UP MED WEBINARS

2020 MEDICAL UPDATES ONLINE

Coping with Diabetes During the COVID Crisis

April 1, 2020
WEDNESDAY, 12-1PM MANILA TIME

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Coping with Diabetes during the COVID-19 crisis in the Philippines

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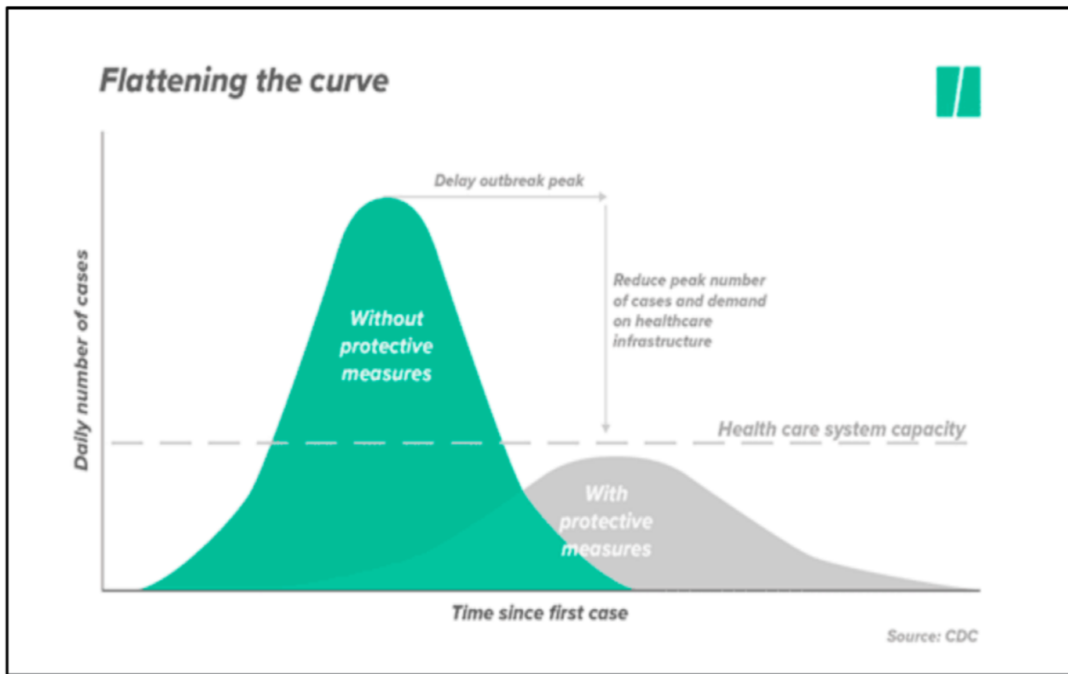
Past President, Philippine Society of Endocrinology, Diabetes and Metabolism

1 April 2020

Ncov tracker for the Philippines

What Quarantine Wants to Achieve



Daily New Cases (Philippines as of 03/28)

Worst case
modelled as of 03/28

Did we flatten the curve?
Too soon to say.

Best case
modelled as of 03/28

700
600
500
400
300
200
100
0

Feb 15, Feb 17, Feb 19, Feb 21, Feb 23, Feb 25, Feb 27, Feb 29, Mar 02, Mar 04, Mar 06, Mar 08, Mar 10, Mar 12, Mar 14, Mar 16, Mar 18, Mar 20, Mar 22, Mar 24, Mar 26, Mar 28

Courtesy of Dans et al

Coping with Diabetes during the COVID-19 crisis

The Philippines during this crisis

Persons with diabetes: vulnerable population

Strategies for optimal care

Epidemiologic data about COVID-19 in DM is emerging; timely sharing is imperative

- Diabetes was seen in 42.3% of 26 fatalities in Wuhan, China *(Deng et al J Clin Med 2020)*
- Increased mortality in DM 7.3%, 2.3% overall *(Wu et al, JAMA 2020)*
- Number of co-morbidities was a significant predictor of mortality *(Ruan et al, Intensive Care Med 2020)*

TABLE 1: Baseline Characteristics of Patients Infected With 2019-nCov, Wuhan, China

