The Lebanese Society of Infectious Diseases and Clinical Microbiology (LSIDCM) Guidelines for the Management of COVID19

These investigation and management pathways and algorithms were prepared by the COVID-19 Task Force of LSIDCM:

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- These recommendations are released on 23/03/2020 and are based on the available literature until 23/03/2020.
- These recommendations are subject to change and amendments according to emerging scientific data and according to the epidemiologic situation in the country.
- They include pathways and algorithms for the following:
    1. Approach to investigating COVID-19 in patients presenting to Emergency Room Department
    2. Approach to Placement and Site of Care of Cases with Positive CoV PCR Testing
    3. Approach to Managing Close Contacts of COVID-19 Confirmed Cases
    4. Approach to Managing Healthcare Worker Exposure to COVID-19
    5. Pharmacotherapy of Confirmed COVID-19

Algorithms for COVID-19 investigation in patients presenting to ER Department

- *These algorithms are related to COVID-19 investigation in patients presenting to ER departments.*
- *They mostly deal with hospital admission, self-isolation and testing of suspect cases with COVID-19.*
- *They were put in view of the global shortage of diagnostic techniques and the local shortage of hospital beds.*

Algorithms for patients coming to ER for COVID-19 investigation

Definitions

1. **Suspect Case:**
    a. A patient who satisfies epidemiological and clinical criteria listed below:
        i. Epidemiological criteria
            1. International travel in the 14 days before the onset of illness.
               or
            2. Close contact in the 14 days before illness onset with a confirmed case of COVID-19.
        ii. Clinical criteria
            1. Fever
               or
            2. Acute respiratory infection (e.g. shortness of breath, cough or sore throat) with or without fever.
               or
            3. Acute unexplained change in general condition of elderly patients ≥75 years of age.

    OR

    b. A patient who has bilateral severe community-acquired pneumonia (critically ill) and no other cause is identified, with or without recent international travel, requiring care in ICU, with respiratory or multi-organ failure. Clinical judgment should be exercised considering the likelihood of COVID-19.

    OR

    c. Any healthcare worker with direct patient contact has a fever (≥37.5 degrees Celsius) **AND** an acute respiratory infection (e.g. shortness of breath, cough, sore throat).

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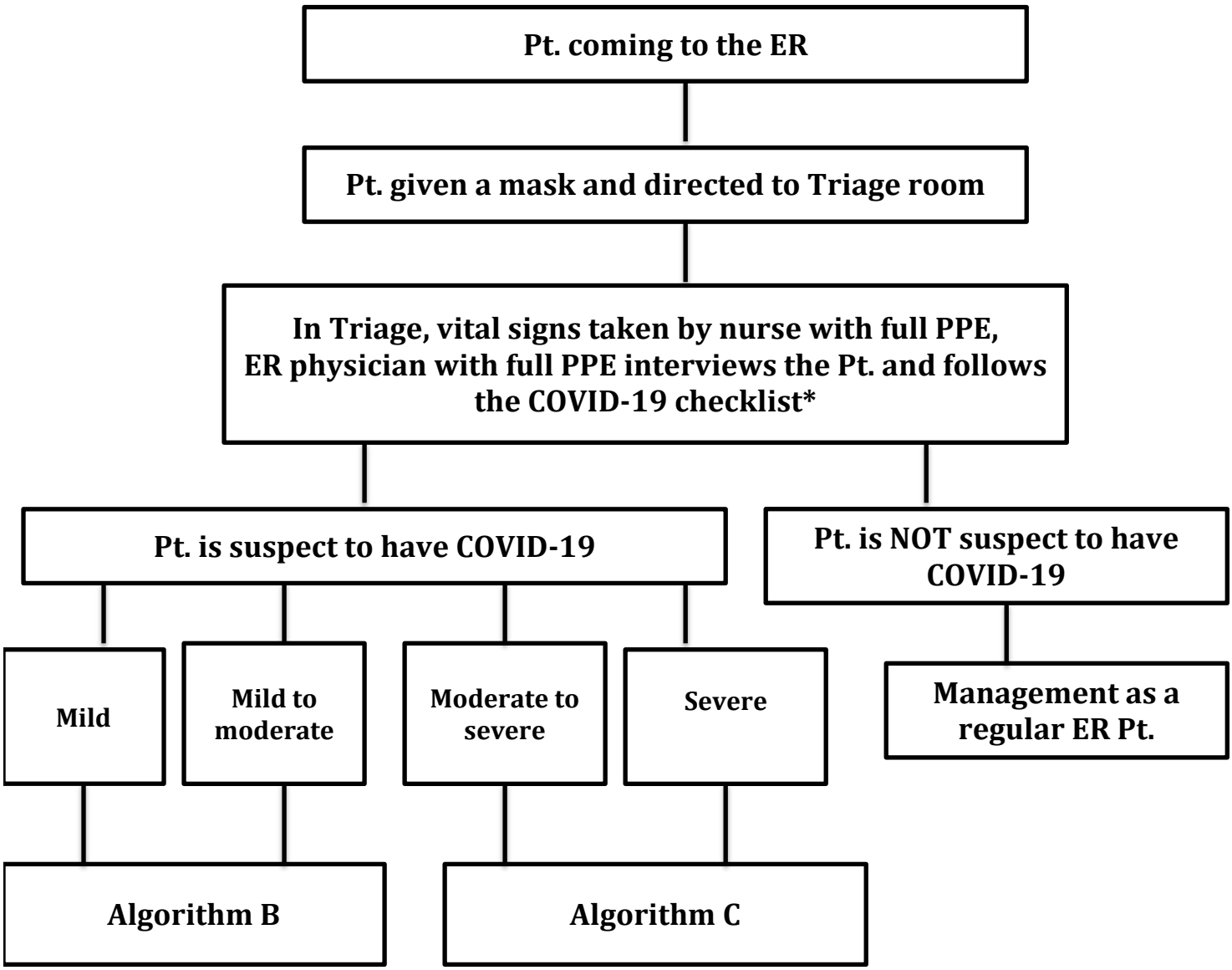
Definitions (continued)

