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25 MARCH 2020

Sa harap ng pandemic ng coronavirus/COVID-19, marami pong kumakalat na impormasyong hindi tugma sa agham at ebidensya. Gayunpaman, marami ring mga paraan na makatutulong sa pagpabagal ng kumakalat na impeksyon. Ang mga sumusunod ay ilan sa mga patnubay na base sa pananaliksik at ebidensya. Kasama rin ang mga link na pinanggalingan ng impormasyon na nakasulat dito. Bagaman naniniwala kami sa mga ebidensya na ito, mainam na suriin niyo pa rin ang aming mga rekomendasyon.

Nais naming bigyang-diin na ang orihinal na dokumento ay ginawa namin para ipamahagi sa aming mga kamag-anak at kaibigan. Dahil nagbabago araw-araw ang aming pag-unawa sa coronavirus at ang ebidensya na lumalabas, ginamit namin ang format na ito upang madaling baguhin ang dokumento kung sakaling may lumabas na bagong impormasyon.

Maaari po ninyo kami i-contact para sa inyong mga komento sa email na covid19doccontributions@gmail.com. Kami po ay na sa proseso ng pagsalin ng buong primer sa iba't ibang mga wika tulad ng Tagalog, Bisaya, Hiligaynon, at iba pa.

Seryosohin po natin and COVID-19. Hindi ito pangkaraniwan na trangkaso.

Sundin po natin ang mga babala ng DOH (English [http://bit.ly/DOHcovidENG] at Filipino [http://bit.ly/DOHcovidFIL, http://bit.ly/DOHfbUpdates]**). Manatili sa bahay. Maghugas ng kamay nang madalas. Itupad po ang social distancing. Gawin po natin ito hindi lang para sa ating mga sarili ngunit para sa mga kapwa nating Pilipino na maaaring magkasakit ng lubos kapag sila's maimpeksyon, at para sa mga healthcare workers na naglilingkod sa frontline at ang kanilang mga kapamilya.**

Ang laman ng dokumento na ito ay hindi pumapalit sa payo ng doktor. Tawagin sa telepono ang inyong doktor kung nakararamdam ng mga sintomas ng COVID-19. Ang doktor nyo ay makakasabi kung dapat kayo dumeretso sa ospital, o manatili sa bahay.

Chris, Joseph, Marc

[You may skip to page 6 to begin with the primer]

25 March 2020

Though this Covid-19 primer was originally made for our family and friends, we realize that there was a huge demand from the general public for curated information about the pandemic. We therefore decided to make this document public and we assure you that we take the responsibility of delivering you factual and up-to-date information very seriously. Because information about Covid-19 changes every single day, we created this document in Google Doc so that it can be updated on a regular basis.

There is confusion regarding the coronavirus pandemic and it is affecting so many people in terms of health and the daily freedoms we otherwise take for granted. The scientific community is racing to find answers, but as of now there are still many unknowns. Critically, the pervasiveness of the unknown drives fear, which can mitigate our ability to think and decide critically. Below are some key evidence-based knowns and unknowns; we have included citations and links in case you want to learn more. We personally believe these sources to be evidence-based and close to the truth, but exercise your own judgment.

Please feel free to email (covid19doccontributions@gmail.com) any comments or suggestions you have about this primer.

COVID-19 should be taken seriously. Please follow local guidelines to mitigate spread, for the sake of those most vulnerable among us, as well as healthcare workers and their families.

The contents of this document are not meant to replace the advice of a doctor who can examine you in person. If you feel fever, cough, and other symptoms of COVID-19, please call your doctor right away. Your doctor may or may not ask you to go to the hospital, depending on your symptoms and risk. Your doctor can update you on local guidelines and testing.

The CDC advises: "Stay in touch with your doctor. Call before you get medical care. Be sure to get care if you feel worse or you think it is an emergency" (http://bit.ly/WhatToDoIfSick_USA).

