Measures concerning COVID-19 suspected ophthalmic patients

General

The SARS-CoV-2 is a single-stranded RNA virus that causes COVID-19. Patients present themselves with respiratory complaints, including fever, cough, and shortness of breath, and in severe cases one pneumonia.

Ophthalmologists are relatively close to the patient and may therefore be at increased risk. It is reported that the virus can be transmitted to the conjunctiva via aerosol drops.

Conjunctivitis has been reported in patients with COVID-19. This is likely to occur in approximately 1% of COVID-19 patients. Conjunctivitis can be the first symptom of COVID-19 infection.

Also, in patients with COVID-19 and conjunctivitis SARS-Cov-2 may be present in the tear fluid. Infectious period: exact data about the infectious period are missing. A patient is in at least contagious during the symptomatic phase. The virus can then be PCR for even longer are detectable in the throat / faeces. So far, there are indications that it is mainly symptomatic persons contribute to the dissemination. (Source: RIVM)

Contamination path:

- Direct: Drip infection: transmission through large drops from coughing and sneezing within one distance of 2 meters. Via aerosols during aerosol-forming operations (eg tracheal intubation) (Source: WHO 2020)
- Indirect: There is no evidence that indirect transmission through objects such as toilets, door handles, cutlery, hand contact points, food, etc. plays a (large) role in the distribution. (Source: RIVM) However, a recent study has shown virus particles after 2-3 days may still be present on surfaces. (Source: Doremalen et al.)
- Aerogenic: There is no evidence that the virus is aerogenic (via suspended particles in the air), except through aerosols during aerosol-forming operations (tracheal intubation, etc) (Source: WHO 2020).

Case definition Ophthalmology

<table>
<thead>
<tr>
<th>Category</th>
<th>COVID-19</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not suspicious</td>
<td>- No complaints <strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Temp &lt;38 °C</td>
</tr>
<tr>
<td>2</td>
<td>Suspicious</td>
<td>- Coughing and / or shortness of breath</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Temp &lt; 38 °C (low suspect)</td>
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<tr>
<td></td>
<td></td>
<td>- Temp ≥ 38 °C (highly suspect)</td>
</tr>
<tr>
<td>3</td>
<td>Proven positive</td>
<td>- Patient who is proven COVID-19 positive (CT / PCR)</td>
</tr>
</tbody>
</table>
Outpatient clinic procedure

Triage by police officer on the phone:
1. Ask about coughing, shortness of breath, fever. If the patient has these complaints, then consult with the TC or supervisor whether the appointment may be postponed to patient 24 hours is complaint-free.
2. Ask patients to contact them if they have a complaint or fever on the day of the appointment to have. Consult with the TC or supervisor whether the appointment may be postponed to patient is free of complaints for 24 hours.

Triage by TC on the phone (such as referrals or urgent referrals from a GP):
1. Only schedule an outpatient appointment for patients with high or low urgent complaints (see appendix standard times for acute ophthalmology (STILL)
2. Ask about coughing, shortness of breath and fever:
   - Absent: have patient come
   - Present: if possible, do not let them come to the clinic, but advise home insulation and have the doctor contacted if necessary.
3. Ask patients to contact them if they still cough on the day of the appointment / have shortness of breath / fever.

Working method on footbridge (see also flow chart):
The employee on the footbridge uses the following protective equipment:

- Surgical mouth nose mask
- Unsterile gloves. Considering the scarcity of gloves, handle this carefully (disinfect with sterilium in between).

Triage on walkway:
1. Give all patients a surgical nasal mask
   - This concerns all patients who come for a poli appointment, laser, injection or surgery
   - If possible, have the mask placed by the supervisor. Have patient on a chair for this to sit
2. Ask about coughing and shortness of breath
3. Measure temperature
4. 1 patient per patient is allowed to come to the waiting room. It is not given a mask and is not allowed enter the treatment room / FO / consultation room. Tell this to the supervisor.
Depending on complaints and temp:

- No complaints and temperature <38 °C → patient reports to the desk
- For complaints and temp < 38 °C:
  o Call AIOS (UK) to say that patient in room 4 (level 0) should be seen
  o Call the treatment room. An employee of the treatment room guides the patient and have them sit in the waiting room in front of room 4. Make sure the patient does not touch anything
  o If the patient comes to the OR, the treatment room employee will guide the patient to the day center
- For complaints and temp ≥ 38 °C, or proven positive patient:
  o Call AIOS (UK). He consults with ZIP
  o Call the treatment room. An employee of the treatment room guides the patient and have them sit in the waiting room in front of room 4. Make sure the patient does not touch anything
- If necessary, disinfect the chair on the footbridge.
General working method
• All patients wear a surgical nasal mask. Attendants do not wear a mask and do not enter the treatment room / FO / doctor's office
• All employees who have patient contact wear non-sterile gloves. Given the scarcity of gloves handle this with care (disinfect with sterilium)
• Only request necessary additional research
• Patients are seen in the regular consultation rooms
• Do not perform non-contact tonometry. If it is necessary to measure the eye pressure use then preferably Goldmann tonometry
• Use a slit lamp with splash guard
• Instruct the patient to speak as little as possible during the examination. (Source: AAO)
• Disinfect the room after each patient as follows:
  o disinfect all contact points slit lamp unit with aseptix cloth
  o disinfect the splash guard with aseptix cloth
  o disinfect parts with which you have contact, with aseptix cloth; think about telephone, remote control, keyboard, etc.
  o disinfect the examination and treatment chair, including the headrest and handles with aseptix wipe and any other surfaces that the patient may be in has come into contact
  o disinfect the worktop with aseptix cloth
  o disinfect used contact glasses with aseptix cloth, leave to act for 30 seconds, rinse with tap water and dry with a paper tissue
  o disinfect contact glass box with aseptix cloth
  o throw away opened eye drops
  o throw away your gloves and disinfect your hands.

Necessities:
• Non-sterile gloves

Method in suspected or proven COVID-19 patient
• Patient is seen in room 4 level 0 (possibly after consultation with ZIP)
• Only request highly necessary job examinations, and always in consultation with the supervisor / the staff member concerned. If necessary, consult with the relevant staff member as a patient beforehand specifically for this staff member
• The AIOS (during regular working hours in the UK) uses the following protective equipment: FFP2 mouth mask, splash goggles, apron and non-sterile gloves
  For instruction see: Knowledge Square → Coronavirus (COVID-19): protective measures
• Instruct the patient to speak as little as possible during the examination. (Source: AAO)
• After the examination, an employee of the treatment room takes the patient to the exit (unless outside regular working hours)
• Do not allow the patient to gain weight anywhere
• Remove used gloves and put on new gloves
• Disinfect the room after each patient as described above
• Remove protective equipment in reverse order and disinfect your hands
• For instructions see: Knowledge square → Coronavirus: protective measures
• After each patient, request a code 3 chlorine 1000 ppm from the cleaning service (inside office hours 66463, outside office hours via MUMC + telephone exchange).

Necessities:

• FFP2 mouth nose mask. These are personal, can not be worn around the neck, may be used for 1 shift (worn for 8 hours), change if visible contamination and if 2 hours worn continuously. After use, place in room 4 in the black container (for sterilization)
• Splash goggles (reusable, should be cleaned with 70% alcohol after every corona suspect patient turn into)
• Non-sterile gloves
• Disposable long sleeve apron.

Intravitreal injections (IVIs)

In general, IVIs can be postponed for a few weeks, but the current situation is going probably last several months. Moving IVIs therefore does not seem to make sense, unless patient has respiratory complaints or fever. (Source: STILL)

Method:
1. Call the patients the day before the injection and ask about complaints that are appropriate for one respiratory infection (cough, shortness of breath, fever). If this is the case then the IVI 2 weeks postpone, provided the patient is free of complaints for 48 hours.
2. Plan no more than 20 IVIs per half-day so that there are fewer patients in the preparation areas to sit.
3. Have the attendant wait in the waiting room.
4. Apply additional hand hygiene and touch as few patients as possible.
5. Have the patients sit themselves on the treatment chair as much as possible. When your patient should help, hand hygiene after this.
6. Clean the door handles every hour. Prevent patients from grasping the door handles by if health care provider to open the doors.

