Swissethics Model
for the submission of "reuse with consent" projects in accordance with the HRA / ORH

Research plan/protocol in accordance with HRO :
Reuse of biological materials and personal health-related data for research purposes in accordance with ss. 32 and 33 HRA

Title of project
Evaluation of the safety and outcomes of outpatient management with mild to moderate COVID-19 pneumonia (PneumoCoV-Ambu).

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Confirmation from project management and (if applicable) the promotor
By my signature, I certify that all the information contained in this research plan is accurate and I undertake to comply with this information as well as with national legislation relating in particular to data protection.

Project manager :

Date 24.06.2020	Signature

Promotor:

Date 24.06.2020	Signature

Abbreviations

COVID-19	Coronavirus disease 2019
NIH:	National Institute Health
CDC	Center of Disease Control
HUG	Geneva University Hospital
DPI	Computerized Patient Record
LRH	Law on Research on Human Beings
ORH	Ordinance on Research on Human Beings
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
CURB 65	Confusion, Urea>7umol/l, Respiration rate>30/min, Blood Pressure<90/50mmHg, age >65

1. Context

Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2) is a new coronavirus strain that emerged from Wuhan, China, at the end of 2019. Subsequently, the infection rapidly spread throughout the world and was declared pandemic by the WHO on 11 March 2020. The virus continues to propagate worldwide, infecting more than 6M people and causing more than 390'000 deaths[1]. This new disease challenges health systems all over the world and represents an overwhelming cause of hospitalization. The spectrum of COVID-19 ranges from asymptomatic infection through mild respiratory tract symptoms, to moderate and severe pneumonia. The disease can also manifest through other non-respiratory symptoms, however we will not be describing them in this current protocol as our focus is on respiratory symptoms.
We can find many guidelines for hospitalized patients, but in an outpatient setting, our research did not find a lot of data or guidelines, especially for SARS-CoV-2 pneumonia. In the context of COVID-19, health institution and governing bodies such as the NIH and CDC tend to categorizes SARS-CoV-2 symptoms to guide treatment and follow-up. Patients are divide into five categories[2]:

- *Asymptomatic or Presymptomatic Infection*: test positive for SARS-CoV-2 but have no symptoms
- *Mild Illness*: any of various signs and symptoms (e.g., fever, cough, sore throat, malaise, headache, muscle pain) without shortness of breath, dyspnoea, or abnormal imaging
- *Moderate Illness*: evidence of lower respiratory disease by clinical assessment or imaging and a saturation of oxygen (SaO_2) >93% on room air at sea level.
- *Severe Illness*: respiratory frequency (RF) >30 breaths per minute, SaO_2 ≤93% on room air at sea level, ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO_2/FiO_2) <300, or lung infiltrates >50% seen on thoracic imaging
- *Critical Illness*: respiratory failure, septic shock, and/or multiple organ dysfunction

For patients with moderate or more severe illness, the NIH and CDC recommend admission to a health care facility for close observation[2]. This model was not adopted worldwide, as national and/or medical centers developed their own strategies. To our knowledge, there are no studies involving SARS-CoV-2 outpatients with moderate pneumonia.

As for other bacterial and viral pneumonia, several scores defining an outpatient setting are successfully used; we choose to adapt the CURB-65[3] score in the context of SARS-CoV-2 pneumonia. The algorithm included a medical evaluation and paraclinical tests at baseline to ensure the absence of hospitalization criteria[4] (pneumonia with CURB-65 >= 2 or new O2 dependency or increased O2 requirements or sustained respiratory rate≥20 min or decompensated comorbidity or major alteration of the general state). We also took into account the social situation of patients in order to ensure effective isolation measures and support at home. If the management chosen was to keep the patient in an outpatient setting, a follow-up was organised (figure 1): follow-up could be done by phone or by the patient's primary care physician or by an outpatient general medicine consultation at the HUG. For on-site visits, a specific track was established to avoid contact with other patients or healthcare workers

The purpose of this study is to evaluate our strategy for outpatients SARS-CoV-2 moderate pneumonia management in terms of efficacy and patient safety. Our ultimate goal is to validate our first wave management strategy in order to support our future approach in the event of a second wave, and spare the hospital resources by safely keeping at home as many patients as possible.