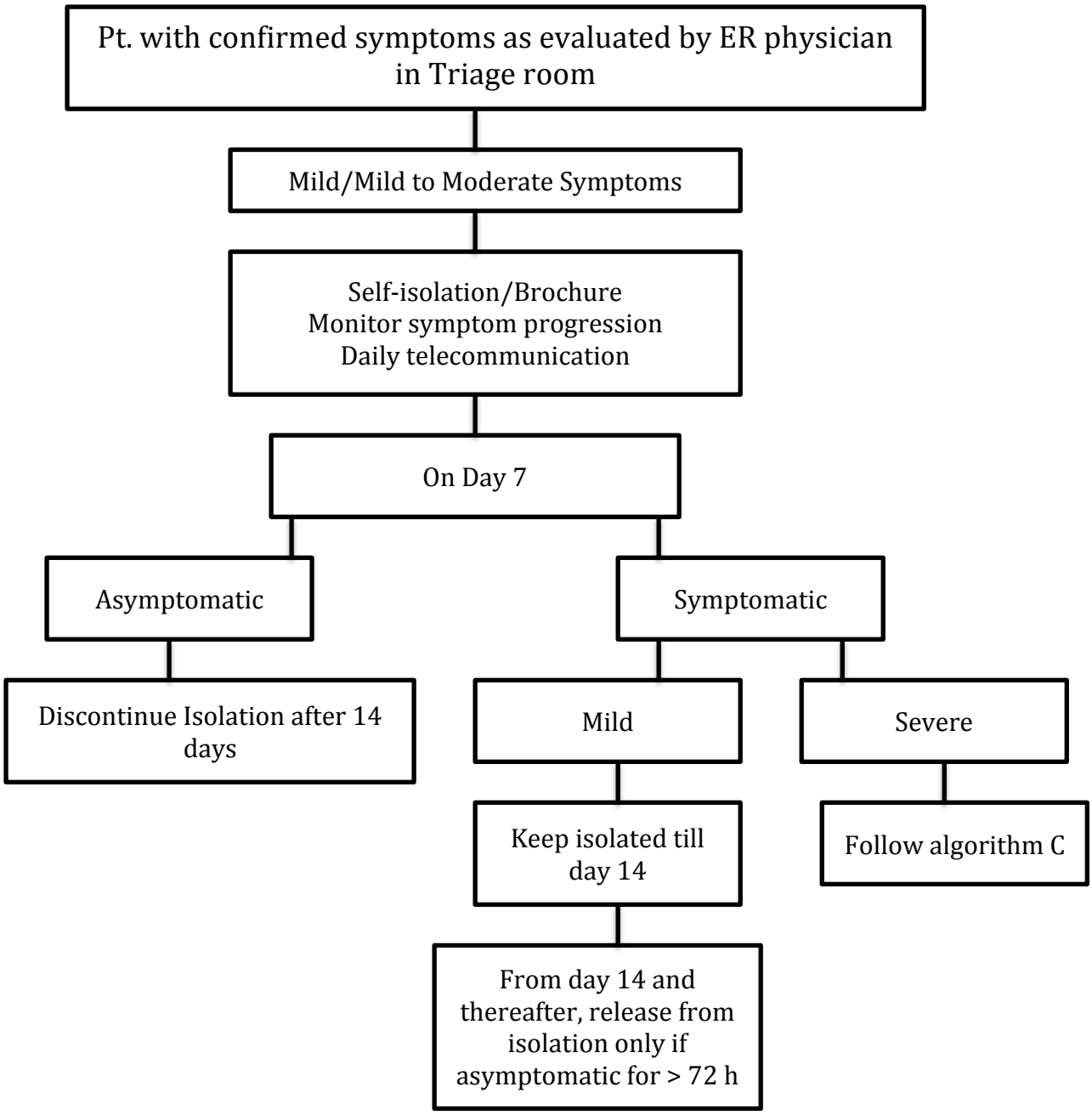
1. **Clinically stable patient:** Any patient with no comorbidities **AND,**
    a. Age < 50 years **AND,**
    b. Clinically appearing well,
    c. With fever, mild cough, no dyspnea (oxygen saturation > 94% on room air),
    d. Normal chest examination and/or normal chest radiography
2. **Mild to moderately ill patient:**
    a. Patient with mild symptoms like above **AND** comorbidities
        i. Symptoms: Fever, mild cough, no dyspnea, oxygen saturation > 94% on room air, clinically appearing well,
        ii. Normal chest examination and/or normal chest radiography
        iii. Comorbidities: cardiovascular, pulmonary, diabetes, renal insufficiency, malignancy with immunosuppressive medication, HCT S/P transplant, rheumatic disease with immunosuppressive medication.
    b. No comorbidities **WITH**
        i. Moderate to severe cough,
        ii. Fever,
        iii. **OR** CURB > 2
        iv. **AND** Normal chest examination and/or normal chest radiography
3. **Moderate to severely ill patient**
    a. Chest examination or chest radiography suggestive of pneumonia,
    b. Oxygen saturation > 94% on room air,
    c. No respiratory distress or hypotension.
4. **Clinically Unstable patient:** Any patient with oxygen saturation < 94% on room air **OR** with evidence of severe pneumonia **OR** with **ANY** of the below:
    a. Confusion,
    b. Low blood pressure,
    c. Decreased urine output,
    d. Any evidence of end-organ damage,
    e. Severe dyspnea with respiratory distress.

