KONSENSUS ÜBER DIE RATIONELLE UND KORREKTE VERWENDUNG VON MUNDMASKEN WÄHREND DER PANDEMIE VON COVID 19

1. Generelle Empfehlungen

Es ist wichtig zu bedenken, dass die Verwendung einer Maske allein nicht ausreicht, um sich selbst zu schützen, und immer von anderen Maßnahmen zur Infektionsprävention und -kontrolle begleitet werden muss. In der gegenwärtigen Phase der Epidemie bleibt die soziale Distanzierung, begleitet von guter Hände- und Hustenhygiene, die wichtigste vorbeugende Maßnahme. Die Verwendung von Masken wird in Situationen empfohlen, in denen ein Abstand von mindestens 1,5 m nicht eingehalten werden kann.

Die Verwendung von Masken wird nicht durch den Beruf, sondern durch eine mögliche Exposition definiert. Angesichts des derzeitigen Maskenmangels sind **chirurgische Masken in erster Linie dem Gesundheitssektor und den Pflegestrukturen vorbehalten.**

2. Benutzung von Masken im Gesundheitssektor und in Pflegestrukturen

2.1 FFP2

Im Allgemeinen sollte die Verwendung von FFP2-Masken medizinischen Fachkräften vorbehalten sein, die in direkten Kontakt mit verdächtigen oder bestätigten Patienten mit MERS, Tuberkulose, Masern, Windpocken und Gürtelrose kommen.

Darüber hinaus müssen im aktuellen Kontext der COVID-19-Epidemie **FFP2-Masken als Priorität für das medizinische Fachpersonal bei Handlungen, Behandlungen und Manövern mit Aerosolisierungspotential bei möglichen oder bestätigten COVID-19-Patienten[1] reserviert** werden. Diese Handlungen beziehen sich hauptsächlich auf die Intubation:

- endotracheale Intubation;
- Bronchoskopie;
- offene Absaugung;
- die Verabreichung einer Sprühbehandlung (so weit als möglich zu vermeiden, indem sie durch die Verwendung von Expansionskammern ersetzt werden);
- manuelle Beatmung vor der Intubation;
- den Patienten in Bauchlage bringen;
- den Patienten vom Beatmungsgerät trennen;
- nicht-invasive Überdruckbeatmung;
- Tracheotomie;
- kardiopulmonale Wiederbelebung;
- bestimmte zahnärztliche Eingriffe.

Um übermäßigen Gebrauch von Masken zu vermeiden, wird bevorzugt, dass nur eine Maske pro Schicht getragen wird. Wenn es während dieser Schicht wahrscheinlich ist, dass das Gesundheitspersonal bei einem möglichen oder bestätigten COVID-19-Patienten mit einem Aerosol erzeugenden Verfahren

[1] Nach der offiziellen Falldefinition, welche Sie hier finden: https://epidemio.wiv-isp.be/ID/Documents/Covid19/COVID-19_Case%20definition_Testing_DE.pdf

konfrontiert ist, muss zu Beginn der Schicht eine FFP2-Maske getragen werden. Falls verfügbar, sollte die Maske mit einem Gesichtsschutz abgedeckt sein und kann dann für die Dauer der Schicht getragen werden, unabhängig von der Anzahl der behandelten Patienten. Die Vorderseite der Maske sollte als kontaminiert angesehen werden und darf niemals angefasst werden. Bei versehentlichem Kontakt mit der Maske sollten die Handschuhe gewechselt oder die Hände gründlich gewaschen werden. Die Maske muss sofort entfernt werden, sobald makroskopische Flecken vorhanden sind.

Wenn das Tragen einer Maske nur für eine begrenzte Zeit erforderlich ist (z. B. Bronchoskopie), kann sie von jeglicher Kontamination ferngehalten und für eine kumulative Dauer von 8 Stunden wiederverwendet werden.

Um die Anzahl der verwendeten Masken zu minimieren, ist es ratsam, die Anzahl der Behandlungen mit Aerosolbildung so weit wie möglich zu begrenzen (z. B. die elektive Operation zu verschieben) und die Anzahl der Personen im Raum zu begrenzen, wenn diese Verfahren durchgeführt werden.

FFP2-Masken können zur erneuten Sterilisation gesammelt werden, wenn der Maskentyp dies zulässt. Die FAMHP hat bereits zu diesem Thema kommuniziert. Weitere Hinweise finden Sie im Anhang und auf der AFMPS Webseite.

