

# World Medical Journal



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## Contents

Editorial .....	1
COVID-19: the Asian Perspective .....	2
The Corona Virus Outbreak on South African Medical Schemes .....	13
Reform Proceeding of Organ Donation and Transplantation System in China .....	15
The Impact of Climate Change on Health .....	19
Physical Activities of Doctors in Rivers State, Southern Nigeria .....	21
Palliative Care: What, Who, When, How? .....	25
The “Normalization” of Euthanasia in Canada: the Cautionary Tale Continues .....	28
Appeal for Policy Promotion .....	38
This Month Consider Indoor Air Health .....	40
Singapore Medical Association – sixty years on .....	iii

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## Editorial

Every day this year is to be marked as the World Doctors' Day. Every day tests the knowledge, endurance, ability and health of doctors all over the world.

Covid-19 is a podium talk for politicians and journalists, but the front line for doctors. Politicians squander public money like their own, journalists invent catchy headlines and clusters of exclamation marks, but doctors risk their lives and those of their loved ones.

Several studies show that doctors are not particularly worried about the possibility if they themselves get sick; sacrifice is a keystone of doctors' professional ethics. Doctors fear for the lives of their beloved, especially for their parents.

Doctors all over the world are aging together with the public. On average, doctors become specialists later than other professionals do because they need a high level of training. Moreover, doctors get sick with all acute and chronic diseases just like all population. Society believes that doctors, as its most educated and wealthy members, keep in good health longer, they are more accurate in targeting their own treatment, and are more committed to physical and mental activities.

There are some truths, which National Medical Associations should repeat to their colleagues. If possible, doctors over the age of 65 should not accept patients directly. They should fully switch to consulting patients on the phone or on the Internet. Likewise, direct contacts with patients should be avoided by colleagues who are older than 50 years, have diabetes and heart problems. Unfortunately,

patients with chronic diseases suffer worse from Covid-19 and the cases are more severe.

We entreat every doctor on this planet to take care of their own health at this time. If Covid-19 beats doctors, then it will beat everyone else. Therefore, these are doctors who should be especially careful with distancing and disinfecting their hands, changing the clothing, washing and sterilizing it. These are doctors who need to find time for a long walk, running or cycling and breathing exercises every day. These are doctors who need to take care of their own chronic diseases, and they should tolerate neither unstable blood sugar nor high blood pressure. There is no more important task for National Medical Associations than to care for the protection and safety of doctors through their governments. Governments must provide doctors with better pay, longer breaks between patient reception, longer rest time, shorter (6 minutes) communication with patients, and ensure that a sick doctor is treated with the best available medicine.

The World Medical Association keeps track of events, collects information and provides advice every day. The World Medical Association currently cares about every doctor on this globe. Let every doctor in our world has enough strength and endurance! Let our WMA leaders have enough strength and endurance!

I thank Dr. KK Aggarwal, President of CMAOO, who shares the latest world findings on Covid-19 with me every day.

*Dr. med. h. c. Peteris Apinis,  
Editor-in-Chief of the World Medical Journal*

March 31

## COVID-19: the Asian Perspective



*Krishan Kumar Aggarwal*

We are grappling with a pandemic of mammoth proportions. Coronavirus Disease (COVID-19) is spreading with a rapidity and ferocity that has caught the world unaware and therefore unprepared and, more often than not, underprepared. Almost every country has now reported COVID-19 cases. The numbers are spiraling, especially in the European continent. Expectedly, an atmosphere of alarm and panic now prevails worldwide.

Increased globalization has made the world more connected today; this has accelerated the spread of the disease. Predominantly, it were the travel-related cases, which have driven the pandemic in most countries [1].

More than 7 lakh (700,000) persons the world over are infected with the virus and the global death toll will cross 45,000 with the current trends (current deaths + current serious patients x 15%).

The World Health Organization (WHO) has now cautioned that the coronavirus disease pandemic is “accelerating”. It took

over three months to reach the first 100,000 confirmed cases, 12 days to reach the next 200,000, four days to reach 300,000, 3 days to reach 400,000, 2.5 days to reach 500,000, two days to reach 600,000 and two days to reach 700,000.

Perhaps Bill Gates was prescient when he said, “*The worst pandemic in modern history was the Spanish flu of 1918, which killed tens of millions of people. Today, with how interconnected the world is, it would spread faster.*” (2014)

The onset of the current pandemic can be traced back to Wuhan, China, where a group of patients with viral pneumonia was reported on 31 December 2019 [2]. These patients were categorized as “pneumonia of unknown etiology” as no cause could be identified [3]. Subsequent investigations revealed the etiopathogen to be an unknown beta-coronavirus and a new coronavirus, named 2019-nCoV, was isolated as the cause of the viral pneumonia [2]. On February 11, the disease was officially named as Coronavirus Disease-2019 (COVID-19) by the WHO.

The new corona virus was found to have 86% genetic similarity with Severe Acute Respiratory Syndrome corona virus (SARS-CoV). Hence, it was called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [4]. But unlike SARS, COVID-19 has a higher transmissibility. The average reproduction number ( $R_0$ ) of COVID-19 is 3.28 and median  $R_0$  is 2.79, which is higher than that of SARS [4].

The spread of the disease on the Diamond Princess Cruise ship in Japan corroborates the high transmissibility of the COVID-19 virus. On February 9, there were 20 cases on board; but, by the end of the quarantine period, this number had increased to around

700 cases (23%), despite preventive measures in place (CDC).

### Transmission of the virus

The disease was initially presumed to be only due to wild animal-to-human transmission since the outbreak was linked to the Huanan Seafood Wholesale Market of Wuhan. Subsequently, human-to-human transmission was confirmed [3].

COVID-19 is mainly transmitted among humans through infected large (>5 microns size) droplets from coughing and/or sneezing (also speaking loudly, singing, talking face to face, shouting) and close contact with an infected person (symptomatic or asymptomatic) [3].

In a retrospective multicenter study of laboratory-confirmed COVID-19 cases from China, the median duration of viral shedding was 20 days in patients who survived, but shedding of the virus continued until death in fatal cases. Viral shedding was observed for as long as 37 days [5].

It has been suggested that mild cases and even asymptomatic persons can transmit the infection as well [6].

The virus can also be transmitted indirectly via surface fomite [7]. A new study published online 17 March 2020 in the New England Journal of Medicine has shown that the virus can survive on surfaces even for several days [8]. The virus remained viable on plastic and stainless steel for up to 72 hours, on copper for 4 hours and on cardboard for up to 24 hours. On plastic surfaces, the virus exhibited a median half life of 6.8 hours, while on stainless steel, it was 5.6 hours. This study also suggested that aerosols generated in the health care settings (high pressure oxygen, nebulizer, intubation, forced coughing procedures) may also be a possible route of transmission of the new corona virus. The virus remained

viable in aerosols for the entire 3 hour duration of the experiment.

The CDC recommends that before disinfection, dirty surfaces should first be cleaned with soap and water.

Diluted household bleach solutions, 70% alcohol-based solutions and products containing hydrogen peroxide, peroxyacetic acid, sodium hypochlorite, quaternary ammonium can be used for disinfection [9].

The incubation period for COVID-19 ranges from 1–14 days, usually around 5 days (WHO). So, persons potentially exposed to the virus on a particular day will surface as cases on the 5<sup>th</sup> day. This forms the basis of testing close contacts between 5–14 days.

The spectrum of the disease ranges from mild infection to critical disease. A summary of a Report of 72,314 cases from the Chinese Center for Disease Control and Prevention shows that majority (81%) of cases were mild (nonpneumonia and mild pneumonia), while the disease was severe in 14% of patients (presenting as dyspnea, respiratory rate  $\geq 30$ /min, blood oxygen saturation  $\leq 93\%$ , partial pressure of arterial oxygen to fraction of inspired oxygen ratio  $< 300$ , and/or lung infiltrates  $> 50\%$  within 24–48 hours). Five percent of patients had critical disease (respiratory failure, septic shock and/or multiple organ failure) [10].

The overall case-fatality rate (CFR) was reported to be 2.3%; CFR was higher in the elderly. However, the WHO has estimated the global death rate for the novel corona virus to be 3.4%. The CFR will also change in countries with high aging population, for instance, Italy.

### Clinical manifestations

Covid-19 most commonly manifests clinically as fever (43.8% on admission and

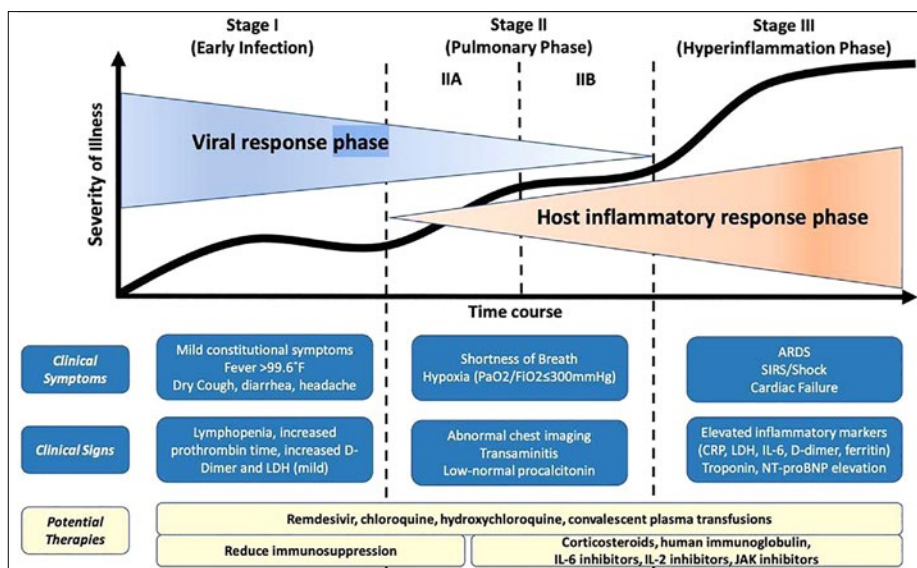


Figure 1. Stages of Covid-19 illness

88.7% during hospitalization), cough (67.8%) and diarrhea (3.8%). The most common finding on Chest CT was ground-glass opacity (56.4%); 18% patients with nonsevere disease and 3% patients with severe disease had no abnormal findings on CT. Around 84% patients had lymphocytopenia on admission [11].

### Severity of illness

COVID-19 can be categorized into three stages based on the severity of the illness: early infection, pulmonary phase and hyperinflammatory phase.

Early infection is the first stage of the illness. The patient has only mild constitutional symptoms such as fever ( $> 99.6^{\circ}\text{F}$ ), dry cough, headache and diarrhea. At this stage, laboratory tests show lymphopenia and increased levels of PT, d-dimer and LDH.

Undetected or untreated, the patient moves into the next stage of the illness, the pulmonary phase. The patient develops shortness of breath and hypoxia ( $\text{PaO}_2/\text{FiO}_2$

$< 300\text{ mm Hg}$ ). Lab tests reveal transaminitis and low to normal procalcitonin. Chest imaging will show an abnormal CT.

The hyperinflammation phase or the third stage is the critical stage characterized by acute respiratory distress syndrome (ARDS), systemic inflammatory response syndrome (SIRS) and/shock and cardiac failure. The inflammatory markers (CRP, IL-6, D-dimer, ferritin), troponin, NT-proBNP levels are raised and are indicative of poor prognosis.

Since COVID-19 is a new disease, there is no specific antiviral drug for its treatment. Potential therapies are being explored.

In the event of any infection, the host reacts by initiating an immune response to fight off the infection in the early phase (“viral response phase”). In the later stages of the illness (“host inflammation response phase”), the host may have an exaggerated or out of control immune response to the trigger, which is the COVID-19 virus infection. This is called “cytokine storm”. At this stage, the virus is lethal and is responsible for the

critical condition of the patient and is often fatal. Tests for inflammatory markers (CRP, IL-6, D-dimer, ferritin), troponin, NT-proBNP levels can detect the presence of cytokine storm.

## Diagnosis

In its interim guidance for surveillance, the WHO has defined criteria for suspect case, probable case and confirmed case as follows [12]:

### Suspect case

- A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of the COVID-19 disease during the 14 days prior to symptom onset; or
- A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case (see the definition of contact) in the last 14 days prior to symptom onset; or
- A patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath, AND requiring hospitalization) AND the absence of an alternative diagnosis that fully explains the clinical presentation.

### Probable case

- A suspect case with inconclusive testing for COVID-19, or
- A suspect case for whom testing could not be performed for any reason.

**Confirmed case:** A person with laboratory confirmation of the COVID-19 infection, regardless of clinical signs and symptoms.

All suspect cases (as per the above criteria) should be tested for the COVID-19 virus, including other respiratory pathogens such as influenza, respiratory syncytial virus, etc.

Samples include nasopharyngeal and oropharyngeal swab, or sputum and/or endotracheal aspirate or bronchoalveolar lavage in patients with more severe respiratory disease. Samples should be collected with stringent infection control precautions [13].

The diagnosis of COVID-19 is confirmed by the detection of virus RNA by reverse-transcription polymerase chain reaction (RT-PCR) [13]. However, a negative result does not exclude the likelihood of the person having the disease. Patients with negative RT-PCR but high clinical suspicion should undergo CT scan along with retesting for the virus [14]. A report of more than 1000 cases from China concluded that chest CT scan has a higher sensitivity for diagnosis of COVID-19 as compared with RT-PCR [15].

## Treatment

Since COVID-19 is a new disease, there is no specific antiviral drug for its treatment. Potential therapies are being explored.

The WHO is conducting a multi-country clinical trial called the “Solidarity Trial” to investigate four drugs (or their combinations) for the treatment of Covid-19: remdesivir; chloroquine, hydroxychloroquine; combination of lopinavir and ritonavir; lopinavir+ritonavir combination plus interferon-beta.

Remdesivir is an investigational broad-spectrum antiviral agent. It has shown encouraging results *in vitro* for treating MERS. Prophylactic and therapeutic remdesivir improved lung function and also decreased lung viral loads and severe lung pathology *in vitro* [16]. The compassionate use of remdesivir has also been reported in the first COVID-19 patient diagnosed in the United States with no adverse effects [17].

Clinical trials in the United States and China are underway to investigate the efficacy

of remdesivir as treatment for patients with moderate or severe COVID-19.

Lopinavir/ritonavir has been used for the treatment of COVID-19 [18, 19].

In a trial of adults hospitalized with severe Covid-19, time to clinical improvement was comparable between patients treated with lopinavir–ritonavir (400 mg/100 mg twice daily for 14 days plus standard care) as compared with those who were given standard care alone (median, 16 days). Mortality at 28 days was 19.2% in lopinavir-ritonavir group, whereas it was 25% for the standard care group; however, this difference was not statistically significant [20].

In India, Central Drugs Standard Control Organization (CDSCO), the national regulatory body for Indian pharmaceuticals and medical devices, has approved the “restricted use” of lopinavir–ritonavir combination for treating those affected by novel coronavirus (nCoV).

In Thailand, oseltamivir along with lopinavir and ritonavir has been used successfully.

Arbidol, an antiviral drug used in Russia and China to treat influenza, could be combined with darunavir, the anti-HIV drug, for treating COVID-19 patients.

The WHO does NOT recommend routine administration of **systemic corticosteroids** for the treatment of viral pneumonia outside of clinical trials, unless there is an indication to do so (exacerbation of asthma or COPD, septic shock). Patients given steroids should be monitored for hyperglycemia, hypernatremia, hypokalemia, signs of adrenal insufficiency or recurrence of inflammation [21].

Hydroxychloroquine and chloroquine have also been evaluated for the treatment of COVID-19 [22, 23].

Both hydroxychloroquine and chloroquine are immunomodulatory. Of these two,

hydroxychloroquine has been found to have more potent *in vitro* antiviral activity against SARS-CoV-2 suggesting that it may be an ideal therapeutic option for critically ill patients through its antiviral action as well as by controlling the cytokine storm via its immunomodulatory properties [22].

Results of the ongoing open-label non-randomized clinical trial “the Marseille study” show a strong reduction in nasopharyngeal carriage of Covid-19 virus in only 3 to 6 days in most patients. Addition of azithromycin to hydroxychloroquine further augmented elimination of the virus. After 6 days, 100% of patients treated with the combination of hydroxychloroquine and azithromycin were virologically cured as against 57.1% patients treated with hydroxychloroquine alone and 12.5% in the control group [24].

The National Task Force for COVID-19 set up by the Indian Council of Medical Research (ICMR), the apex health research body of India, has recommended hydroxychloroquine for prophylaxis of SARS-CoV-2 infection for high risk population:

- Asymptomatic Healthcare Workers involved in the care of suspected or confirmed cases of COVID-19: 400 mg twice a day on Day 1, followed by 400 mg once weekly for next 7 weeks; to be taken with meals;
- Asymptomatic household contacts of laboratory confirmed cases: 400 mg twice a day on Day 1, followed by 400 mg once weekly for next 3 weeks; to be taken with meals.

## Prognosis

Older age, high Sequential Organ Failure Assessment (SOFA) score (a diagnostic marker for sepsis and septic shock) and d-dimer levels greater than 1 µg/L on admission are indicative of poor prognosis and higher risk of death [5].

Patients with severe COVID-19 illness also had increased levels of blood interleukin (IL)-6, high-sensitivity cardiac troponin I and lactate dehydrogenase (LDH) and lymphopenia.

## Evolution of the COVID-19 pandemic: chronology of key events

The COVID-19 pandemic, as it stands today, has moved through various stages since it first emerged from Wuhan, China, as a local outbreak. The disease spread to the entire country within a month, despite extreme measures adopted by China including a lockdown of whole cities [25].

On March 19, China reported zero local transmission rate for the first time since the pandemic began; the 34 new cases reported were imported cases. However, on March 22, after three days, China reported its first case of domestic infection.

**The number of confirmed cases worldwide has exceeded 300, 000. The virus has now spread to around 200 countries. More than 80% of all cases are from the WHO Western Pacific Region and European Region.**

Here is the chronology of key events as they have occurred.

**Dec. 31, 2019:** Cluster of cases of pneumonia of unknown etiology reported from Wuhan, China

**Jan. 1, 2020:** Huanan Seafood Wholesale Market in Wuhan, suspected to be the source of the disease, closed

**Jan. 7:** China isolated a new type of corona virus as the cause, named 2019-nCoV

**Jan. 11:** First death due to the new Corona virus reported in China

**Jan. 12:** Genetic sequence of the new Corona virus shared by China

**Jan. 13:** Thailand reported the first case (lab-confirmed) outside China

**Jan. 15:** Japan reported its first imported case of lab-confirmed virus

**Jan. 20:** First case reported in South Korea

**Jan. 21:** Human-to-human transmission of the virus confirmed

**Jan.24:** France reported the first case

**Jan. 25:** Australia and Malaysia reported their first cases

**Jan. 30:** The WHO declared coronavirus a “public health emergency of international concern (PHEIC); India, Finland, Philippines reported their first cases of the new corona virus

**Jan. 31:** First two confirmed cases of 2019-nCoV reported in Italy

**Feb. 5:** Ten passengers on board the Diamond Princess Cruise ship docked in Yokohama, Japan, test positive

**Feb. 11:** The WHO officially named the disease as “COVID-19”

**Feb. 13:** For the first time, China reported clinically diagnosed cases in addition to the laboratory-confirmed cases

**Feb. 14:** Africa’s first COVID-19 case reported in Egypt

**Feb. 19:** First COVID-19 cases reported in Iran

**Feb. 26:** For the first time, more new cases were reported from outside China than from China

**Feb. 28:** The WHO raised the level of global risk to “very high”

**March 7:** The global number of reported cases crossed 100,000

**March 11:** The WHO declared the corona virus outbreak a pandemic

**March 13:** The WHO declared Europe to be the new epicenter of the pandemic, with more reported cases and deaths than the rest of the world combined, apart from China

**March 15:** 2,000 new coronavirus cases and more than 100 deaths over the last 24 hours in Spain

**March 16:** The total number of cases and deaths outside China exceeded those in China

**March 18:** China reported no local transmission for the first time since the pandemic began, only imported cases; the WHO

launched multi-country SOLIDARITY Trial to compare untested treatments

**March 19:** The number of confirmed cases worldwide exceeded 200,000; Italy (3405 deaths) overtook China (3249 deaths) for the number of deaths related to corona virus, making it the world's deadliest centre of the outbreak

**March 22:** India attempted the largest study on the role of over 5% population (critical mass) on social behaviours by observing self-restriction based 'shelter in home', a 14-hour restriction at home with mass clapping for 5 minutes at 5pm as an alternative to forced lockdown.

## COVID-19: Measures adopted by CMAAO countries

CMAAO is a Confederation of Medical Associations in Asia and Oceania. It has national medical associations (NMAs) of 19 countries as its members. Since it was first established in 1956, the objective of CMAAO activities as stated in its constitution has been to promote academic exchange and cultivate ties of friendship between member medical associations.

Many Asian countries have been able to contain the disease to some extent, unlike Europe and the USA, where cases are spiralling and a slowdown seems inconceivable.

Strategies like mass testing, timely alerts and advisories, effective screening and surveillance have been crucial in the efforts to contain the spread of the virus. However, this is not the time to be complacent; it is the time to exercise patience, be cautious and not let up the constant vigil.

**We first issued a CMAAO Alert on COVID-19** on January 8, even as it was still a mysterious lung infection in China. Since then CMAAO has been creating awareness about the disease every day.

## India Model

### 1117 active cases and 32 deaths at the time of writing this article

India is currently in the early third stage of the epidemic, most confirmed cases have a history of travel to corona-affected countries and their close contacts. There is no evidence of widespread community transmission yet in India. A sentinel surveillance initiated by ICMR found no positive samples in H1N1 negative viral pneumonias. The survey tested 826 samples of people suffering from severe acute respiratory infection (SARI)/influenza like illnesses at 51 sites by 15 March 2020 [26].

India issued a **travel advisory** as early as January 17 and has been regularly updating the travel advisories keeping with the evolving situation. Screening of air travellers has been ongoing since January 18. All existing visas (except for diplomatic, official, UN/International Organizations, employment, project visas) have been suspended until 15 April 2020. All international commercial passenger flights have been banned from 22 March 2020 till April 14. All domestic travel too has been put on hold until March 31.

**Countrywide regular surveillance** was initiated for all travel-related and their close contacts, including those having fever, cough or breathlessness. India has been carrying out "need-based testing", i.e., testing suspected cases with history of travel to areas with active transmission and their close contacts. However, the government has revised its testing policy: "All hospitalized patients with severe acute respiratory illness (fever and cough and/or shortness of breath) will now be tested for COVID-19 infection. And, all asymptomatic direct and high-risk contacts of a confirmed case should be tested once between day 5 and day 14 of coming in contact".