Algorithm A



**Checklist is based on the definition of suspect case*

Algorithm B



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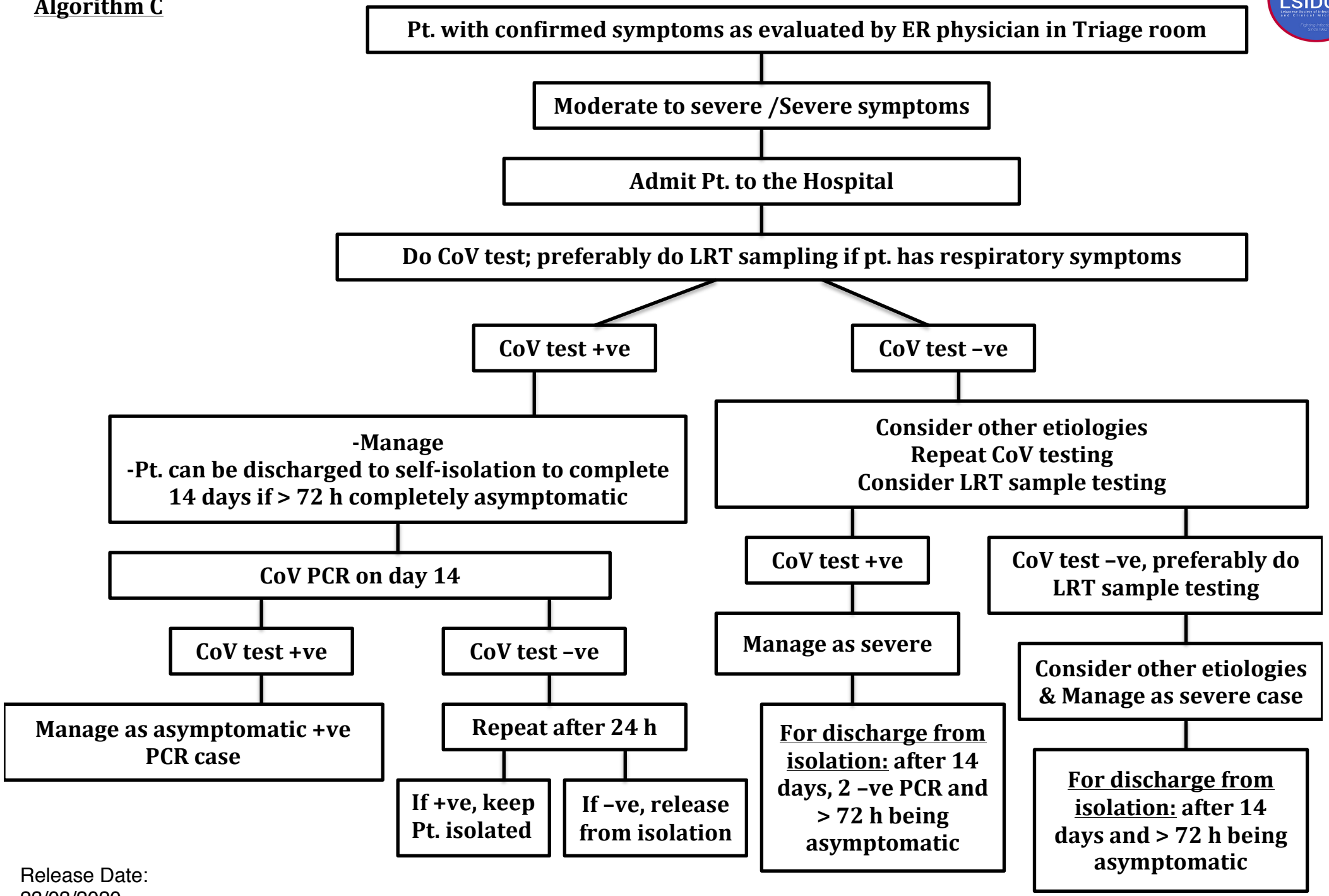
Algorithm C



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Algorithms for patients with nCoV-19 positive PCR site of care and further follow-up

- *These algorithms are related to site of care and follow-up on patients with positive nCoV-19 PCR.*
- *They mostly deal with hospital admission, outpatient self-isolation and testing.*
- *They were put in view of the global shortage of diagnostic techniques and the local shortage of hospital beds.*

Patients with positive PCR Placement and Testing

- **SOME** of the patients with positive PCR can be sent to ***"Outpatient Isolation",*** which is defined as isolating the patient in his own home or in a non-acute care facility like a designated hotel or an officially-assigned facility for non-acute care.
- Below are the suggested conditions where patients with positive PCR can be referred to ***Outpatient Isolation***, in order to spare the hospital beds to those who are in need.
- In order to be able to realize this plan, a telecommunication/help center should be installed with physicians providing advice and daily checks when needed by telecommunication.

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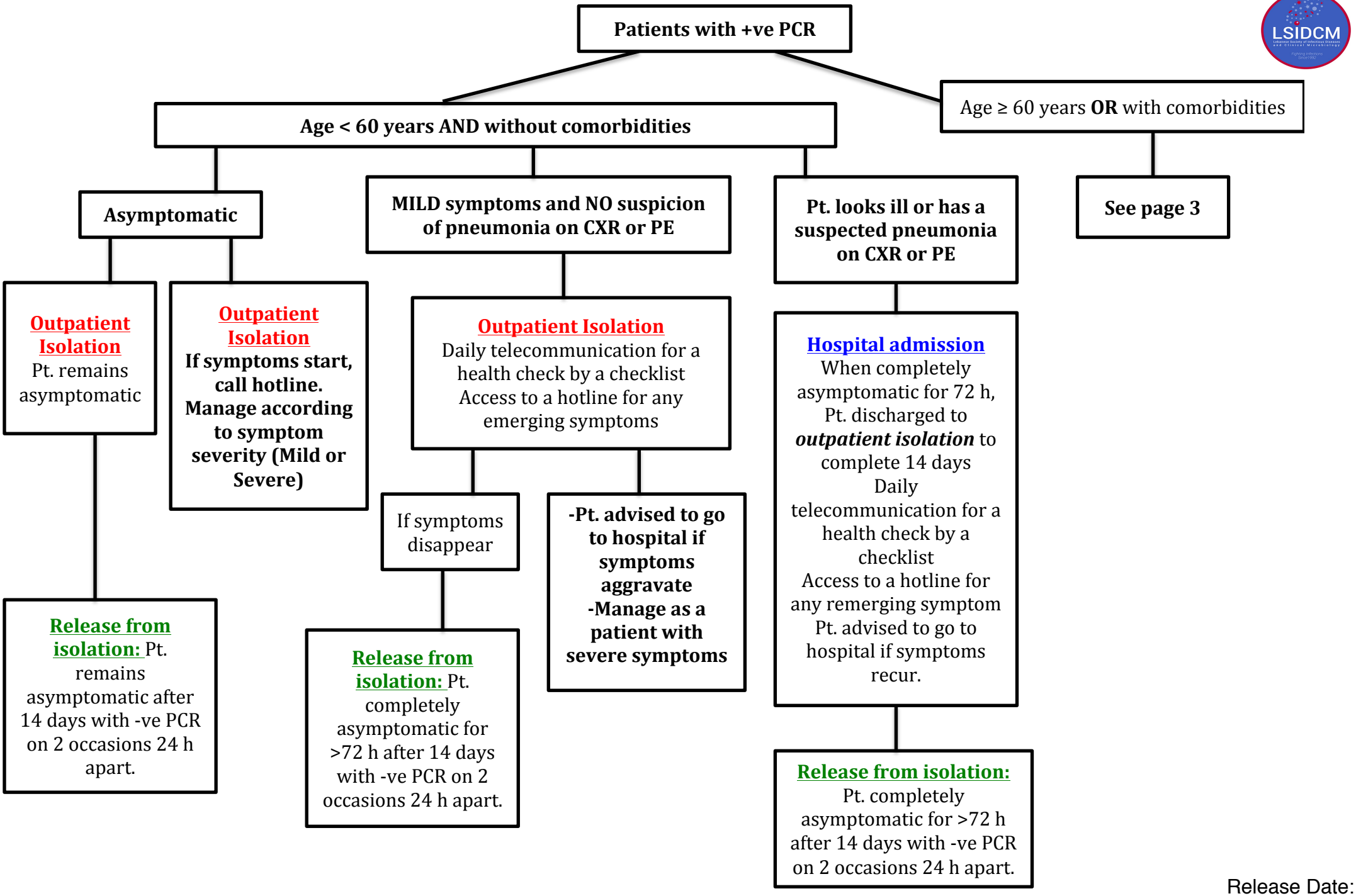