2.2 Chirurgische Masken

Chirurgische Masken werden empfohlen :

- **für Personen, die mögliche[2] oder bestätigte COVID-19-Patienten in einer Entfernung von <1,5 m betreuen und / oder unterstützen (definiert als Pflegepersonal), außer während Behandlungen mit Aerosolbildung (siehe oben)** ;

- für Pflegepersonal in direktem Kontakt mit möglichen oder bestätigten infektiösen Sekreten von COVID-19-Patienten (auch nach dem Tod oder bei der Behandlung von Wäsche in COVID-Einheiten);

- für alle anderen Aktivitäten in Gesundheitseinrichtungen, in denen das Tragen von Operationsmasken bereits vor der COVID-19-Epidemie Teil der Routine war (z. B. Operationssaal, sterile Einheiten, Laborpersonal in Kontakt mit Atemwegs- und Verdauungstraktproben ohne Haube mit laminarer Strömung ...);

- für COVID-19-Patienten möglich oder bestätigt:
  - o in Kontakt mit dem **Pflegepersonal**;
  - o in Kontakt mit Neugeborenen (z. B. Mutter COVID-19 +, die stillt);
  - o in einer Einrichtung mit gemeinschaftlicher Unterbringung wohnen;

[2] Person, bei der Symptome einer akuten Infektion der unteren oder oberen Atemwege auftreten **oder** sich verschlimmern, wenn der Patient chronische Atemwegsbeschwerden hat

o unter einem Dach mit einer Person leben, bei der das Risiko besteht, eine schwere Form von COVID-19 zu entwickeln, und wenn der Abstand zu dieser Person unmöglich eingehalten werden kann;
o Wer Teil des Pflegepersonals ist, und zur Arbeit zurückkehrt (siehe Kriterien im Verfahren https://epidemio.wiv-isp.be/ID/Documents/Covid19/COVID-19_procedure_hospitals_DE.pdf

- Wenn der Vorrat es zulässt :
  - o Pflegepersonal in Nicht-COVID-19-Einheiten, Pflegeheimen und anderen Wohngemeinschaften während des engen Kontakts mit Bewohnern / Patienten;
  - o Krankenwagendienstleister in Nicht-COVID-Krankenwagen.

Wie bei FFP2-Masken ist es vorzuziehen, dass unabhängig von der Anzahl der behandelten Patienten nur eine chirurgische Maske pro Schicht getragen wird, um eine übermäßige Verwendung von Masken zu vermeiden. Falls verfügbar, kann die Maske mit einem Gesichtsschutz abgedeckt werden, um sie beim Tragen besser vor starker Verschmutzung zu schützen. Die Vorderseite der Maske sollte als kontaminiert angesehen werden und darf niemals angefasst werden. Bei versehentlichem Kontakt mit der Maske sollten die Handschuhe gewechselt oder die Hände gründlich gewaschen werden. Die Maske muss sofort entfernt werden, sobald eine starke Kontamination vorliegt.
Wenn das Tragen einer Maske nur für eine begrenzte Zeit erforderlich ist, kann sie vor Verunreinigungen geschützt werden (z. B. in einem individuellen Papierumschlag oder in einem personalisierten waschbaren Behälter, jedoch niemals in der Tasche) und für eine kumulative Dauer von 8 Stunden widerverwendet werden.

2.3. Papier Masken

Angesichts der Geschwindigkeit, mit der sich diese Art von Papier Maske verschlechtert, sind die empfohlenen Gebrauchsanweisungen begrenzt, wie z.B

- Familienmitglieder, die einen immungeschwächten Patienten besuchen;
- Kontakte zu „MRSA / MDRO-Patienten“.

Im Rahmen der COVID-19-Epidemie können diese Masken genauso wie auch Stoffmasken verwendet werden.

2.4. Stoffmasken

Der Hauptzweck des Tragens einer Stoffmaske besteht darin, die Menschen in der Umgebung zu schützen, vielmehr als den Träger. Da ihre Aufgaben es ihnen nicht erlauben, einen Abstand von mindestens 1,5 m einzuhalten, sollten **Pflegekräfte in Nicht-COVID-19-Einheiten und Einrichtungen mit gemeinschaftlicher Unterbringung** idealerweise chirurgische Masken tragen, wenn die Vorräte dies zulassen und wenn nicht mindestens Stoffmasken (oder Papiermasken) zur Verringerung des Übertragungsrisikos, wenn es sich um asymptomatische Träger handelt. Dies gilt auch für Nicht-COVID-Patienten, sofern ihr klinischer Zustand dies zulässt. Es ist von größter Wichtigkeit, dass jede Pflegekraft, die Symptome zeigt, gemäß den aktuellen Richtlinien getestet und / oder isoliert wird.