The Ministry of Health & Family Welfare of India has a **discharge policy** for con-

firmed cases; patients are discharged only after evidence of chest radiographic clearance and viral clearance in the respiratory samples (after two specimens test negative for the virus within 24 hours).

ICMR's National Institute of Virology has isolated the COVID-19 virus strain making India the 5<sup>th</sup> country to do so. The other four countries are China, Japan, Thailand and the United States of America.

The Ministry of Health & Family Welfare has invoked the *Epidemic Disease Act, 1897* (Section 2) so that all advisories issued are enforceable; the *Disaster Management Act* to ensure price regulation and availability of masks, hand sanitizers and gloves, and the *Essential Commodities Act* to regulate production, quality, distribution, etc. of face masks and hand sanitizers and to ensure their availability at reasonable prices or under MRP.

Other public health measures include creating mass awareness about preventive measures (social distancing, hand washing, closing of all educational institutions, museums, swimming pools, malls and theatres (except for grocery, vegetables and chemist shops); work from home (except those working in emergency/essential services); all citizens above 65 and children below 10 years have been advised to remain at home.

## South Korea Model

### 9786 cases with 162 deaths

With 4212 confirmed cases, up to March 2, South Korea was next only to China, which had 80,026 confirmed cases at that time [27].

Still, South Korea has slowed down its rate of infection; from a peak of 851 new cases per day on March 3, the number of new cases has declined to 64 cases per day, as on March 23 [28].



The reason for this success has been its testing policy of “**Trace, Test and Treat**”. Instead of putting entire cities under a lockdown or implementing punitive measures, South Korea put in place an extensive mass testing program to quickly identify hotspots to further prevent transmission and initiate early intervention (contact tracing and quarantine) and treatment [29].

South Korea has randomly tested more than 270,000 people (amounting to more than 5200 tests per million population); this number is higher than in any other country [29]. Under this program, around 12,000–15,000 people are tested daily and the system is capable of carrying out 20,000 tests a day [30]. Drive-through testing centres and mobile alerts about those who tested positive for the virus have further expanded the testing capacity.

Besides travel restrictions, other preventive measures such as social distancing, use of masks, hand washing, allowing people to work remotely, avoiding mass gatherings (attending online religious services instead) have helped the country to reduce the number of infected cases [29].

## Japan Model

### 1953 cases and 56 deaths

Japan initially focused on containment of the epidemic, but after the COVID-19 outbreak on the Diamond Princess Cruise ship, the focus shifted to a prevention and treatment policy in anticipation of community spread within the country.

The new coronavirus was designated as an “infectious disease” under the Infectious Diseases Control Law, which allowed the government to order infected patients to undergo hospitalization. COVID-19 was also classified as a “quarantinable infectious disease” under the Quarantine Act, which allows the government to quarantine people

suspected of infection and order them to undergo diagnosis and treatment. A “Cluster Response Section” was formed to quickly identify and contain small-scale clusters of COVID-19 infections before they turn into large-scale ones [31].

Japan initially made an error of cohort quarantine for 3700 people on the Diamond ship mixing people of all ages together for 14 days and ending up with 712 positive cases and 8 deaths. Cohort quarantine should have been high risk vs low risk cohort quarantine [31].

## Singapore Model

### 926 cases with only 3 deaths

Singapore acted early on in the pandemic and constituted a Multi-Ministry Task Force before a case was detected to provide central coordination during the crisis [32].

Besides temperature screening of all travellers from Wuhan, all physicians had also been warned by the Health Ministry to identify any patient with pneumonia and a recent travel history to Wuhan, almost right from the time when the outbreak was first reported from Wuhan [33]. As a result, Singapore was able to expedite case detection. Doctors were also allowed to test patients if they suspected them to be infected, based on clinical judgment or epidemiological reasons [32].

More than 800 Public Health Preparedness Clinics (PHPCs) were activated to treat respiratory infections at the primary care level [32].

Singapore has a testing capacity of 2200 tests daily for a population of 5.7 million [32]. Tests are free for all, including visitors to the country.

Other public health measures, which included enhanced surveillance to identify

cases that did not fit the prescribed case definition [32], aggressive contact tracing and quarantine of close contacts of confirmed cases, travel advisories and entry restrictions, as well as public education helped to contain the epidemic in the country [33]. All events and gatherings with 250 or more participants had been suspended.

Singapore also defined punitive actions (fine of up to \$10,000 or up to six months in prison) against those who violate their quarantine or give a false account of their travel history.

Singapore had zero healthcare infection rate due to its policy of liberal distribution of masks at every hospital reception, N95 masks by health care providers and AI rooms for all positive cases.

## Taiwan Model

### 322 cases with 5 deaths

Taiwan created a data source (also accessible to health professionals) by integrating the national health insurance database with immigration and customs database to identify persons at high risk based on their travel history and clinical symptoms. Patients with severe respiratory symptoms who had tested negative for influenza were retested for COVID-19 [34].

QR code scanning and online reporting of travel history and health symptoms were used to stratify risk categories of travellers: the low risk group was given a health declaration border pass through SMS on their phones; persons in the higher risk group were put into home quarantine and monitored through cell phones to ensure compliance with the quarantine [34].

The government has also imposed fines for hoarding, spread of misinformation and breach of quarantine.

## Malaysia Model

### 2766 cases with 43 deaths

I was in Malaysia on January 18 when we had the first interaction with MMA regarding Corona Virus. Same day, I had a meeting with the Myanmar Medical Association, Thailand Medical Association and China Medical Association regarding the same.

Malaysia is now experiencing widespread ongoing transmission of the COVID-19 virus.

Malaysia has been under a nation-wide lock-down (except for essential services) since March 18 with the growing number of corona cases. All persons arriving in Malaysia mandatorily undergo check for symptoms of corona. All air travellers are issued Health Alert Cards indicating their health status, which must be kept for the next 14 days.

The Ministry of Health has identified 48 hospitals for coronavirus screening including 26 referral hospitals to manage coronavirus suspected and positive cases. Contacts of positive cases are being tracked by the Malaysian Epidemiology Bureau. Asymptomatic cases are put under home quarantine, while symptomatic persons are hospitalized for testing and monitoring as persons under investigations [35].

## Thailand Model

### 1651 cases with 10 deaths

The situation has begun to change since mid-March, when health officials reported a few large clusters of infections in Bangkok.

Thailand recorded a spike in the number of cases for the first time on March 15, with 32 new cases of laboratory-confirmed CO-

VID-19 and increasing the total number of cases to 114 from 82 [36]. More and more clusters are testing positive for the virus, indicating a super spreader.

Thailand has a dedicated national pandemic influenza preparedness plan, which is in the process of updating. All educational institutions, entertainment outlets have been closed.

Air travellers have been segregated into three risk groups, based on the origin of their flight: Disease Infected Zones (mandatory 14-day self-quarantine, health forms at check-in certifying that they are not at risk of COVID-19), countries with ongoing local transmission (home-based 14-day quarantine, report symptoms to officials) and other destinations (precautions such as wearing masks, avoiding mass gatherings and crowds).

### Flattening the curve: Decontaminate, wash hands and maintain social distancing

Countries are engaged in efforts to control the ongoing pandemic, but there seems to be no foreseeable end to this. The inevitable question is whether we will be able to stop or delay the peak and rapid spread of the disease.

Addressing the media on March 11, WHO Director-General Dr Tedros Adhanom Ghebreyesus said, *"This is the first pandemic caused by a coronavirus. And we have never before seen a pandemic that can be controlled, at the same time... We cannot say this loudly enough, or clearly enough, or often enough: all countries can still change the course of this pandemic."*

Identification and isolation of cases along with rapid tracing and quarantine of contacts may break the identified chains of

transmission, reduce the number of cases and contain the epidemic.

Social distancing with no emotional distancing, i.e., maintaining a distance of at least 1 m (3 feet) from other people or self-quarantine or self-isolation; working from home; virtual meetings; closure of schools; limiting the size or canceling public gatherings; regular handwashing with soap and water; respiratory hygiene, cough etiquette or building hygiene are potential mitigation strategies, which can be implemented when a chain of transmission is not known.

Instead of moving from containment to mitigation, adopting a combination of containment and mitigation measures may slow the disease spread.

Flattening the epidemic curve, instead of allowing a steep curve (illustrating an exponential increase in the number of cases), slows the transmission of the COVID-19 virus so there are fewer cases and also fewer deaths; enough resources are available and patients are able to access the critical care they need. While a flatter curve may prolong the epidemic, it relieves the overburdened healthcare system, where demand surpasses capacity, for instance, not enough hospital beds, ventilators, etc. Italy is experiencing this at present.

To control the COVID-19 pandemic, the aim should be to flatten the curve and delay the peak.

Results of a latest mathematical model study conducted by ICMR show that adopting social distancing as a preventive measure will flatten the curve. If strictly followed, this will reduce the expected number of cases by 62% and the peak number of cases by 89% [37].

To achieve this:

- Clean and decontaminate surfaces, wash hands and stay away from people with fever and cough.

- Using 1 : 1 isolation method kit will help stop the formation of clusters.
- Avoid handshakes and elbow greet; the traditional Indian greeting *Namaste* and bowing is the best greeting in these times.
- Maintain social distancing of one feet with others

## Conclusion

COVID-19 is hitherto an unknown disease caused by an unknown virus. Information about this disease is still evolving. There are still several questions unanswered. What will be the fate of the virus? Will COVID-19 become an endemic disease? And many more.

Preparedness and capacity building are keys to averting such pandemics in times to come. A robust surveillance system is the basis of preparedness for any epidemic. It is also important to strengthen public health care systems for optimum utilization of resources and facilitate research and develop-

ment. Communication is crucial for sharing information. There are lessons to be learnt from the ways different countries have managed the situation.

When I took over as President of CMAAO on 5 September 2019, at the CMAAO General Assembly in Goa, India, in my address I said, *“As an organization, we too share several public health challenges such as vector-borne diseases such as dengue, malaria; air pollution; communicable and non-communicable diseases (NCDs); antimicrobial resistance (AMR); tobacco use; HIV/AIDS, to name a few. Violence against doctors and inequity in health are few other issues that are a concern. Attaining universal health coverage, which is affordable, accessible, available, appropriate and accountable, still remains a distant goal for many of us. All these have a bearing on the socioeconomic progress of our countries. Therefore, it becomes our collective responsibility to make certain that these issues are prioritized. Some of these issues are global concerns and we should try to solve them as a family and set an example for*

*the world. In the event of any outbreak or public health crisis, we can share our health models besides knowledge and experiences of a similar situation.”*

For the first time (March 19), since the pandemic first began, China reported zero local transmission rate suggesting that it may be possible to control the disease, although it had a new case of local transmission 3 days later.

To achieve this, there needs to be a strategic shift in our approach to tackle the pandemic; instead of moving from containment to mitigation in a stepwise manner, it may be prudent to combine containment and mitigation measures.

Could COVID-19 be the Disease X mentioned by the WHO in 2018 in its list of eight priority diseases? We do not know yet.

Still, now we cannot afford to be complacent as the window of opportunity may be too small in any such future events.

## Appendix

### Three Cs of managing a new disease

First **Case** – index or the primary (Stage 1)  
 First **Cluster** of “**person to person**” **transmission** (Stage 2)  
 First evidence of **Community** spread (surface to person transmission)

### COVID-19: A snapshot

Causes mild illness in 82%, severe illness in 15%, critical illness in 3%

Death rate: males 2.8% females 1.7%  
 Death: 3.4% (March 3)  
 Deaths: 15% serious cases  
 Deaths: 71% with comorbidity  
 71% deaths are in patients with comorbidity due to cytokine storm. [72,314 Chinese cases, largest patient-based study, JAMA)

Coronary artery disease patients most at risk [CAD 10.5%, Diabetes 7.3%, COPD 6.3%, Hypertension 6%, Cancer 5.6%, no pre-existing disease (0.9%)

Health care provider infection: China 3.8%; 0.3% deaths. Singapore: nil  
 Deaths: 10% in Iran (under reporting)  
 South Korea: (0.6%) doing more tests in mild cases  
 Affects all sexes but predominately males: 56%  
 Age: 87% (30–79), 10% (<20), 3% (>80)

Mean time to symptoms: 5 days  
 Mean time to pneumonia: 9 days  
 Mean time to death: 14 days  
 Mean time to CT changes: 4 days  
 Reproductive number  $R_0$  3–4 (flu 1.2, SARS 2)  
 Epidemic doubling time: 7.5 days  
 Doubling time in Korea: 1 day probably due to the super spreader  
 Tripling time in Korea: 3 days  
 Positivity rate (%): UK 0.2, Italy 5, France 2.2, Austria 0.6, USA 3.1

Origin: Probably from bats (mammal; central hosts), snakes and pangolins (intermediate hosts); possible animal sources of COVID-19 not yet been confirmed

Spread: large droplets; predominately from people having LRTI  
Precautions: standard droplet for the public and close contacts; air borne for healthcare workers dealing with secretions

Incubation period: 2–14 days  
Mean Incubation period: 5.2 days

Recovery time 2 weeks (mild cases); 4–6 weeks (severe cases)

Case fatality: 80 + 14.8%

Case fatality: 70–79 = 8%

Case fatality 60–69: = 3.6%

Case Fatality 50–59: = 1.3%

Case fatality 40–49: 0.4%

Case fatality 10–39: 0.2%

Case fatality <9 years: nil

## Transmission

- **Fabric, carpet, and other soft surfaces:** Currently, there is no evidence.
- **Hard surfaces:** Doorknobs, likely to survive for just a few hours (WHO).
- **Non-porous surface** 1–2 days and porous surface 8–12 hours.
- **Casual exposure:** Human to human contact requires prolonged contact (possibly 10 minutes or more) within 3 to 6 feet.
- **Currency notes:** The central banking authorities of China are disinfecting cash to stop the spread.
- **Biometric attendance:** Suspended in India.
- **Kissing:** Scenes banned in movies in China. France cut back on *la bise*, the custom of greeting with kisses, or air kisses, on the cheeks.
- **Breath analyzer tests for alcohol:** Kerala (India) exempted air crews.
- **Public gatherings:** The affected countries have banned death rituals, people gatherings.
- **Uncovered eyes:** The transmission is through the mucous membrane contamination. One case got infected even when using a gown, but eyes were not covered.
- **Eating meat, fish or chicken:** It's not a food-borne illness but a respiratory illness. It cannot occur by eating any food or meat. However, it is always advised not to touch raw meat, eat raw meat or eat partially cooked meat to prevent meat-related food borne illnesses. Eating fish and chicken is safe.
- **Eating snakes or drinking bat soups:** Eating wild animals cannot cause it. Handling their secretions can cause it.
- **Handling wild animals or their meat:** Yes, if their secretions are handled by the animal handlers.

- **Semen:** We do not know yet for the new corona virus (in patients infected with Ebola, the virus may persist for months in the testes or eyes even after recovery and can infect others and keep the epidemic going).
- **Sexual transmission like Ebola and Zika infected cases:** No evidence yet.
- **Goods from affected areas:** People receiving packages from affected areas are not at risk.
- **Pipes:** Ventilation systems connect one room to another. There has been previous concern that the coronavirus can spread through pipes.
- **Stress:** Stress and anxiety are known to suppress the immune system, making people more susceptible to contracting the virus.
- **Patients without symptoms:** Both SARS-CoV and MERS-CoV infect intrapulmonary epithelial cells more than the cells of the upper airways. Consequently, transmission occurs primarily from patients with recognized illness and not from patients with mild, nonspecific signs. Though NEJM has reported a case of COVID-19 infection acquired outside Asia when the transmission of mild cases appears to have occurred during the incubation period in the index patient but the same has been challenged now.
- **Corona beer:** It has nothing to do with coronavirus. It is a brand of beer.
- **Minimal risk in a plane:** Window seat.
- **Airports more at risk:** Pipes, AC, International travelers, close surface contact; wear gloves when in doubt.
- **All TV panelists:** Wear disposable earphones.

## Formula of C

Corona; COVID; CHINA Pneumonia (early name); CONTAINMENT policy; break CHAIN of transmission; 1<sup>st</sup> Case; 1<sup>st</sup> Cluster; 1<sup>st</sup> Community spread; new Case; avoid COHORT of CLOSE CONTACTS; CAP price of essential items; CONTACT tracing; CARE of the elderly; CONVINCING patients to wear surgical masks; COUGH not to be ignored; CDC guidelines; avoid CHAOS; CHLOROQUINE can be tried; COLOR CODING (Red, Yellow, Green); stay CONNECTED with updates; know COUNTRIES not affected; CRITICAL cases; no CONTACT policy; CHECK list of hospitals; CHECK points (all port entries); COLLECTIVE action; CONTROLLED measures; CONDOM (no evidence that it protects); CONGENITAL (no evidence of congenital Covid-19); CLEARING of antigen; COMPLAIN (Section 270 of Indian Penal Code [IPC]); do not CRITICISE; CALM during illness; COMMUNICATION is the key; COMMITMENT of government; CAD patients are the highest risk; CHILDREN are less likely to die; COLD blooded animals are not the source; CLAIM of insurance should not be cancelled.



## What is Coranxiety?

Anxiety about falling ill and dying; avoiding or not approaching healthcare facilities due to fear of becoming infected during care; fear of losing livelihood; fear of not being able to work during isolation; fear of being dismissed from work if found positive; fear of being socially excluded; fear of getting put into quarantine; fear of being separated from loved ones and caregivers due to quarantine; refusal to take care of unaccompanied or separated minors; refusal to take care of people with disabilities or elderly because of their high-risk nature; feeling of helplessness; feeling of boredom; feeling of depression due to being isolated; stigmatization of positive infection; possible anger and aggression against government; unnecessary approaching the courts; possible mistrust on information provided by government; relapses of mental illness in already mentally-ill patients; overstress on people to cover work of infected colleagues; quarantined for 14 days and insufficient or incomplete information leading to myths and fake news.

## Precautions for general public

- Strict self-quarantine if sick with flu-like illness: 2 weeks.
- Wash your hands often and for at least 20 seconds with soap and water or use an alcohol-based hand sanitizer.
- Avoid touching: eyes, nose, and mouth with unwashed hands.
- Avoid close contact: stay at a distance of 3-6 feet from people who are sick with cough or breathlessness.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces.

## Which masks should be used by health care providers and patients?

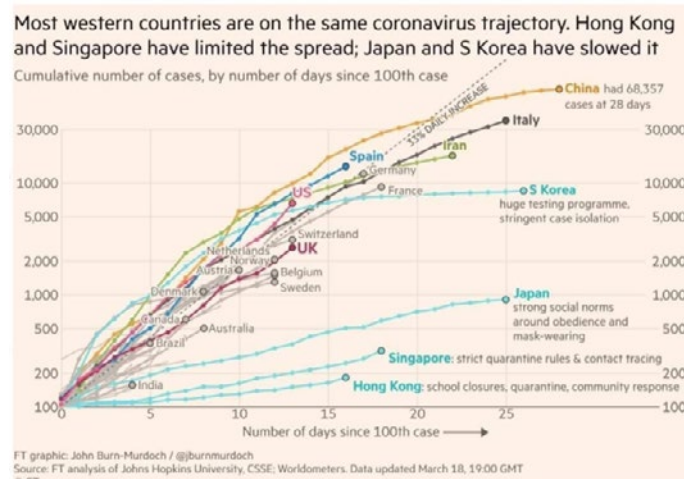
- For patients and close contacts: surgical 3-layered masks:
- For healthcare providers when handling respiratory secretions: N95 masks

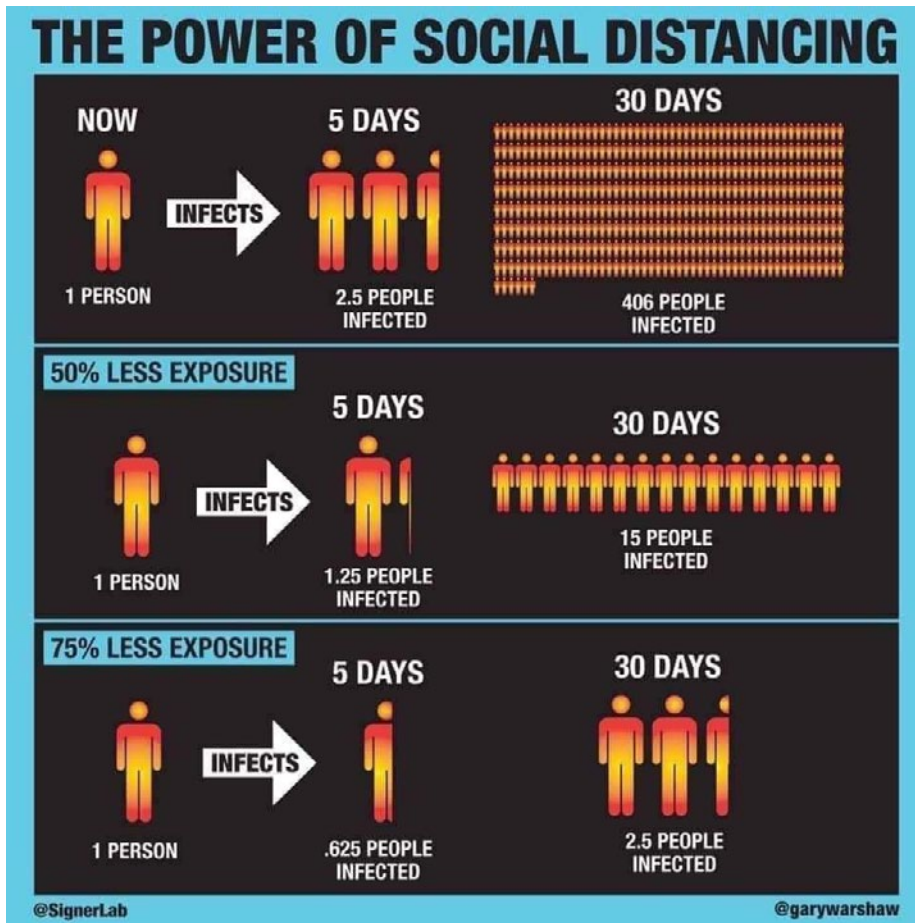
## COVID Models to Know Future Numbers

1. **Case fatality rate:** Number of deaths/Number of cases
2. 5 pm 23 March:  $14924/345289 = 4.32\%$
3. **Correct formula:**  $CFR = \text{deaths at day } x / \text{cases at day } x - \{T\}$   
(where T = average time period from case confirmation to death, which is 14 days)
4. Deaths on 23 March: 14924
5. Cases 14 days before 10 March: 114381
6. Correct CFR =  $14924/114381 = 13\%$
7. **Deaths in symptomatic cases** = 1-2%
8. Number of deaths X 100 = expected number of symptomatic cases
9. **Symptomatic cases** x 50 = number of asymptomatic cases

## 10. Total expected number of cases

11. Italy scenario: 978/million population (0.1% of the population)
12. China scenario: 56/million population
13. Switzerland scenario: 1000/population
14. Average scenario: 46 per million population
15. **Average scenario India:** 50 per million population
16. **Expected number of cases after seven days**
17. Number of cases today x 2 (doubling time 7 days, normal spreader)
18. Number of cases x 6 (doubling time 2days, super spreader)
19. **Number of cases expected in the community:** We can look at the number of deaths occurring in a five-day period, and estimate the number of infections required to generate these deaths based on a 3.3 per cent fatality rate.
20. Finally, we can compare that to the number of new cases actually detected in the five-day period 17 days earlier to give us an estimate of the proportion of actual cases that were detected 17 days ago.
21. This can then give us an estimate of the total number of cases, confirmed and unconfirmed.
22. **Lockdown effect:** reduction in cases after average incubation period ( 5 days)
23. **Lockdown effect in reduction in deaths:** on day 14 (time of death)
24. **Requirement for ventilators on day 9:** 3% of the number of new cases detected
25. **Requirement for future oxygen on day 7:** 15% of total cases detected today
26. **Number of people which can be managed at home care:** 80% of number of cases today
27. **Requirement for ventilators:** 3% of the number of cases today
28. **Requirement for oxygen beds today:** 15% of total cases today
29. **Match the curve to see where you are going**





**References**

30. Ralph R, Lew J, Zeng T, Francis M, Xue B, Roux M, et al. 2019-nCoV (Wuhan virus), a novel Coronavirus: human-to-human transmission, travel-related cases, and vaccine readiness. *J Infect Dev Ctries.* 2020; 14(1):3-17. doi: 10.3855/jidc.12425.

31. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al; China Novel Coronavirus Investigating and Research Team. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med.* 2020; 382(8):727-33.

32. Cascella M, Rajnik M, Cuomo A, et al. Features, evaluation and treatment Coronavirus (COVID-19) [Updated 2020 Mar 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-Available from: <https://www.ncbi.nlm.nih.gov/books/NBK554776/>.

33. Wilder-Smith A, Chiew CJ, Lee VJ. Can we contain the COVID-19 outbreak with the same measures as for SARS? *Lancet Infect Dis.*

2020 Mar 5. pii: S1473-3099(20)30129-8. doi: 10.1016/S1473-3099(20)30129-8. [Epub ahead of print]

34. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet.* 2020 Mar 11. pii: S0140-6736(20)30566-3. doi: 10.1016/S0140-6736(20)30566-3. [Epub ahead of print]

35. Hoehl S, Rabenau H, Berger A, et al. Evidence of SARS-CoV-2 infection in returning travelers from Wuhan, China. *N Engl J Med.* DOI: 10.1056/NEJMc2001899.

36. Cai J, Sun W, Huang J, Gamber M, Wu J, He G. Indirect Virus Transmission in Cluster of COVID-19 Cases, Wenzhou, China, 2020. *Emerg Infect Dis.* 2020 Mar 12; 26(6). doi: 10.3201/eid2606.200412. [Epub ahead of print]

37. van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN,

et al. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. *N Engl J Med.* 2020 Mar 17. doi: 10.1056/NEJMc2004973. [Epub ahead of print]

38. Interim Recommendations for US Households with Suspected/Confirmed Coronavirus Disease 2019, CDC. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/prepare/cleaning-disinfection.html>, Accessed on March 24, 2020.

39. Wu Z, McGoogan JM. Characteristics of and important lessons from the Coronavirus Disease 2019 (COVID-19) outbreak in China: Summary of a Report of 72 314 Cases from the Chinese Center for Disease Control and Prevention. *JAMA.* 2020 Feb 24. doi: 10.1001/jama.2020.2648. [Epub ahead of print]

40. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al; China Medical Treatment Expert Group for Covid-19. Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl J Med.* 2020 Feb 28. doi: 10.1056/NEJMoa2002032. [Epub ahead of print]

41. Global surveillance for COVID-19 caused by human infection with COVID-19 virus Interim guidance, WHO, 20 March 2020.

42. Laboratory testing for coronavirus disease (COVID-19) in suspected human cases, Interim guidance, WHO, March 19, 2020.

43. Xie X, Zhong Z, Zhao W, Zheng C, Wang F, Liu J. Chest CT for typical 2019-nCoV pneumonia: Relationship to negative RT-PCR testing. *Radiology.* 2020 Feb 12;200343. doi: 10.1148/radiol.2020200343. [Epub ahead of print].

44. Ai T, Yang Z, Hou H, Zhan C, Chen C, Lv W, et al. Correlation of Chest CT and RT-PCR Testing in Coronavirus Disease 2019 (COVID-19) in China: A Report of 1014 Cases. *Radiology.* 2020 Feb 26;200642. doi: 10.1148/radiol.2020200642. [Epub ahead of print]

45. Sheahan TP, Sims AC, Leist SR, Schäfer A, Won J, Brown AJ, et al. Comparative therapeutic efficacy of remdesivir and combination lopinavir, ritonavir, and interferon beta against MERS-CoV. *Nat Commun.* 2020 Jan 10. 11 (1):222.

46. Holshue ML, DeBolt C, Lindquist S, Lofy KH, Wiesman J, Bruce H, et al; Washington State 2019-nCoV Case Investigation Team. First Case of 2019 Novel Coronavirus in the United States. *N Engl J Med.* 2020 Mar 5; 382(10):929-36.

47. Kim JY, Choe PG, Oh Y, Oh KJ, Kim J, Park SJ, et al. The first case of 2019 novel coronavirus pneumonia imported into Korea from Wuhan, China: implication for infection prevention and control measures. *J Korean Med Sci.* 2020; 35(5):e61.

48. Lim J, Jeon S, Shin HY, Kim MJ, Seong YM, Lee WJ, et al. Case of the index patient who caused tertiary transmission of COVID-19 in-

- fection in Korea: the application of lopinavir/ritonavir for the treatment of COVID-19 infected pneumonia monitored by quantitative RT-PCR. *J Korean Med Sci.* 2020; 35(6):e79.
49. Cao B, Wang Y, Wen D, Liu W, Wang J, Fan G, et al. A trial of lopinavir-ritonavir in adults hospitalized with severe Covid-19. *N Engl J Med.* 2020 Mar 18.
  50. Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected. Interim guidance, WHO, March 13, 2020.
  51. Yao X, Ye F, Zhang M, Cui C, Huang B, Niu P, et al. In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). *Clin Infect Dis.* 2020 Mar 9.
  52. Gao J, Tian Z, Yang X. Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. *Biosci Trends.* 2020 Feb 19.
  53. Gautret et al. (2020) Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *International Journal of Antimicrobial Agents* – In Press 17 March 2020 – DOI : 10.1016/j.ijantimicag.2020.105949.
  54. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. Vital Surveillances: The epidemiological characteristics of an outbreak of 2019 novel Coronavirus Diseases (COVID-19) — China, 2020. *China CDC Weekly.* 2020;2(8):113-22.
  55. ICMR Initiated Sentinel Surveillance to detect community transmission of COVID-19, ICMR Press release, March 19, 2020.
  56. Korean Society of Infectious Diseases; Korean Society of Pediatric Infectious Diseases; Korean Society of Epidemiology; Korean Society for Antimicrobial Therapy; Korean Society for Healthcare-associated Infection Control and Prevention; Korea Centers for Disease Control and Prevention. Report on the Epidemiological Features of Coronavirus Disease 2019 (COVID-19) Outbreak in the Republic of Korea from January 19 to March 2, 2020. *J Korean Med Sci.* 2020 Mar 16; 35(10):e112.
  57. <https://www.worldometers.info/coronavirus/country/south-korea/>.
  58. Coronavirus cases have dropped sharply in South Korea. What's the secret to its success? March 17, 2020, Available at: <https://www.sciencemag.org/news/2020/03/coronavirus-cases-have-dropped-sharply-south-korea-whats-secret-its-success>.
  59. What the U.S. needs to do today to follow South Korea's model for fighting Coronavirus. Available at: <https://time.com/5804899/u-s-coronavirus-needs-follow-s-korea/>.
  60. 2020 coronavirus pandemic in Japan. Available at: [https://en.wikipedia.org/wiki/2020\\_coronavirus\\_pandemic\\_in\\_Japan](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Japan).
  61. Lee VJ, Chiew CJ, Khong WX. Interrupting transmission of COVID-19: lessons from containment efforts in Singapore. *J Travel Med.* 2020 Mar 13. pii: taaa039. doi: 10.1093/jtm/taaa039. [Epub ahead of print]
  62. Wong JEL, Leo YS, Tan CC. COVID-19 in Singapore-Current experience: critical global issues that require attention and action. *JAMA.* 2020 Feb 20. doi: 10.1001/jama.2020.2467. [Epub ahead of print]
  63. Wang CJ, Ng CY, Brook RH. Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing. *JAMA.* 2020 Mar 3. doi: 10.1001/jama.2020.3151. [Epub ahead of print]
  64. Duddu P. Coronavirus in Malaysia: COVID-19 outbreak, measures and impact. MARCH 23, 2020. Available at: <https://www.pharmaceutical-technology.com/features/coronavirus-affected-countries-malaysia-covid-19-outbreak-measures-tourism-economy-impact/>

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## The Corona Virus Outbreak on South African Medical Schemes



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*Michael Mncedisi Willie*



*Sipho Kabane*

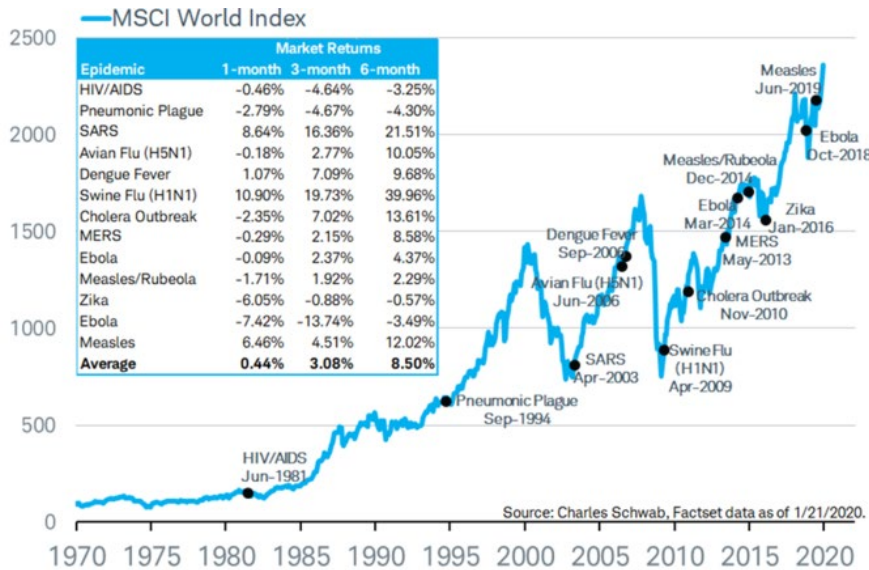


*Clarence Mini*

The economic impact of pandemics is becoming more potent and widespread as a result of greater human and economic connectedness. Transnational supply chains,

travel and unlimited access to media technologies often fuel contagion of both the disease and the fear surrounding it. Interestingly, the impact of infectious disease is pri-

marily driven not by mortality or morbidity figures but mostly by the behavioral changes as people, businesses and governments seeks to avoid infection or isolate infected persons



**Figure 1.** MSCI (market cap weighted stock market index) trends and associated disease outbreaks. Source: Charles Schwab Factset data as of 1/21/2020

or populations. Estimates provided by the World Bank indicate that the economic impact of a severe pandemic can be in the region of five percent of global GDP (Jonas, 2014). While this may seem overstated, the recent Ebola outbreak in West Africa resulted in cumulative losses of 10 percent of GDP between 2014 and 2015 with an infection rate of less than one percent of the region's population (World Bank, 2014).

Aside from the productivity losses experienced due to pandemics, financial markets are also adversely affected as a result of a slowdown in trade, disruption of supply chains or perceived health systems risks. The current outbreak of the Corona virus in China, which contributes about 16 percent to the global economy, has accelerated fears of a global economic slowdown or an outright recession (IMF, 2020). Global stock markets have experienced losses since the outbreak; however, trends of past disease outbreaks and the global stock market performance show a subdued impact overtime (Charles Schwab, 2020). South Africa currently has one reported case of the virus, but the fi-

nanacial market woes have been felt on the Johannesburg Stock Exchange. China is not only the biggest importer of South African raw mineral exports; it is also a global leader in the production and value addition of finished products destined for South Africa.

The impact on the medical schemes industry is likely twofold. On the one hand, medical schemes invest their reserves in viable investment instruments to counter the impact of medical aid inflation, so they are exposed to the current financial market downturn. On the other hand, any hint of a weakness in South Africa's public health surveillance and detection system will likely result in public panic and cause a rise in claims for health consultations or hospitalizations by members.

In terms of investments, medical schemes are only allowed to allocate a maximum of 40 percent of their reserves to equities as per Regulation 29 and 30 of the Medical Schemes Act in order to reduce exposure to high risk asset classes. The impact of the forecasted global economic slowdown and

volatile financial markets as a result of the virus outbreak are likely to negatively impact investment returns in this asset class. This is further exacerbated by the prevailing domestic recession conditions after two consecutive quarters of negative economic growth in the region of 0.8 and 1.4 percent respectively (Stats SA, 2020). Other asset classes, like local government bonds and money market/bank deposits may also be affected, however the overall impact on the investments of medical aids is largely unknown and likely on the downside.

**References**

1. Jonas O. (2014). Pandemic risk. Washington, DC: World Bank.
2. World Bank (2014). The economic impact of the 2014 Ebola epidemic: Short and medium term estimates for West Africa. Washington, DC: World Bank.
3. IMF: Virus outbreak will slow global economic growth this year. Available online: <https://www.aljazeera.com/ajimpact/imf-virus-outbreak-slow-global-economic-growth-year-200305013321840.html>. Accessed: 03/03/2020.
4. Will the Coronavirus Outbreak Lead to a Market Breakdown? Available online: <https://www.schwab.com/resource-center/insights/content/will-virus-outbreak-lead-to-market-breakdown>. Accessed: 03/03/2020.
5. Stats SA (2020). GDP in the fourth quarter of 2019 decreased by 1,4%. [Press release]. 03/03/2020.

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## Reform Proceeding of Organ Donation and Transplantation System in China



Bingyi Shi

The first kidney transplantation in China was performed in 1960, which symbolized the start of transplantation exploration in China [1]. To facilitate understood, the organ transplantation development in China could be divided into in three phases: the initial exploration phase (1960–2005), development and construction phase (2005–2015) and scientific standardization phase (2015–). During the initial exploration phase, all activities related to organ donation and transplantation were explored. Although a few cases of transplant with organs donated after citizen's death has been performed, executed prisoners were the main source of organs donors. Neither norms and guidelines nor registration system were present in this period, as experiences accumulating and technique maturing, guidelines and regulations was in urgent need to safeguard the scientific and health development.

Huang Jiefu, the vice minister of the Ministry of Health, pledged that China would promote the reform of the organ transplan-

tation system, develop voluntary, no-paid organ donation by citizens at the World Health Organization (WHO) High-level meeting on health held in Philippines [2]. The development and construction phase started, and the reform proceeding to establish a legal and standardized system for organ transplantation began in China. The reform was initiated with promotion of the legislation in the field of organ transplantation in 2007, the State Council of China promulgated the *Regulations on Human Organ Transplantation* [3], which was implemented nationwide in May 2007. The administrative matters involved in the process of human organ transplantation were stipulated. It was reiterated in the regulations that organ transplantation in China must comply with the WHO guidelines on human organ transplantation and the international medical norms. In order to criminalize organ trafficking, the *Amendment (VIII) to The Criminal Law* was promulgated in 2011, making it punishable under criminal law, and the legal framework in the field of transplantation was strengthened [4]. The Law of The Red Cross Society of the People's Republic of China was revised in May 2017 [5], and it clearly stipulated that organ donation should be promoted and that humanitarian relief mechanisms should be explored by charities.

According to the regulations, the former Ministry of Health of china reviewed and approved organ transplant hospitals in 2008, thereby reducing the number of transplant-qualified medical institutions from >600 to 164 (in 2008), the hospitals were scrutinized and regulated strictly every year from then on. In the same year, a registration system for liver and kidney transplant recipients was established, the medical quality of the transplant hospitals was monitored. To standardize the clinical

transplant practice, the Chinese Medical Association developed serial clinical norms and guidelines about transplantation, A total of 23 guidelines, covered aspects like complications diagnosis, prevention and treatment, had been published and compiled in *The clinical guideline for organ transplantation (2010 version)*. At same times, the clinical practice regulations of kidney, liver, heart and lung were also developed and formed a *book on organ transplant clinical technique norms (2010 version)* [6, 7]. The application of this clinical norms and guidelines did improve the standardization and medical quality of the organ transplantation practice in China.

With the strengthening of the legal framework surrounding organ transplantation, deceased organ donation was explored in a three-year pilot program since 2010 [8], and then was officially promoted nationwide on February 25, 2013. The organ Procurement Organizations (OPOs) and organ donation offices were then established in various transplant medical institutions. According to China's socioeconomic development level and cultural background, the Red Cross Society of China (RCSC) was introduced to participate in propaganda, coordinate, and witness in organ donation as a third party [9]. The China Organ Donation Administrative Center (CODAC) was set up to take charge in the work related to human organ donation and promote the concept of organ donation. An efficient and professional team of organ donation coordinator is need to promote the deceased organ donation, and it was organized and trained by CODAC since 2011. So far, 34 training courses have been held, and 2,516 professional coordinators have been trained and certified. The coordinators are affirmed by inspection, qualification, and certification every year to ensure strict implementation of the certification systems. This has gradually established an efficient and professional countrywide coordinator team, which has become the main force on the organ dona-

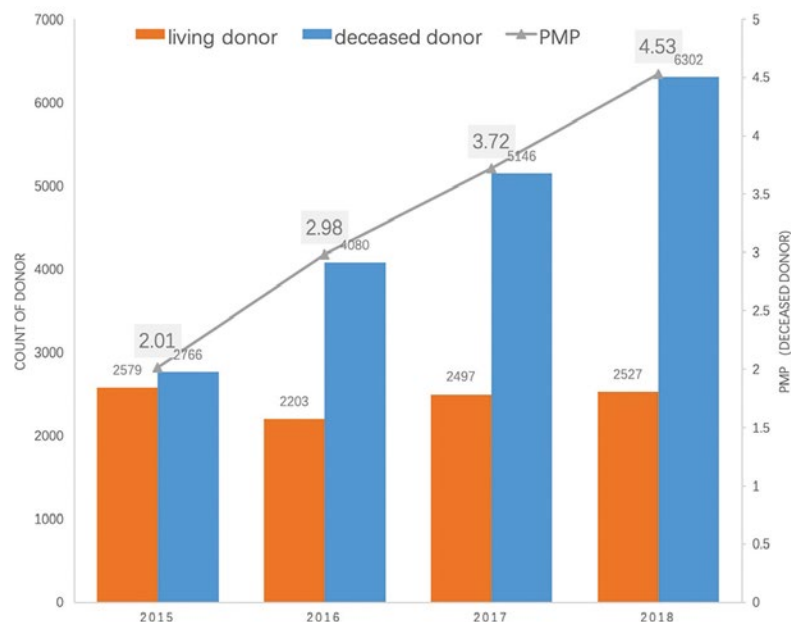
tion front. Organ donation involves social, religious, ethical, political, legal, etc. To better promote the deceased organ donation, a unique deceased donor classification system with three categories has been innovatively proposed [9]. Meanwhile, the criteria and clinical norms for brain death determination have been developed and updated, and the latest version (including adult and child version, respectively) was revised in 2013 [10, 11], and the national “Brain Injury Evaluation Quality Control Center” set in Xuanwu hospital is approved for training and certifying physicians and surgeons qualified to declare brain death. A total of 3,643 professionals qualified in brain death determination were trained from 2013 to 2019, who covered all regions in the mainland China. They are certified to create suitable conditions for organ donation based on brain death. In recent years, China has also explored and introduced regulations and mechanisms beneficial for organ donation and transplantation. For example, the former National Health and Family Planning Commission, Ministry of Public Security, Ministry of Transport, China Civil Aviation Administration, China Railway Corporation and RCSC jointly established a green channel mechanism for organ transportation to ensure smooth transfer of donated organs in 2016 [12].

A scientific allocation system through which the organs donated could be allocated fairly and transparently is key characteristics to the scientific and ethical transplant system. The China Organ Transplant Response System (COTRS) was developed and put into operation in 2011, by which advanced international experience was referred to for determining the allocation priority. The *Management Regulations for Acquisition and Distribution of Human Donor Organs (Trial)* was issued in August 2013 as based on the experience with operation of COTRS [13]. It is mandatory that all donor organs must be allocated through the COTRS thereby ensuring that the processes are just, open, and traceable.