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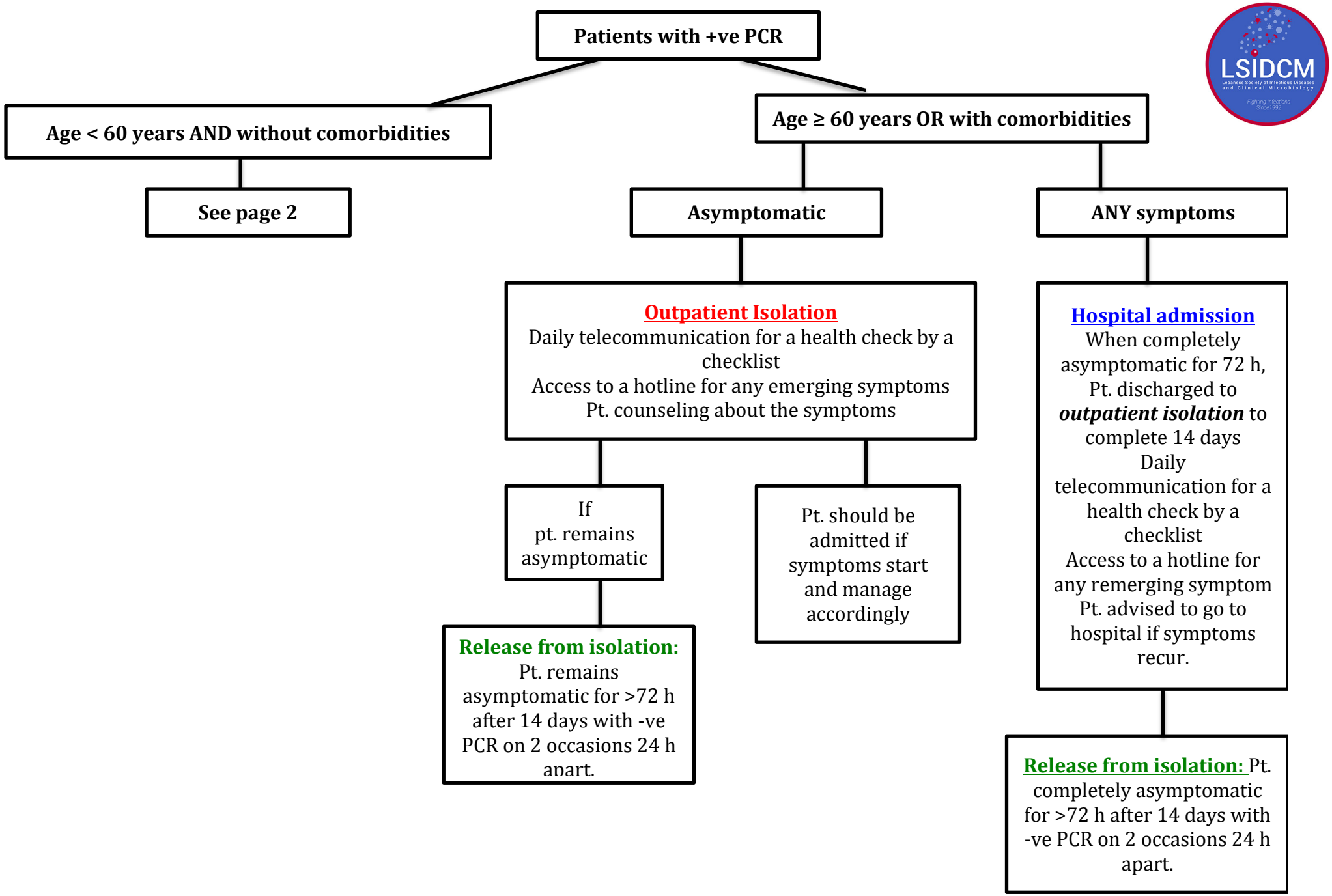