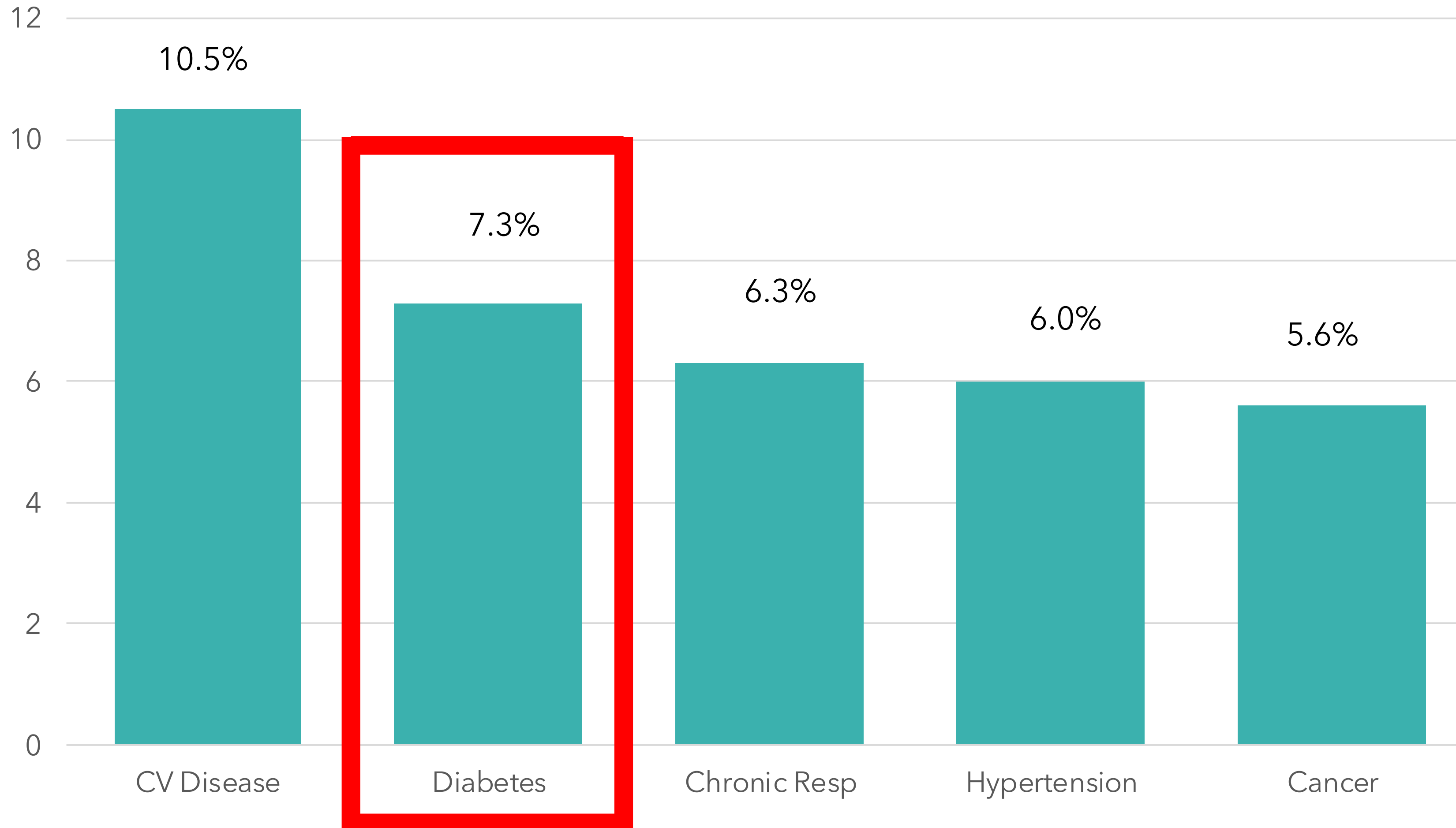
	Total	ICU	Non-ICU	
Comorbidities	64 (46.4)	26 (72.2)	38 (37.3)	<.001
Hypertension	43 (31.2)	21 (58.3)	22 (21.6)	<.001
Cardiovascular disease	20 (14.5)	9 (25.0)	11 (10.8)	.04
Diabetes	14 (10.1)	8 (22.2)	6 (5.9)	.009
Malignancy	10 (7.2)	4 (11.1)	6 (5.9)	.29
Cerebrovascular disease	7 (5.1)	6 (16.7)	1 (1.0)	.001

46.4% of COVID with co-morbidities

Co-morbidities
72% in ICU
37% non-ICU

Wang et al, JAMA 2020

Case fatality rate (CCDC) by co-morbidities



Chinese Centre for Disease Control and Prevention Weekly 2020; 2(8): 113-122.