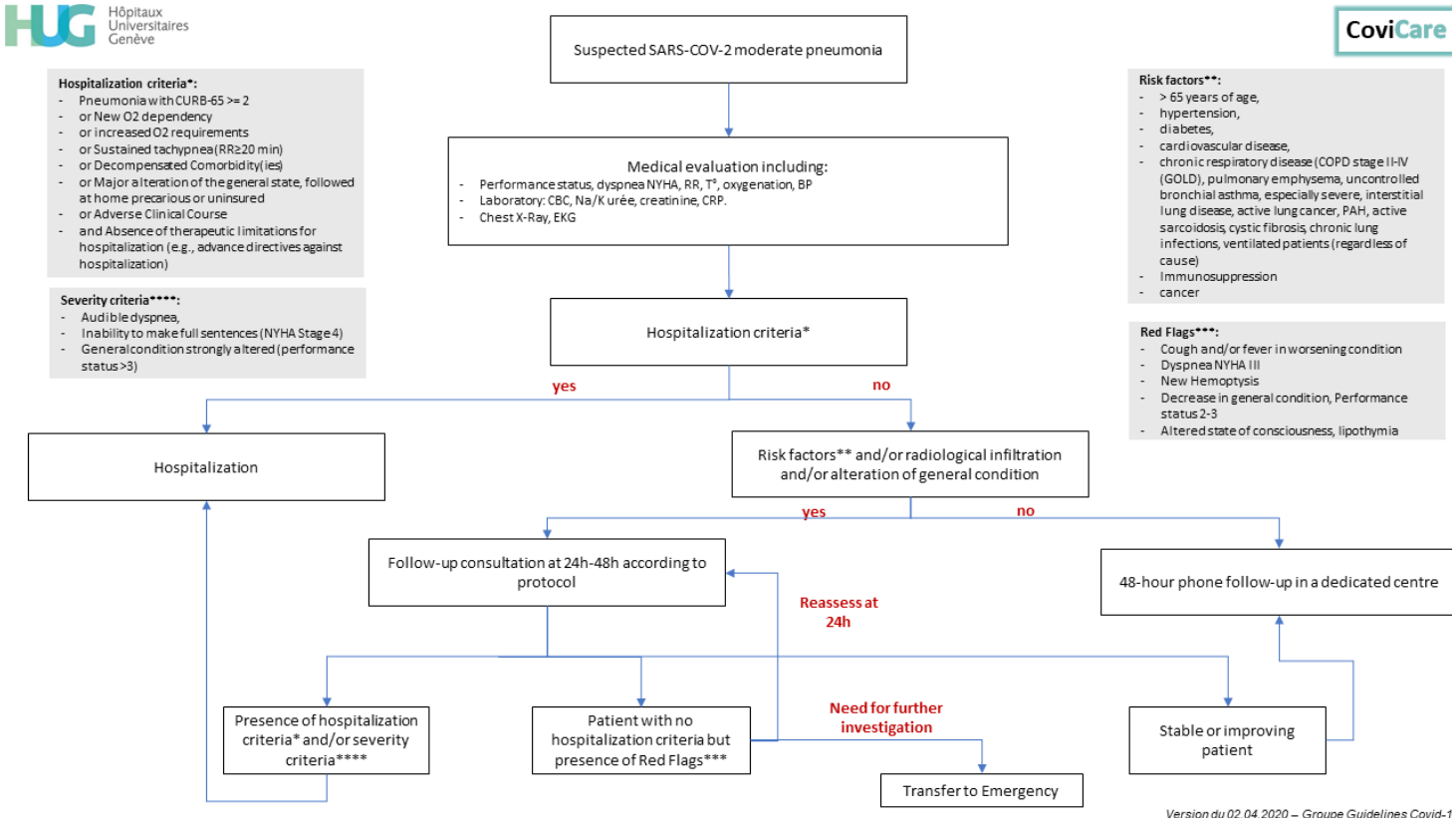

Figure 1: Moderate pneumonia outpatient management algorithm[5]

2. Objective

Validation of our strategy in terms of safety and efficacy for the treatment of moderate SARS-CoV-2 pneumonia

3. Origin of data and material

We focused on patients consulting in the emergency department at the HUG who remained in an outpatient setting, with pneumonia and moderate illness, defined by individuals who have evidence of lower respiratory disease by clinical assessment or imaging and a saturation of oxygen (SaO_2) >93% on room air and no other hospitalization criteria (CURB 65 score below 2points).
For patients' follow-up, we have created an aftercare ambulatory unit, open 5/7 days. We were able to conduct 64 consultations between April 2 and May 5, 2020. Every patients had suspected or confirmed SARS-CoV-2 pulmonary tract infection.

