Key points – details below (all info is hyperlinked if you'd like more details)

1. Avoid using Ibuprofen for symptomatic treatment in patients with suspected or confirmed COVID-19
2. Continue using ACEI and ARBs in patients already on them
3. Avoid using steroids in patients with COVID-19 (except patients who have hyperinflammation, but those would be treated in the hospital and not by us)
4. Re-infection is unlikely

5. Data from Italy give a better idea about mortality and age association (below)

6. I am attaching the Home Isolation instructions for patients, as well as a guide for local production of sanitizers (considering the shortage on the market) + patients can be directed to this website: https://santemontreal.qc.ca/population/coronavirus-covid-19/
7. I am also attaching a review article on COVID-19 in children

8. OB and neonatal updates will be provided by Lida

9. I will upload all of these documents tomorrow to Trello

10. Tomorrow's points:

- I will send the most updated guidelines on testing

- More on risk factors for ARDS and mortality

- Asymptomatic carrier transmission

- Mental Health and Psychological aspects of COVID-19 outbreak.

1. Ibuprofen and COVID-19: The Saga Continues

There were calls in France and Italy to avoid using Ibuprofen in patients with COVID-19 and to stick to Acetaminophen. This is based on a hypothesis put forward in a Lancet correspondence that certain meds, including ACE inhibitors, ARBs, thiazolidinediones and Ibuprofen could aggravate COVID-19, based on a hypothesis that they could upregulate ACE, to which **SARS**-CoV-2 binds.
The use of ibuprofen has been discouraged previously in France in severe respiratory infections.
On Saturday France's health minister tweeted that people showing symptoms of covid-19 should use paracetamol (acetaminophen) rather than ibuprofen and today UK's Health Select Committee (legislative health committee) called for the same.
Today a BMJ news piece supported these calls based on interviews with experts.
Good new on the horizon: the identification of ACE2 as a SARS-CoV-2 receptor is being studied as potential therapeutic target

2. On ACEI and ARBs

Food for thought: SARS-CoV-2 was found to bind to ACE2. Patient with hypertension had worse outcomes and higher mortality. In Italy, there was a theory that the high rate of ACEI and NSAIDs use could be related to the higher mortality rate seen there (7.2% compared to 3.x in China).

This is an interesting discussion of ACEI and COVID: https://www.medscape.com/viewarticle/926665#vp_2
NONETHELESS, All societies have recommended continuing ACEI and ARB

Society	Summary of recommendations	Last Statement Update
European Society of Hypertension	Recommend continuing ACEis/ARBs due to lack of evidence to support differential use in COVID-19 patients. In those with severe symptoms or sepsis, antihypertensive decisions should be made on a case-by-case basis taking into account current guidelines	March 12, 2020
European Society of Cardiology Council on Hypertension	Strongly encourage continuing ACEis/ARBs due to lack of evidence to support discontinuing	March 13, 2020
Hypertension Canada	Recommend continuing ACEis/ARBs due to lack of evidence that patients with hypertension or those treated with ACEis/ARBs are at higher risk of adverse outcomes from COVID-19 infection	March 13, 2020
Canadian Cardiovascular Society	Strongly encourage continuing ACEis/ARBs and Angiotensin Receptor Neprilysin Inhibitors due to a lack of clinical evidence to support withdrawal of these agents	March 15, 2020
The Renal Association, United Kingdom	Strongly encourage continuing ACEis/ARBs due to unconvincing evidence that these medications increase risk	March 15, 2020
International Society of Hypertension	Strongly recommend that the routine use of ACEis/ARBs to treat hypertension should not be influenced by concerns about COVID-19 in the absence of compelling data that ACEis/ARBs either improve or worsen susceptibility to COVID-19 infection nor do they affect the outcomes of those infected	March 16, 2020
American College of Physicians	Encourage continuing ACEis/ARBs because there is no evidence linking them to COVID-19 disease severity, and discontinuation of antihypertensive therapy without medical indication could in some circumstances result in harm	March 16, 2020
Spanish Society of Hypertension	Recommend that ACEis/ARBs should not be empirically stopped in patients who are already taking them; in seriously ill patients, changes should be made on a case-by-case basis	March 16, 2020
American Heart Association, Heart Failure Society of America, American College of Cardiology	Recommend continuing ACEis/ARBs for all patients already prescribed them	March 17, 2020
European Renal Association - European Dialysis and Transplant Association	Recommend continuing ACEis/ARBs in COVID-19 infection patients due to a lack of evidence to support differential use and the discontinuation of ACEis/ARBs in COVID-19 patients	March 17, 2020
American Society of Pediatric Nephrology	Strongly recommend continuing ACEis/ARBs until new evidence to the contrary becomes available	March 17, 2020

3. Steroids and COVID-19

Steroids are also discouraged in COVID-19. We know from SARS and COVID that steroids lead to delaued viral clearance and that they increase mortality in Influenza.

Early experiences with COVID-19 suggest adverse outcomes with the use of steroids.

However, with states of hyperinflammation (cytokine storm syndromes/ARDS) immunosuppression might be beneficial – Therapeutic options include steroids, intravenous immunoglobulin, selective cytokine blockade (eg, anakinra or tocilizumab) and JAK inhibition. Read more here: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30628-0/fulltext

4. Re-infection:

There were media reports about patients in Italy and China who were tested positive after being cleared. So far there is no evidence of re-infection and these cases could represent likely a non-clearance. A Chinese study (unpublished, but I can share the manuscript as I received it from colleagues in Asia) demonstrated that reinfection could not occur in SARS-CoV-2 infected rhesus macaques.

5. Mortality - Age Association

Fascia d'età (anni)	Deceduti [n (%)]	Letalità (%)
0-9	0 (0%)	0%
10-19	0 (0%)	0%
20-29	0 (0%)	0%
30-39	4 (0.25%)	0.3%
40-49	10 (0.62%)	0.4%
50-59	43 (2.65%)	1%
60-69	139 (8.55%)	3.5%
70-79	578 (35.57%)	12.5%
80-89	694 (42.71%)	19.7%
>90	156 (9.6%)	22.7%
Non noto	1 (0.06%)	0.6%
Totale	1625 (100%)	7.2%

(data from ministry of health in Italy)

6. Patient-recommendations

https://santemontreal.qc.ca/population/coronavirus-covid-19/
Home Isolation Guide (Health Canada and Public Health Montreal)

Antiseptic local production (WHO)

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