Sincerely,
Chris, Joseph, Marc

BUOD

- 3.9% ng pangkalahatang bilang ng mga may sakit ay namamatay, ngunit sa Pilipinas ito ay higit sa 8%; kapag tumataas ang mga nagtetest na positibo na may banayad na mga sintomas, bumababa ang case fatality rate
- para sa mga humihigit sa 80 taong gulang, humigit kumulang 15% ang mga namamatay; para sa mga 70-79 taong gulang, ang case fatality rate ay 8%; hindi kasama sa mga bilang na ito ang mga malubhang nagkakasakit ngunit nabubuhay. Bagamat mas malakas ang mga nakababata, nasa panganib pa rin sila ng lubhang kahirapan sa paghinga (respiratory distress requiring intensive care) at ng pagkalat ng virus sa mga mas mahihina.
- **sintomas**: **lagnat** (100.4 °F/38 °C, pinakakaraniwan), **ubo**, pagkapagod, sakit sa kalamnan ("myalgia"), plema ("sputum"), sakit ng ulo, pag-ubo ng dugo ("hemoptysis"), kahirapan sa paghinga (“shortness of breath”); maaari ring magkaroon ng mga **sintomas ng tiyan**, kabilang ang **pagduduwal/pagkakahilo** (nausea), sakit sa tiyan, **diarrhea**
- **Maaari pa ring makahawa ang taong may banayad na sintomas**
- ang mga face mask ay ipinahiwatig para sa mga taong may mga sintomas ng paghinga (ubo, plema) upang mabawasan ang pagkalat ng coronavirus; ang mga face mask ay hindi inirerekomenda sa kasalukuyan para sa mga taong walang sintomas; hugasan ang kamay bago isuot at pagkatapos alisin ang mga face mask; huwag gamitin ng paulit-ulit ang face mask
- **Manatili sa sariling bahay kung maaari**; binabawasan nito ang pagkalat sa mga mas mahihina ang kalusugan na maaaring malubhang magkasakit.
- Nababawasan ang pagkakalat sa pamamagitan ng **pagpapanatili ng humigit kumulang 1 metrong distansiya sa isa't isa**
- **Ugaliing maghugas ng kamay. Kung walang sabon at tubig, gumamit ng alcohol-based na hand sanitizer na di bababa sa 60% ang nilalamang alcohol** (katulad ng ethanol/ethyl alcohol, isopropanol/isopropyl alcohol)
- Pambuod na video: http://bit.ly/CDCOverviewVideo13Mar2020 (USA CDC, English), http://bit.ly/DOHLabansaCOVID19 (Philippine DOH, Filipino)
- **Kung ang sarili ay wala sa mataas na panganib ng pagkakaroon ng malubhang pagkasakit o kamatayan, lahat tayo ay may kilalang mayroon nito. Hindi panghihinayang o pagkatakot ang magpapatigil sa pagkalat ng sakit. Ang kinakailangan ay agaran at sariling kusang pagkilos mula sa ating lahat.**

SUMMARY

- Overall case fatality rate is 3.9%
- Fatality rate of ~15% for >80 years old, ~8% for 70-79 years old; these numbers do not include those who become severely ill but survive. Although younger people have low risk of death, they are still at risk of needing hospitalizationand of transmitting the virus to more vulnerable people
- **Symptoms**: **fever** (100.4 °F/38 °C, most common), **cough**, fatigue/muscle aches ("myalgia"), sputum (phlegm), headache, coughing up blood ("hemoptysis"), diarrhea, difficulty breathing/shortness of breath; also abdominal symptoms including nausea, abdominal pain, diarrhea
- **Patients with only mild symptoms may still transmit the virus**
- Masks are indicated for people with respiratory symptoms to decrease spread; masks not currently recommended for people who do not have symptoms; wash hands before putting on and after removing masks; do not reuse masks
- Stay home if ill
- **Social distancing of ~1m decreases spread**
- **Wash hands often. If soap and water are not available, using an alcohol-based hand sanitizer with at least 60% alcohol (ethanol/ethyl alcohol, isopropanol/isopropyl alcohol)**
- Video summary: http://bit.ly/CDCOverviewVideo13Mar2020 (USA CDC, English), http://bit.ly/DOHLabansaCOVID19 (Philippine DOH, Filipino)
- **Even if you yourself may not be at high risk of severe illness or death, we all know someone who is.** Neither complacency nor panic will stop the spread. **What is needed is urgent and deliberate effort on everyone's part.**