Access the 2020 Standards of Care Guidelines

Routine: Flu, pneumonia and hepatitis vaccines

Immunizations

Recommendations

4.7 Provide routinely recommended vaccinations for children and adults with diabetes as indicated by age. **C**

4.8 Annual vaccination against influenza is recommended for all people ≥6 months of age, *especially* those with diabetes. **C**

4.9 Vaccination against pneumococcal disease, including pneumococcal pneumonia, with 13-valent pneumococcal conjugate vaccine (PCV13) is recommended for children before age 2 years. People with diabetes ages 2 through 64 years should also receive 23-valent pneumococcal polysaccharide vaccine (PPSV23). At age ≥65 years, regardless of vaccination history, additional PPSV23 vaccination is necessary. **C**

4.10 Administer a 2- or 3-dose series of hepatitis B vaccine, depending on the vaccine, to unvaccinated adults with diabetes ages 18 through 59 years. **C**

JCI insight

RESEARCH ARTICLE

Comorbid diabetes results in immune dysregulation and enhanced disease severity following MERS-CoV infection

Kirsten A. Kulcsar,[1] Christopher M. Coleman,[1] Sarah E. Beck,[2] and Matthew B. Frieman[1]

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Upon infection with the MERS-CoV:
Prolonged phase, severe disease and delayed recovery,
with evidence from histologic analysis and altered inflammatory parameters

https://doi.org/10.1172/jci.insight.131774

How do we help our patients with
diabetes, being a chronic disease,
at this time of COVID-19 crisis?

General principles of Diabetes care continue to apply

- Patient strategies: nutrition, physical activity, stress control, provision of diabetes education
  - Benefits of the flu and pneumonia vaccines
- Regulation of glycemic control and risk factors (BP, lipids, weight, cessation of smoking)
- Regular communication with her/his health care professional/s

Adapting new practice patterns

- Remote consults for out-patient care (telephone, e-mail)
- Government support for provision of medications (adequacy, accessible through delivery with social distancing, subsidies); access to healthy foods and opportunities for physical activity
- Best practices for health care professionals for entire country (private and charity, urban and rural); organize through specialty organizations (Philippine Society of Endocrinology, Diabetes and Metabolism, Philippine College of Physicians) in cooperation with the government; provide equitable approach for rich and poor sectors
- Information campaign for patients in the age of social media: accurate and relevant with support for various concerns including mental health

Education is the treatment for Diabetes
---Elliott P. Joslin

Empower persons with diabetes information in this age of social media

DIABETES in the time of COVID-19

We are on a lockdown.
I am a person with diabetes.
What should I do?

Answer:
THINK, TALK, WORK for SAFETY

THINK for SAFETY

Think of the thing you need in preparation for staying at home for a long time.:

1. Phone numbers of clinics, pharmacy and medical insurance.
2. List of medicine and vitamins with doses and frequency of intake.
3. Enough supply of medicines including insulin (if applicable)
4. Simple sugars like regular sodas and candies if you are at risk for low blood sugar.
5. Enough supply of food, water and items like alcohol and soap.

TALK for SAFETY

Talk to your doctor/healthcare worker about the following:

1. How often to check your blood sugar
2. What medications to take for colds, flu and infections.
3. What medications to make with your anti-diabetes drugs when you are sick.
4. When to call your doctor's clinic or hospital.

WORK for SAFETY

Work on maintaining your preventive measures and avoid exposure

1. Clean hands often with soap and water or alcohol/ sanitizers.
2. Avoid touching your face, nose and eyes; use tissue if needed.
3. Avoid touching surfaces like doorknobs, handrails , elevator buttons etc.
4. Avoid crowds and non-important travels; stay at home
5. Clean your house and disinfect surfaces like tables, switches, cellphones etc.

REMEMBER!

COVID-19 infection can cause serious complications to persons with diabetes.

BUT

With the right knowledge & attitude,
YOU CAN AVOID COVID-19
& prevent its spread to your family and the community.

This is for your SAFETY
Think it. Talk it. Work it

A Reminder from:

Philippine Society of Endocrinology, Diabetes & Metabolism (PSEDM)

PSEDM Diabetes Research and Advocacy Council

Philippine Society of Endocrinology Diabetes and Metabolism

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KAILAN DAPAT MAGPAKONSULTA SA DOKTOR O MAGPUNTA SA OSPITAL?