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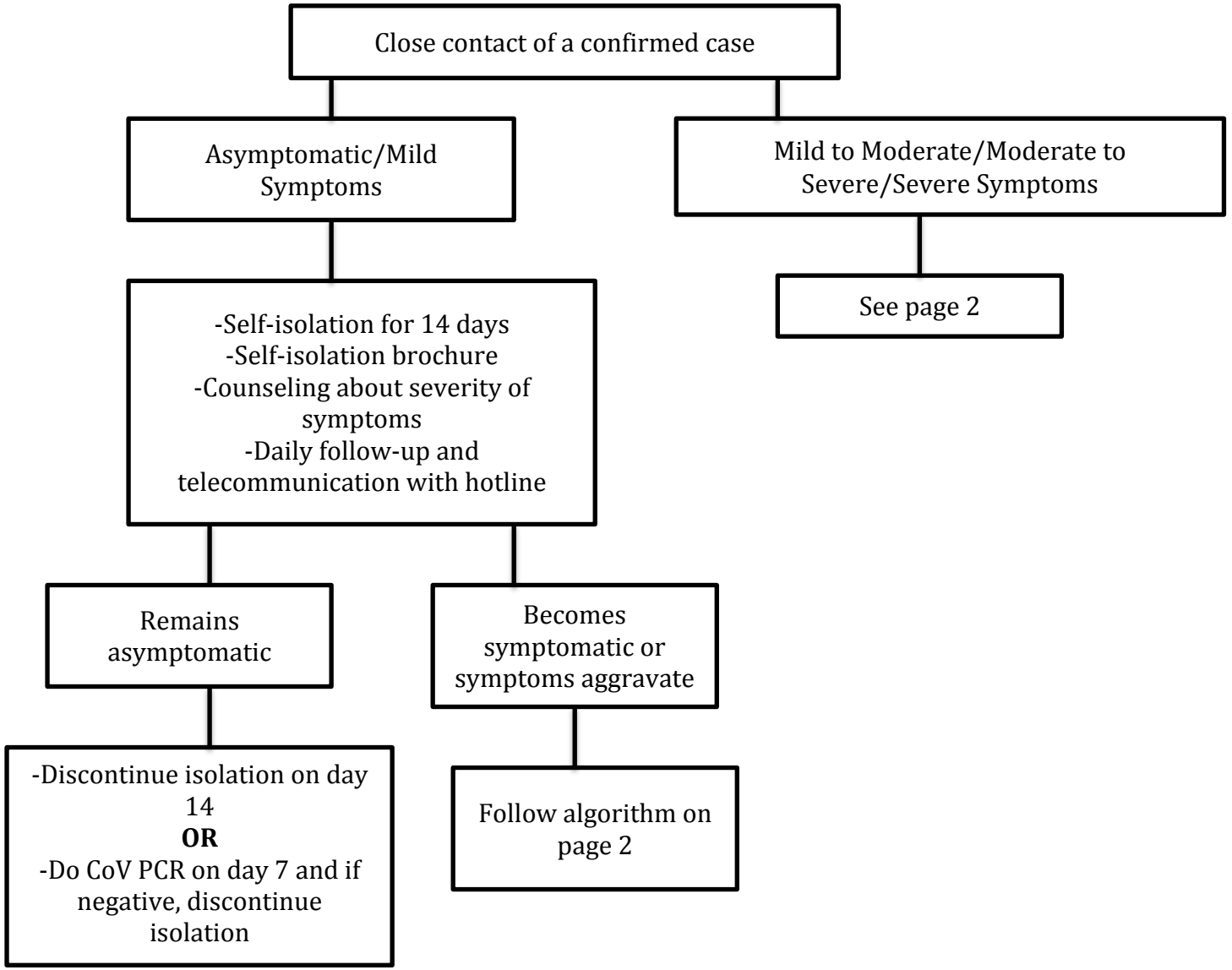
Algorithms for COVID-19 investigation in close contacts of an already confirmed case

- *These algorithms are related to COVID-19 investigation in close contacts of an already confirmed case.*
- *They mostly deal with hospital admission, self-isolation and testing.*
- *They were put in view of the global shortage of diagnostic techniques and the local shortage of hospital beds.*

Close contact of a confirmed case algorithm (page 1/2)



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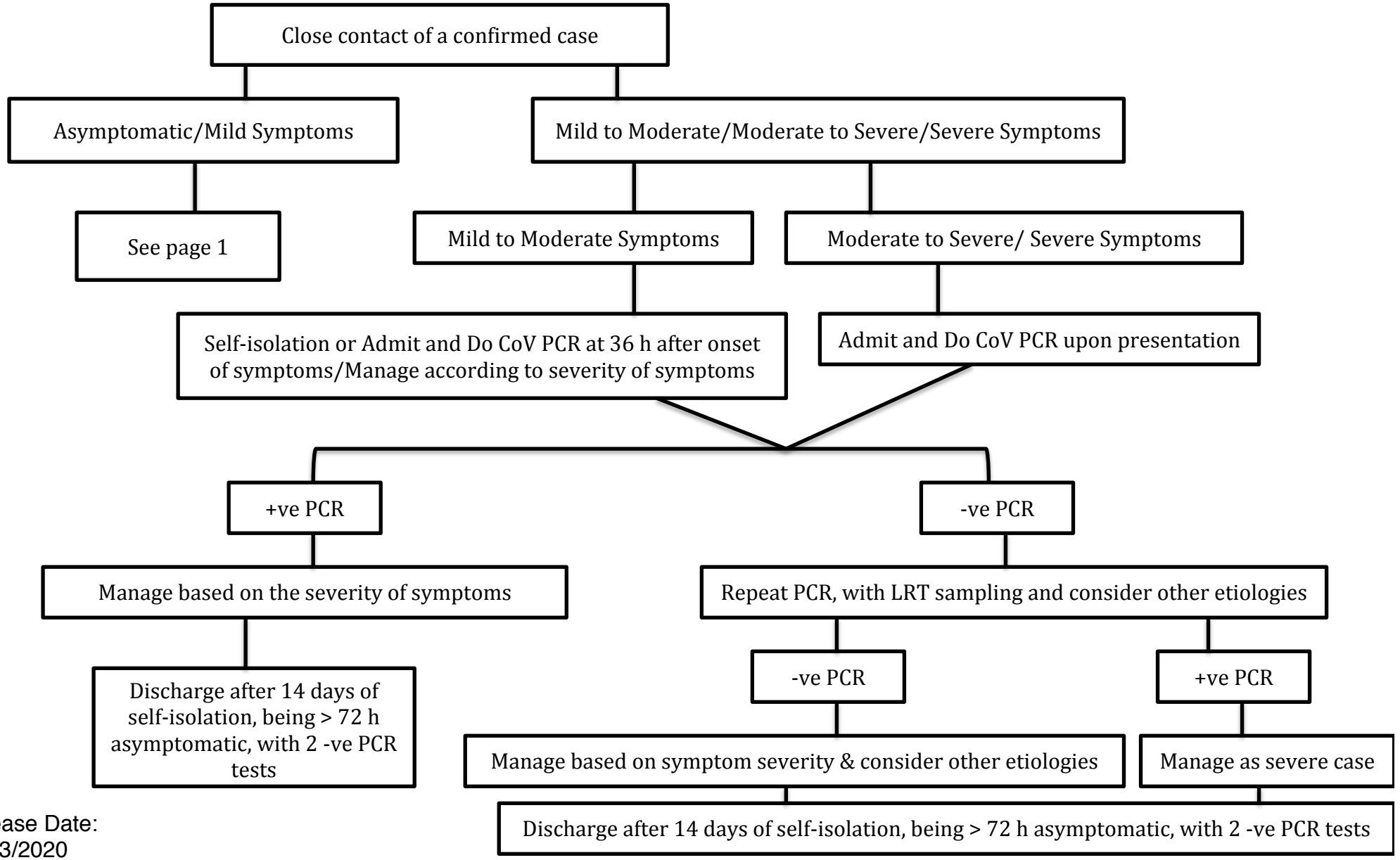
Close contact of a confirmed case algorithm (page 2/2)



