**Supplementary materials to “Establishing an ad hoc COVID-19 mortality surveillance during the first epidemic wave in Belgium, 1 March to 21 June 2020”**

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**Supplementary table 1 - Chronology of the evolution of the COVID-19 case definition**

| Date       | Case definition                                                                                                                                                                                                 |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18/01/2020 | Travelers coming back from Wuhan who develop respiratory symptoms during or within 14 days after traveling, should consult their medical doctor and mention the journey.                                                |
| 13/02/2020 | - Travelers coming back from Wuhan who develop respiratory symptoms during or within 14 days after traveling, should consult their medical doctor and mention the journey.   |
|            | - Persons who had contact with a lab-confirmed case in the 14 days prior to the onset of symptoms should also consult their physician and mention the contact.                                                                 |
| 18/02/2020 | Every person with:                                                                                                                                                                                                 |
|            | - upper/lower respiratory symptoms (acute start of minimal 1 of following symptoms: fever, cough, sore thought, myalgia, respiratory difficulties, headache, ...)

AND

- or a travel history to China in the 14 days before the onset of the disease
- or a physical contact with a laboratory confirmed COVID-19 case in the 14 days prior to the onset of the disease.

| 26/02/2020 | 1. Every person with:
|            | - upper/lower respiratory symptoms (acute start of minimal 1 of following symptoms: fever, cough, respiratory difficulties)

AND

- or a history of travel to a region of high transmission in the 14 days before the onset of the disease:
  - China, South-Korea, Iran and 11 municipalities in Italy (Codogno; Casapusterlengo; Castiglione d’Adda; Maleo; Fombio; Bertonico; Castelgerundo; Somaglia; San Fiorano; Terranova dei Passerini; Vo Euganeo)
  - or physical contact with a laboratory confirmed case in the 14 days before the onset of the disease

2. Every person with:
   - severe acute respiratory symptoms and/or clinical or radiological proof of pneumonia, needing hospitalisation
### 28/02/2020

1. Every person with:
   - Fever + clinical symptoms of a respiratory infection (cough, respiratory difficulties)
   - or a history of travel to region/country of high transmission in the 14 days before the onset of the disease: China, South-Korea, Iran and Italy (provinces of Lombardia; Veneto and Emilia Romagna)

   - or physical contact with a laboratory confirmed case in the 14 days before the onset of the disease

2. Every person with:
   - severe acute respiratory symptoms and/or clinical or radiological proof of pneumonia, needing hospitalisation
   - History of travel to a region/country of high transmission in the 14 days before illness if the aetiological examination for endemic pathogens has remained negative: region/country mentioned above; Singapore; Japan.

### 04/03/2020

1. Every person with:
   - Fever + clinical symptoms of a respiratory infection (cough, respiratory difficulties)
   - or a history of travel to region/country of high transmission in the 14 days before illness:
     - China, South-Korea, Iran and Italy (provinces of Lombardia; Veneto and Emilia Romagna)
     - or physical contact with a laboratory confirmed case in the 14 days before illness

2. Every person with severe acute respiratory symptoms and/or clinical or radiological proof of pneumonia, needing hospitalisation if the etiological examination for endemic pathogens has remained negative.

### 05/03/2020

1. Every person with:
   - Fever + clinical symptoms of a respiratory infection (cough, respiratory difficulties)
   - or a history of travel to a region/country of high transmission in the 14 days before illness:
     - China, South-Korea, Iran and North Italy (provinces of Lombardia; Veneto and Emilia Romagna; Piemonte; Ligurië; Trentino South-Tirol; Friuli-Venezia Giulia; Vlle d’Aosta and Marche)
     - or physical contact with a laboratory confirmed case in the 14 days before illness