Hindi makakain o makainom

Walang tigil na pagsusuka o pagtatae

Mataas na blood sugar (> 450 mg/dL) sa kabila ng pagbabago ng dosis ng insulin

Sobrang baba na blood sugar

Pagkakaroon ng madaming ketones sa ihi

Pagbabago ng ulirat, labis na pagtulog, o pagkalito

PSEDM is on FB, IG and Twitter

Secondary care services for DM

- Keep outpatient consults to a safe minimum. Use virtual clinics and remote consultations (mobile phone texting, FB Messenger and Viber)
  - Pregnancy
  - Foot clinics
  - Nutrition advise
- Open help lines (telephone, e-mail) to assist patients and prevent unnecessary admissions and trips to the hospital; ***empower*** them with information to decide about their care
- Allow access to safe sites for laboratory testing (guidelines for home service and satellite sites)

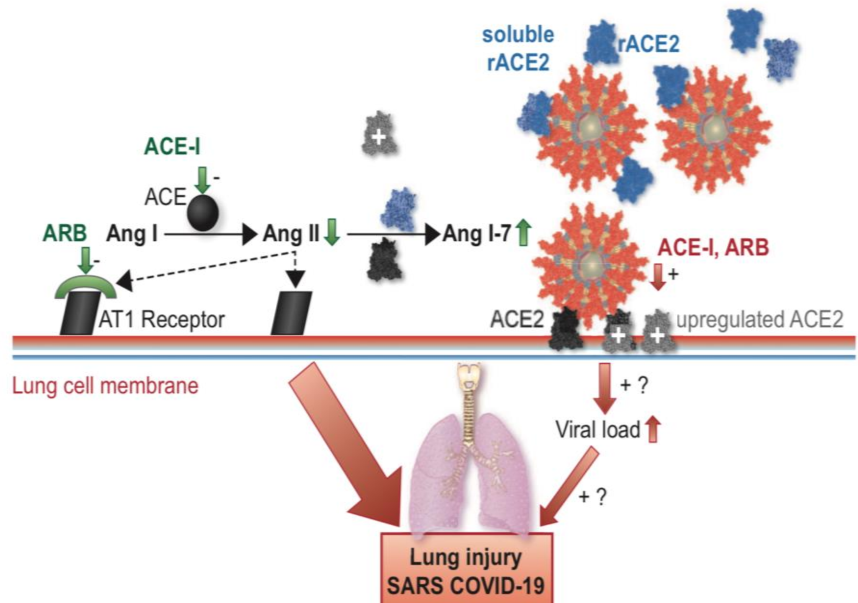
Secondary care services for DM

- Guide patient access to medicines: insulin and supplies, oral agents, glucose meter and supplies, meds for BP, lipids etc. ; senior and PWD discounts, government subsidies for healthcare costs in absence of incomes due to Community Quarantine (CQ)
  - Expanded Senior Citizens Act of 2010: in case of CQ, 3 months supply to be allowed
  - Electronic prescriptions to be honored by pharmacies
  - Advise on equivalent brands as some ran out of stock or not readily available
  - Unproven drugs for COVID not to be purchased without prescriptions, as they may ran out for those who actually use them for the right indications

Secondary care services for DM

- Psychological support: patients reaching out in isolation
- Community health services (GP, IM, Fam Med, and other health clinics)
  - Partnership and cooperation
- Unique issues and concerns during the COVID crisis
  - **Position statements from our specialty organizations**

RAAS Inhibition with ARBs and ACE-i



- Covid-19 virus binds to a specific enzyme ACE2 to infect cells ; ACE2 levels are increased following treatment with ARBs and ACE-inhibitors
- Animal studies suggest that these medications may be rather protective against serious lung infections, but no data on humans

Position Statement of the ESC Council on Hypertension on ACE-Inhibitors and Angiotensin Receptor Blockers

- *No evidence to suggest discontinuation ARBs and ACE-i*
- *BP control is essential in DM; ARBs and ACE-I provide added protection for kidney and heart-related complications*

ASA and NSAIDs

Animal studies: increased levels of ACE2
Preclinical data only and do not provide reliable guidance for clinical management

GUIDANCE FROM THE CCS COVID-19 RAPID RESPONSE TEAM
March 20, 2020

3. **NEW March 20th** Patients taking low-dose acetylsalicylic acid (ASA, Aspirin™) for heart disease should continue taking it unless otherwise advised by their physician. This applies to children, adolescents and adults.
4. **NEW March 20th** Confirmed or suspected COVID-19 infection is **not** an indication to stop low-dose ASA.
5. **NEW March 20th** There is no clinical evidence regarding non-steroidal anti-inflammatory drugs (NSAIDs) use in patients with or at risk of COVID-19 infection; however, patients with heart failure or hypertension should preferentially choose acetaminophen over NSAIDs for fever or pain to avoid decompensation of these cardiovascular conditions.