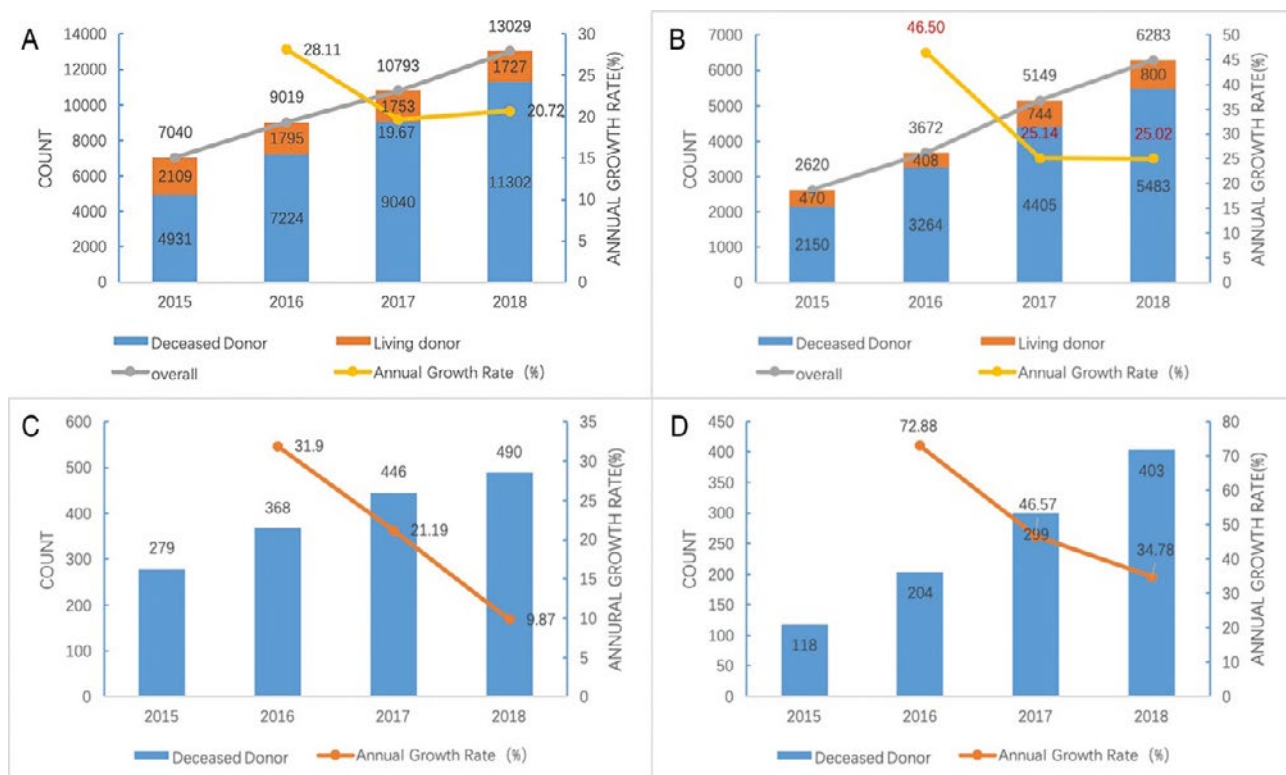
As coordinators are growing and maturing with the construction and improvement of the organ donation system, the number of voluntary deceased organ donation has been increasing year by year, and gradually occupying an important part of transplant organs [14]. Based on these facts, The National Human Organ Donation and Transplantation Commission (NHODT) announced that executed prisoner organ donation should be terminated from January 1, 2015. From then on, citizen organ donation has become the only legitimate source of transplantable organ in China [15].

After 10 years of arduous reform, a fair, transparent, and open climate of voluntary citizen organ donation movement has gradually formed across the society. Organ donation reached 6,302 cases in China mainland in 2018. The number of organ donors ranked second worldwide, and the per-million-population (pmp) donation

rate rose to 4.53 (from 0.03 at the beginning of the pilot in 2010), thereby laying a solid foundation for high-speed development of organ donation and transplantation (Figure 1) [16]. More patients benefit from transplant surgery with the promotion of deceased organ donation. The quantity of solid organ transplantation was rapidly escalating, a total of 20,201 organ transplants were performed in 2018 (Figure 2). With the rapid increasing of the quantity of the solid organ transplantation recently, China now turns to pursue quality management and improvement in the transplantation field [16]. At present, the development targets of organ transplantation is undergoing a transition from fast growth of quantity and scale to promoting improvement of quality. China has set up organ transplant quality control centers based on the original transplant recipient clinical data registration systems in 2016, who are responsible for the national medical quality monitoring, supervision and inspection of specific



**Figure 1.** Counts of Deceased Donor, Living Donor and PMP, 2015–2018. PMP was calculated with the deceased donor. The Figure and data were obtained from the Report on Organ Transplantation Development in China (2015–2018), and authorized by the China Organ Transplantation Development Foundation



**Figure 2.** Counts of Transplantation Surgeries in China, 2015–2018. A: kidney Transplantation performed in china, and the annual growth rate calculated with the deceased donor Transplantation. B: Liver Transplantation performed in china, and the annual growth rate calculated with the deceased donor Transplantation. C: Heart Transplantation performed in china, and the annual growth rate. D: Lung Transplantation performed in china, and the annual growth rate. All the data were obtained from the Report on Organ Transplantation Development in China (2015–2018), and authorized by the China Organ Transplantation Development Foundation

transplant programs. The exploration of the quality improvement program began in 2017 by the Kidney Transplantation Quality Control Center of National Health Commission [17], and it was introduced to other transplantation program in the 2019 Annual Congress of Chinese Society of Organ Transplantation [18]. The Chinese organ transplantation quality improvement program would establish statistic models based on clinical outcomes data of the Chinese recipients to set up scientific medical quality evaluation methods, and through refining of clinical practices guideline and norms to promotion standardized diagnosis and treatment procedures, thereby to promotion the quality improvement in organ

transplantation. The establishment of standardized diagnosis and treatment system was led by the Chinese Medical Association, which organize the experts from Chinese Society of Organ Transplantation to update and revise the clinical guideline and clinical norms for transplantation. *Clinical Guideline For Organ Transplantation in China (2017 version)* has been published in 2018, it has referred the latest clinical evidence and incorporated with the local experience about the Chinese patient clinical characteristics, a total of 27 guidelines had been revised or establish [19]. The updating and revising of the clinical norms has been ongoing since 2018, 57 clinical practice norms have been completed and published

[20–22]. The publication of guidelines and norms effectively improves the standardization of organ transplant diagnosis and treatment, and does promote the quality improvement of clinical care.

The organ donation and transplantation system in China was constructed with long-term support and assistance of the international transplant community. Since 2006, many international transplantation experts have visited China to provide assistance and guidance [8]. A jointly China-European Union (EU) education program named “knowledge Transfer and Leadership in Organ Donation, from Europe to China (KeTLOD)” has been carried out

since 2016. These efforts greatly increased awareness of organ donation among Chinese society [23, 24]. Since 2015, the China has invited international experts to personally witness the whole organ donation processes to confirm the facts. The organ donation work is transparent and open in China, and leaves a deep impression on the visiting experts. It has also prompted experts skeptical of the organ transplantation process to acknowledge the construction and reform of the organ transplantation system [2, 25]. The United Nations and the Vatican Pontifical Academy of Sciences jointly held a conference on "Ethics in Action" in March 2018 [26, 27]. For the first time, Huang Jiefu introduced the experience with organ transplantation reform and its practice to the world. It was referred to as the "China model" and well received by the participating experts [28]. It was concluded that the organ donation and transplantation reform experience in China may be adopted as a reference for countries with similar social and cultural backgrounds and socioeconomic development status [26, 29].

The fourth China – International Conference on Organ Donation – 'The Belt and Road' Organ Donation International Cooperation Development Forum was held in Kunming, Yunnan, from December 6, 2019, to December 8, 2019 [30]. Representatives from WHO, the International Association of Organ Transplantation (TTS), and transplant associations from 62 countries across all continents attended the forum. Experts at the conference praised China's achievements in organ donation and transplantation reform, and they affirmed the important role of the "Chinese Experience" in the construction of the transplant system. The forum follows the principles of "extensive consultation, joint contribution, and shared benefits." The *Kunming Consensus on International Cooperation Development of 'The Belt and Road' Organ Donation and Transplantation* was issued. China conveyed to the world the belief of establishing an ethical organ transplant system consistent

with the criteria of WHO. It also provided the world transplant community with the "Chinese experience." China will actively promote international exchanges and cooperation in the cause of organ donation and transplantation in the field of humanities and health organ among countries along "The Belt and Road," thereby jointly addressing problems and challenges in human development [30].

We will make unremitting efforts to build a perfect organ donation and transplantation system that is consistent with the ethics and criteria of the WHO, thereby actively promoting international cooperation of "The Belt and Road" organ donation and transplantation, presenting the image of a responsible political power to the international community, and making our due contribution to the construction of the "human destiny community".

## References

- Guo Y, Yang J. Overview of Renal Graft. *China Medical News* 2003; 18 (3): 18-19.
- Huang J, Wang H, Zheng S, Liu Y, Feng H. Advances in China's Organ Transplantation Achieved with the Guidance of Law. *Chin Med J (Engl)* 2015; 128 (2): 143-146.
- Chinese Ministry of Health. Regulation on human organ transplantation 2007. Last accessed on 2020 February 20th. Available from: [http://www.gov.cn/zwgk/2007-04/06/content\\_574120.htm](http://www.gov.cn/zwgk/2007-04/06/content_574120.htm).
- National People's Congress of the People's Republic of China. Amendment (VIII) to the Criminal Law of the People's Republic of China 2011. Last accessed on 2020 February 20th. Available from: <https://www.cecc.gov/resources/legal-provisions/eighth-amendment-to-the-criminal-law-of-the-peoples-republic-of-china>.
- National People's Congress of the People's Republic of China. Amended Law of the People's Republic of China on the Red Cross Society 2017. Last accessed on 2020 February 20th. Available from: [http://www.npc.gov.cn/npc/xinwen/2017-02/24/content\\_2008112.htm](http://www.npc.gov.cn/npc/xinwen/2017-02/24/content_2008112.htm).
- Chinese Medical Association. The Clinical Guideline for Organ Transplantation (2010 version). Beijing: People's Medical Publishing House (PMPH), 2010.
- Chinese Medical Association. A Book on Organ Transplant Clinical Technique Norms (2010 version). Beijing: People's Military Medical House, 2010.
- Huang J, Millis MJ, Mao Y, Millis AM, Sang X, Zhong S. A pilot programme of organ donation after cardiac death in China. *Lancet* 2012; 379 (9818): 862-865.
- Huang J, Wang H, Fan ST, Zhao B, Zhang Z, Hao L, et al. The National Program for Deceased Organ Donation in China. *Transplantation* 2013; 96 (1): 5-9.
- Brain Injury Evaluation Quality Control Centre of National Health and Family Planning Commission. Criteria and practical guidance for determination of brain death in adults (BQCC version). *Chin J Neurosurg* 2013; 46 (9): 637-640.
- Brain Injury Evaluation Quality Control Centre of National Health and Family Planning Commission. Criteria and practical guidance for determination of brain death in children (BQCC version). *Chin J Pediatr* 2014; 52 (10): 756-759.
- National Health and Family Planning Commission, Ministry of Public Security, Ministry of Transport, China Civil Aviation Administration, China Railway Corporation, China Red Cross Federation. Notice on Establishing a Green Channel for Human Organ Donation 2016. Last accessed on 2020 February 20th. Available from: <http://www.nhc.gov.cn/xxgk/pages/viewdocument.jsp?dispatchDate=&staticUrl=/yzygj/s3585/201605/206fb7d1c0014c48bd6a76b8f155c935.shtml&cwenhao=%E5%9B%BD%E5%8D%AB%E5%8C%BB%E5%8F%91%E3%80%942016%E3%80%9518%E5%8F%B7&cutile=%E5%85%B3%E4%BA%8E%E5%BB%BA%E7%AB%8B%E4%BA%BA%E4%BD%93%E6%8D%90%E7%8C%AE%E5%99%A8%E5%AE%98%E8%BD%AC%E8%BF%90%E7%B%B%BF%E8%89%B2%E9%80%9A%E9%81%93%E7%9A%84%E9%80%9A%E7%9F%A5&ctopic=&topic=&publishedOrg=%E5%8C%BB%E6%94%BF%E5%8C%BB%E7%AE%A1%E5%B1%80&indexNum=000013610/2016-00090&manuscriptId=206fb7d1c0014c48bd6a76b8f155c935>.
- National Health and Family Planning Commission of the People's Republic of China. Notice of the Interim Provisions on Human Organ Procurement and Allocation 2013. Last accessed on 2020 February 20th. Available from: <http://www.nhc.gov.cn/yzygj/s3585u/201308/8f4ca93212984722b51c4684569e9917.shtml>.
- Zhang Q. They gave their word, and more. *Global Times*. 2016. Last accessed on 2020 February 20th. Available from: <http://www.global-times.cn/content/1001281.shtml>.
- Guo Y. The "Chinese Mode" of organ donation and transplantation: moving towards the center stage of the world. *Hepatobiliary Surg Nutr* 2018; 7 (1): 61-62.

16. China Organ Transplantation Development Foundation. Report on Organ Transplantation Development in China(2015-1018). Beijing: 2019 November 2019. Report No.
17. Shi B, Liu Z. Kidney transplantation: from quality control to quality improvement plan. Chinese Journal of Transplantation (Electronic Edition) 2018; 12 (03): 7-11.
18. Shi B, Liu Z. To Construct of quality improvement proram system and to promote the transition development of organ transplantation. Organ Transplantation 2020; 10 (1): 1-7.
19. Chinese Society of Organ Transplantation of Chinese Medical Association. Clinical Guideline For Organ Transplantation In China. Beijing: People's Medical Publishing House(PMPH), 2018.
20. Chinese Society of Organ Transplantation of Chinese Medical Association. Procedures and regulations for organ donation after the death of Chinese citizens. Organ Transplantation 2019; 10 (2): 122-127.
21. Chinese Society of Organ Transplantation of Chinese Medical Association. Clinical technical operation specification of small bowel transplantation. Chin J Organ Transplant 2019; 40 (10): 580-590.
22. Chinese Society of Organ Transplantation of Chinese Medical Association. Technical specification for preoperative evaluation and preparation of heart transplantation recipients in China (2019 edition). Chinese Journal of Transplantation (Electronic Edition) 2019; 13 (1): 1-7.
23. Jiang W, Ye Q, Li L, Sun X, Feng G, Liu Y, et al. 115.8: Developing the educational pathway for organ donation in China: international-joint training program to increase organ donation rate. Transplantation 2019; 103 (11S): S5-S6.
24. Marti M, Chloe B, Entela K, Melania I, Wenshi J, Marco Z, et al. 330.4: Knowledge transfer and leadership in organ donation from Europe to China: KeTLOD project. Transplantation 2019; 103 (11S): S71.
25. Danovitch GM, Delmonico FL. A path of hope for organ transplantation in China? Nephrol Dial Transplant 2015; 30 (9): 1413-1414.
26. China Daily. China to share organ transplant expertise2018. Last accessed on 2020 February 20th. Available from:<http://usa.chinadaily.com.cn/a/201805/26/WS5b097ed3a31001b-82571c7c7.html>.
27. Fan L. China's organ transplant reforms win recognition. Global Times.2018. Last accessed on 2020 Ferbruary 20th. Available from: <http://www.globaltimes.cn/content/1106029.shtml>.
28. Guo Y. The "Chinese Mode" of organ donation and transplantation: moving towards the center stage of the world. 2018;
29. China Global Television Network. World Health Assembly: Tackling global issues of organ donation and transplantation2018. Last accessed on 2020 February 20<sup>th</sup>. Available from: [https://news.cgtn.com/news/334d444f31454464776c6d636a4e6e62684a4856/share\\_p.html](https://news.cgtn.com/news/334d444f31454464776c6d636a4e6e62684a4856/share_p.html).
30. Yang J, Zhang K. China's effort in organ donation and transplant applauded amid rumors. China Global Television Network.2019.

Last accessed on 2020 February 20. Available from:<https://news.cgtn.com/news/2019-12-08/China-s-effort-in-organ-donation-and-transplant-applauded-amid-rumors-Mg2t9aG1X2/index.html>.

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## The Impact of Climate Change on Health

### A question of survival

Climate is a decisive social factor in basic health. The climate system is fundamental for life as a safe climate is needed to sustain health, for which reason climate change is a direct threat to health. It is also one of humanity's greatest challenges and protecting the climate and environment is synonymous with protecting health. To achieve this objective, swift, efficient mitigation and adaptation strategies that improve health and reduce health vulnerability must be implemented. These should incorporate climate change and its risks within health

programmes, in addition to preparation and response programmes for emergencies that may occur.

Climate change is the global variation in the Earth's climate, mainly owed to human activity through greenhouse gases that alter the atmosphere's composition, causing global warming with detrimental effects in many areas of the planet and with specific consequences for global health. The latter is a priority for public health as it may become progressively worse, creating



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a world health crisis throughout the 21st century. Being aware of this, preventing it as far as possible, and acting to diminish and temper its consequences are obligations for all of mankind, and the medical profession in particular given its responsibility and commitment to caring for human health.

According to the World Meteorological Organisation (WMO) and the World Health Organisation (WHO), at present climate change makes a significant contribution to increasing the global burden of premature deaths and illnesses worldwide, especially in terms of cardiovascular, respiratory, allergic, digestive and neurological diseases. In addition, it alters the distribution of numerous infectious diseases, causing continuous changes in some vectors that expand important illnesses (malaria, yellow fever, zika virus, chikungunya virus, dengue fever, among others). It affects agriculture, food, air and water with disastrous consequences for people's health and quality of life. Climate change will heighten inequality in health, especially in more vulnerable countries and populations who will suffer more from its consequences.

Climate change is an important risk factor for health given its repercussions that impact many relevant aspects, ranging from extreme events like torrential rains, floods, droughts, hurricanes, tornadoes, heat waves and cold snaps, to alterations in the distribution of water and food. These threaten food safety and cause diarrhoea along with other problems, such as air pollution, changes in pollination and ultraviolet radiation, resulting in increased diseases and deaths. Other consequences include exodus with mass emigration and climate refugees in a panorama that could act as the trigger for armed conflicts, poverty, hunger, and changes to oceans and fishing, with fewer glaciers and more droughts that threaten the entire rural environment and agriculture, altering ecosystems and biodiversity.

According to the WHO, one in four deaths in the world is owed to environmental factors and it warns that the impact of climate change will be particularly serious in children, old people, pregnant women, people with chronic diseases in general, and especially those affected by respiratory and cardiovascular diseases, considering that diseases sensitive to the climate are among the most lethal. For these reasons, the crucial impact of climate change on health and life must be emphasised. Although it is a recognised fact, it appears to be of secondary importance when it should be a priority.

Climate change is a global issue that requires solidarity and collaboration on all aspects, with a comprehensive approach covering prevention, mitigation, adaptation to its consequences, and research in all areas to reduce its impact on health. Via their National Medical Associations (NMAs), doctors must take climate change into consideration and actively participate in devising policies and initiatives that reduce its consequences on health, participating in the field of education in particular to raise professional and social awareness of the importance of the environment and climate change on people's health as well as community health. Environmental education constitutes a form of training in values and, in order to fight climate change and improve its impact on health, doctors and their professional organisations (as well as the entire health industry) must strive to uphold and introduce new values in addition to an ethical and moral facet to address the issue.

The World Medical Association (WMA) and NMAs must act as the frontline when defending against the health issues related to climate change. They must also lead doctors so they may help people to adapt to its consequences, fight against the diseases linked to climate change, and collaborate with governments and other organisations to tackle, mitigate and adapt to the effects climate change has on health.

Climate change is a health emergency, an immense crisis for humanity that is at a tipping point. It destroys the economy and health (and even health advances achieved over time), thus reducing life expectancy. Consequently, it constitutes a global challenge given its repercussions, which are difficult to reverse, and its impact on health results. Time is short when it comes to stopping global warming and protecting health, therefore, our life model must be redefined to become more sustainable and healthier because when the climate changes, life also changes.

In this battle against the clock, public health systems must be strengthened so as to improve their health response capacity and ability to adapt to climate change. Funding must be increased to bolster primary health care (along with community initiatives and risk prevention responses), reduce greenhouse gases that cause global warming, control vectors, protect environmental health, and monitor the diseases climate change causes. Research in all areas of health affected by climate change must be encouraged in order to pinpoint solutions and ameliorate the health consequences for people and communities, strengthen monitoring systems for the diseases caused or altered as a result of climate change, and make the medical community's voice heard as a significant party in the climate debate such that climate change's impact on health is treated with the importance it requires. The WMA must also join these efforts to promote better environmental management in addition to improved management of water, farming, and industrial resources as well as ecosystems. It must also call for responsibility and professional commitments in relation to a healthy environment given that doctors, when protecting life and health, have an ethical and professional duty to protect the environment and report incidents of environmental abuse that may be potentially dangerous to health or life.

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## Physical Activities of Doctors in Rivers State, Southern Nigeria



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Globally, sedentary lifestyle has been a public health burden [1, 2]. More people are becoming sedentary due to modernization, westernization and civilization, as well as the advancement in technology. There have been more devices invented that help relieve manual labour and some of these newly developed household gadgets that make life easier and expend less energy in operating them. These are making people to be less physically active. In public health, physical inactivity has become an important research topic [3]. Many people are becoming physically inactive in the changing world [4]. Worldwide, one in four adults is physically inactive [5]. Movement of the human body is linked to physical activity as the human beings are designed for it. Physical activity is necessary for maintaining physical and mental wellbeing.

Physical activity can be defined as any movement of the body produced by the skeletal muscles that result in the expenditure of energy [6]. Physical activity involves all forms of activities which can be chores done within and outside the home, activities of daily living and also recreational activities [7, 8]. Examples of physical activity are brisk walking, cycling, swimming, running, dancing, shopping, exercise, jogging and active sports [5, 7–10]. Being physical active has some health benefits but they are done

with little concern of its importance on the role it plays on physical fitness [11].

When physical activity is planned, it is exercise, that is structured and it is used for the improvement of health for the maintenance of physical fitness [10]. Healthy lifestyle involves physical activity [12]. Different forms of physical activity have different intensities; hence the World Health Organization recommends that the activity should be done in episodes of at least ten minutes for it to be beneficial to cardiorespiratory health [8]. There are several benefits of physical activity [13] as it is important for staying healthy [7, 14, 15]. It helps in the prevention of diseases as physical inactivity is a risk factor of most non-communicable diseases such as hypertension, obesity, cardiovascular diseases, coronary heart disease, type 2 diabetes mellitus, osteoporosis, colon cancer, depression, anxiety, improves physical fitness and strength [3, 5, 7–9, 11, 12, 16–19]. The fourth leading risk factor for mortality is physical inactivity as globally about 3.2 million persons die because they are physically inactive [8]. There is an increase in the number of people that are becoming physically inactive worldwide [8, 20, 21]. Therefore in global health, physical inactivity has become a burden [5, 9, 22, 23]. Healthcare professionals including medical doctors are involved in counselling their clients and patients in the course

of their work. Advices are given by the healthcare workers are usually held in high esteem as most hospital clients and patients will perceive that the healthcare worker as a role model in health matters and maintaining healthy lifestyle [3, 10, 24]. Hence this study investigates physical activity amongst medical doctors in Rivers State, Southern Nigeria.

### Method

This is a cross-sectional descriptive study conducted during the 2018 annual general meeting and scientific conference of the Rivers State Branch of the Nigerian Medical Association. Respondents were medical doctors and dentists and participation was voluntary. A questionnaire was administered to the research respondents. The questionnaire included questions related to demographics and the short form of the International Physical Activity Questionnaire (IPAQ-SF). The International Physical Activity Questionnaire is a valid and reliable instrument for measuring physical activity which has been tested in different populations worldwide [1, 25–30]. The short form which was used in this study is a recall of physical activity of moderate and vigorous activity and walking and sitting in the past seven days and comprises of seven ques-

tions [26, 31–33] The International Physical Activity Questionnaire was developed in 1998 [27]. Data extracted from the International Physical Activity Questionnaire short form was analyzed using the scoring protocol of the instrument [34]. The Metabolic Equivalent Task was obtained from the International Physical Activity Questionnaire scoring protocol and the total Metabolic Equivalent Task (MET) calculated. One Metabolic Equivalent Task was the energy that would be expended at rest and this is approximately 3.5 ml O<sub>2</sub> kg<sup>-1</sup>min<sup>-1</sup> in adults [16, 35, 36] or 20 mlmin of oxygen is used up in an average 70 kg adult [16]. There is a rise in the amount of oxygen consumed where an increase in the intensity of the activity hence the mean equivalent increase with the intensity of physical activity [16].