2. Every person with severe acute respiratory symptoms and/or clinical or radiological proof of pneumonia, needing hospitalisation after negative examination for bacterial infection
1. Every person with:
   - Fever + respiratory symptoms (cough and respiratory difficulties)
   AND
   - History of travel to a region of high transmission in the 14 days before illness: China, South-Korea, Iran and North Italy (provinces of Lombardia; Veneto and Emilia Romagna; Piemonte; Ligurië; Trentino South-Tirol; Friuli-Venezia Giulia; Ville d’Aosta and Marche)

2. Every person with severe acute respiratory symptoms and/or clinical or radiological proof of pneumonia, needing hospitalisation after negative examination for bacterial infection

11/03/2020
Possible case:
Every person with acute upper/lower respiratory symptoms
   - newly appearing
   or
   - deteriorating in case the patient suffers from chronic respiratory disease

04/04/2020
Possible case:
Every person with acute upper/lower respiratory symptoms
   - newly appearing
   or
   - deteriorating in case the patient suffers from chronic respiratory disease

Radiologically confirmed case:
A radiologically confirmed case is a person in whom the laboratory test for COVID-19 is negative, but in whom the diagnosis of COVID-19 is made on the basis of a suggestive clinical presentation AND a compatible CT-scan of the chest.

Confirmed case:
Person with a lab confirmed COVID-19 infection

08/05/2020
Possible case:
A possible case of COVID-19 is a person with
   - at least one of the following main symptoms: cough; dyspnoea; thoracic pain; acute anosmia or dysgeusia without obvious cause;
   OR
   - at least two of the following symptoms: fever; muscle pain; fatigue; rhinitis; sore throat; headache; anorexia; watery diarrhea with no apparent cause; acute confusion; sudden fall with no apparent cause;
   OR
   - worsening of chronic respiratory symptoms (COPD, asthma, chronic cough...).

Radiologically confirmed case:
A radiologically confirmed case is a person in whom the laboratory test for COVID-19 is negative, but in whom the diagnosis of COVID-19 is made on the basis of a suggestive clinical presentation AND a compatible chest CT-scan.
Confirmed case:
A confirmed case is defined as a person with laboratory confirmation of COVID-19 infection.

Possible case:
A possible case of COVID-19 is a person with
- at least one of the following main symptoms that appear acute, with no other obvious cause:
cough; dyspnoea; thoracic pain; acute anosmia or dysgeusia;

OR
- at least 2 of the following symptoms, with no other obvious cause, fever; muscle pain; fatigue;
rhinitis; sore throat; headache; anorexia; watery diarrhea; acute confusion; sudden fall ;

OR
- worsening of chronic respiratory symptoms (COPD, asthma, chronic cough...), with no other obvious cause.

Radiologically confirmed case:
A radiologically confirmed case is a person in whom the PCR for COVID-19 is negative, but in whom the diagnosis of COVID-19 is made on the basis of a suggestive clinical presentation AND a compatible chest CT scan.

Confirmed case:
A confirmed case is defined as a person where the diagnosis of COVID-19 infection has been confirmed by a molecular test.
## Supplementary table 2 - Chronology of the COVID-19 deaths registration in nursing homes