Stay on ASA

Acetaminophen preferred over NSAIDs to prevent CV decompensation

How does someone with diabetes prepare for the COVID-19 crisis?

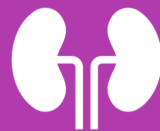
- Information on general practice for prevention of contracting COVID-19
  - Community quarantine (proper hygiene, cough etiquette, use of masks, physical distancing, going out only for essential needs)
  - Consideration of everyone as a likely COVID carrier: after the traveler, now that the spread is in the community, anyone who still goes out for essential tasks and needs, to get food and medicine supplies
  - Separate rooms, 6 feet distance (meals): easier said than done in many communities and homes
  - Clothing, bags, backpacks, delivery packages, grocery packages
- Instructions on sick days, what to prepare and how to handle (medications especially insulin and others, supplies); hypoglycemia management
- Assistance so they do not need to be admitted to the hospital!

How to prepare once a diabetic contracts COVID-19?

Everyone should have a plan.

Gather contact info of your doctor or clinic, how to reach, before you go to the ER on your own. Funds, health insurance and Phil Health coverage should be in place

Have a complete list of your medications, including doses. Have a good supply of medications and glucose testing supplies. Continue your medications



For type 1 DM patients: proper hydration; to add ketone strips, and provisions for hypoglycemia. Follow sick day guidelines

Who needs to be admitted?

Clinical guides for people with DM during the COVID-19 pandemic

Summary of recommendations applicable to Philippine setting (urban and rural; private and government hospitals)

Publications approval reference: 001559

Specialty guides for patient management during the coronavirus pandemic

Clinical guide for the management of people with diabetes during the coronavirus pandemic

19 March 2020 Version 2

Obligatory admissions

- Admit when necessary:
  - Hyperglycemic emergencies (DKA and HHNS)
  - Risk of amputation in setting of active diabetic foot disease; other infections
  - Other life-threatening conditions: heart attacks or strokes, etc. needing emergent care
  - Trauma, fractures
- Designate a lead consultant(s) with duty for a day or several days with role of coordinating comprehensive service from the ER to liaison with other specialties
  - Expect a higher load of patients, as 18% of hospital beds are occupied by persons with diabetes, and with likely more severe manifestations
  - Protect HCW with standardized process in patient care areas and flow; have correct PPE (double layer gloves, isolation gown, masks, etc.)
  - Avoid unproductive attendances to the hospital
- Facilitate early discharge, continue with remote support to prevent re-admission

Management of critically ill patients with diabetes (with or without COVID-19)

In-patient DM care, ICU, with Covid

- ICU glycemic goals: less stringent, 150-180 mg/dl for most patients, for those with co-morbidities and hypoglycemia risk
- Strategies:
  - **Insulin infusion protocols in place, structured basic orders**
  - Monitoring strategies: use of CGM such as Freestyle Libre to lessen the exposure of HCW
  - Remote consults for patient education and preparation for discharge and home care

THE MEDICAL CITY
SECTION OF ENDOCRINOLOGY AND METABOLISM
TMC MODIFIED INSULIN DRIP PROTOCOL

Sample Insulin Drip Protocol

Protocol for intravenous insulin infusion

General guidelines

- Goal blood glucose level = ______________
- Standard drip: 100 units/100 mL 0.9% NaCl via an infusion device (1 unit/1 mL)

Initiating the infusion

- **Algorithm 1:** Start here for most patients (see table below).
- **Algorithm 2:** For patients not controlled with algorithm 1, or start here if status is post coronary artery bypass graft surgery
  or solid organ transplantation or islet cell transplant, receiving glucocorticoids, or for patients with diabetes receiving more than 80 units/day of insulin as an outpatient.
- **Algorithm 3:** For patients not controlled on algorithm 2, NO PATIENTS START HERE without authorization from the endocrine service.
- **Algorithm 4:** For patients not controlled on algorithm 3, NO PATIENTS START HERE.

Patients not controlled with the above algorithms need an endocrine consult.