The values of MET assigned to sitting, walking, moderate and vigorous physical activity intensity by the international physical activity questionnaire protocol are [28, 30]:

- Walking: 3.3 MET
- Moderate physical activity: 4.0 MET
- Vigorous physical activity: 8.0 MET

For each activity as calculated by multiplying the number of minutes the activity was carried out by the number of days and the constant assigned to that activity. The calculated MET was compared with the standard MET

Using the MET, physical activity was categorized into low, moderate and high physical activity as shown below [1, 2]:

Category	MET – minutes/week
Low physical activity:	<600
Moderate physical activity:	≥600 to <3000
High physical activity:	≥3000

The MET – min-per week = : MET level X events per week.

Activities lasting less than 10 minutes are not counted [36].

## Results

One hundred and six doctors participated in this study; only 102 questionnaires were filled completely while four questionnaires were incomplete therefore they were not included in the study. Table 1 shows the social demographics characteristics of the respondents while table 2 shows the respondents place of work. Most 77 (80%) of the respondents worked in a government owned hospital. Table 3 shows the number of days that is spent on physical activities. Table 4 shows physical activities of respondents using the metabolic equivalent task. The highest physical activity was conducted by 43 (42.16%) moderate physical activity, 40 (39.22%) low physical activity and 19 (18.63%). Table 4 shows the time spent on various activities.

Measurement of physical activity is complex as it can be measured directly or indirectly using self-reported questionnaires [4]. There are different methods of measuring physical activity. Questionnaires is the most commonly used and valuable method [3]. Doctors spend a lot of time sitting down as they have to sit down taking history from their patients except those involved in surgeries or procedures in which they have to stand. According to the World Health Organization adults should have 150 minutes of moderate physical activity per week or 75 minutes of activity of vigorous intensity daily [8, 20]. Using the MET 43 (42.16%) had moderate physical activity and 19 (18.63%) high physical activity. It shows that some doctors are physically inactive. Activities less than ten minutes were not included in the study.

Doctors are involved in the counselling and educating patients on been physically active to help prevent some non-communicable diseases in which physical inactivity is a risk factor [2, 37, 38]. The result of this study is in contrast to the study conducted among healthcare professionals in South-West Nigeria where only 20.8% met

**Table 1.** Social demographic characteristics of the respondents

Variable	Frequency (n)	Percentage (%)
<b>Age (n=102)</b>		
21–30 Years	26	25.5
31–40 Years	49	48
41–50 Years	18	17.6
51–60 Years	4	3.9
61–70 Years	4	3.9
71–80 Years	1	1
<b>Sex (n=102)</b>		
Males	34	33.3
Females	68	66.7
<b>Marital status (n=102)</b>		
Separated	2	2
Single	35	33.3
Married	66	64.7
<b>Rank (n=100)</b>		
House officer	14	14
Senior House officer	1	1
Registrar	22	22
Senior Registrar	9	9
Consultant	11	11
Professor	2	2
Medical officer	23	23
Senior Medical Officer	12	12
Principal Medical officer	2	2
Chief medical officer	3	3
Retired	1	1



**Table 2.** Place of work of the respondents

Variable	Frequency (n)	Percentage (%)
<b>Hospital Ownership (n=96)</b>		
Military Hospital	1	1
Company hospital	3	3.1
Non-Governmental Organization	3	3.1
Private	12	12.5
Government	77	80.2
<b>Type of public facility (n=71)</b>		
General hospital	2	2.8
Management staff	4	5.6
Specialist hospital	9	12.7
Primary health care	11	15.5
University teaching hospital	45	63.4
<b>Department (n=92)</b>		
No Department	26	28.3
Community Medicine	9	9.8
Family Medicine	6	6.5
Hematology	3	3.3
Internal medicine	7	7.6
Obstetrics and Gynaecology	19	20.7
Surgery	4	4.3
Paediatrics	3	3.3
Others	17	18.5

**Table 3.** Physical activity category

Physical category	Metabolic equivalent task
Low <600 MET	40 (39.22%)
Moderate >600–3000	43 (42.16%)
High >3000	19 (18.63%)
Total	102 (100%)

**Table 4.** Time spent on various activities amongst the respondents (n=102)

Variable	Frequency (n)	Percent (%)
<b>Time spent on Vigorous activities (minutes)</b>		
<= 60	94	92.2
91–120	4	3.9
121–150	1	1.0
151+	3	2.9
<b>Time spent on moderate vigorous activities (minutes)</b>		
<= 60	91	89.2
61–200	8	7.8
201–340	1	1.0
341+	2	2.0
<b>Time spent Walking (minutes)</b>		
<= 60	85	83.3
61–220	8	7.8
221–380	6	5.9
381+	3	2.9
Total	102	100.0
<b>Time spent sitting (minutes)</b>		
<= 60	53	52.0
61–440	31	30.4
441–820	14	13.7
821+	4	3.9
<b>Time spent sleeping (hours)</b>		
<= 3.0	73	71.6
3.1–6.0	18	17.6
6.1–9.0	7	6.9
9.1+	4	3.9
<b>Time spent watching TV (Hours)</b>		
<= 3.0	73	71.6
3.1–6.0	18	17.6
6.1–9.0	7	6.9
9.1+	4	3.9

the recommendation for physical activity. Though this study included all cadres of healthcare workers, it did not specify the different categories of healthcare professionals [24]. The long hours spent at the workplace and the sedentary nature of medical work are some of the causes of low physical activity among healthcare workers including doctors [24].

Physical inactivity is a risk factor for most non-communicable diseases which are life threatening and causes morbidity, mortality and end organ damage. Doctors who know all about the benefits of physical activity are also physically inactive even though they contribute so much to health education advising their clients and patients to increase their physical activity and decrease physical inactivity.

## Limitation

Since this study was conducted during a scientific and annual general meeting of the Rivers State branch of the Nigerian Medical Association, only doctors that attended the meeting participated in the study hence the results may not reflect the true physical activity of doctors in Rivers State, Nigeria as doctors that did not attend the meeting did not participate in the study.

## References

- International Physical Activity Questionnaire. [www.ipaq.ki.se](http://www.ipaq.ki.se) assessed January 2020.
- Hadimani CP, Kulkarni SS, Matt AK, Javali SB. Pattern of physical activity and its correlation with gender, body mass index among medical students. *Inter J Comm Med Public Health*. 2018, 5 (6), 2296-2300.
- Metcalfe KM, Baquero BI, Gracia MLC, Francis SL, Janz KF, Laroche HH, Sewell DK. Calibration of the Global Physical Activity Questionnaire to accelerometry measured physical activity and sedentary behaviour. *BMC Public Health*, 2018, 18:412. doi.org/10.1186/s12889-018-5310-3.
- Alricsson M. Physical activity why and how. *J Biosafety Health Educ*. 2013:1.4. doi. Org/10.4172/2332-0893.1000e/11.
- Boopathirajam R, Raveendran A, Agyalusamy P. Study on practice of physical activity among medical interns in a private medical college hospital in Chennai. *Inter J Comm Med Public Health*. 2019, 6 (5), 1-5.
- World Health Organization. Global strategy on diet, physical activity and health. [www.who.int](http://www.who.int) assessed January 2020.
- Kruk J. Physical activity and health. *Asian Pacific J Cancer Prevention*. 2009, 10, 721-728.
- World Health Organization. Physical activity fact sheet no 385, 2014. [www.who.int](http://www.who.int) assessed January 2020.
- Miles L. Physical activity and health. *Bri Nutr Foundation Bull*. 2007, 32, 314-363.
- Adegboyega JA. Physical activity and exercise behaviour of senior academics and administrative staff of tertiary institutions in Ondo State, Nigeria. *Inter J Educ Res*. 2015, 3 (2), 189-202.
- Oyeyemi AY, Usman RB, Oyeyemi AL. A survey of disposition of physicians towards physical activity promotion at two tertiary hospitals in North-Western Nigeria. *Ann Ibd Pg Med*. 2016, 14 (2), 74-80.
- Al-Asousi M, El-Sabban F. Physical activity among preclinical medical students at the University of Malaya, Malaysia. *J Nutritional Health Food Sci*. 2016. [www.symbiosisonline.org](http://www.symbiosisonline.org) assessed 2020.
- Weissblueth E. Short Hebrew international physical activity questionnaire: reliability and validity. *Baltic J Health Physical Activity*. 2015, 7 (1), 7-13.
- Kumar H, Ramakrishnan N, Chandrashekar M, Kodihl A, Jayaramgowda AK, Kadian M, Chauhan V. A cross-sectional study on patterns, motivating factors and barriers for physical activity among undergraduate medical students. *Inter J Med Public Health*. 2014, 41 (4), 413-416.
- Wennlof AH, Hagstromer M, Olsson L. The international physical activity questionnaire modified for the elderly: aspects of validity and feasibility. *Public Health Nutri*. 2010, 13 (11), 1847-1854.
- Polito A, Intorr F, Ciarapica D, Barnabas L, Tagliabue A, Ferraris C, Zaccaria M. Physical activity assessment in an Italian adult population using the international physical activity questionnaire. *Obes Res Open J*. 2016, 4 (1). doi.10.17140/OROJ-4-127.
- Bolarinde SO, Olagbegi OM, Daniel EO, Akinnbola B. Knowledge, attitude and practice of physical activity among health professionals in a Nigerian tertiary health institution. *South Am J Public Health*. 2015, 3 (2). [www.researchgate.net/publication/283496898](http://www.researchgate.net/publication/283496898)
- Rhodes RE, Janseen I, Bredin SSD, Warburton DER, Bauman A. Physical activity: health impact, prevalence correlates and interventions. *Psychol Health*. 2017, 32 (8), 942-975.
- Oyeyemi AL, Oyeyemi HY, Adegoke BO, Oyetofo FO, Aliyu HN, Aliyu SU, Rufai AA. The Short International Physical Activity Questionnaire: cross cultural adaptation, validation and reliability of the Hausa language version in Nigeria. *BMC Med Res Methos*. 2011, 11, 156. [www.biomedcentral.com/1471-2288/11/156](http://www.biomedcentral.com/1471-2288/11/156)
- Akarolo-Anthony SN, Adebamowo CA. Prevalence and correlates of leisure-time physical activity among Nigerians. *BMC Public Health*. 2014, 14:29. [www.biomedcentral.com/1471-2458/14/529](http://www.biomedcentral.com/1471-2458/14/529)
- Craig CL, Marshall AL, Sjoström M, Bauman AE, Booth ML, Ainsworth BE, Pratt M, Ekelund et al. International Physical Activity Questionnaire: 12-country reliability and validity. *Med Sci Sports Exer*. 2003, 35, 1381-1395.
- Pratt M, Norris J, Lobelo F, Ronx L, Wang G. The cost of physical activity: moving into the 21st century. *Bri J Sports Med*. 2014, 48, 171-173.
- Momton JS, Ferment P, Khan K, Poirer P, Fowles J, Wells GD, Frankorich RJ. Physical activity prescription: a critical opportunity to address a modifiable risk factor for the prevention and management of chronic disease: a position statement by the Canadian Academy of Sports and Exercise Medicine. *Bri J Sports Med*. 2016, 6,1-6. doi:10.1136/bjsports.2016-696291.
- Wuala SO, Sekoni AO, Olamoyegun MA, Akanbi MA, Sadiir AA, Ayankogbe OO. Self-reported physical activity among health care professionals in South-West Nigeria. *Nig J Clin Pract*. 2018, 18 (6), 790-795.
- Hagstromer M, Oka P, Sjoström M. The International Physical Activity Questionnaire (IPAQ): a study of concurrent and construct validity. *Public Health Nutrit*. 9(6), 755-762. doi.10.1079/PHN.2-58598.
- Lee PH, McDowell L, Leung Ham TM, Stewart SM. Performance of the International Physical Activity Questionnaire (Short Form) in subgroups of the Hong Kong Chinese population. *Inter J Behavioral Nutr Physical Activity*. 2011.8.81. [www.ijbnja.org/contents/811/81](http://www.ijbnja.org/contents/811/81) assessed January 2020.
- Lee PH, MacFarlane DJ, Ham TH, Stewart SM. Validity of the International Physical Activity Questionnaire Short Form (IPAQ-SF): a systematic review. *Inter J Behavior Nutr Physical Activity*. 2011. 8. 115. [www.ijbnpa.org/content/18/1/15](http://www.ijbnpa.org/content/18/1/15) assessed January 2020.

28. Adeniyi AF, Ogwumike OO, John-Chu CG, Fasanmade AA, Adeleya JO. Links among motivation, socio-demographic characteristics and physical activity level among a group of Nigerian patients with type 2 diabetes. *J Med Biomed Sci.* 2013, 2(2), 8-16.
29. Kim Y, Park L, Kang M. Convergent validity of the International Physical Activity Questionnaire (IPAQ): meta-analysis. *Public Health Nutri.* 2012, 16(3), 440-452.
30. Wolin KY, Heil DP, Askew S, Mathews CE, Bennett GG. Validation of the international physical activity questionnaire-short form among Blacks. *J Physical Activity Health.* 2008, 5, 746-760.
31. Nang EEK, Ngunjiri SAG, Wu Y, Salim A, Tai ES, Lee J, Dam RMV. Validity of the International Physical Activity Questionnaire and the Singapore prospective study program physical activity questionnaire in a multiethnic urban Asian population. *BMC Med Res Meth.* 2011.11.141. [www.biomedcentral.com/1471-288/11/141](http://www.biomedcentral.com/1471-288/11/141).
32. Tran DV, Lee AH, Au TB, Nguyen CT, Hoang DV. Reliability and validity of the International Physical Activity Questionnaire-Short Form for older adults in Vietnam. *Health Promotion J Australia.* 2013, 24, 126-131.
33. Meeus M, Eupen IV, Willems J, Kos D, Nijs J. Is the International Physical Activity Questionnaire – short form (IPAQ-SF) valid for assessing physical activity in chronic fatigue syndrome? *Disability Rehabilitation.* 2010, 1-8.
34. Guidelines for data processing and analysis of the International Physical Activity Questionnaire (IPAQ) short and long forms. [www.ipaq.ki.se/scoringpdf](http://www.ipaq.ki.se/scoringpdf)
35. American College of Sports Medicine. Position stand. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness and flexibility in healthy adults. *Medicine and Science in Sports and Exercise.* 1998, 30, 975-91.
36. Forde C. Scoring International Physical Activity Questionnaire (IPAQ). Trinity College of Dublin. The University of Dublin exercise, prescription for the prevention and treatment of disease.
37. Nomton JS, Ferment P, Khan K, Poirere P, Fowles J, Well GD, Frankorich RI. Physical activity prescription: a critical opportunity to address a modifiable risk factors for the prevention and management of chronic disease: a position statement by the Canadian Academy of Sport and Exercise Medicine. *Bri J Sports Med.* 2016, 6, 1-16. doi.10.1136/bjsports.2016-696291
38. Brannan M, Bernardotto M, Clarke N, Varney J. Moving healthcare professionals – a whole system approach to embed physical activity in clinical practice. *BMC Med Educ.* 2019, 19, 84. doi.org/10.1186/s/2909-019.1517y

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## Paliative Care: What, Who, When, How?\*

\*Based on a lecture on October 24, 2019, at the World Medical Association General Assembly, Tbilisi, Georgia



Robert Twycross

### What and who?

Fifty years ago, palliative care was largely limited to comfort care at the end of life, and was mainly provided in very few free-standing hospices. Since then the scope of palliative care has expanded considerably and probably can best described as 'care beyond cure'. It is:

- holistic: addressing physical, psychological, social/family, and spiritual/existential concerns
- focused on quality of life, but can be provided in tandem with life-prolonging treatments
- based on need, not limited by diagnosis or prognosis
- applicable across all age groups
- ideally provided by a multidisciplinary healthcare team [1].

In other words, humane care for human beings, not mechanical care for human machines. However, shifting from cure-oriented care to palliative care requires a transition by all involved – clinicians, patient and family: an acceptance that cure is not possible and a re-focusing on comfort [2], and an avoidance of 'therapeutic obstinacy' not prolonging death and suffering by futile resuscitative interventions when death is clearly inevitable and relatively imminent.

In 2014, the World Health Assembly called on all health services to provide palliative care within the context of universal health coverage [3]. Thus, palliative care should be integrated into primary health care in the community, with back-up from specialist palliative care – as with other medical specialties [4]. Centres of excellence, particularly in tertiary care and university hospitals,

are necessary for the care of patients and family with complex needs, and for training both generalists and specialists. In practice, most of such centres care for patients with end-stage disease, most commonly cancer, with their services embracing outpatients, inpatients, ward consultations, day care, home care support, and even more intensive round-the-clock 'hospice at home' in the final few days, as well as bereavement support if necessary.

When should family practitioners and other hospital specialists refer to a specialist palliative care service? In the USA, the American Society of Clinical Oncology suggests that referral should be considered for any patient with metastatic cancer and/or high symptom burden [5]. Other specialties will need to make their own criteria for referral. However, having a list of 'Red Alerts' could allow more timely referral, for example:

- pain *not* responding to your analgesia
- nausea/vomiting *not* responding to anti-emetics
- inoperable bowel obstruction
- constipation *not* responding to routine measures
- breathlessness at rest
- insomnia/nocturnal distress
- anyone expressing distress that they are dying
- anyone you think is dying badly.

In the UK and possibly elsewhere, there is a shift towards 'pro-active' palliative care: instead of waiting for a referral, all admissions over the previous 24 hours are scrutinized from the hospital's master-list. Likely palliative care patients are visited by the Support Team whether in a temporary 'holding' ward or an Intensive Care Unit. In addition there are regular pro-active visits to Oncology and Renal Departments, and other specialist wards depending on local arrangements. This results in many patients being transferred more swiftly to the palliative care inpatient unit or discharged home with a care package in place. It is of value not only to the patients concerned but also

to the hospital – with significant financial savings being made.

There is also a tendency for palliative care to fill the gaps in existing provision for long-term (continuing) care. For example, in the UK, many palliative care services in the 1980s and 1990s established lymphoedema clinics, caring for those with congenital lymphoedema as well as patients with cancer (cured or end-stage). In Moldova, the Angelus Hospice in the capital Chisinau is the only service in the country offering ostomy care; and, in Moscow, long-term inpatient post-stroke and long-term inpatient ventilation care has been integrated into palliative care.

## How?

According to a systematic review, in relation to palliative care, the top four priorities for patients and families are:

- effective communication, shared decision-making
- expert care
- respectful and compassionate care
- trust and confidence in clinicians [6].

Three of these four priorities relate to clinician-patient/family relationships. Relationships are built on trust. Thus, the basic question for the professional carer must surely be: what can we do to increase trust? A doctor in her mid-30s with end-stage ovarian cancer wrote, 'Introductions [make] a human connection... They begin therapeutic relationships and can instantly build trust in difficult circumstances'. She began a campaign for all those working within health services called 'Hello, my name is...' because she knew from hard experience (as I do too!) how dehumanizing it is when someone by-passes this common courtesy and just says what they have come to do. Thus, all health professionals (and support staff) should begin by introducing themselves by name, and wear a clearly visible and easily readable badge stating the person's name and position.

Palliative care should be seen as a partnership between experts. In relation to the disease process, the clinicians are the experts but, in relation to the impact of the illness, the experts are the patient and family. It is vital to recognize this because, through listening to their story and their problems, the patient and family begin to shift from being passive victims to empowered persons. An important first step is to let the patient set the agenda, for example, by asking them what is troubling them the most, or what they hope will come out of the consultation.

In recent decades, much has been written about 'person-centred care'. However, in practice much of it is about moving from a paternalistic 'covenantal' relationship between patient and carer to a commodified 'contractual' one – akin to a typical business relationship of client and contractor. In practice this tends to downgrade the professional to a technician, and often leaves the patient uncertain of the best way forward. For partnership, a 'covenantal' (but non-paternalistic) relationship is required [7]. Empathy, the cognitive ability to imagine what someone else is feeling, is essential. Empathy is enhanced by listening to people's stories. For those not often caring for palliative patients, reading stories can substitute for personal clinical experience [8, 9].

Susan Block, an American psycho-oncologist, has listed what she regards as important to know when talking to someone with advanced disease:

- What do you understand about your illness?
- What are your concerns about the future?
- If your health were to get worse, what would you want to do in the time that's left?
- What trade-offs are you willing to make?
- How much suffering are you prepared to accept in order to gain added time?
- Who do you want to make decisions for you if you cannot [10]?

Holistic care takes time. Data from a systematic review show that the median length of the initial consultation is 55 minutes

(range 20–120) [11]. The median time devoted to symptom management was 20 minutes (range 0–75); coping 15 minutes (range 0–78); understanding 10 minutes (range 0–35). However, giving this time initially results in better care – and may well save time in the long-term.

## Expert Care: symptom management

Palliative care is generally ‘low-tech’ but always ‘high-skill’. The general principles underlying symptom management can be summarized in the mnemonic ‘EEMMA’:

- **Evaluation:** diagnosis of each symptom before treatment
- **Explanation:** explanation to the patient before treatment
- **Management:** individualized treatment
- **Monitoring:** continuing review of the impact of treatment
- **Attention to detail:** no unwarranted assumptions.

To a large extent, evaluation is based on probability and pattern recognition [12]. Symptoms may be caused by treatment, debility or a concurrent second disorder rather than the primary disorder. Symptoms are often caused by multiple factors; pain can occur at several sites have distinct causes. Explanation by the doctor of the causes of a symptom can do much to reduce its psychological impact on the sufferer (‘The doctor understands what is going on...’).

Management falls into three categories: correct the correctable, non-drug measures, and drugs. By adopting a multimodal approach, it is generally possible to obtain considerable, if not complete, relief. A list of 20 relatively inexpensive essential drugs is contained in the report of the Lancet Commission on Global Access to Palliative Care [13] and updated guidelines for the management of cancer pain in adults and adolescents have been published by the World Health Organization [14].