| Steps                                                                 | Flanders   | Wallonia  | Brussels  | German-speaking Community |
|----------------------------------------------------------------------|------------|-----------|-----------|---------------------------|
| First COVID-19 death in nursing homes                                | 11/03/2020 | 16/03/2020| 14/03/2020| 27/03/2020                |
| Registration of NH deaths by health inspectors, early steps of data centralization at Sciensano | 11/03/2020 | NA        | 11/03/2020| NA                        |
| Set up of an organized data exchange between Sciensano and regional authorities | 17/03/2020 to 03/04/2020 | 17/03/2020 to 23/03/2020 | 17/03/2020 to 09/04/2020 | NA                        |
| Online registration tool implemented, and start of the online registration | 18/03/2020 | 20/03/2020 | 26/03/2020 | 26/03/2020 |
| Tool: e-loket (version 1)                                            | Tool: Plasma Individual data |
| Aggregated data Place of death not available Data not transmitted (technical problem) | Tool: PlasmaIndividual data |
| First data transmission to Sciensano via the online registration tool | 1/4/2020 Not included immediately, since no information about place of death -> impossible to identify duplicates with the hospital surveillance | 24/03/2020 Included in statistics | 26/03/2020 Aggregated data not used, since individual data provided by health authorities | 28/03/2020 Will be included on 22/4/2020 in the statistics |
| Change in case definition (Sciensano): retrospective inclusion in statistics of deaths of possible cases (outside hospital) Backlog (+85 deaths) | NA | 30/03/2020 | 30/03/2020 | NA |
| FLA: New version registration tool (e-loket) : | 02/04/2020 | e-loket (version 2) Place of deaths distinctable | 02/04/2020 | 02/04/2020 |
|-----------------------------------------------|------------|------------------------------------------------|------------|------------|
| First inclusion in statistics of deaths data from the online tool | 06/04/2020 | Backlog (+241 deaths) | 24/03/2020 | Included in statistics |
| FLA: Investigation in NH to recover information on deaths having occurred in March 2020 | 09/04/2020 | (backlog : +171 deaths) | 10/04/2020 | (before, individual data transmitted by health authorities) |
| Start extensive testing in NH residents | 15/04/2020 | 15/04/2020 | 15/04/2020 | 15/04/2020 |
| Changes in registration of the diagnostic and registration of non-COVID-19 deaths | 22/04/2020 | 15/04/2020 | 12/05/2020 | 12/05/2020 |
| Individual data collected via the online registration tool (age, sex, date of death) | 02/06/2020 | 20/03/2020 | 10/04/2020 | 12/05/2020 |
| Replacement of previously aggregated data by case-based data | 25/08/2020 | (AZG inventory) | 17/07/2020 | (Sciensano investigation) |

AZG: Agentschap Zorg en Gezondheid; NA: Not applicable

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### Supplementary table 3 – Variables collected by the different sources and transmitted to Sciensano, 2020

|                      | Hospitals Belgium | LTCF Brussels | LTCF Wallonia | LTCF Flanders | LTCF German-speaking Community |
|----------------------|-------------------|---------------|---------------|---------------|-------------------------------|
| **Date of birth (DOB)** | 24/03 to 23/04 : Year of birth  
Since 24/04 : DOB | Since start | Not available | Since 2/06 (earlier deaths updated on 25/08) | Since 12/05 (earlier deaths updated on 17/07) |
| **Age**              | Calculated        | Calculated    | Since start   | Calculated    | Calculated                   |
| **Date of death (DOD)** | Since 24/03 from the surge capacity survey  
Since start from regional health authorities | Since start | Since start | 18/3 to 1/6: proxy (updated on 25/08)  
Since 2/06: exact DOD | 28/03 to 12/05: proxy (updated on 17/07)  
Since 12/05: exact DOD |
| **Sex**              | Since 24/03       | Since start   | Since start   | Since 2/06 (earlier deaths updated on 25/08) | Since 12/05 (earlier deaths updated on 17/07) |
| **Case-classification** | Since start: confirmed/ suspected  
Since 11/04: + CT confirmed (previous deaths updated on 6/05) | Since start: confirmed/ possible | Since start: confirmed/ possible | Since start: confirmed/ possible | Since start: confirmed/ possible  
Since 12/05: + CT confirmed |
| **Type place of death** | Hospital          | Since start   | Since start   | Yes, since 2/04 (deaths 18/03 to 1/04 updated on 9/04) | Since start |
| **Type place of living** | Since 19/06       | Since start   | Since start   | Since start Type of reporting LTCF as type of place of living  
Since start Type of reporting LTCF as type of place of living | Since start Type of reporting LTCF as type of place of living  
Since start Type of reporting LTCF as type of place of living |
| **Postcode place of death** | Since start       | Since start   | Since start   | Since start | Since start |
| **Postcode place of residence** | Since 24/04       | Since start   | Since start   | Since start | Since start |

LTCF: Long-term care facilities

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