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Algorithms for investigation and management of Healthcare Workers exposed to COVID-19 confirmed cases

- *These algorithms are related to COVID-19 investigation and management of healthcare workers who were exposed to a confirmed case.*
- *They mostly deal with hospital admission, self-isolation and testing.*
- *They were put in view of the global shortage of diagnostic techniques and the local shortage of hospital beds.*

Management of HCW who were exposed to patient with confirmed COVID-19 (Page 1/3)

Definition of Risky Exposure:

- HCW who performed or were present in the room for procedures that generate aerosols or during which respiratory secretions are likely to be poorly controlled (e.g., cardiopulmonary resuscitation, intubation, NIV, extubation, bronchoscopy, nebulizer therapy, sputum induction) on patients with COVID-19
- When the healthcare providers' eyes, nose, or mouth were not protected.
- HCW who had prolonged close contact with patients with COVID-19
- Where HCW mucous membranes or hands were exposed to potentially infectious materials for COVID-19

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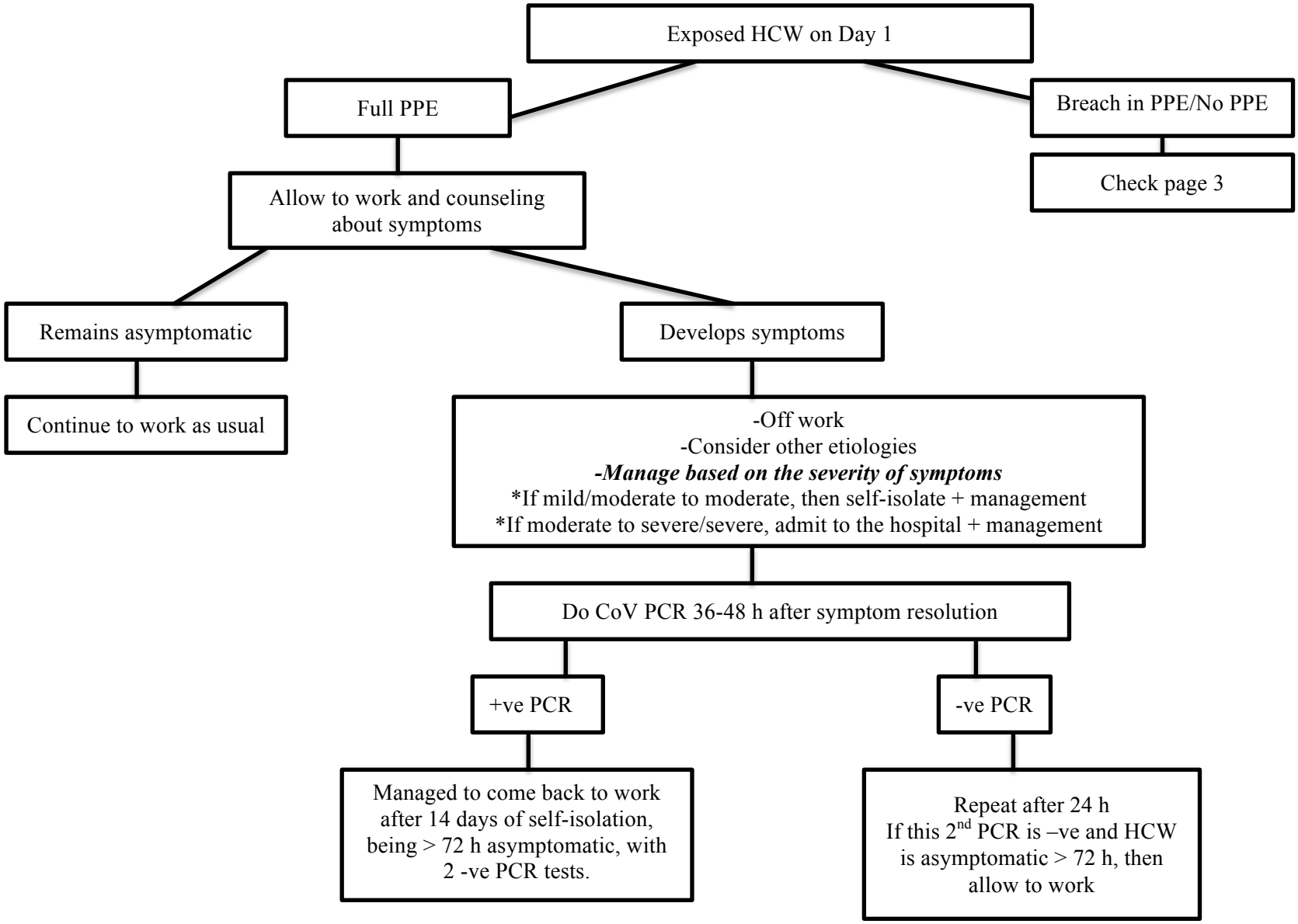
Management of HCW Exposed To Covid-19 Confirmed Case: Risky Exposure (Page 2/3)