Drugs for persistent symptoms should be prescribed regularly on a prophylactic (‘by the clock’) basis; the use of drugs only ‘as needed’ is the cause of much needless distress. For some symptoms, management may mostly be helping the patient (and family) accept the irreversible physical limitations of advanced progressive disease, for example anorexia, weakness and fatigue.

Monitoring is crucial. Patients vary and it is not always possible to predict the optimum dose of opioids, laxatives, and psychotropic drugs. Particularly initially, doses may need to be adjusted upwards (and sometimes downwards). Adverse (side) effects may jeopardize patient compliance. Attention to detail is important at every stage, and is equally important in relation to the non-physical aspects of care. All symptoms are exacerbated by anxiety and fear.

## Death-accepting, but Also Life-enhancing

‘Add life to days even when it is no longer possible to add days to life’ is a central tenet of palliative care. An emphasis on ‘doing’ rather than ‘being done to’ helps the patient to live and die with their self-respect maintained. In many cases, gentle and imaginative encouragement is all that is needed to entice a patient into an activity that leaves him with an increased sense of well-being. The concept of living with cancer (or other advanced progressive disease) until death comes is still foreign to many patients and their families, and to many professionals as well. Indeed, many terminally ill patients, although capable of a greater degree of activity and independence, are unnecessarily restricted by well-meaning relatives.

## Multidisciplinary Teamwork and Community Involvement

*‘Teamwork is the fuel that allows ordinary people to achieve extraordinary results.’*

Holistic care is generally best provided by a multidisciplinary team. The ‘nuclear’ team comprises a doctor and a nurse. To these can be added a physiotherapist, occupational therapist, social worker, chaplain, clinical psychologist, liaison psychiatrist, and even music and art therapists. Volunteers are vital. Depending on their abilities, they can do a wide range of tasks alongside the professional staff. In addition, their presence conveys the message to the patient that they are still a valued member of the community.

## Incompatible Values

Regrettably, there are many factors that work against the provision and delivery of palliative care – and not only financial ones. There will always be the need to contend with the ‘distaste’ many health professionals feel when confronted with end-stage disease, and a reluctance to change the focus of care from disease control to comfort. Linked with this is the inability of many professionals to engage sensitively and skillfully in discussions about impending death.

Further, the underlying values of most healthcare systems are incompatible with compassion and caring. The values of the system tend to be competition, rationalization, productivity, efficiency, and even profit [15]. Healthcare has been ‘industrialized’ and there is little room for holistic care. All too often this leads to emotional exhaustion and cynicism in the professional carers. Thus, the long-term challenge of providing high quality palliative care should not be under-estimated. It requires resilience, determination, high level clinical skills, undergirded by the attitude verbalized by Cicely Saunders, the founder of the modern hospice and palliative care:

*‘You matter because you are you. You matter to the last moment of your life, and we will do all we can, not only to help you die peacefully, but to live until you die.’*

## References

1. Pastrana T, Junger S, Ostgathe C, Elsner F & Radbruch L. A matter of definition: key elements identified in a discourse analysis of definitions of palliative care. *Pall Med*, 2008; 22: 222-232.
2. Mecker MA, McGinley JM & Jezewski MA. Metasynthesis: dying adults' transition process from cure-focused to comfort-focused care. *J Adv Nurs*, 2019; 75: 2059-2071.
3. World Health Assembly. Strengthening of palliative care as a component of integrated treatment throughout the life course. 67th World Health Assembly, 2014.
4. Gomez-Batiste X & Connor S. Building Integrated Palliative Care Programs and Services. *Worldwide Hospice and Palliative Care Alliance*, 2017. <https://www.thewhpc.org/resources>
5. Smith TJ, Temin S, Alesi ER, Abernethy AP, Balboni TA, Basch EM, Ferrell BR, Loscalzo M, Meier DE, Paice JA, Peppercorn JM, Somerfield M, Stovall E & Von Roenn JH. American Society of Clinical Oncology Provisional Clinical Opinion: The Integration of Palliative Care into Standard Oncology Care. *J Clin Oncol*, 2012; 30: 880-887.
6. Viridun C, Luckett T, Davidson PM & Phillips J. Dying in the hospital setting: a systematic review of quantitative studies identifying the elements of end-of-life care that patients and their families rank as being most important. *Pall Med*, 2015; 29: 774-796.
7. Beach MC, Inui T & the Relationship-Centered Care Research Network. Relationship-centered care: a constructive reframing. *J Gen Intern Med*, 2006; 21: S3-8.
8. Byock I. *Dying Well: peace and possibilities at the end of life*. Riverside Books, New York, 1997. pp. 299.
9. Mannix K. *With the End in Mind: how to live and die well*. William Collins, London, 2017. pp. 342.
10. Block S. in: Gawande Atul. *Being Mortal: illness, medicine and what matters in the end*. Profile Books, London. 2014, pp. 182-183.
11. Jacobsen J, Jackson V, Dahlin C, Greer J, Perez-Cruz P, Billings JA, Pirl W & Temel J. Components of early outpatient palliative care consultation in patients with metastatic nonsmall cell lung cancer. *J Pall Med*, 2011; 14: 459-464.
12. Twycross R. Factors involved in difficult-to-manage pain. *Int J Pall Care*, 2004; 10(2):21-32.
13. Knaul FM, Farmer PE, Krakauer EL, De Lima L, Bhadelia A, Kwete XJ et al. Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage: the Lancet Commission report. *Lancet*, 2018; 391: 1391-1454 (Panel 2). [http://dx.doi.org/10.1016/S0140-6736\(17\)32513-8](http://dx.doi.org/10.1016/S0140-6736(17)32513-8)ing the n alliative care
14. World Health Organization. WHO guidelines for the pharmacological and radiotherapeutic management of cancer pain in adults and adolescents. WHO: ISBN 978 92 4 155039 0 (available on-line).
15. Youngson R & Blennerhassett M. Humanising healthcare. *Brit Med J*, 2016; 355: 466-467.

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## The “Normalization” of Euthanasia in Canada: the Cautionary Tale Continues



Leonie Herx



Margaret Cottle



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In June 2016, Canada legalized euthanasia and assisted suicide, which legislators referred to collectively as “Medical Assistance in Dying” (MAiD). In Sept 2018, an article

was published in this journal summarizing the early impacts of legalized euthanasia on Canadian medicine [1]. In October 2019, the World Medical Association (WMA)

reaffirmed its opposition to euthanasia and assisted suicide [2]. We propose in this article to update colleagues around the globe on consequences of the rapid expansion and

cultural normalization of the practice of intentional termination of life in Canada.

This paper will balance recent portrayals in the popular and medical media that imply only a positive impact as a result of the introduction of euthanasia into Canada's health system [3–4]. Evidence will be presented to demonstrate that there are significant negative and dangerous consequences of this radical shift for medicine, and particularly for palliative medicine. These include the widening and loosening of already ambiguous eligibility criteria, the lack of adequate and appropriate safeguards, the erosion of conscience protection for health care professionals, and the failure of adequate oversight, review and prosecution for non-compliance with the legislation. Indeed, what we have seen over the past four years is that “the slope has in fact proved every bit as slippery as the critics had warned” [5]. We also seek to reaffirm the vision of the physician's role “to cure sometimes, to relieve often and to comfort always.”

## How Many People Undergo Euthanasia in Canada?

In just under four years, the number of euthanasia deaths has rapidly increased in Canada. New statistics released by the federal government on February 24, 2020, show that 13,000 people have died by euthanasia since the legalization of the practice, which represents approximately 2% of all deaths in Canada. The government estimated that there were 5,444 deaths in 2019 and 4,438 deaths in 2018 from euthanasia [6]. In comparison, Statistics Canada reported 1,922 deaths in motor vehicle accidents for 2018, the latest year for which statistics are available [7]. Euthanasia proponents argue that the Canadian death rate should stabilize at a level comparable to other jurisdictions with equivalent legislation, such as the Netherlands where euthanasia now accounts for 4.9% of deaths [8]. However, it is troubling that Canada's rate has increased

more rapidly than other permissive jurisdictions over a similar initial time period, and that our rates are quickly approaching current rates in the Netherlands and Belgium, where euthanasia has been legal for almost 20 years.

## Expansion of Euthanasia Practice and Legislative Changes

In addition to the increasing numbers of cases, there is also an expanding range of indications approved for euthanasia. In four years, Canada has moved from approving euthanasia for so-called “exceptional” cases to euthanasia being treated as a normalized, almost routine, option for death.

Ongoing court challenges to legislative requirements for euthanasia have resulted in its approval for individuals with chronic illnesses such as osteoarthritis, dementia, and physical disability [9, 10, 11, 12]. Media reports point to less restrictive interpretations of eligibility criteria by assessors and providers of euthanasia without intervention from the courts [13, 14]. These precedent-setting cases have produced what euthanasia providers themselves call “not an expansion of our law” but “a maturing of the understanding of what we're doing” [12]. This, in turn, has led providers to approve cases they would not have previously approved due to earlier fears of criminal prosecution [15]. Although reports of criminal code and regulatory body violations have been well documented [16, 17], no charges have ever been laid.

In September 2019, a Quebec Superior Court ruling on the Truchon case [11] struck down a central euthanasia criterion for “reasonably foreseeable natural death” (RFND) which may soon open up euthanasia to those with chronic conditions, disabilities and mental health issues as a primary diagnosis. The Federal Government

is committed to expanding the legislation and, on February 24, 2020, tabled a new bill in Parliament to respond to the Truchon case ruling to remove the requirement for RFND [18]. In the near future, euthanasia in Canada will almost certainly be open to any person who feels their suffering cannot be addressed except through intentional termination of life. As mandated by the 2016 legislation, the Canadian government is continuing to explore the additional inclusion of those with mental health issues as a primary diagnosis, “mature minors” (i.e. children), and euthanasia by advance directive (for those who may lose decisional capacity at some point in the future) as part of a parliamentary review expected to begin by June 2020 [19].

Even those who support euthanasia in some circumstances are voicing concerns over the rapid expansion of the procedure in Canada, and a problematic lack of proper, robust analysis of its utilization [20]. Many who care for citizens with mental health issues are extremely concerned, not only that psychiatric conditions may be considered “irremediable” by some, but also that if psychiatric indications are permitted as the sole reason for euthanasia, these patients could possibly have euthanasia performed almost immediately, whereas the wait time can be years for specialized, life-saving psychiatric interventions and care [21]. The lack of access to psychiatric care in Canada is also putting patients who are facing an end of life diagnosis in an even more dire situation [22], given the high risk for suicide in this population [23, 24].

Euthanasia deaths are now serving as a growing source of organ and tissue donations in Canada [25]. Unlike other countries, Canada is the first jurisdiction to allow non-patient-initiated discussion of organ donation for those approved for euthanasia. In other jurisdictions where euthanasia is legalized, including the Netherlands and Belgium, only patient-initiated organ donation discussion is allowed, while in some

jurisdictions, including Switzerland and some U.S. states, subsequent organ donation is not possible following assisted suicide. Having the potential to alleviate the suffering of another person in need or to leave a legacy appears to be a powerful motivator in the decision for organ donation as part of death by euthanasia [25]. One individual who donated her organs after euthanasia stated, “I thought the knowledge of having full autonomy by way of MAiD was comforting, but, when the possibility of organ donation was added to it, the sense of elation is the only appropriate word for me.” [25]. Given that most requests for euthanasia are due to existential suffering, in particular feeling a burden to others and loss of meaning and purpose in life [26], the potential “good” of organ donation may be a persuasive incentive for some who may otherwise not have chosen to hasten their death.

Euthanasia providers are now making recommendations to add drugs (e.g., potassium chloride) to the existing regimen which will cause rapid cessation of cardiac activity and reduce the potential for ischemic damage to organs to be transplanted. The rationale for the change is that it “allows organs to be donated in the best condition possible” [27]. Questions are also being raised about starting organ procurement processes prior to death being determined which would also allow organs to be donated in “the best condition possible” [28]. There are a number of difficult issues that arise when considering organ donation in these circumstances, including conscientious objection of team members involved in transplantation, the “dead donor” rule, and informing potential recipients of the source of the organs to be transplanted.

More evidence of the normalization of euthanasia can be seen in the recent set of tips published on how to prepare children for a euthanasia death of a loved one. The author, Co-Chair of the Ontario College of Family Physicians Palliative/End of Life Care and MAiD Collaborative Mentoring Network,

recommends, “if the adults surrounding them normalize MAID [sic], so will the children” [29]. Medical literature regarding children, death and grieving was used to extrapolate approaches to the euthanasia context. Tip #5 states that these conversations can easily be had with children as young as four years old. Tip #6 suggests that euthanasia providers should offer to show your equipment (syringes, stethoscope, IV supplies). For example: “I have a tray with the things I will use to help your loved one die. These include medications and syringes. I am going to leave them on the table and if you would like to take a look you can. I will stand beside the table and you can ask me any questions” [29].

### **Euthanasia Due to Lack of Access to Care or Lack of Perceived Quality of Life**

Examples are mounting of Canadians requesting euthanasia because of lack of access to care, such as long-term care or disability supports [30, 31]. A significant number of reports have documented cases in which individuals have been told by health care professionals and others to consider euthanasia as an “answer” to a perceived poor quality of life or a lack of health care resources to meet their needs. Motivation for these decisions and suggestions appears to include the cost of care or specialized supports [32, 33].

Following the Quebec Superior Court ruling on the Truchon case [11], over seventy Canadian disability allied organizations came together out of concern for the equality rights of vulnerable Canadians, and signed an open letter asking the federal government to appeal the court ruling to the Supreme Court of Canada [34]. A similar open letter [35], urging an appeal in the same case, was signed by over 350 physicians from all specialties across Canada. No appeal was made. These disability experts and physicians argued that the removal of

the end of life criterion (RFND) means that disability-related suffering, largely caused by lack of support and societal inequality, justifies the termination of a person’s life. When the legislation is amended, this will effectively enshrine in Canadian law the principle that a person’s life can be ended based on disability alone, further stigmatizing and devaluing the lives of those living with disabilities.

Disability advocates continue to express alarm at the evolving situation in Canada, and Catherine Frazee (former Human Rights Commissioner in Ontario and retired professor in Disability Studies) points to the hidden message being conveyed by government, that expanding medically assisted death so that it is not only for those who are dying, but also, exclusively, for those who have some illness, disease or disability, makes us a ‘special case’ for ending a difficult life. This categorically sends one and only one message: we are not needed. Whatever gifts we bring to the world, gifts of mind and heart and body, are not of such value that Canada will fight for us to live [36].

International attention was garnered last year when the UN’s Special Rapporteur on the Rights of Persons with Disabilities traveled to Canada in the spring of 2019. In her end-of-mission statement, Ms. Devandas-Aguilar stated that she is “extremely concerned about the implementation of the legislation on medical assistance in dying from a disability perspective...” and she urged Canada to do more to “...ensure that persons with disabilities do not request assistive [sic] dying simply because of the absence of community-based alternatives and palliative care” [37].

### **“Safeguards” for Euthanasia**

The Supreme Court of Canada, in the case of *Carter v. Canada* (2015), that originally led to the decriminalization and subsequent legalization of euthanasia, stated that a



“carefully designed and monitored system of safeguards” would limit risks to vulnerable persons [38]. The safeguards in the subsequent 2016 legislation [39] include a mandatory ten-day reflection period between the request and the euthanasia procedure, the independent nature of the two eligibility assessors, the requirement for decisional capacity of the patient at the time of the request and at the time of the procedure, protection against coercion by requiring two independent witnesses, and a rigorous system of monitoring and review.

Currently, the ten-day reflection period is often waived, and the newly proposed legislation would formally repeal this requirement [18]. In one cohort study of euthanasia deaths in Ontario, 26% of euthanasia deaths had the ten-day reflection period expedited [40]. In Quebec, it has been reported that 60% of euthanasia cases had the ten-day reflection period waived and, of these cases, 48% did not meet the criminal code criteria for removal (i.e., imminent risk of death or imminent loss of decisional capacity) and 26% had no documented reason for waiving the reflection period [41].

Compliance reports from Quebec have also documented concerns about the “independent nature” of assessors [17]. In our personal experience, the assessors are in reality not always independent. Assessors are often colleagues belonging to a small community of providers who practice euthanasia. The second assessor can see the first assessor’s report prior to seeing the patient or writing their own report. There are also no data about how often a second assessor disagrees with a first assessor, or how many different assessors an individual seeks out, since there is no limit to the number of assessments that can be obtained. An individual patient only needs two approved assessments. A study from Belgium, which deals with euthanasia for psychiatric reasons, suggested that 24% of cases involved disagreement amongst consultants, highlighting the challenge of discordant assessments [42]. Although the

current and proposed initial amendments to the euthanasia legislation in Canada (response to the Truchon case) do not permit euthanasia for psychiatric reasons alone, this indication is under formal review [19] and there is considerable public pressure for its legalization from those who wish to see this expansion [43].

We also note that it is difficult, even in person, to determine decisional capacity or possible coercion, especially if a case is complicated. In Canada, both telemedicine (video) and telephone (voice) are allowed to be used for euthanasia assessments. Determination of a person’s decisional capacity is not straightforward and may require advanced skills and tools [44], but there are no formal requirements for training to assess decisional capacity and no requirement for psychiatric consultation in complex cases. Many physician colleagues, ourselves included, report personal experiences with patients who, in their opinion, lacked decisional capacity at the time of the euthanasia assessment and/or at the time of the procedure, and still received euthanasia even though formal documented concerns had been raised with the euthanasia providers.

Monitoring requirements include only basic demographic information and are reviewed in retrospect [45]. Information about race, education, socioeconomic status, and language abilities is not collected, and there is no direct oversight or mechanism to stop the procedure if red flags are raised.

A group representing euthanasia providers, the Canadian Association of MAiD Assessors and Providers (CAMAP) has been calling for the abandonment of the requirement for two independent witnesses (established to ensure protection against coercion). They contend that this requirement is a bureaucratic frustration that blocks patient access. New legislation proposes to reduce the number of witnesses to one and would make it legal for that witness to be the patient’s paid personal care worker

or health care provider [18]. There is also a reasonable concern that the blanket misapplication of the so-called “duty to inform” may soon suggest to all physicians that they are required to offer euthanasia as an option in every serious illness. If this is the case, it will be impossible for physicians to avoid the appearance, if not the reality, of coercion for vulnerable patients who may already feel they are a burden to others. Even supporters of euthanasia have already acknowledged there is no reliable way to measure coercion [46].

Concerned Canadians continue to work together to address the issue of safety for vulnerable citizens. The Vulnerable Persons Standard (VPS), initially developed in response to the *Carter v. Canada* decision, is an internationally recognized evidence-based framework “that provides clear and comprehensive guidance to law-makers by identifying the safeguards necessary to protect vulnerable persons within a regulatory environment that permits medical-assistance in dying” [47]. The VPS was developed by a large body of advisors with expertise in medicine, ethics, law, public policy and the needs of vulnerable persons. Despite the fact that the VPS has received strong, broad-based, continuing support, it has been completely ignored by every level of government.

It is also important to note that, during the legalization process, access to palliative care was positioned as a “safeguard” for euthanasia. However, in reality, less than 30% of Canadians have access to any form of palliative care and less than 15% have access to specialized palliative care [48]. Many, including Shariff and Gingerich, have questioned if euthanasia can truly be an informed choice if there is no meaningful access to palliative care [49].

Although economic considerations may not currently be driving the normalization and expansion of euthanasia in Canada, it cannot be denied that the procedure is sig-

nificantly cheaper than rigorous, traditional palliative care. The financial savings of euthanasia for the health care system in Canada have already been reported [50] and with an aging demographic and diminishing fiscal resources, the option to save money in this way may become increasingly acceptable to health care decision makers.

## Confusion Between Palliative Care and Euthanasia

Another ongoing issue is the confusion and conflation of euthanasia with palliative care. The use of the euphemistic terminology of *Medical Assistance in Dying* to refer to euthanasia in Canada has exacerbated this confusion in both the public and health care spheres. Canadian palliative care organizations have argued against the use of such language, affirming that palliative care provides support or “assistance» in dying to help people live as fully as possible until their natural death, but does not intentionally hasten death [51]. This assertion is also supported by the longstanding World Health Organization definition of palliative care [52].

In spite of clear and repeated distinctions made by national palliative care organizations and the Canadian Medical Association [53–56], there are ongoing efforts by some euthanasia providers to incorporate euthanasia within the scope of practice of palliative care, and to co-opt palliative care language to describe their euthanasia practice, “as one of the many items in the palliative care basket” [57, 58]. Linking the two practices in this way misleads other health care professionals and the public regarding palliative care. The 2019 Canadian Guideline for Parkinson Disease is a recent example [59]. Palliative care was commendably presented as one of the five key recommendations for the approach to care for persons with Parkinson Disease. However, euthanasia (as “MAiD”) was listed directly under the banner of palliative care support and was the only specific measure listed!

National Canadian palliative care organizations have expressed concern that this confusion and conflation of euthanasia and palliative care perpetuates the myth that palliative care hastens death and that misconception may prevent patients from seeking timely palliative care interventions which improve quality of life and, in some cases, enable people to live longer [60]. The Canadian Society of Palliative Care Physicians has stated that “patients and families must be able to trust that the principles of palliative care remain focused on effective symptom management and psychological, social, and spiritual interventions to help people live as well as they can until their natural death.” [53].

Dr. Balfour Mount, the “father” of palliative care in Canada, recently stated that

Canadian legislation utilizes the euphemism ‘medical assistance in dying’ (MAiD) to define euthanasia/assisted suicide and that language has caused confusion concerning its distinction from Palliative Care. For over four decades, Palliative Care has been providing expert medical management to assist and support those who are dying without hastening death or administering a lethal dose of drugs to end life. The MAiD euphemism confuses and causes fear in our patients and the general public regarding the practice of Palliative Care and the nature of Palliative Medicine [61].

## Impact on Palliative Care

The 2016 Federal legislation positioned euthanasia (MAiD) as a health care right under the Canada Health Act, and so it must be publicly funded and accessible to all Canadians [39]. Palliative care, however, is not afforded such status and there is no similar requirement for it to be funded and accessible to Canadians. This is highly inequitable since almost 98% of deaths in Canada are not through euthanasia [6].

Euthanasia proponents continue to co-opt the vocabulary and tools of palliative care to create a new discipline of “end of life medicine” with a radically different philosophy, intention and approach that embraces hastened death as the “most beautiful death” [3]. Under this banner of “end of life care,” existing palliative care resources are being used in some jurisdictions to provide euthanasia, effectively reducing already limited resources for palliative care. This is the case in Ontario where, in some regions, the community Hospice Palliative Care Nurse Practitioners were given the additional role of providing euthanasia [62–63]. The assessment for and provision of euthanasia by physicians in Ontario are billed to the Ministry of Health using palliative care billing codes, despite the objections of palliative care physicians [64]. The very distinct and disparate goals and procedures followed by euthanasia teams and palliative care teams make it reasonable and advisable to separate the two practices. This separation should be accepted without acrimony or contention as it is in the best interests of patients, their families and the teams themselves.