SUMMARY IN OTHER LANGUAGES

- Bisaya: http://bit.ly/2U54Yok
- Bikolano: http://bit.ly/38QZgES
- Chavacano de Zamboanga: http://bit.ly/CovidChavacano
- Hiligaynon: http://bit.ly/2wW1IwF
- Ibanag: http://bit.ly/CovidIbanag
- Ibatan: http://bit.ly/Covid19IBATAN
- Ilocano: http://bit.ly/Covid19Ilocano
- Kapampangan: http://bit.ly/CovidKapampangan
- Maguindanawan: http://bit.ly/Covid19Maguindanawan
- Minasbate: http://bit.ly/CovidMinasbate
- Portuguese: http://bit.ly/2IN8JTe

COVID 19 PRIMER

WHAT IS COVID-19?

Natural history

COVID-19 is the disease caused by the virus "severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)", the new name of "2019-nCoV". What started out as clusters of severe pneumonia in Wuhan, China, COVID-19 has become a global pandemic in less than 6 months.

HOW IT SPREADS - COVID-19 can spread from person to person by **respiratory droplets**, especially among patients who are coughing or sneezing. The word "droplet" emphasizes the fact that infectious particles released by a person can circulate in a 6-foot radius, in contrast to airborne transmission which has a much larger radius.

The point at which a person is infected with the virus until the time he or she will manifest with the first symptom is called the **incubation period**. The median incubation period for COVID-19 is 4 days (can range from 4-14 days). **Despite not having obvious symptoms, patients in the incubation period, as well as asymptomatic carriers (infected but not displaying symptoms), can still be infectious** (http://bit.ly/CDCCOVIDTransmission; http://bit.ly/NEJMAsymptomaticTransmission; http://bit.ly/JAMAAsymptomaticCarrierCR; http://bit.ly/NEJMGates). There is increasing evidence of transmission even among patients without symptoms, underscoring the need for social distancing and handwashing for everyone (http://bit.ly/asymptomatictransmission1). Earlier estimates may have underestimated the number of asymptomatic transmission, further highlighting social distancing measures (https://bit.ly/asymptomaticspread, http://bit.ly/LancetICURisks).

There is also increasing evidence of SARS-CoV-2 found in the stools/feces (https://bit.ly/2xxdcqF, http://bit.ly/fecaloralcovid), but whether or not the **fecal-oral route** is a significant route of transmission of COVID-19 is unclear.

SYMPTOMS - In some studies, **eighty percent of patients with COVID-19** have mild or no symptoms (Table 1, http://bit.ly/2Qe9XLn). In others, however, **up to one in**

five even among the young may require hospitalization (http://bit.ly/COVIDyoung). Among those patients who end up in the hospital, the most common symptoms of COVID-19 are **fever**, **cough** (both dry and with sputum), **muscle pain**, and **fatigue** (Table 1, http://bit.ly/3aWSMWz). **Shortness of breath** also occurs ("respiratory symptoms"). Patients may also have **diarrhea** and **vomiting** ("gastrointestinal symptoms"), which may occur before respiratory symptoms.

