctors, this was on a background of mental illness comorbidity.

Moral Injury

The concept of moral injury with the pandemic is frequently considered and referenced in relation to the poor overall preparedness by the government, the delayed responsiveness, and the lack of resources and PPE. Moral injury was first described in war veterans in the 1990s and refers to perception of betrayal and injustice, guilt, shame and anger. This was conceptualized to

occur among doctors in 2018 as an expansion of the concept of burnout and compassion fatigue (Talbot & Dean, 2018). Doctors are affected and suffer psychological harm as a result of not being able to give patients the care needed due to lack of resources. Moral injury refers to unaddressed moral distress leading to psychological conflict that is related to trauma and will affect wellbeing.

Wellbeing & Post Traumatic Growth

It is important to identify strategies to manage stress and early recognition of symptoms is necessary in order avoid burnout. Resilience is often described as the panacea for burnout. Doctors arguably already have high resilience and yet still struggle with high levels of burnout; they are also generally known to be difficult patients with a tendency to neglect and deny symptoms and often self-diagnose and treat themselves. Unfortunately, doctors suffering from burnout are more likely to use maladaptive coping mechanisms.

Covid-19 has been and remains a traumatic stressor and the prolonged traumatic exposure suffered by doctors has resulted in clearly defined difficulties. However, post traumatic growth provides opportunities for new possibilities of personal strength, improved relationships, spiritual growth and appreciation of life (Tedeschi, 1996).

Work and Mental Health: An employer's guide (Royal College of Psychiatrists, 2002)

Looking after yourself and dealing proactively with stress and burnout requires you to pause, to reevaluate and change direction to get back to feeling positive and enjoying your work. It is important to start monitoring your own health, stress levels and coping strategies.

Healthy living cannot be overemphasized. It is about setting time aside to relax, scheduling leave periods and prioritizing sleep, nutrition, hydration and exercise. It's important to communicate and share with family and friends and connect with colleagues both informally and formally. Remember to set boundaries and make changes to your work - life balance. Supervision and mentoring can be extremely helpful in keeping you focused on addressing your wellbeing. Never ignore early warning signs of stress and always get help for health problems.

Time to be kind to yourself!

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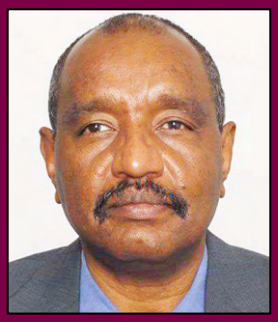
COVID-19 and the Global Economy

6 March 2021



Mutasim Elagraa

is a Sudanese economist with the United Nations Conference on Trade and Development (UNCTAD), in Geneva. His views do not necessarily represent those of the United Nations secretariat.

By causing the death of 2.7 million people as of early March 2021 and triggering far-reaching health and economic convulsions, the outbreak of the COVID-19 pandemic inflicted untold human suffering and posed serious challenges to national governments as well as multilateral institutions and the international community.

By locking down national economies, the pandemic disrupted all pillars of the global economy, including international trade, domestic and foreign investment, global value chains, employment, as well as public and private debt.

United Nations and World Bank date indicate that millions of jobs have been lost to the pandemic, some of which may never return, and some 130 million people have been pushed towards extreme poverty.

As the world economy shrank by a significant percentage, thanks to the pandemic, 2020 will go down in history as the year of the worst global economic recession in the last century and half; surpassed only by the Great Depression and two world wars.

World Bank data suggest that the world economy contracted by 4.3 percent in 2020. But the true cost of the pandemic is even greater than that figure which only reflects the level of global output in 2020 compared to its level in 2019 - not to what it could have been in 2020 absent the pandemic.

Before the arrival of the pandemic, the global economy was expected to grow by 2.5 percent in 2020 to reach US$86 trillion. This means that the world lost 6.6 percent of its income in the aftermath of the pandemic – i.e. US$5.6 trillion at constant 2010 prices.