3. Benutzung von Masken in anderen Berufsgruppen

3.1 Chirurgische Masken

Abgesehen von Pflegepersonal, sind die Mitarbeiter der Leichen- und Bestattungsunternehmen sowie die Mitarbeiter der Industriewäschereien, die in direktem Kontakt mit der schmutzigen Wäsche der COVID-19-Einheiten stehen, die Berufstätigen die von der Benutzung von Operationsmasken profitieren sollten.

Folglich, wenn die Reserven es zulassen :

1. nicht pflegerisches Personal in einer Einrichtung mit gemeinschaftlicher Unterbringung in direktem Kontakt mit Bewohnern (z. B. Haushälterinnen);
2. alle Bewohner einer Einrichtung mit gemeinschaftlicher Unterbringung;
3. Personal in wesentlichen Funktionen, in denen ein Abstand von 1,5 m nicht eingehalten werden kann, z. B. die Polizei während ihrer Eingriffe (nicht während administrativer Aufgaben).

3.2. Stoffmasken

Gegenwärtig können während der Periode der Eindämmung Stoffmasken von **Menschen ohne Symptome verwendet werden, um eine a/präsymptomatische Übertragung in Situationen zu verhindern, in denen soziale Distanzierung schwierig ist**, beispielsweise für Bewohner von Einrichtung mit gemeinschaftlicher Unterbringung, Polizisten, Feuerwehrleute ...

Eine Stoffmaske kann auch eine physische Barriere gegen Spritzer bilden, sollte jedoch sofort entfernt werden, sobald sie verschmutzt ist.

Wenn die Eindämmungsmaßnahmen schrittweise aufgehoben werden, werden Stoffmasken für alle Situationen empfohlen, in denen ein Kontakt von <1,5 m erforderlich ist und an Orten, an denen sich viele Personen aufhalten (z. B. öffentliche Verkehrsmittel, Supermärkte usw.).

Es ist jedoch zu beachten, dass:

- Das Tragen einer Stoffmaske hat das wesentliche Ziel, die Menschen in ihrer Umgebung zu schützen, viel mehr als den Träger.
- Das Tragen einer Maske kann andere bereits verhängte Maßnahmen wie soziale Distanzierung, gute Händehygiene, Hustenhygiene und Isolation während der COVID-19-Symptome nicht ersetzen.
- Stoffmasken müssen korrekt verwendet werden: Die Hände müssen vor dem Anlegen gewaschen werden, die Maske muss Nase und Mund bedecken, die Vorderseite darf nicht angefasst werden und die Hände müssen nach dem abnehmen der Maske gewaschen werden. Aus diesem Grund werden Masken für Kinder in Kindergärten und Grundschulen nicht empfohlen.
- Waschbare Masken müssen täglich bei mindestens 60 ° gewaschen und vor dem nächsten Gebrauch vollständig trocken sein.

- Der Öffentlichkeit müssen klare Anweisungen für die Herstellung von Stoffmasken zur Verfügung gestellt werden, die sie auch über die Eigenschaften der verschiedenen Stoffe informieren (siehe Beispiel unten).
- In den kommenden Tagen wird diese Gruppe weiter an spezifischeren Empfehlungen für die Verwendung von Stoffmasken arbeiten, einschließlich der technischen Aspekte.

TABLE 1

Filtration Efficiency and Pressure Drop Across Materials Tested with Aerosols of *Bacillus atrophaeus* and Bacteriophage MS2 (30 L/min)[a]

Material	*B atrophaeus*		Bacteriophage MS2		Pressure Drop Across Fabric	
	Mean % Filtration Efficiency	SD	Mean % Filtration Efficiency	SD	Mean	SD
100% cotton T-shirt	69.42 (70.66)	10.53 (6.83)	50.85	16.81	4.29 (5.13)	0.07 (0.57)
Scarf	62.30	4.44	48.87	19.77	4.36	0.19
Tea towel	83.24 (96.71)	7.81 (8.73)	72.46	22.60	7.23 (12.10)	0.96 (0.17)
Pillowcase	61.28 (62.38)	4.91 (8.73)	57.13	10.55	3.88 (5.50)	0.03 (0.26)
Antimicrobial Pillowcase	65.62	7.64	68.90	7.44	6.11	0.35
Surgical mask	96.35	0.68	89.52	2.65	5.23	0.15
Vacuum cleaner bag	94.35	0.74	85.95	1.55	10.18	0.32
Cotton mix	74.60	11.17	70.24	0.08	6.18	0.48
Linen	60.00	11.18	61.67	2.41	4.50	0.19
Silk	58.00	2.75	54.32	29.49	4.57	0.31

[a] Numbers in parentheses refer to the results from 2 layers of fabric.