SEVERITY	
Mild	81%
Severe	14%
Critical	5%
SYMPTOMS/SIGNS	
Fever (100.4 °F/38 °C)	95%
Cough	79%
Muscle pains	15%
Fatigue	23%
Vomiting/Diarrhea	4-5%
Rapid breathing (RR* > 24)	29%

Table 1. Severity of illness as published in JAMA (http://bit.ly/33eYVuk) and symptoms of COVID-19 patients admitted to the hospital as published in the Lancet (http://bit.ly/3aWSMWz).
*respiratory rate in breaths per minute

Risk factors for hospitalization

No matter how healthy or young you are, you are at risk of getting COVID-19. Older people (median of 58 years old) and people with underlying illnesses have greater risk of hospitalization/worse outcomes.

The most common comorbidities among hospitalized patients are hypertension (30%), diabetes (19%), coronary artery disease (8%), and chronic obstructive pulmonary disease (3%) (http://bit.ly/3aWSMWz).

CASE FATALITY RATE

CFR (case fatality rate) or MR (mortality rate)?

The CFR is the number of people who die of a disease divided by the number of people with that disease. This differs from the mortality rate (MR) which is the number of deaths in a certain time period divided by the general population (including those who are not sick). Because the denominator in MR is much larger than CFR, we expect the MR to be much smaller. **Therefore, these two terms should NOT be interchanged**. (http://bit.ly/2wT6niU)

COVID-19 CFRs Across the World

REGION	COVID-19 CASE FATALITY RATE*
Worldwide	3.9%
China	4.0%
Italy	7.7%
South Korea	0.9%
United States	1.7%
Philippines**	8.4%

Table 2. Case-fatality rate by region

***as of 16 March 2020** http://bit.ly/39WRCdw

**** as of 16 March 2020: 12 mortalities and 142 confirmed cases**

As of March 12th of 2020, the reported overall case fatality rate of Covid-19 is ~3.7% (Table 2, http://bit.ly/2vWNToS). Across countries, the case fatality rate is variable. One of the lowest CFRs is in South Korea, attributed primarily to the government's mass testing, heightened public communications, and use of technology (http://bit.ly/2IHTzyf). It is unclear why some countries have higher CFRs. Some have blamed overwhelmed healthcare systems as a culprit (https://nyti.ms/38SIFQR). While there have been reports of different strains of the virus (http://bit.ly/3aTXcNG), we found little evidence to support the notion that some strains may be deadlier than others.

COVID-19 CFRs Among Different Types of Patients

PATIENT CHARACTERISTIC	COVID-19 CASE FATALITY RATE*
Aged 80 and above	14.8%
Aged 70 to 79	8.0%
Critically ill	49.0%
Cardiovascular disease	10.5%
Diabetes	7.3%
Chronic respiratory disease	6.3%
Hypertension	6.0%
Cancer	5.6%

Table 3. Case-fatality rate by patient characteristics as published at JAMA (http://bit.ly/33eYVuk)

The Journal of the American Medical Association (JAMA) published research by Dr. Zunyou Wu and Dr. Jennifer McGoogan on February 24th that detailed the characteristics of 72314 patients from China. Older age and other comorbidities were associated with increased case-fatality rates (Table 3, http://bit.ly/33eYVuk). Therefore, even if one is young and completely healthy, one must always be considerate of the possibility of spreading the disease to the more vulnerable people in our population.

Although older patients are more likely to have worse outcomes, **not only are young people at risk of spreading the virus, they are also at risk of requiring ICU-level care** (http://bit.ly/JAMACovidICU). The level of sickness it takes to require ICU-level care should NOT be taken lightly.

WHAT DO I DO?

We strongly believe that the most important aspects of care are the following:

- **Preventive** efforts of the entire community,
- **Timely consultation** with your doctor when you suspect you have COVID-19,
- **Vigilance** among the elderly and those with co-morbids based on international guidelines.
- Most antibiotics do **NOT** work for COVID-19, as antibiotics are for bacteria and not viruses
- Trials are underway for appropriate antivirals and vaccines. Although data are not definitive, promising medications may help in the treatment of COVID-19:
    - **Lopinavir-Ritonavir/Kaletra** (not better than standard of care in severely ill patients): http://bit.ly/18MarRitoLopiNEJM
    - **Favipiravir/Avigan** (may be effective in those with mild to moderate symptoms): http://bit.ly/18MarAvigan
    - **Remdesivir** (multiple ongoing trials): http://bit.ly/10MarRemdesivir
    - **Hydroxychloroquine + Azithromycin** (promising in certain patient groups): http://bit.ly/HCQAzithroFrench
    - **Tocilizumab** (in trial): http://bit.ly/TociTrial
    - Many other potential treatments are being studied (http://bit.ly/CovidMedsinDev)
- Although there is **no definitive evidence that ibuprofen worsens covid19**, consider switching to **paracetamol** based on your doctor's advice; some experts argue there is a theoretical risk (http://bit.ly/CovidIbuprofen). Ibuprofen may not be indicated in patients with certain underlying conditions such as kidney disease, active gastritis, or risk of gastrointestinal bleed.
- **Remdesivir** as well as **hydroxychloroquine** may be recommended by your physician based on several small trials and lab evidence (https://bit.ly/CDCtherapies)

Prevention

SOCIAL DISTANCING is strongly recommended. The US government has already imposed a ban against gatherings of more than 10 people. If there is a known COVID19 case in your home, the entire household must be in quarantine. The CDC has detailed recommended practices on whether you are at home, in school, at work, etc (http://bit.ly/2QcLfuM). (Philippine DOH guidelines in English [http://bit.ly/DOHcovidENG] and Filipino [http://bit.ly/DOHcovidFIL]).

HAND WASHING with soap and water for 20 seconds is still the most important method of preventing disease spread. If soap and water are unavailable, alcohol-based sanitizers with at least 60% alcohol (ethanol/ethyl alcohol, isopropanol/isopropyl alcohol) may be used (http://bit.ly/CDCHandSanitizer, disinfecting your environment http://bit.ly/2IHeEZF). Coronavirus may last on metal and plastic surfaces for several hours (http://bit.ly/covidNEJMfomite), highlighting the value of washing hands and cleaning surfaces regularly.

FACE MASKS are recommended for patients with symptoms. When using a mask, it is very important to know how to wear and how to dispose of it (https://bit.ly/33chrUs). Improper disposal of masks may actually lead to self-contamination.

BE AWARE of the most recent recommendations in your region. For the Philippines, you may refer to http://bit.ly/2W8cnPj. In the US, you may refer to the CDC recommendations (http://bit.ly/2QcLfuM).

BE CONSIDERATE of others. Though more than 95% of patients with COVID-19 recover, let us consider that every individual can be a host to this virus and may spread the disease to more vulnerable people in the community. Although most recover, many may require difficult hospitalizations and intensive care. Therefore, mitigation of spread is key.

Guidelines for High-Risk Patients

PEOPLE WITH DIABETES - (https://bit.ly/3cPMOse)

- People who already have diabetes-related health problems are likely to have worse outcomes with COVID-19 than people with diabetes who are otherwise healthy, whichever type of diabetes they have
- Maintain your blood sugar; if it falls too low or rises too high, **consult with your doctor**. For low blood sugar you will likely have to eat simple sugars such as honey, candy, or popsicles, and recheck blood sugar in 15 minutes. For high blood sugar, you will likely have to check for ketones to screen for diabetic ketoacidosis (DKA).

THE ELDERLY (https://bit.ly/39Htnje)

- Wash hands often, avoid contact with the sick, clean doorknobs, table tops
- Make a plan for what to do if you get sick and know who will take care of you if your caregiver gets sick
- Talk to doctors to have enough medication supplies on hand
- Pay attention to local transmission in your community, and stay home and avoid crowds

- If you have fever, cough, or shortness of breath, chest pain, blueness of lips, or face, call your doctor right away

PATIENTS WITH HEART DISEASE (https://bit.ly/2Q6ko3d)