Even though the world economy commenced recovery and is more likely to achieve positive growth in 2021, assuming progressive containment of the pandemic with the advent of vaccines, global output is forecast to remain 5.3 percent below pre-pandemic projections – implying the loss of another US$4.7 trillion, for a total of 10.3 loss for 2020 and 2021. In other words, in two years the economic cost of the pandemic will be greater than the combined output of 153 countries in the world map. The greatest losses will be registered, respectively, in the euro area, the USA, and India while China fairs much better among the large economies of the world.

Yet that horrifying loss of global income understates the toll of the pandemic because it does not take into account the change in the composition of global output caused by shifting productive resources to increase production of goods and services necessitated by the pandemic such as medical equipment, testing tools, vaccines, protective equipment, ventilators, thermometers, sanitizers, and medical care, all of which would have been redundant if there were no pandemic.

Fortunately, containment of the pandemic seems

to be finally within view with the advent of several vaccines. Nevertheless, even after containment, the economic damage of the pandemic will persist for years, if not decades. The corrosive economic impact of the pandemic will persist via its long-term negative impact on investment, weakened productivity growth, lost education time, lower accumulation of physical and human capital and mounting public and private debt which may crimp growth prospects around the world.

Not an equal opportunity virus

At the sectoral level, the sectors that borne disproportionate cost inflicted by the pandemic include the services sector, tourism, microenterprises and small and medium-sized enterprises. At the global level, even though the COVID-19 pandemic spared no country on the map, its economic impact has not been symmetric, nor has it correlated with its spread and the death it caused around the world. Far from being an equal opportunity curse, the pandemic exposed and deepened inequalities within countries and between them.

While rich countries suffered greater infection and death rates, low-income countries suffered greater economic damage owing to their vulnerability to shocks, and weaker capacity to respond to the massive challenges posed by the outbreak of the pandemic and its persistence. Nor has the pandemic's impact been equal within countries. Its toll disproportionately victimized the most vulnerable groups in societies, be they poor households, low-paid workers, migrant workers, or ethnic minorities – the same demographic groups which are overrepresented in jobs that lack basic protections.

Nor has the impact of the pandemic been gender-neutral. Women have experienced greater unemployment than men where COVID-19 hit hard since, among other things, women are more reliant on employment in parts of the economy that are hit hardest by the pandemic - the service sector, tourism airlines, hotels, hospitality, restaurants and retail. By some estimates, tourism, a major source of employment for women, lost more than a trillion dollars in 2020, with 100 million to 200 million jobs jeopardized by the pandemic.

Fortunately, in Sudan and Sub-Saharan Africa, the health toll of the pandemic has not been as bad as initially feared. This has been a qualified good luck of sorts. Even though one life lost is too many, it still could have been worse in Sudan and Sub-Saharan Africa. Multiple factors may explain the relatively lower spread and death rates: weak transport networks, lower international and interregional integration, younger population, possible cross immunity developed by exposure to other viruses, and lower incidence of complicating comorbidities such as diabetes and obesity. And yet official statistics may have underestimated the spread and death toll caused by the virus owing to weak testing and statistical capacities in the continent.

Despite the comparatively smaller health impact, economic activity in Sub-Saharan Africa still declined by 3.7 percent last year, not far from the global average, and forecasts suggest that the pandemic will weigh down growth for a long time to come, especially that the rollout of vaccines in the continent is expected to lag behind advanced and emerging economies.

The pandemic has thus sent the continent into recession in 2020 and sent millions of households into poverty as well as extreme poverty and food insecurity. The World Bank and UN data show that the economic crisis precipitated by the pandemic is projected to push more than 130 million people into extreme poverty, half of them in South Asia and one-third in Sub-Saharan Africa where 40 percent of the people already live in extreme poverty.

Across the continent, the pandemic inflicted greater cost on oil exporting and tourism-reliant countries as travel and production activities slowed down a great deal around the world and thus weakened the demand for both tourism and oil to power factories as well as land, air and sea transportation. On the other hand, agricultural commodity exporting countries were less exposed to the pandemic, they fared better and a few African countries that depend heavily on agricultural commodity exports registered growth in 2020 despite the COVID-19 global economic shock, these include Malawi, Uganda, Benin, and Côte d'Ivoire.