The impact of normalized euthanasia on our day-to-day clinical work in palliative care has been profound. When someone expresses a desire to die or a desire for hastened death (for example, “I just want this to be over...”), there can now be a knee-jerk reaction to consult the euthanasia team as a first response and neglect what palliative care has to offer. Until now, the standard of care has been to engage the patient in serious dialogue, to try to understand the nature of their suffering and grief expression more fully, and to determine what supports might be helpful. In palliative care, it is universally accepted that expressing a desire to die and talking about hastening death are most often normal expressions of grief, loss and coming to terms with one’s mortality in the face of a life-threatening condition. Such expressions of distress need to be explored and supported with skilled palliative care interventions to better understand the nature of

the suffering and how to address this, and/or to accompany the person in their suffering. There are many holistic, dignity-conserving palliative care interventions such as Dignity Therapy [65], developed by renowned Canadian palliative care psychiatrist Dr. Harvey Chochinov, which are aimed at restoring purpose, meaning, and reframing hope in the face of the losses that accompany life-threatening illnesses. Such therapies help a person and their loved ones to focus on living, even while dying, and provide support to accompany people on their journey, so they do not feel abandoned or alone.

There is no mandatory palliative care consultation prior to euthanasia. The only requirement is that a patient is aware of all options for care (informed of all means to relieve suffering, including palliative care). Awareness is not the same thing as meaningful access, and what a person understands palliative care to be may influence the person's understanding of what palliative care has to offer. The Chief Coroner of Ontario, who receives all reports of euthanasia cases in the province, has identified that it is very difficult to evaluate the quality/suitability of the palliative care being offered to patients who receive euthanasia [66]. Our own personal experience is that many patients and health care professionals, including some euthanasia providers, do not fully understand palliative care and its extensive array of therapeutic interventions.

It is also our experience that, although palliative care teams offer to provide ongoing palliative care for patients who request a euthanasia death, a number of these patients reject palliative care involvement. These patients often refuse many of the medications offered for optimizing symptom management, citing fear that the medications will cause them to lose decisional capacity and therefore their eligibility to receive euthanasia. Tragically and paradoxically, this may result in the last days of life awaiting a euthanasia death being more highly symptomatic, and patients may have eu-

thanasia without ever having a proper trial of excellent palliative care, even where it is available. A Quebec study found that in patients requesting euthanasia, 32% of those who received a palliative care consultation had it requested less than seven days before euthanasia provision and another 25% of palliative care consults were requested the day of or the day after the euthanasia request [41]. With the removal of the ten-day reflection period from euthanasia request to delivery of the procedure in the proposed revision for euthanasia legislation [18], the reality of a meaningful palliative care consultation seems even less likely.

Downar et al (2020) state that 74% of euthanasia cases in Ontario had palliative care involved, however, the reporting measures used during the study period do not allow for a detailed evaluation of the quality of medical care provided, including palliative care, as it is not within the legislated requirements for oversight by the Office of the Chief Coroner to review or collect this information [66]. It is thus not possible to delineate or evaluate either the quality or quantity of palliative care involvement, when it occurred in relation to the request for euthanasia (the study only documented that there was involvement at the time of request), which palliative care team member provided it (e.g. physician, nurse, or social worker, etc.) or whether there was any meaningful involvement by a specialist palliative care team. A number of detailed responses outlining the significant problems with the conclusions made in this paper have already been published online [40].

Strong lobbies are pushing for euthanasia to be available in every palliative care unit and hospice in the country [67]. In many areas, euthanasia is required to be provided in all settings of care in order to avoid the withdrawal of public funding. Hospice societies who fundraise to build the buildings and co-support the day-to-day costs of specialized hospice care are also being mandated to provide euthanasia on site or face closure.

Hospices and faith-based institutions are criticized for “blocking access” to euthanasia, even where access is documented to be excellent [68].

## Protection of Conscience for Physicians

Participation in euthanasia is also a great concern for physicians who are professionally and/or morally opposed to it. Some physician regulatory bodies require participation via a mandatory referral for euthanasia by physicians unwilling to provide the procedure themselves. For some physicians, such an obligation makes them complicit in an act they find not clinically indicated, unethical, or immoral. This happens in Ontario, Canada's largest province, where the College of Physicians and Surgeons of Ontario has mandated such an “effective referral” requirement [69]. Physicians who decline to do this could face disciplinary action such as the loss of the license to practice medicine. The Ontario courts have agreed that the requirement for referral violates the conscience/religious rights of physicians (which are protected under the Canadian Charter of Rights and Freedoms) but justifies the referral requirement to “ensure access» to euthanasia for patients, despite no documented lack of access in Ontario [70]. This is the very first time in Canada that the burden of ensuring access to other parts of the health care system has rested on the individual physician.

As previously discussed, euthanasia proponents are now suggesting that doctors must introduce euthanasia as an option to all potentially eligible patients as a so-called “duty to inform” [71]. However, in no other clinical situations are physicians required to discuss all potential options and procedures if they determine that those options are not medically indicated [72–74].

Some euthanasia providers are now refusing to become the “Most Responsible

Physician” (MRP) via a transfer of care prior to or during the euthanasia procedure. One of the authors on this paper has directly experienced this at their local hospital. Personal written communications have also reported this practice happening at other hospitals across Canada. In addition, some euthanasia providers are refusing to accept patient transfers from palliative care units and hospices. These strategies profoundly damage collegiality and may force physicians unwilling to collaborate in euthanasia (professionally or morally) into an ethical crisis, compelling them either to remain the MRP, formally approving euthanasia and responsible for all aspects of care for the patient and family, or to refuse to approve it and face contrived accusations of having obstructed patient access.

Palliative care clinicians have a high level of burnout [75–76], and the perceived lack of control over the scope of practice and forced participation in something that goes against their convictions about the very core of their vocation may be contributing to increasing moral distress and moral injury. This is reflected in colleagues who come to us on a daily basis to share experiences of repeated distress from euthanasia cases. Even colleagues who support euthanasia in some circumstances have reported experiencing this serious distress at times. Moral distress and moral injury manifest as early retirements, leaves of absence, and career changes by physicians who will no longer provide palliative care due to the expectation that euthanasia is included in the scope of practice. Additional moral distress is experienced by some palliative care leaders when health region administrators arbitrarily put euthanasia administration and oversight into the “end of life care” portfolio. The probable loss of palliative care physicians from the workforce at a time when even more clinicians are needed is in part a direct consequence of such stressful situations and heavy-handed measures.

Proponents of euthanasia use the phrase “my life, my death, my choice,” which calls

solely on the principle of autonomy as justification for euthanasia [77]. But, in Canada, the delivery of euthanasia is anything but an autonomous act. By design, it involves one or more other individuals. Many individuals and health care and community services commonly participate in each death, sometimes against their better judgment and possibly even against their will.

While palliative care has so far been on the forefront of the euthanasia experience, the coming expansion of the legislation that will allow euthanasia for suffering due to any illness, condition or disability, will have a much broader impact on physicians from all medical disciplines, as well as on other health care professionals. There will be very few areas of medicine that euthanasia does not touch.

In less than four years since the legalization of euthanasia in Canada we have witnessed

- rapid increase in rate of death by euthanasia (now estimated to be 2% of all deaths and expected to rise further) – a rate of growth over 3 years that has surpassed all other permissive jurisdictions
- the loosening of eligibility criteria by assessors and courts and the weakening of safeguard mechanisms in existing legislation
- the imminent expansion of euthanasia through legislative revision, despite strong opposition from citizens in the disability community, mental health professionals, palliative care clinicians and public policy leaders
- the failure of federal and provincial governments to designate palliative care as a right and to provide access to palliative care that is at least as robust as access to euthanasia
- the confusion and conflation of palliative care with euthanasia; and
- the erosion of conscience protection for physicians and other health care professionals leading to coerced participation and demoralization.

These formidable challenges faced by physicians and patients in our difficult Canadian

experience should not lead to discouragement but should instead inspire a reaffirmation of the commitment to traditional, whole-person medicine. Patients, loved ones, clinicians, and even society in general are all deeply enriched when palliative teams use our expertise to show compassion through excellent clinical care in an on-going, committed relationship with each patient, no matter how difficult the circumstances or how complicated the issues. Suffering — pain, fear, loss of control, sense of burden—is not solved by hastened death, but by this excellent care, delivered in a community and a society that honours and protects our most vulnerable citizens at the most difficult times in their lives. Euthanasia is not the panacea that proponents promise. Its legalization and subsequent rapid normalization have had serious negative effects on Canadian medicine and on Canadian society as a whole. We urge the WMA and our colleagues around the world to look beyond the simplistic media reports and to monitor developments in Canada carefully and wisely before making any changes in their own country’s legal framework for medical practice.

## References

1. Leiva R, Cottle M, Ferrier C, Rutledge Harding S, Lau T, McQuiston T, et al. Euthanasia in Canada: a cautionary tale. *WMJ* 2018 Oct; 64 (3):17-23 [cited 2020 Feb 29]. Available from: [https://www.wma.net/wp-content/uploads/2018/10/WMJ\\_3\\_2018-1.pdf](https://www.wma.net/wp-content/uploads/2018/10/WMJ_3_2018-1.pdf)
2. World Medical Association. WMA Declaration on Euthanasia and Physician-Assisted Suicide [Internet]. 2019 Nov 13 [cited 2020 Feb 29]. Available from: <https://www.wma.net/policies-post/declaration-on-euthanasia-and-physician-assisted-suicide/>
3. Buchman S. Why I decided to provide assisted dying: it is truly patient centred care. *BMJ*. 2019 Jan 30;364:l412.
4. Smith R. Learning from Canada about assisted dying. *BMJ Blogs* [Internet] 2020 Jan [cited 2020 Feb 29]. Available from: <https://blogs.bmj.com/bmj/2020/01/22/richard-smith-learning-from-canada-about-assisted-dying/>
5. Coyne A. *Globe and Mail* [Internet]. 2020 Jan 17 [cited 2020 Feb 29]. Available from: <https://>

- www.theglobeandmail.com/opinion/article-on-assisted-suicide-the-slope-is-proving-every-bit-as-slippery-as/
6. Government of Canada. An Act to Amend the Criminal Code (medical assistance in dying) Technical Briefing. 2020 Feb 24.
  7. Government of Canada. Canadian Motor Vehicle Traffic Collision Statistics: 2018 [Internet]. 2019 Dec 19 [cited 2020 Feb 29]. Available from: <https://www.tc.gc.ca/eng/motorvehiclesafety/canadian-motor-vehicle-traffic-collision-statistics-2018.html>
  8. Statistics Netherlands. StatLine. Deaths by medical end-of-life decision; age, cause of death [Internet]. 2019 Aug 9 [cited 2020 Feb 29]. Available from: <https://opendata.cbs.nl/statline/#/CBS/en/dataset/81655ENG/table?ts=1581825997592>
  9. Germano D. Judge rules Ontario woman meets requirements for medically assisted death. CTV News [Internet]. 2017 Jun 19 [cited 2020 Feb 29]. Available from: <https://www.ctvnews.ca/health/judge-rules-ontario-woman-meets-requirement-for-medically-assisted-death-1.3467146>
  10. The Superior Court of Ontario. A.B. v. Canada (Attorney General), 2017 ONSC 3759 [Internet]. 2017 Jun 19 [cited 2020 Feb 29]. Available from: <http://eol.law.dal.ca/wp-content/uploads/2017/06/20170619152447518.pdf>
  11. The Superior Court of Quebec. Truchon c. Procureur général du Canada, 2019 QCCS 3792 (CanLII) [Internet]. 2019 Sept 11 [cited 2020 Feb 29]. Available from: <http://canlii.ca/t/j2bz1>
  12. Canadian Broadcasting Corporation. B.C. man is one of the first Canadians with dementia to die with medical assistance [Internet]. 2019 Oct 27 [cited 2020 Feb 29]. Available from: <https://www.cbc.ca/radio/thesundayedition/the-Sunday-edition-for-october-27-2019-1.5335017/b-c-man-is-one-of-the-first-canadians-with-dementia-to-die-with-medical-assistance-1.5335025>
  13. Grant K. Medically assisted death allows couple married almost 73 years to die together. Globe and Mail [Internet]. 2018 Apr 1 [cited 2020 Feb 29]. Available from: <https://www.theglobeandmail.com/canada/article-medically-assisted-death-allows-couple-married-almost-73-years-to-die/>
  14. Favaro A, St. Philip E, Slaughter G. Family says B.C. man with history of depression wasn't fit for assisted death. CTV News [Internet]. 2019 Sep 24 [cited 2020 Feb 29]. Available from: <https://www.ctvnews.ca/health/family-says-b-c-man-with-history-of-depression-wasn-t-fit-for-assisted-death-1.4609016>
  15. Bryden J. BC woman who challenged right-to-die laws gets medically assisted death. Canadian Broadcasting Corporation [Internet]. 2017 Sep 18 [cited 2020 Feb 29]. Available from: <https://www.cbc.ca/news/canada/british-columbia/assisted-dying-law-canada-moro-1.4294809>
  16. Huyer D. Office of the Chief Coroner Memorandum [Internet]. 2018 Oct 9 [cited 2020 Feb 29]. Available from: <http://www.mcscs.jus.gov.on.ca/english/Deathinvestigations/OfficeChief-Coroner/Publicationsandreports/MedicalAssistanceDyingUpdate.html>
  17. Government of Quebec. Commission sur les soins de la fin de vie : Rapport annuel d'activités 1er juillet 2017 – 31 mars 2018 [Internet]. Quebec: Bibliothèque et Archives Canada; 2018 [cited 2020 Feb 29]. Available from: [http://www.assnat.qc.ca/Media/Process.aspx?MediaId=ANQ\\_Vigie.Bll.DocumentGenerique\\_141357](http://www.assnat.qc.ca/Media/Process.aspx?MediaId=ANQ_Vigie.Bll.DocumentGenerique_141357)
  18. House of Commons of Canada. Bill C-7. An Act to amend the Criminal Code (medical assistance in dying). First Reading [Internet]. 2020 Feb 24 [cited 2020 Feb 29]. Available from: <https://www.parl.ca/DocumentViewer/en/43-1/bill/C-7/first-reading>
  19. Department of Justice Canada. Government of Canada proposes changes to medical assistance in dying legislation [Internet]. 2020 Feb 24 [cited 2020 Feb 29]. Available from: <https://www.canada.ca/en/departement-justice/news/2020/02/government-of-canada-proposes-changes-to-medical-assistance-in-dying-legislation.html>
  20. Gaiñd KS. MAiD: Enlightened empathy or misguided myopia? [Internet] 2020 Feb 13 [cited 2020 Feb 29]. Available from: <http://www.canadianhealthcarenetwork.ca/physicians/discussions/maid-enlightened-empathy-or-misguided-myopia-58237>
  21. Maher J. Why legalizing medically assisted dying for people with mental illness is misguided. Canadian Broadcasting Corporation [Internet]. 2020 Feb 11 [cited 2020 Feb 29]. Available from: <https://www.cbc.ca/news/opinion/opinion-assisted-dying-maid-legislation-mental-health-1.5452676>
  22. The Canadian Mental Health Association (CMHA). Mental health in the balance: Ending the health care disparity in Canada [Internet]. 2018 Sept [cited 2020 Feb 29]. Available from: <https://cmha.ca/wp-content/uploads/2018/09/CMHA-Parity-Paper-Full-Report-EN.pdf>
  23. Jones DA, Paton D. How Does Legalization of Physician-Assisted Suicide Affect Rates of Suicide? South Med J. 2015 Oct;108(10):599-604. Kolva E, Hoffecker L, Cox-Martin E. Suicidal ideation in patients with cancer: a systematic review of prevalence, risk factors, intervention and assessment. Palliative Support Care. 2019 Sep 26:1-14.
  24. Deachman D. Medically assisted deaths prove a growing boon to organ donation in Ontario. Ottawa Citizen [Internet]. 2020 Jan 6 [cited 2020 Feb 29]. Available from: <https://ottawacitizen.com/news/local-news/medically-assisted-deaths-prove-a-growing-boon-to-organ-donation-in-ontario>
  25. Rodríguez-Prat A, Balaguer A, Booth A, Monforte-Royo C. Understanding patients' experiences of the wish to hasten death: an updated and expanded systematic review and meta-ethnography. BMJ Open [Internet]. 2017 Sep 29 [cited 2020 Feb 29]; 7(9): e016659. Available from: <https://bmjopen.bmj.com/content/7/9/e016659> doi: 10.1136/bmjopen-2017-016659
  26. Ball IM, Martin C, Sibbald R. Potassium chloride for medical assistance in dying followed by organ donation. Can J Anesth/J Can Anesth [Internet]. 2020 Feb 20 [cited 2020 Feb 29]. Available from: <https://doi.org/10.1007/s12630-020-01603-w>
  27. Ball IM, Sibbald R, Truog RD. Voluntary Euthanasia – implications for organ donation. N Engl J Med 2018 Sep 6;379(10):909-911.
  28. Woolhouse, S. This changed my practice: Preparing children for the medically assisted death of a loved one. University of British Columbia Continuing Professional Development (Internet). 2020 Feb 26 [cited 2020 Feb 29]. Available from: <http://thischangedmypractice.com/preparing-children-for-death-of-a-loved-one/>
  29. Canadian Broadcasting Corporation. B.C. man with ALS chooses medically assisted death after years of struggling to fund 24-hour care [Internet]. 2019 Aug 13 [cited 2020 Feb 29]. Available from: <https://www.cbc.ca/news/canada/british-columbia/als-bc-man-medically-assisted-death-1.5244731>
  30. Hamilton Spectator. Hamilton senior in unbearable pain wants assisted dying to save her from nursing home [Internet]. 2019 Jan 21 [cited 2020 Feb 29]. Available from: <https://www.thespec.com/news-story/9131260-hamilton-senior-in-unbearable-pain-wants-assisted-dying-to-save-her-from-nursing-home/>
  31. CTV News. Chronically ill man releases audio of hospital staff offering assisted death [Internet]. 2018 Aug 2 [cited 2020 Feb 29]. Available from: <https://www.ctvnews.ca/health/chronically-ill-man-releases-audio-of-hospital-staff-offering-assisted-death-1.4038841>
  32. Canadian Broadcasting Company. Doctor suggests assisted suicide to mother of child with several medical conditions [Internet]. 2017 Jul 24 [cited 2020 Feb 29]. Available from: <http://www.cbc.ca/player/play/1007608899964/>
  33. Open Letter: Advocates Call for Disability-Rights Based Appeal of the Quebec Superior Court's Decision in Truchon & Gladu [Internet]. 2019 Oct 4 [cited 2020 Feb 29]. Available from: <https://cacl.ca/2019/10/04/advocates-call-for-disability-rights-based-appeal-of-the-quebec-superior-courts-decision-in-truchon-gladu/>
  34. Open Letter from Physicians Calling for an Appeal of the Quebec Superior Court Decision in Truchon & Gladu [Internet] 2019 Oct 9 [cited 2020 Feb 29]. Available from: <https://static1.squarespace.com/static/56bb84cb01dbae77f988b71a/t/5>