Lasers

Patients who come for a laser treatment should be treated as a regular patient turn into.
### Case definition Ophthalmology and consequences for surgery location:

<table>
<thead>
<tr>
<th>Category</th>
<th>COVID-19</th>
<th>Description</th>
<th>Where to operate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not suspicious</td>
<td>- No complaints <strong>AND</strong></td>
<td>→ OCT</td>
</tr>
<tr>
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</tr>
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<td>- Patient who has proven COVID-19 is positive (CT / PCR)</td>
<td>→ COA</td>
</tr>
</tbody>
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### General remarks:
- Low-suspect patients are scheduled at the end of the program
- Highly suspicious patients or proven positive patients:
  - Are not operated in OCT but in the COA complex
  - Criteria:
    - Oncology
    - Committed processes, where further treatment cannot wait
    - Failure to operate results in permanent disability
    - Urgent.

### Day Center (DC):
- All patients receive a surgical nasal mask on the walkway. Escorts do not wear mask.
- Low-suspicious patients are supervised by a staff member in the treatment room
- Have low-suspect patients take place in a separate part of the day center.
- Indicate on time-out form whether patient is suspicious or low suspicious. Write this on it form.
- Protective equipment for patient contact / drip:
  - Unsuspected patient: non-sterile gloves
  - Low-suspect patient: FFP1 mask, non-sterile gloves, apron and splash goggles
    (For instruction see: Knowledge Square → Coronavirus (COVID-19): protective measures)

### Holding:
Anesthesiologist / anesthesia-trained AIOS:
- Protective equipment when administering subtenon anesthesia:
  - Unsuspicious patient: surgical mouth mask + sterile gloves
• Low-suspect patient: FFP2 mask * + sterile gloves, apron and goggles (front instruction see: Knowledge square → Coronavirus (COVID-19): protective measures).

OK

• Leave the mask peroperatively in situ for a patient who is lowly suspect, provided that this does not affect the patient too much obstructs. A patient who is not suspect does not have to wear a mask peroperatively

• Protective equipment:
  o Unsuspected patient:
    • Time out: surgical mouth mask
    • During surgery: circulation wearing surgical mouth mask and non-sterile gloves
  o Low-suspicious patient:
    • Timeout: only the operator and bypass are present in the OR during the time out. They wear surgical mouth masks and non-sterile gloves. The assistant (AIOS / OR employee) waits in the washing / changing room
    • During the operation:
      • Operator / assistant: regular operating theater clothing
      • Circulation: surgical mouth mask, non-sterile gloves and plastic apron on indication (with intensive patient contact, such as lifting)

• For low-suspect patients: have the OR cleaned after each operation (code 3+ chlorine 1000 ppm). This procedure takes 45 minutes. (Call 66463 during office hours, outside office hours via telephone exchange MUMC +.)

*FFP2 mouth nose mask. These are personal, can not be worn around the neck, may be used for 1 shift (worn for 8 hours), change if visible contamination and if 2 hours worn continuously. Place in the black barrel after use (for sterilization). **DO NOT THROW AWAY** Splash goggles (reusable) should be cleaned with 70% alcohol after each use.

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**Important phone numbers**

<table>
<thead>
<tr>
<th>ZIP</th>
<th>67134</th>
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</thead>
<tbody>
<tr>
<td>Cleaning service</td>
<td>66463 (outside office hours via central)</td>
</tr>
</tbody>
</table>

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**Sources**

• RIVM [https://lici.rivm.nl/richtlijnen/covid-19](https://lici.rivm.nl/richtlijnen/covid-19)
• STILL [https://www.oogheelkunde.org/COVID-19](https://www.oogheelkunde.org/COVID-19)
• AAO [https://www.aao.org/headline/alert-important-coronavirus-context](https://www.aao.org/headline/alert-important-coronavirus-context)
• WHO
• Guidance Dutch Association of Medical Microbiologists, version 1-110320. Infection prevention measures to prevent or reduce the spread of COVID-19 in health institutions.
• Doremalen et al. Aerosol and surface stability of HCoV-19 (SARS-CoV-6 2) compared to SARS-CoV-1. NEJM 2020.