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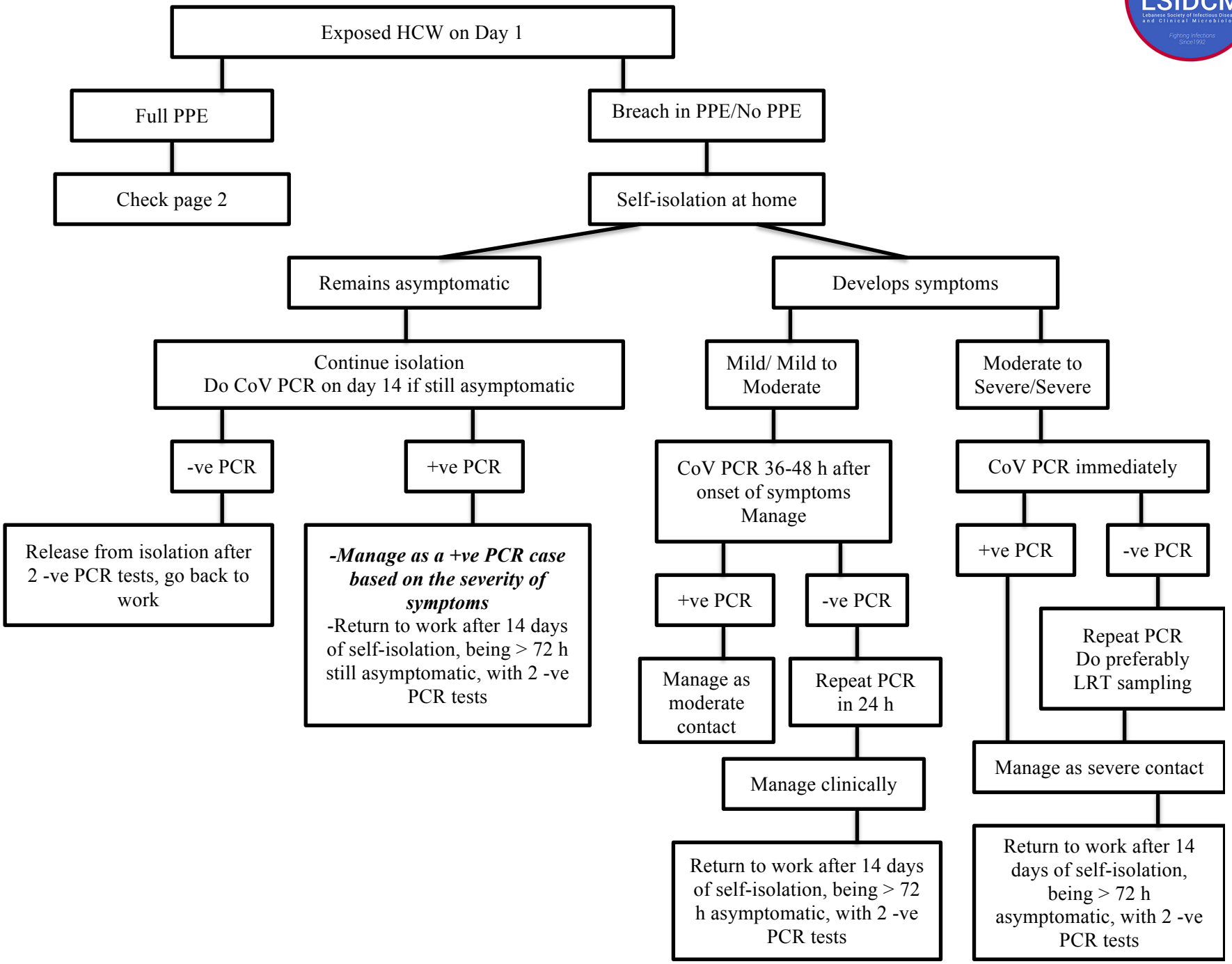
Management of HCW Exposed To Covid-19 Confirmed Case: Risky Exposure (Page 3/3)



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Treatment of COVID-19 patients confirmed by PCR testing

Scope:

- This protocol is used to guide the pharmacotherapy for COVID-19 infected symptomatic patients.
- These recommendations are based on the available literature until 23/03/2020.
- All protocols including antivirals and others are experimental and are under investigation.
- Some antivirals are not available in Lebanon at the moment.

Clinical staging of presenting illness:

1. Mild Disease:
    a. Mild upper respiratory symptoms
    b. Age <70 years
    c. NO comorbidities such as: lung disease, cardiovascular disease, DM, CKD, cancer, immunosuppression, hematologic disease, etc.
2. Mild to moderate disease:
    a. Mild upper respiratory tract symptoms with
        i. Age >70 years
        OR
        ii. Any comorbidity
3. Moderate to Severe infection:
    a. Evidence for pneumonia with
        i. RR < 24 /min
        ii. AND oxygen saturation > 93% on room air.
4. Severe pneumonia requiring ICU admission as per: Fever OR SARI with at least one from below:
    a. RR ≥ 30 /min
    b. $PaO_2/FiO_2 \leq 250$mmHg
    c. Rapid progression of disease on chest radiography
    d. Leukopenia
    e. Hypothermia
    f. Platelet < 100000
    g. Hypotension requiring fluid resuscitation
    h. Non-invasive positive pressure ventilation
5. ARDS/Cytokine Release Syndrome: Patient with rapidly progressing pneumonia leading to ARDS

General Supportive Treatment:

- Acetaminophen (paracetamol) 1 g IV every 6-8 hours for pain/fever (Max dose of 4 g/day)
- Avoid NSAIDs
- Avoid systemic corticosteroid unless new studies recommend their use.
- Bronchospasm: Avoid nebulizer therapy-use metered dose inhaler bronchodilators
- Put intubated patients in prone position whenever possible.
- **Chloroquine/Hydroxychloroquine + Azithromycin needs close cardiac monitoring for arrhythmias of QT prolongation, and when the risk of cardiac complications is very low.**
- **Antibiotic therapy and other antiviral therapy (i.e oseltamivir) for pneumonia left at the discretion of the infectious diseases physician.**