In Sudan, the overall situation has been far worse compared to the rest of the continent due to the confluence of the COVID-19 shock with other natural and manmade disasters. The Sudanese economy was in bad shape before the pandemic struck and it got only worse since. The national economy was on a declining trend before the pandemic, with real GDP falling by 2.3 percent in 2018 and sinking again by 2.5 percent in 2019. Thanks to the pandemic and other misfortunes, in 2020 the Sudanese real gross domestic product (GDP) fell by a staggering 8.4 percent implying 10.8

percent decline in per capita income on top of 4.7 percent per capita income decline in 2018 and another 4.9 percent drop in 2019.

The growing risk of debt distress and financial crises

Lacking the fiscal space to limit the damage, many countries in Africa and the developing world resorted to borrowing to deal with the challenges posed by the pandemic. The COVID-19 pandemic has elevated global sovereign as well as private debt to perilous levels. In developing and emerging economies, the accumulation of debt will crimp long term growth prospects as paying back principal and interest will divert resources away from productive investment in physical and human capital. The negative impact of debt accumulation is magnified by its elevation of the uncertainty and risks of financial and currency crises at all levels of the global economy.

As such, the COVID-19 pandemic has dealt a major blow to the pursuit of the Suitable Development Goals, setting them many years back. It reversed progress made in reducing poverty around the world. Global poverty fell from 36 percent in 1990 to 8.6 per cent in 2018. Africa is particularly threatened since it accounts for half the of global extreme poverty even though its share of global population is less than 17 percent.

Remittances take a hard hit

For low-income countries, such as Sudan, foreign direct investment does not play an important role. Instead, the external position of such countries tends to be more sensitive to variations of expatriate workers' remittances and official development assistance. Of late, Sudan received little official development assistance, but remittances play a critical role as they are the country's main source of foreign exchange and family support. Statistics are not precise, but there can be no doubt about the central importance of remittances to the Sudanese economy. Their share of GDP is certainly in the double digit and can be as high as 20 percent of GDP or even more.

In addition to providing safety nets for recipient households, remittance facilitate economic growth by enabling the country to import critical production inputs, technology, and capital goods and by stimulating aggregate demand in the destination country. The impact of the decline has been particularly harsh in poorer countries with high degree of dependence on remittances for household livelihood and for securing essential imports in foreign exchange-constrained economies such as Sudan's.

For low- and middle-income countries the COVID-19 pandemic resulted in some 20 percent decline in remittances in 2020 (to $445 billion) as migrant workers around the world lost income and employment in host countries.

The perils of vaccine nationalism and unequal recovery

The development of new vaccines in record time has been a feat for technology and the medical sciences. The remarkable achievement has been received around the world with great relief and renewed optimism. As well as saving precious life, by WHO count; vaccines may well prevent the loss of US$ 375 billion per month to the global economy.

However, there is serious risk that in developing and low-income countries access to vaccination may follow existing unequal distribution of global power and resources and by the elevation of profit over life.

While wealthy countries have raced to inoculate their populations, most low-income countries could be forced to wait until at least 2022 or beyond to vaccinate significant portions of their population.

Access of low-income countries to vaccines is not only jeopardized by funding shortfalls and logistical constraints, it is also threatened by the fact that rich countries have been hoarding enough doses to vaccinate their entire populations up to five times over.

Prospects for vaccine distribution in Sub-Saharan Africa are further darkened by insufficient access, multiple logistical barriers, weak state capacity to manage large scale vaccination campaigns, poor transport infrastructure and inadequate storage facilities.

Lack of timely, equal access to the vaccine is not only ethically problematic, it is also costly from global health and economic vantage points. Unequal access will not only deepen the existing global hyper inequality, it will lower global economic growth and will enable the pandemic to persist for longer than it otherwise would; with the attendant risk of further mutations and the emergence of new strains that may be costly and hard to contain. Morality aside, timely vaccination of the whole people of the word is the optimal course from economic and public health perspective while the selective, restricted access is costlier in terms of both ethics, life and dollar.