- da8e4cd272dc53dc71a2a64/1571349710134/Op en+Lettter+\_+Updated+\_+Re+\_+Physicians+Cal l+for+Appeal+of+the+Quebec+Superior+Court's +Decision+in+Truchon+%26+Gladu.pdf
35. Frazee C. Opening Remarks. End of life, Equality and Disability: a National Forum on Medical Assistance in Dying [Internet]. Ottawa: The Canadian Association of Community Living and Council of Canadians with Disabilities; 2020 Jan 30 [cited 2020 Feb 29]. Available from: <https://cacl.ca/2020/02/14/end-of-life-equality-and-disability-a-national-forum-on-medical-assistance-in-dying-maid-livestream/>
  36. United Nations Human Rights Office of the High Commissioner. End of Mission Statement by the United Nations Special Rapporteur on the rights of persons with disabilities, Ms. Catalina Devandas-Aguilar, on her visit to Canada [Internet]. 2019 Apr 12 [cited 2020 Feb 29]. Available from: <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24481&LangID=E>
  37. The Supreme Court of Canada. Carter v. Canada (Attorney General), 2015 SCC 5, [Internet] 2015 Feb 6 [cited 2020 Feb 29]. Available from: <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/14637/index.do>
  38. Parliament of Canada. Bill C-14 [Internet]. 2016 Jun 17 [cited 2020 Feb 29]. Available from: <https://www.parl.ca/DocumentViewer/en/42-1/bill/C-14/royal-assent>
  39. Downar J, Fowler RA, Halko R, Davenport Huyer L, Hill AD, Gibson JL. Early experience with medical assistance in dying in Ontario, Canada: a cohort study. *CMAJ* [Internet]. 2020 Feb 24 [cited 2020 Feb 29]; 192 (8) E173-E181. Available from: <https://www.cmaj.ca/content/192/8/E173/tab-e-letters> DOI:<https://doi.org/10.1503/cmaj.200016>
  40. Seller L, Bouthillier M, Fraser V. Situating requests for medical aid in dying within the broader context of end-of-life care: ethical considerations. *Journal of Medical Ethics* 2019; 45:106-111.
  41. Kim SYH, De Vries RG, Peteet JR. Euthanasia and Assisted Suicide of Patients with Psychiatric Disorders in the Netherlands 2011 to 2014. *JAMA Psychiatry*. 2016;73(4):362-368.
  42. Scully J. Why medical assistance in dying must treat mental and physical illness equally. Canadian Broadcasting Corporation (Internet). 2020 Feb 27 [cited 2020 Feb 29]. Available from: <https://www.cbc.ca/news/opinion/opinion-assisted-dying-maid-legislation-mental-health-1.5474025>
  43. Kolva E, Rosenfeld B, Saracino R. Assessing the Decision-Making Capacity of Terminally Ill Patients with Cancer. *Am J Geriatr Psychiatry*. 2018 May;26(5):523-531.
  44. Government of Canada. Regulations for the Monitoring of Medical Assistance in Dying; SOR/2018-166 [Internet]. 2018 Jul 27 [cited 2020 Feb 29]. Available from: <http://www.gazette.gc.ca/rp-pr/p2/2018/2018-08-08/html/sor-dors166-eng.html>
  45. Downar, D. Voluntary Assisted Dying: the Canadian Perspective [Internet]. Presented at: Voluntary Assisted Dying Implementation Conference; 2019 May 8-10; Melbourne, Australia [cited 2020 Feb 29]. Available at: <https://www2.health.vic.gov.au/Api/downloadmedia/%7B1135F6C0-F463-42D9-8039-A47E6AF0A788%7D>
  46. Vulnerable Persons Standard [Internet]. 2017 Sep 28 [cited 2020 Feb 29]. Available from: <http://www.vps-npv.ca/>
  47. Canadian Institute for Health Information. Access to Palliative Care in Canada [Internet]. Ottawa: CIHI; 2018 [cited 2020 Feb 29]. Available from: <https://www.cihi.ca/sites/default/files/document/access-palliative-care-2018-en-web.pdf>
  48. Shariff MJ, Gingerich M. Endgame: Philosophical, Clinical and Legal Distinctions between Palliative Care and Termination of Life. *Second Series Supreme Court Law Review* [Internet]. 2018 Jun 21 [cited 2020 Feb 29]; 85: 225-293. Available from: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3191962](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191962)
  49. Trachtenberg AJ, Manns B. Cost analysis of medical assistance in dying in Canada. *CMAJ* 2017 Jan 23;189:E101-5.
  50. Canadian Hospice Palliative Care Association and Canadian Society of Palliative Care Physicians Joint Call to Action [Internet]. 2019 Nov [cited 2020 Feb 29]. Available from: <https://www.cspcp.ca/joint-statement-from-chpca-and-cspcp-regarding-palliative-care-and-maid/>
  51. World Health Organization. WHO Definition of Palliative Care [Internet]. [cited 2020 Feb 29]. Available from: <https://www.who.int/cancer/palliative/definition/en/>
  52. Canadian Society of Palliative Care Physicians Key Messages: Palliative Care and Medical Assistance in Dying [Internet]. 2019 May [cited 2020 Feb 29]. Available from: <https://www.cspcp.ca/wp-content/uploads/2019/05/CSPCP-Key-Messages-PC-and-MAiD-May-2019-FINAL.pdf>
  53. Canadian Society of Palliative Care Physicians. Key Messages: Physician-Hastened Death [Internet]. 2015, Oct [cited 2020 Feb 29]. Available from: <http://www.cspcp.ca/wp-content/uploads/2015/10/CSPCP-Key-Messages-FINAL.pdf>
  54. Canadian Hospice Palliative Care Association. Policy on Hospice Palliative Care and Medical Assistance in Dying [Internet]. 2019 Jun [cited 2020 Feb 29]. Available from: [https://www.cspcp.ca/wp-content/uploads/2019/12/CHPCA-Position-Statement\\_MAiD\\_June2019.pdf](https://www.cspcp.ca/wp-content/uploads/2019/12/CHPCA-Position-Statement_MAiD_June2019.pdf)
  55. Canadian Medical Association. CMA Policy: Palliative Care [Internet]. 2016 [cited 2020 Feb 29]. Available from: <https://www.cma.ca/sites/default/files/2018-11/cma-policy-palliative-care-pd16-01-e.pdf>
  56. Kutcher M. Navigating MAiD on PEI. Canadian Medical Association [Internet]. 2018 Nov 19 [cited 2020 Feb 29]. Available from: <https://www.cma.ca/dr-matt-kutcher>
  57. Buchman S. Bringing Compassion to Medicine and to the CMA. Canadian Medical Association [Internet]. 2019 Oct 12 [cited 2020 Feb 29]. Available from: <https://www.cma.ca/dr-sandy-buchman>
  58. Grimes D, Fitzpatrick M, Gordon J, Miyasaki J, Fon EA, Schlossmacher M et al. Canadian guideline for Parkinson disease. *CMAJ* [Internet]. 2019 Sep 9 [cited 2020 Feb 29]; 191(36): E989-E1004. Available from: <https://www.cmaj.ca/content/191/36/E989.long>
  59. Temel JS, Greer JA, Muzikansky A, Gallagher ER, Admane S, Jackson VA, et al. Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med*. 2010; 363:733-742.
  60. Open letter Dr. Balfour Mount [Internet]. 2019 Dec [cited 2020 Feb 29]. Available from: <https://www.cspcp.ca/wp-content/uploads/2019/12/Letter-from-Dr.-Balfour-Mount.pdf>
  61. Beuthin R, Bruce A, Scaia M. Medical assistance in dying (MAiD): Canadian nurses' experiences. *Nurs Forum*. 2018 Oct; 53(4):511-520.
  62. Nursing and Assisted Dying – Experiences from a Canadian Context [Internet]. Presented at: Voluntary Assisted Dying Implementation Conference; 2019 May 8-10; Melbourne, Australia [cited 2020 Feb 29]. Available from: <https://www2.health.vic.gov.au/Api/downloadmedia/%7B28620FDD-3485-4292-98DC-52C08722D0E6%7D>
  63. OHIP Payments for Medical Assistance in Dying [Internet]. 2018 Nov [cited 2020 Feb 29]. Available from: [https://content.oma.org/wp-content/uploads/MAiD\\_Billing-Guide-final-18Oct2018.pdf](https://content.oma.org/wp-content/uploads/MAiD_Billing-Guide-final-18Oct2018.pdf)
  64. Dignity in Care [Internet]. 2016 [cited 2020 Feb 29]. Available from: <https://dignityincare.ca/en/>
  65. Huyer D. Office of Chief Coroner of Ontario Oversight: Lessons from Ontario Medical Assistance in Dying [Internet]. May 2019 [cited 2020 Feb 29]. Available from: <https://www2.health.vic.gov.au/Api/downloadmedia/%7B59E8A8AB-B84C-4047-8B9E-E263E0500E50%7D>
  66. DWDC, CAMAP issue joint statement on forced transfers for assisted dying [Internet]. 2018 Jan 8 [cited 2020 Feb 29]. Available from: [https://www.dyingwithdignity.ca/forced\\_transfers\\_statement](https://www.dyingwithdignity.ca/forced_transfers_statement)
  67. Jones AM, Cousins B. Standoff between B.C. and hospice refusing to offer assisted dying [Internet]. January 20, 2020 [cited 2020 Feb 29]. Available from: <https://www.ctvnews.ca/health/standoff-between-b-c-and-hospice-refusing-to-offer-assisted-dying-1.4773755>

68. Medical Assistance in Dying [Internet]. College of Physicians and Surgeons of Ontario. 2016 [cited 2020 Feb 29]. Available from: <https://www.cpsso.on.ca/Physicians/Policies-Guidance/Policies/Medical-Assistance-in-Dying#Policy>
69. Ontario Superior Court of Justice Divisional Court. The Christian Medical and Dental Society of Canada v. College of Physicians and Surgeons of Ontario, 2018 ONSC 579 (CanLII) [Internet]. 2018 Jan 31 [cited 2020 Feb 29]. Available from: <https://www.canlii.org/en/on/onsc/doc/2018/2018onsc579/2018onsc579.pdf>
70. The Canadian Association of MAiD Assessors and Providers. Key Messages: End of Life Care and Medical Assistance in Dying [Internet]. 2020 Feb [cited 2020 Feb 29]. Available from: <https://camapcanada.ca/wp-content/uploads/2020/02/FINAL-Key-Messages-EOL-Care-and-MAiD.pdf>
71. Williams JR. Law catching up with ethics. CMAJ [Internet]. 2020 Feb 3 [cited 2020 Feb 29]; 192(5): E123. Available from: <https://www.cmaj.ca/content/192/5/E123>
72. Downar J, Close E, Sibbald R. Do physicians require consent to withhold CPR that they determine to be nonbeneficial? CMAJ [Internet]. 2019 Nov 25 [cited 2020 Feb 29]; 191(47): E1289-E1290. Available from: <https://www.cmaj.ca/content/191/47/E1289>
73. Ontario Superior Court of Justice Wawrzyniak v. Livingstone, 2019 ONSC 4900 (CanLII) [Internet]. 2019 Aug 20 [cited 2020 Feb 29]. Available from: <https://www.canlii.org/en/on/onsc/doc/2019/2019onsc4900/2019onsc4900.html>
74. Kamal AH, Bull JH, Wolf SP, Swetz KM, Shanafelt TD, Ast K, et al. Prevalence and Predictors of Burnout Among Hospice and Palliative Care Clinicians in the U.S. J Pain Symptom Manage. 2016 Apr; 51 (4): 690-696.
75. Reddy S, Yennu S, Tanco KC, Anderson AE, Guzman D, Williams JL, et al. Frequency of burn-out among palliative care physicians participating in continuing medical education. Journal of Clinical Oncology 2019; 37:31\_suppl, 77.
76. Wesley Smith. My Life, My Death, My Choice [Internet]. 2010 Aug 5 [cited 2020 Feb 29]. Available from: <https://www.discovery.org/a/15141/>

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## Appeal for Policy Promotion

To our President



Terence McQuiston

Dear colleagues, I was a co-author of the article **Euthanasia in Canada – a Cautionary Tale**, published in the World Medical Association Journal September 2018, Vol. 64 #3 pp. 17-23, although today I am writing only on my own behalf.

I am writing to you to plead for a fresh start by the WMA leadership to promote the WMA's vision of medical care without euthanasia.

To this end, I believe that in addition to maintaining its prohibition of euthanasia by physicians, the WMA needs now to explain publicly its reasons for this, and these reasons need to be on the WMA website along with a prominent display of the policy.

My patients live in retirement residences and therefore include many who think about euthanasia for themselves now that in Canada it is legal, increasingly frequent, and increasingly seen as normal in the health care system and in society in general. (*I personally never suggest euthanasia to a patient,*

*and I counsel against it when the subject arises. Rather, I try to discover the reasons underlying my patient's request, in order to see how I can ethically help them with these.*) In conversation with them, I have found it very helpful to point out that the World Medical Association has repeatedly stated that physician involvement in euthanasia is unethical, and that since the WMA has over 100 constituent national medical associations, we in Canada are "the odd man out" of the worldwide medical profession.

In light of the continuing creep of euthanasia in the Western World, I feel an urgency to present to you a proposal to promote the WMA's wise policy and ethics statements on the subject. I believe we need to **actively promote** the WMA policy not only in countries such as my own whose medical associations have already succumbed to the euthanasia activists, but also in other countries where cultural and political pressures are mounting to make euthanasia both legal and expected of the medical profession. The WMA's existing policy statements prohibiting euthanasia are valuable, but would be more effective if the reasons for them were explained. If explained, I think that the WMA's policy could have much more traction in Western countries.

### Why do we say that euthanasia by physicians is unethical?

Regrettably, when I searched through the WMA website's policies and archives I found nothing on this question. The reaction of many people, especially the well-educated, if they hear about the WMA's policy will be to say, "That's interesting, but why does the WMA say that?" The WMA's reasons are not obvious to them, and that is so with many of my medical colleagues

as well. They perceive the WMA's position as merely conservative, and the WMA as a milieu in which Hippocrates is struggling to catch up to the twenty-first century. Personally, I think they are tragically mistaken. I think there are good reasons for physicians to abstain from euthanasia, and that these reasons are just as pressing today as they were twenty-four centuries ago. I gather that suicide assistance did occur in the Greece of Hippocrates' day, but we have no evidence that he or his disciples were political reformers. Rather, their position seems to have been that suicide assistance was not their role, that it was inconsistent with medical care. As in Hippocrates' day, there are reasons for the medical profession to abstain from euthanasia that apply no matter whether the larger society wants it. While there are reasonable concerns that the option of euthanasia in our clinical work harms the doctor-patient relationship, I believe there are also reasons for concern that euthanasia in the health care system harms society as a whole.

I would therefore submit for the WMA's consideration the following as reasons that society, even if it has decided to approve euthanasia for its citizens, should **not** delegate the adjudication or execution of euthanasia requests to its physicians.

### Euthanasia in the Health Care System Even if Society has Decided that it Wants Euthanasia, why Should it Keep its Health Care Workers, Especially its Physicians, out of Euthanasia?

**First** – Magistrates would do a better job than physicians in adjudicating euthanasia applications.

Unless society decides to legalize euthanasia on demand, any legalization of euthanasia will try to define some restrictions on the practice. Therefore, as a practical necessity the legislation will need to construct an application process and to appoint someone to



adjudicate the applications. So far all euthanasia laws in whatever jurisdiction have assigned the job of adjudication to physicians. However, I would contend that physicians are a poor choice for this role. It involves legal decision-making, which is different from clinical decision-making. We, physicians, are trained for and experienced in the latter, but not the former. There are no medical indications for euthanasia. Euthanasia is not at its base a medical act. Rather, it uses simple medical technology to accomplish a non-medical end. Euthanasia is a new activity for our societies and needs to be framed uniquely, distinct from all other activities such as health care.

Predictably we are seeing a great variation in physicians' responses to euthanasia application. This variation looks arbitrary to the public, so it breeds disrespect for the law and emboldens both patients and physicians to skirt the law.

In 2009, the Human Rights Committee of the United Nations Covenant on Civil and Political Rights investigated Dutch euthanasia practice and expressed concern "at the extent of euthanasia and assisted suicides ..... a physician can terminate a patient's life without any independent review by a judge or magistrate to guarantee that this decision was not the subject of undue influence or misapprehension." Evidently, they did not consider review by a second physician to be an adequate safeguard.

**Second** – Execution of approved euthanasia applications does not need a physician.

Instead, other individuals can be licensed to perform euthanasia. The knowledge and skill set needed to kill someone painlessly is remarkably simple. A High School graduate could easily be trained for this in two to four weeks.

**Third** – The effectiveness of the health care system suffers when euthanasia is introduced in it.

A – The presence of euthanasia in the health care system **erodes public confidence** in the health care system, especially in its physicians, that they can be trusted to care in all circumstances, and never to harm. We have seen evidence of this problem in the Dutch experience. Indeed, this came out at the WMA General Assembly in Reykjavik, where it was reported that Dutch patients receiving health care in Germany often carry cards saying, "I do not wish to be killed." In a fiduciary doctor-patient relationship, the patient's trust in the physician is vital to the relationship's optimum function. How can patients receive maximum benefit from their doctors if they don't trust them not to kill them?

B – The presence of euthanasia in the health care system **impairs the morale of health care providers** including, but not limited to, physicians and nurses. We are human beings, not robots. Quality clinical care necessitates a caring, personal relationship between care-giver and patient. To kill our patient necessitates a certain hardening of ourselves to cope with this horrible reality. Such hardening cannot be restricted to the immediate euthanasia act. In our clinical work with other suffering or "hopeless" patients we will inevitably be weighing in our minds the question of whether killing the patient would be in their best interest. It is very difficult to be continually moving between the vision of classical medical care (to cure sometimes, relieve often, and console always) and the idea of killing this person. It's like continually shifting our car's gears back and forth, between forward and reverse. This severely grinds the gears. It creates too much stress in us to cope with, so we have to reduce the gear-shifting. We can do this either by suppressing the "reverse" to euthanasia, thus failing our society in its desire for euthanasia, or else by restraining the "forward", namely our professional calling to give of ourselves to the maximum care for patients in dire circumstances. Society will therefore suffer in the quality of care it gets from its physicians. Anecdotally I am

already seeing this in Canada, with physicians leaving palliative care, and difficulties in recruiting new medical graduates for palliative care.

Perhaps you know of other reasons why physicians should not involve themselves in euthanasia. *Unfortunately, although our ethics code includes "the utmost respect for human life", I don't think this consideration will resonate strongly in our increasingly secular Western societies, but perhaps you are aware of other reasons that might resonate with them.*

### **Euthanasia in Society as a Whole is this a Public Health Issue? Should the WMA Address it as Such that in the Public Square?**

So far, I have written only about euthanasia's effects on the health care system.

However, it can be argued that euthanasia is also a public health issue (*People do die from it*), and the WMA quite properly involves itself in other public health issues.

Does the presence of euthanasia in a society's culture result in significantly more deaths than the euthanasia advocates originally anticipated or advocated for? Have we "let a genie out of its bottle" in the words of the Dutch Ethics Professor Theo Boer? That is certainly what has been happening in Canada, and in the Netherlands also, I think. To quote from the then Professor of medical ethics at the Free University of Amsterdam, Dr. Henk Jochemsen, in an open letter to Canadians in 2010 when our parliament was first considering legalizing euthanasia, "the practice of euthanasia in the Netherlands is changing the doctor-patient relationship and the attitudes of society toward the severely disabled, elderly, and terminally ill." I see similar changes now occurring in Canada.

It should not come as a surprise that the presence of euthanasia in a society's culture



will result in people being euthanized because they are sick, disabled, elderly, mentally ill, or in the last phase of their lives (i.e., “terminally ill”). Requests for euthanasia from our patients and their families don’t arise only from dispassionate philosophy about end-of-life questions, but also from a number of extra-rational factors including suffering in many forms (physical, mental, and social – they’re lonely), fear of the future, shame (“I’m just a burden to my family”), and existential despair (“My life has no meaning anymore.”) As euthanasia becomes more public and commonplace in society, cultural pressure to conform to its ideology will inevitably increase.

Let us not imagine that we of the WMA will succeed on the battlefield of medical ethics while ignoring this issue of public health. Therefore I ask, what should the

WMA be saying in the public square about the effects of euthanasia in the broader culture of society, as an issue of public health? The WMA has worldwide prestige. Its messages become part of the cultural brew and can make a difference. People still do listen to what they hear their doctors saying. However, such a statement would need to be supported by more data than I have ready access to. Drawing from our networks, who can supply us with the necessary studies and statistics on the WMA approach, as you work on a statement about the ramifications of euthanasia on public health?

I plead with the WMA’s leadership to consider what I have written.

**Please elaborate publicly your reasons for declaring euthanasia by physicians to be unethical.**

If we really want credibility for our euthanasia policy with physicians in the West, let alone adherence to it, we must “unpack” it. (*Perhaps the WMA Workgroups on the Patient-Physician Relationship and on the International Code of Medical Ethics could work on this.*)

**Please also form a committee to look into the public health ramifications of euthanasia, and develop an adequately researched statement on this matter. (Sooner rather than later – the need is urgent.)**

Terence McQuiston M.D.  
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## This Month Consider Indoor Air Health



Most of us are spending more time indoors this month. Many people do not know that the air inside is usually dirtier than the air outside, contributing to asthma and other pulmonary complaints. The World Medical Association’s My Green Doctor program has a short guide to help your patients improve indoor air quality, “Go Green at Home to Prevent Asthma and Breathing Problems” (Reading Time: five minutes). You might print copies to share with your office colleagues and for the waiting room, or consider emailing it to all of your patients, either as a PDF (we provide the file) or as a link: <https://www.mygreendoctor.org/go-green-at-home-to-prevent-asthma-breathing-problems/>.

There’s also a link to a free waiting room poster on this topic.

My Green Doctor is a free membership benefit from the World Medical Association that is saving clinics and offices money as they adopt wise environmental practices and share these ideas with their patients. Hundreds of offices use My Green Doctor. It adds just five minutes to each regular office staff meeting. My Green Doctor explains what to say and do at each meeting so there is nothing for the office manager to study or prepare. This is how we prepare

our communities for the health threats of climate change. Ask your clinic or office manager to register: <https://www.MyGreen-Doctor.org/>.

If you are a leader in your national medical association, please add this message to your organization’s newsletter so that your doctors can enjoy this free membership benefit. To receive this e-newsletter announcement in a language other than English, simply contact My Green Doctor’s Editor: [tsack8@gmail.com](mailto:tsack8@gmail.com).

## Singapore Medical Association – sixty years on



Benny Loo



Lee Yik Voon

Singapore Medical Association (SMA) has been the voice of the medical profession in Singapore since its establishment in 1959, representing the majority of medical practitioners in both the public and private sectors. The objectives of SMA include fostering and maintaining the honour, interest and unity of the medical profession as a whole. This is in conjunction with acquainting the government and regulatory bodies with the policies and attitudes of the profession. SMA has participated in numerous consultations with various ministries and government organisations to voice members' opinions on matters such as the National Electronic Health Records, the Healthcare Services Bill, telemedicine and the local residency training programme.

SMA plays a key role in professional development through the setting up of Centre for Medical Ethics and Professionalism (CMEP) in 2000. CMEP hopes to provide doctors with a platform for life-long learning in the area of medical ethics, professionalism and health law. This was driven by the change in medical landscape in the late 1990s, when there was a move from social capital-based healthcare financing towards economic capital-based healthcare financing. This transition posed challenges of answering healthcare problems with innovative investi-

gations versus rising healthcare costs, and increasing demand that doctors follow guidelines of care versus being liable for medical incompetence. Till today, CMEP constantly engages with the current generation of doctors to promote the art and science of medical ethics and medical practice, as

well as their application, for the betterment of patient care and public health in the context of changing social norms.

The global epidemic of Severe Acute Respiratory Syndrome (SARS) in 2003 tested Singapore's healthcare preparedness in outbreak management. The sudden and swift spread of the virus, which we had little knowledge of at that time, almost paralysed the community healthcare services – General Practitioners (GP) did not have enough N95 masks. In response to members' feedback on the difficulties in obtaining the N95 masks, SMA purchased 5,000 pieces of N95 masks from the Singapore General Hospital and sold them to the GPs. Due to the overwhelming response, all 5,000 pieces were sold out on the same day. SMA subsequently sought support from the Ministry of Health and received a second shipment of 5,000 pieces of N95 masks, which were sold to the GP clinics who were unable to obtain masks earlier. This collaborated move provided GPs with protection from the deadly virus and hence allowed them to continue the care of their patients safely.

SMA strongly believes in investing in the future of healthcare and the recent SMA Lectureship and the National Medical Students' Convention are evident of our support

in the next generation of medical doctors. Inaugurated in 1963, the SMA Lectureship is a prestigious annual lecture delivered by a distinguished speaker on medical ethics and related topics that are pertinent in the day. The 2018 SMA Lectureship was delivered by A/Prof Yeoh Khay Guan (Dean of Yong Loo Lin School of Medicine, National University of Singapore and Deputy Chief Executive of National University Health System) on "The Future of Medical Education". The lecture explored the implications of shifting trends in Singapore healthcare and its impact on medical education. The event drew an audience of more than 150, comprising doctors, educators, medical students, even A-Level students and their parents. The 2017 SMA National Medical Students' Convention provided an opportunity for students of all three local medical schools to come together for a day of learning and networking. Through the discussion of important issues pertinent to medical education, the convention sought to provide clarity on students' roles as future doctors in an evolving medical training and practice landscape. In its first run, A/Prof. Benjamin Ong (Director of Medical Services, Ministry of Health) delivered the keynote address "The Future of Singapore Healthcare and What It Means to Medical Students Today".

Celebrating our 60<sup>th</sup> anniversary this year, SMA will continue to work towards being a stronger representative voice of the medical profession in Singapore – for doctors, for patients.

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*Dr. Benny Loo – Honorary Assistant Secretary (60<sup>th</sup> SMA Council)  
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