ALGORITHM 1		ALGORITHM 2		ALGORITHM 3		ALGORITHM 4	
BG	Units/hr	BG	Units/hr	BG	Units/hr	BG	Units/Hr
IF less than 110 = DISCONTINUE INSULIN DRIP < 70 = HYPOGLYCEMIA (see below for treatment)							
110-119	0.5	110-119	1	110-119	2	110-119	3
120-149	1	120-149	1.5	120-149	2	120-149	3
150-179	1.5	150-179	2	150-179	4	150-179	7
180-209	2	180-209	3	180-209	5	180-209	9
210-239	2	210-239	4	210-239	6	210-239	12
240-269	3	240-269	5	240-269	8	240-269	16
270-299	3	270-299	6	270-299	10	270-299	20
300-329	4	300-329	7	300-329	12	300-329	24
330-359	4	330-359	8	330-359	14	330-359	28
>360	6	>360	12	>360	16	>360	28

In-patient DM care, ICU, with COVID-19

- The glycemic goals remain in maintaining specific goals for specific patients: moderate 150-180 mg/dl for most patients
- Strategies:
  - Insulin infusion protocols in place, structured basic orders
  - Monitoring strategies: use of CGM such as Freestyle Libre to lessen the exposure of HCW, currently being looked at
  - Remote consults for patient and family education and preparation for discharge and home care, and instructions on continued quarantine

Share hope for the future!

Share hope for the future!

- Rapid diagnostic test kits – with results in 15 minutes
- Vaccines – J and J, September 2020
- Treatments

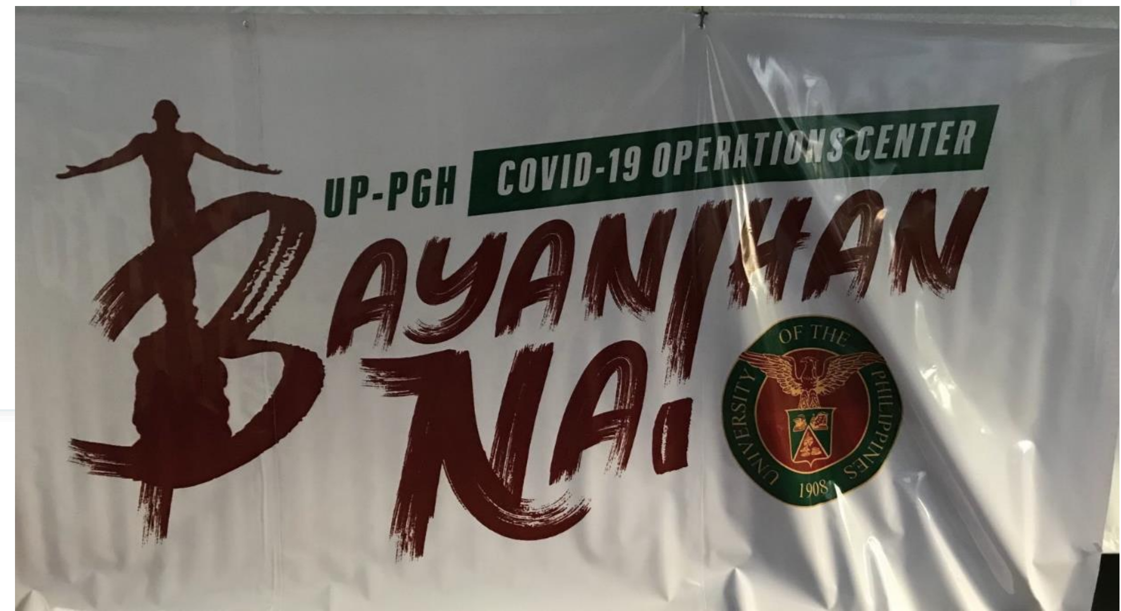
Novel Rx and indications (*New, re-purposed, off-label)*

WHO Landscape Analysis of COVID experimental drugs (March 21, 2020)
ClinicalTrials.gov

- Chloroquine and Hydroxychloroquine (emergency US FDA approval)
- Azithromycin
- Favipiravir (Fujifilm Toyama)
- Remdesivir (ClinicalTrials.gov)
- Darunavir (ClinicalTrials. gov)
- Lopinavir-Ritonavir (NEJM)
- Tociluzimab
- Convalescent Serum (antibodies); IV immunoglobulin
- Colchicine
- AND MANY MORE

Do not stock or hoard, none proven to be clearly effective yet.
Need proper advice from consensus among experts: used in serious cases.

We are all in this together!



- Be updated on government initiatives, health advisories
- Innovate and modify practice patterns to adapt to the changing scenario and needs
- Be a source of much-needed psychological support and HOPE!

Let us take a moment to honor our fallen heroes and say Thank You to our Health Care Workers.

Let us all do our bit, in small ways; with God's graces, we can overcome!