As the pandemic's death toll mounted, some voices called for relaxing the stringent rules of intellectual property rights to enable developing countries to produce vaccines for faster administration to population outside rich countries. A group of developing countries led by India and South Africa proposed that the World Trade Organization suspends vaccine-related intellectual property rights to enable poor countries to produce affordable versions. However, the proposal has been blocked by rich countries using the predictable rationale that patent protection and the ensuing profits incentivize innovation that make the development of critical medicines possible in the first place. Never mind that the COVID-19 vaccines have been developed with massive and decisive government support that disbursed billions of public funds to accelerate the process; on top of a background of essential basic scientific research conducted at public institutions or by private institutions funded by governments around the world.

Weak global solidarity multilateral response

In response to the multiple challenges posed by the COVID-19 pandemic, international organizations declared commitment to provide all countries with the tools needed to fight it, but action has fallen far behind words.

The international community set the COVAX mechanism by the WHO and the Vaccine Alliance to ensure global, equitable access to vaccines. COVAX announced a plan aimed at providing low- and middle-income countries with doses of vaccines to cover at least 20 percent of countries' populations. This leaves much population outside the COVAX coverage; as vaccine production and distribution remain controlled by profit-seeking corporations and access has so far been based largely on ability to pay.

The pandemic provides the global community with an opportunity to demonstrate that life comes before profit and that global solidarity is for real whether it is motivated by ethical or pragmatic concerns, which both point the same direction in this case. It can do this by expanding the reach of the COVAX mechanism to cover more people in developing and emerging economies and by devising creative solutions to overcome the vaccine-related intellectual property rights that limit and delay vaccination of much of the population of developing and low-income countries.

Nor has the response of the global community to the economic fallout of the pandemic been better than its vaccine response. With regards to debt and finance, the World Bank, International Monetary Fund and the G20 launched the Debt Service Suspension Initiative aimed at helping developing countries dedicate scarce resources to fighting the pandemic while maintaining funding for other critical public services. However, private creditors have shown little enthusiasm for the initiative, which has so far delivered welcome but modest breathing room for governments in the developing world.

The debt service suspension period, originally set to end on 31 December 2020, has been extended to June 2021. Needless to say that developing economies need more time to recover and are unlikely to regain pre-pandemic financial positions by June 2021. Moreover, even though the Initiative provides welcome respite to eligible debtor countries, it is by no means a debt relief scheme. Debt still must be paid and serviced once the suspension interval expires in June 2021. This implies heavier debt burden in the future and increased risk of debt distress and financial crises.

The truly global scope of the pandemic and its economic ramifications has underscored, at once, the vulnerability, interconnectedness, inequality, and contradictions of the world we live. Pandemics recognize no borders and the world economy is now integrated like never before in history, and yet governance lags behind and remain anachronistically national even on such matters as global public health and economic well-being.

This cleavage between the local governance and globalized nature of threats to human survival, health and economic wellbeing is one of the most salient contradictions of the global multilateral architecture. This dichotomy needs to be urgently addressed by the global community by strengthening the multilateral global governance structure especially that organized human life on earth faces a growing risk of extinction by another border-blind menace: the environmental collapse.

Beyond the immediate need for credible global solidarity for equitable, timely containment of the COVID-19 pandemic, there remains the challenge of strengthening global, multilateral governance to match the globalization of economies, diseases, and the climate crisis which in itself could trigger more, novel epidemics and pandemics as human activities encroach and alter the habitat of other species.

General information.

Protect yourself, your family, and everybody around you.

Symptoms of corona virus:

The main symptoms corona virus (covid-19) are high temperature, new continuous cough, and loss or change to your sense of smell and taste.

- A high temperature, this means you feel hot to touch on your chest or back (you do not need to measure your temperature)
- A new continuous cough, this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual)
- or taste – this means you have noticed you cannot smell or taste anything, or things smell or taste different to normal.

If you have any of these symptoms get a PCR test(test is that sent to the lab) to check if you have corona virus and stay at homeuntill you get your result, even if the symptoms are mild.

Prevention:

to help to stop the spread of corona virus (covid-19), avoid close contact with anyone you do not live with and wash your hands regularly.