The follow-up data was entered into DPI (patient's medical record at HUG) on a specific consultation form. Patients followed in our consultation were contacted between 30 and 60 days after diagnosis by the Covicare team. The Covicare team is call-center composed of medical students and primary care physicians who remotely followed patients with COVID-19 by calling them by phone or telemedicine every day or every other day depending on patients' needs and health status. We will export data from RedCap concerning post-hospitalization, satisfaction survey on our care and oral consent for use of data (ARGOS study CCER number 2020-01273). We will coordinate with the unified HUG database, which is in process by Prof. Christian Lovis.

4. Inclusion Criterias
All persons with suspected or confirmed SARS-CoV-2 pneumonia who consulted in the emergency department of the HUG without criteria for hospitalization[4] (Pneumonia with CURB-65 >= 2 or new O2 dependency or increased O2 requirements or sustained respiratory rate≥20 min or decompensated comorbidity or major alteration of the general state) and who have been scheduled for outpatient follow-up in HUG.

5. Exclusion Criterias
Patients with hospitalization criteria[4]
Refusal to consent documentation found in the computerized patient record or oral refusal consent during follow up call.

6. Information and consent of participants
All data are from our daily clinical activity with patients with SARS-CoV-2 pneumonia who visited the Ambulatory Care Unit between April 2, 2020 and May 5, 2020. The Covicare team obtained their consent by telephone for the use of the data at the time of diagnosis. A form was sent to them by message to validate their consent in writing (see attached file name “Consentement à l'utilisation des données en lien avec le COVID19 à des fins de recherche”.) Moreover, since the beginning of the outbreak, the HUG screening and emergency sites contain an informative poster mentioning that patient clinical data can be used and collected in clinical studies on COVID-19. Any patient who refuses to allow their data to be used must inform the health care provider at the time of care, and this refusal is insert into DPI. Such patients will be excluded from the study.

7. Scientific methodology
We want to elaborate a retrospective and prospective cohort study.

The statistical analyses will be descriptive only. Given the small sample size of patients, no statistical measures of association will be performed. The data collection period is from April 2 to May 5, 2020. The satisfaction study will be prospective, within the 3 months after diagnosis.

The primary outcome will be secondary hospitalization(s) or death COVID-19 related, until 30 to 60 days from diagnosis
Secondary outcomes will be

- number of unexpected COVID-19 related outpatient visits until day 30 to 60 from diagnosis,
- severity of COVID-19 disease on a 7-points ordinal scale at 30 to 60 days after diagnosis of SARS-CoV-2 (1: not hospitalized, no limitation of activities; 2: not hospitalized, limitation of activities; 3: hospitalized, not requiring supplementary oxygen; 4: hospitalized, requiring supplementary oxygen; 5: hospitalized, on non-invasive mechanical ventilation; 6: hospitalized, on invasive mechanical ventilation or ECMO; 7: death),
- patient satisfaction with management strategies
- estimation of saved costs compared with a strategy of hospitalization of all COVID-19 related pneumonia cases.

8. Obligation to announce
A change in the study’s orientation or of the elements mentioned in the decision must be announced beforehand to the competent ethics committee.

9. Data protection: coding and preservation

Removing direct and indirect identifiers will coded data extracted from the DPI. Record ID will be created using a number (1 to 100 for example). This record ID will be reported on the paper survey filled by physicians. Anonymized data will be stored in Microsoft Excel format, protected with a password and on a HUG server, on the responsibility of Dr Chloé Chevallier Lugon.

10. Procedure concerning non coded data

Data from the physician survey will be coded by Dr Chloé Chevallier Lugon and matched with coded data using the record ID. Coded data will be stored in Excel format, protected with a password and on a HUG server, on the responsibility of Dr Chloé Chevallier Lugon.

11. Data storage

Anonymized coded data will be stored in Excel format, protected with a password and on a HUG server, on the responsibility of Dr Chloé Chevallier Lugon.

Only Dr Chloé Chevallier Lugon can modify the protected Excel file. At each modification, a PDF extract will be made, and named after the date and the initials of the contributor. Paper surveys will be stored in a locked drawer in Dr Chloé Chevallier Lugon HUG office.

12. Storage time

Once the study is complete, record ID and paper surveys will be destroyed. Data will be kept for 10 years.

13. Ethical and regulatory requirements

This study meets the regulatory requirements of the LRH and the ORH. The prerequisite for carrying out the project is approval by the competent ethics committee.

14. Funding / publication / declaration of interests

This project does not have specific funding.
There is no conflict of interest.
Durée de conservation

15. Bibliographie

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Disponible sur : https://www.hug-ge.ch/coronavirus/recommandations-pour-professionnels-sante
5. Recommandations HUG Groupe Guidelines COVID: Prise en charge ambulatoire des patients suspects de pneumonie à SARS-CoV-2
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