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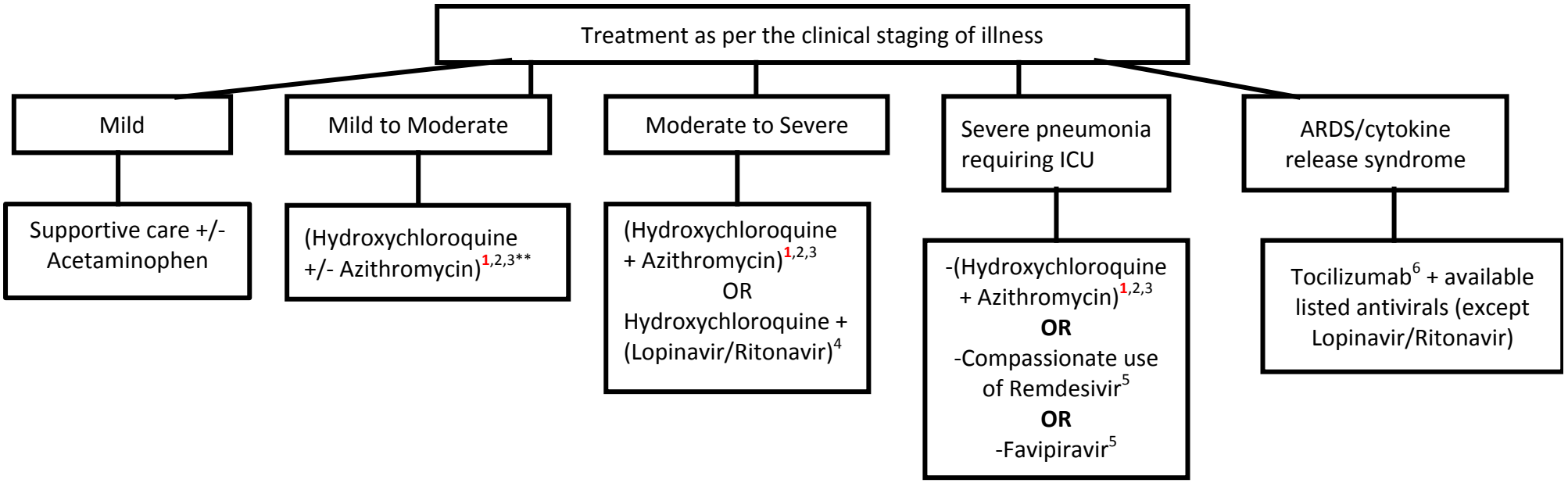
Pharmacotherapy for COVID-19 Infection



[1] **close follow-up of cardiac side effects with monitoring for arrhythmias of QT prolongation is recommended.**
[2] If hydroxychloroquine is not available use chloroquine.
[3] G6PD screening is recommended but the drug can be administered before the results are back.
[4] Lopinavir/Ritonavir has to be started early in the course of the disease. Monitor blood glucose (especially in diabetic patients) and electrolytes while on Lopinavir/Ritonavir
[5] Not available in Lebanon at the moment.
[6] Tocilizumab is not for patients with active pulmonary tuberculosis and with definite bacterial or fungal infections.

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**In mild to moderate cases, the combination is to be used only if cardiac monitoring is possible and when the risk of cardiac complications is low.

Dosing considerations:

1. **Azithromycin:** 500 mg PO x1 on day 1 then 250 mg PO daily for 4 days
2. **Chloroquine:** 100 mg 5 tablets (500 mg) PO with meals/PNG BID for 10 days
3. **Favipiravir:** 1.6 g PO BID on day 1 then 0.6 g BID on days 2 to 5
4. **Hydroxychloroquine:** Loading dose 400 mg PO BID on day 1, then 200 mg 1 tablet PO with meals/PNG TID for 10 days
5. **Lopinavir-Ritonavir:** 400mg/100mg PO BID (duration based on clinical response)
6. **Remdesivir:** 200 mg IV then 100 mg IV daily for 5-10 days
7. **Tocilizumab**: Initial dose 8 mg/kg Max 800 mg/dose. See table below for dosing. One extra administration at the same dose can be given after 12 hours if needed Dilute dose to 100 mL NS and infuse over 1 hour

Weight	8 mg/kg dose range	**Suggested Dose**	Vial size and number
40-43 kg	320-344 mg	**320 mg**	4 x 80 mg vials
44-54 kg	352-432 mg	**400 mg**	1 x 400 mg vial
55- 62 kg	440-496 mg	**480 mg**	1 x 400 mg vial and 1x 80 mg vial
63-75 kg	504-600 mg	**560 mg**	1 x 400 mg vial and 2x 80 mg vial
76-87 kg	608-696 mg	**640 mg**	1 x 400 mg vial and 3x 80 mg vial
88-92 kg	704-736 mg	**720 mg**	1 x 400 mg vial and 4x 80 mg vial
93-100 kg	744-800 mg	**800 mg**	2 x 400 mg vial

References:

- Cao B, Wang Y, Wen D, Liu W, Wang J, Fan G, Ruan L, Song B, Cai Y, Wei M, Li X. A trial of lopinavir–ritonavir in adults hospitalized with severe Covid-19. New England Journal of Medicine. 2020 Mar 18.
- Gao J, Tian Z, Yang X. Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies. Bioscience trends. 2020.
- 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.
- Information for Clinicians on Therapeutic Options for COVID-19 Patients. http://www.cdc.gov/coronavirus/2019-ncov/hcp/therapeutic-options.html. Accessed 22 March 2020.
- Massachusetts General Hospital COVID-19 Treatment Guidance. Version 1.0 3/17/2020 4:00PM
- NIH clinical trial of remdesivir to treat COVID-19 begins. National Institutes of Health, February 2020.
- Wang, M., Cao, R., Zhang, L. et al. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-covid-19) in vitro. Cell Res 30, 269–271 (2020). https://doi.org/10.1038/s41422-020-0282-0
- World Health Organization. Clinical Management of Severe Acute Respiratory Infection when Novel Coronavirus (2019-covid-19) Infection is Suspected. Interim guidance. 13 March 2020.
- Xu X, Han M., Li T., and colleagues. Effective Treatment of Severe COVID-19 Patients with Tocilizumab.