To stop the spread the corona virus:

- Try to stay at least 2 metres away from people you're not meeting with.
- Wash your hands with soap and water often – do this for at least 20 minutes.
- Use hand sanitiser gel if soap and water are not available.
- Wash your hands as soon as you get home.
- Cover your mouth and nose with a tissue or sleeve (not your hands) when you cough or sneeze.
- Put used tissue in the bin immediately and wash your hands afterwards.
- Wear something that covers your mouth and nose, when it is hard to stay at home or a way from people, such as in shops or in public transport.
- Let fresh air into your home by opening windows, doors and air vents as much as possible.
- Do not touch your eyes or mouth if your hands are not clean.

Follow government guidelines.

Treatment:

you can usually treat mild symptoms of corona virus (covid-19) whilst you are still at home (self isolating).

If you have high temperature:

- Get lots of rest.
- Drink plenty of fluids (water is the best) to avoid dehydration – drink enough so you can pee slight yellow and clear.
- Take paracetamol or ibuprofen if you feel uncomfortable.

If you cough:

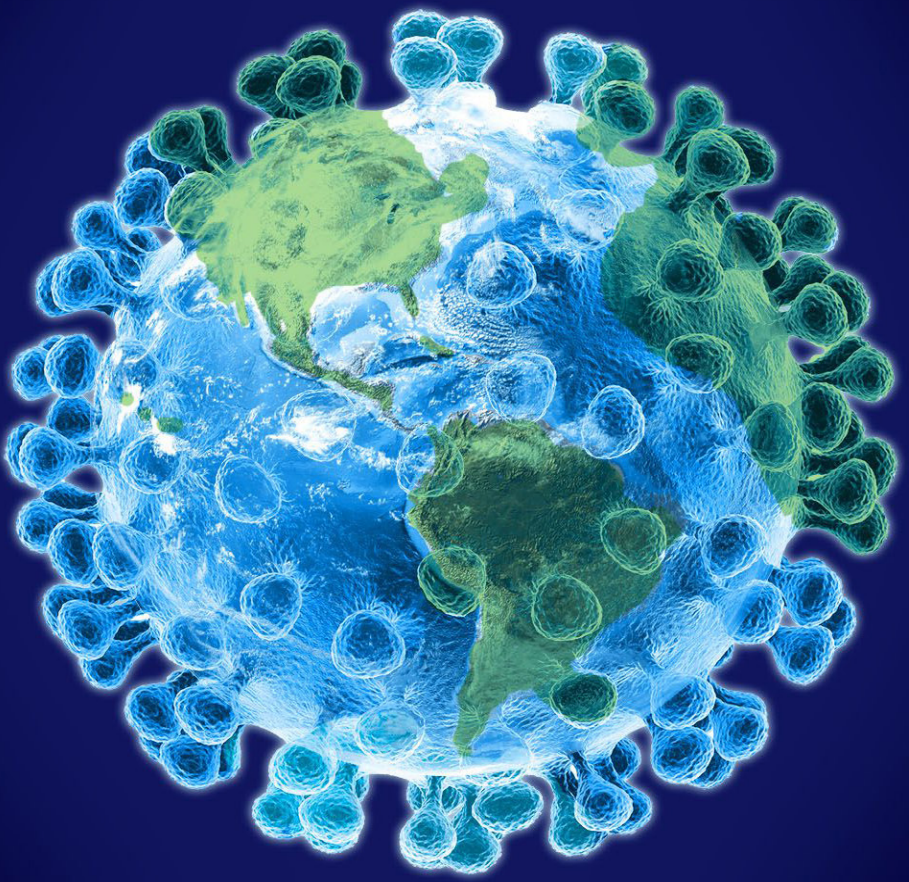
- Avoid lying on your back, lie on your side or sit upright instead.
- Try to have tea spoon of honey – but do not give honey to babies under 12 months.

If you feel breathless:

- Keep your room cool by turning down the heating or opening the window - do not use a fan as it may spread the virus.
- Sit up in a chair and relax your shoulders.
- Try breathing in slowly through your nose and out through your mouth, with your lips together like you are blowing out a candle.

And finally for mor information and to learn more visit nhs.uk

SPECIAL Covid-19 ISSUE



الحكمة
Alhikma

الهيئة النقابية للأطباء السودانيين
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