- Patients with heart disease are at potentially increased risk of worse outcomes from COVID-19 and should take extra precautions to minimize risk of exposure.
- Telehealth visits for stable check-ups/follow-ups may be reasonable options.
- For patients with heart failure or volume overload conditions, copious fluid administration for viral infection should be used cautiously and carefully monitored.
- Patients with heart disease should take extra precautions per their doctor, and in accordance with CDC guidelines (http://bit.ly/CDChigherriskguide)

PATIENTS WITH HYPERTENSION (http://bit.ly/covidCVDmeta)

- Patients with **previous cardiovascular metabolic diseases** may face a greater risk of infection of 2019-nCoV and it can also greatly affect the development and prognosis of pneumonia
- Patients with **hypertension**, cardio-cerebrovascular diseases, or diabetes are more likely to develop severe/ICU cases after 2019-nCoV infection (mechanistic hypothesis: http://bit.ly/LancetIbuACEARB)
- The overall proportion of hypertension was ~2x higher in ICU/severe cases than in their non-ICU/severe counterparts
- In the analysis of Li et al., 8% of patients with COVID-19 suffered acute cardiac injury (http://bit.ly/covidCVDmeta)
- Therefore, patients with hypertension and other cardiometabolic conditions should take extra care and follow the guidelines of local health authorities (http://bit.ly/CDChigherriskguide)

WHY SHOULD I CARE?

The following provides a clear description of the epidemiology of the virus: https://bit.ly/38IR3Tg. The extent of spread could also be underestimated due to undetected carriers (http://bit.ly/undetectedspreadnature). The critical thing to note is that slowing spread requires a conscious and deliberate effort on everyone's part, no matter how well they feel. If someone with relatively mild symptoms passes the virus on to someone who is more vulnerable, the latter can fall ill faster and with worse outcomes. Furthermore, they can spread it to more people, such that the health systems -- in wealthy and poorer countries alike -- can become overwhelmed. Neither complacency nor panic will stop the spread. **What is needed is urgent and deliberate effort on everyone's part.**

OTHER RESOURCES

Mental health and coping (http://bit.ly/CDCMentalHealthCOVID): Everyone reacts differently to stressful situations. The emotional impact of an emergency on a person can depend on the person's characteristics and experiences, the social and economic circumstances of the person and their community, and the availability of local resources. People can become more distressed if they see repeated images or hear repeated reports about the outbreak in the media.

How to talk to your kids about coronavirus (http://bit.ly/MGHPediatrics): Be open with them and ask them about their worries. Ask them open-ended questions about how they are feeling and what questions they may have. Know that kids can pick up on your anxiety. Model good prevention behavior so your kids can copy you. *Singing happy birthday twice is about 20 seconds, the minimum recommended time for coronavirus prevention*. Remind them of times that they went through challenges.

Key peer-reviewed scientific journals and updates:
Nature - for general medical/biological research: -
https://www.nature.com/collections/aijdgieecb,
https://www.springernature.com/gp/researchers/campaigns/coronavirus
Lancet - for public health/epidemiology:
https://www.thelancet.com/coronavirus
Cell - for cellular biology:
https://www.elsevier.com/connect/coronavirus-information-center
https://www.cell.com/2019-nCOV
New England Journal of Medicine - for public health/epidemiology/clinical medicine:
https://www.nejm.org/coronavirus

We want to make a quick plug for **humanism** in all this. In **Albert Camus**'s "**The Plague**," the town of Oran falls victim to a mysterious, fictional illness, one even more terrifying than COVID-19. The book is a study of how different people respond to such a threat, and argues that we must always take efforts to choose the decent thing to do. Nothing more complicated than that. One of the central passages in the book is worth ending on:

"What we learn in the midst of the plague is that there is more in each other to admire than to despise."
"Ang natutunan natin sa gitna ng salot ay mayroong higit sa bawat isa sa atin na maaaring paghangaan kaysa sa hamakin."

Best,
Chris, Joseph, Marc (covid19doccontributions@gmail.com)