UPDATE REGARDING THE CORONAVIRUS PANDEMIC NOW CALLED "COVID-19"

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In support of improving medical care across the world, Project C.U.R.E. is pleased to share the first edition of our COVID-19 Education and Prevention Newsletter. Dr. Spaulding, a medical advisor for Project C.U.R.E. and international medical doctor, will regularly provide up-to-date information on Coronavirus—what it is and how we can keep ourselves and our communities safe. This information is up-to-date as of April 19th, 2020 from a variety of highly reliable sources. Our knowledge is rapidly increasing as doctors and researchers are working day-and-night globally. We still have much to learn and will keep you updated as new information comes in. Updated information and guidance are also regularly being provided by the World Health Organization (WHO) and the United States Centers for Disease Control and Prevention (CDC).
WHAT IS A VIRUS?

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(a) Viruses are extremely small particles
   (i) Average virus is 1/100th the size of a bacterium
   (ii) Most viruses are only visible with a sophisticated electron microscope
(b) Each virus has a protein coating called the “capsid”, with genetic material (DNA or RNA) inside
(c) Viruses can only reproduce by invading a host cell (of an human, animal, or plant, depending on the type of virus) and then hijacking that cell’s reproductive capabilities in order for the virus to make many new copies of itself
(d) The virus then kills the cell and ruptures the cell membrane releasing large numbers of its “offspring” into the host’s body to attack other cells
(e) Viruses cause may common diseases in humans
   (i) For example, Measles, Shingles, Influenza, HIV, Ebola
   (ii) And, thankfully, very effective vaccines already exist to protect humans against many of these other viral diseases
(f) It is important to understand that antibiotics do not treat any Viral Infections; antibiotics are only able to treat bacterial infections
   (i) However, there are a few “Anti-Viral” medications that treat several other viral diseases
      (1) For example, Herpes, HIV

WHAT IS A PANDEMIC?

(a) Definition: An epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people in a relatively short period of time
WHAT IS COVID-19?

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a) This virus belongs to a family of viruses known as “Coronaviruses”
   i) These are important viruses causing various diseases in humans and animals

   (1) For example, many cases of Grippe are caused by other Coronaviruses

b) On 31 December 2019 a “Novel” Coronavirus was reported in a cluster of pneumonia cases in Wuhan, China
   i) This virus had never before been found to cause illnesses in humans

c) On 30 January 2020
   i) WHO declared this outbreak: “A Public Health Emergency of International Concern”

d) On 11 February 2020
   i) WHO named this illness “COVID-19” which stands for “coronavirus disease 2019”

e) On 11 March 2020
   i) WHO declared COVID-19 a “Global Pandemic”

f) The causative novel coronavirus is now officially called “SARS-CoV-2”
   i) Because its genetic composition has much in common with the SARS-CoV virus that caused the SARS epidemic back in 2003
   ii) However, SARS-CoV-2 was initially referred to as “2019-nCoV” in reports from January

g) Of course, the term “COVID-19” refers to the actual illness/disease
WHY IS THERE SO MUCH CONCERN ABOUT COVID-19?

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(a) Since this is a totally new viral illness, no one in the world has prior immunity
(b) Preliminary reports tell us that the Mortality Rate for COVID-19 is much worse
   i) Overall, COVID-19 appears at least 10 times more deadly than Influenza
   (i) Compared to Influenza, a larger percentage of COVID-19 patients have Severe/Critical Disease requiring hospitalization and even an Intensive Care Unit and Mechanical Ventilator (breathing machine) to help them survive
   ii) However, the “crude Case Fatality Rate” for Italy looks much worse with an estimated very broad range of 3.3% to 12%
   iii) Other reports from various countries preliminarily report a Case Fatality Rate of 2-3% (vis-à-vis Influenza at only 0.1%)
   (i) Which, if verified, would indeed make COVID-19 20-30 times more deadly
   iv) Ultimately, we need “Infection Fatality Rate”
      (i) Which is only possible with widespread high-quality testing for the presence of the virus in the population and/or antibodies in the bloodstream
      (a) To more accurately determine the total number of people who currently or previously have had this infection, whether they had symptoms or not
(c) There is currently no Vaccine for COVID-19 (see below)
(d) There are no Antiviral medications yet proven to be effective for COVID-19 (see below)
a) Where did this SARS-CoV-2 virus come from?
   i) There is still no definitive answer on this issue
      (1) Probably naturally occurring in bats or other animals in Wuhan, China remains the most likely original source
      (2) However, the possibility that it “escaped” from a nearby Chinese Viral Research Institute has not been totally eliminated from the possibilities

b) Initially most sick patients could be traced to: (a) Wuhan, China, or (b) recent travel to China, or (c) contact with travelers from this region of China
   i) However, “community spreading”, i.e., person-to-person transmission is now the primary way COVID-19 is causing people to become sickened globally
   ii) This means that persons with no connections to China or any other known source of exposure have developed an illness with COVID-19

c) Infectiousness, i.e., contagiousness of this virus
   i) Current studies: for those patients who become symptomatic
      (1) On average they become infectious 2.3 days beforehand with a peak at 0.7 days in advance of the onset of symptoms, then declines for the next 7 days
      (2) Raising the possibility that patient’s may be more contagious in the early stages of infection, although more research is needed
   ii) Some studies are now reporting ~18% of patients with COVID-19 may remain totally asymptomatic, i.e., never develop any typical symptoms
      (1) Nevertheless, these patients have been found to be infectious / able to spread the disease to their close contacts

iii) The duration of viral shedding is highly variable, with or without symptoms
      (1) Questions remain regarding how low the detected sputum viral particles must be before the patient is no longer contagious to others

d) Antibody Blood Tests
   i) Can be used to show whether a person may have already had an episode of COVID-19 illness (whether symptomatic or not)
   ii) These tests are just beginning to be utilized in healthcare settings
   iii) However, we currently do NOT know if:
      (1) These antibodies are “protective” against a second “recurrent” infection
      (2) And if protective, then for how long will this protection be maintained
   iv) Furthermore, many of these Antibody Tests were rushed to market without careful studies of their accuracy/erroneous test results, which raises additional questions and concerns about their usefulness and their accuracy.
What is the current data for this pandemic as of 19 April 2020?

i) Current reports indicate that COVID-19 is now present in 177 countries worldwide

ii) More than 2.4 million cases have been confirmed (by using proper virus test kits)

(1) Although it is quite likely that, once robust testing is available, additional millions of cases will be confirmed as already having occurred globally

iii) Compared to 11,000 recorded deaths just 1 month ago, now there have been 165,000+ deaths worldwide

(1) Including ~41,000 deaths in the USA and almost 100,000 deaths across Europe

iv) According to the CDC, among adults with confirmed COVID-19 in the USA:

(1) Estimated percent requiring hospitalization

(a) 31-70% of adults 85+ years old

(b) 31-59% of adults 65-84 years old

(2) Estimated percent requiring admission to the intensive care unit (ICU)

(a) 6-29% of adults 85+ years old

(b) 11-31% of adults 65-84 years old

(3) Estimated percent who died

(a) 10-27% of adults 85+ years old

(b) 4-11% of adults 65-84 years old

v) Italy’s preliminary reports of Case Fatality Rates are 12% and 20% among those aged 70-79 years, and 80+ years, respectively