Quelle : Davies A., Thompson K, Giri K et al. Testing the efficacy of homemade masks : would they protect in an influenza pandemic ? Dis Med and Pub Health Prep 2013(7) 413-418 doi 10.1017/dmp.2013.43

Wissenschaftlicher Hintergrund

Context

On 11 March, WHO officially declared the COVID-19 pandemic. Health care systems worldwide are under extreme pressure. Due to the global scale, several different factors come in play compared to other disease outbreaks. Firstly, demand for personal protective equipment and other amenities (like test reagents) has surged. In combination with a reduced supply due to do the economic impact of mitigation strategies, this has led to severe shortages which in turn inevitably must lead to rational use and prioritization. Therefore, difficult choices need to be made. Whilst we may turn to international health authorities like WHO and (E)CDC for guidance, decisions need to be adapted to the local context and take into account particular constraints like testing capacity, stocks of PPE, available workforce, compliance of the population with guidelines, structure of the health care system…
Secondly, as SARS-CoV-2 is a novel coronavirus, initial decisions needed to be taken based on previous experiences and with very limited evidence on the newly emerged pathogen. These decisions might need to be reviewed as new evidence becomes available, although several key aspects remain unknown. The currently rapidly accumulating evidence (to date 2,873 articles published on PubMed with either “SARS-CoV-2” or “COVID” in the title) confronts us with yet another problem of staying updated and critically reviewing evidence for its quality and consistency.

According to estimates of ECDC, 14-15 sets of PPE are needed per confirmed case with mild symptoms and up to 24 sets per severe case. (1) Multiplied by the 5 688 patients that were hospitalized on 08/04/2020, of which 1 276 in ICU (2) and the even much larger number of suspected cases, it is clear that rational use of PPE is of the utmost importance. To date, the biggest bottleneck in masks is the stock of FFP2 masks. Slightly larger stocks of surgical masks exist, but many non-COVID hospital activities also rely on their availability. Several initiatives have been taken to increase the stock of PPE. Efforts to increase supply have however met with concerns about quality and sustainability of the supply, e.g. in the light of changing policies in China. In addition to increasing supply, re-use of masks might be considered. Several health authorities in other countries have taken this route: decontamination of FFP2/N95 masks with H_2O_2 vapor in the Netherlands (3) and the USA (4) and using dry heat in Germany (5). In Belgium too, plans are underway for the re-use of masks. However, experience with these techniques is limited and it is currently unclear to which extend they will help to alleviate the scarcity.

Scientific evidence on key aspects relating to use of masks

Mode of transmission

Evidence indicates that SARS-CoV-2 is transmitted from **human to human by infectious droplets and contact** (6).

Based on experiences with previous outbreaks of SARS and on experimental evidence, other routes of transmission are also debated. One possible additional route is the **long-range airborne** route. For SARS, both evidence from modelling studies (7,8) and positive air samples from a patient's room (9) indicated a potential for airborne transmission. This raises concerns about a similar airborne transmission potential for COVID-19. In one experiment, SARS-CoV-2 was purposefully aerosolized by a powerful machine and kept in a closed container (10). After 3h, viable virus could still be detected. The amount of infective virus was however halved each 1,1h. Whilst worrying, these findings need to be interpreted with caution, as these experimental circumstances are not representative of real-life circumstances. Natural ventilation, for instance, has been shown to dilute aerosols (11). In Singapore, researchers sampled the air and several surfaces of the isolation room of three patients with SARS-CoV-2 (12). The virus could be found on many surfaces like door handles, light switches and ventilator grates, but all air samples were negative. Unpublished data did detect SARS-CoV-2 in air samples of patients in negative pressure rooms, but the implication is unclear as they were unable to show any viral activity in cell cultures (13).

SARS-CoV-2 viral RNA has been found in many other samples than nasopharyngeal swabs such as feces, blood and (very rarely) urine (14–16). Especially in faeces, viral RNA seems to be present later and persists longer than in samples from the upper respiratory tract (17). **Faeco-oral transmission** therefore needs to be considered. Importantly though, presence of viral RNA does not equal infectious potential. Data is currently limited, but a German team did detailed analyses on samples from 9 patients. They reported that infectious virus (as proven by viral culture) was readily isolated from throat- and lung-derived samples but not from stool samples, despite high viral load. Moreover, no infectious virus could be isolated from the various sample sites after day 8 of symptom onset, despite ongoing high viral loads (18). Only one study (published in Chinese) has cultured SARS-CoV-2 from a stool sample, and no documented feco-oral transmission has occurred (6).

That direct contact, rather than airborne spread, is the main transmission route, seems to be supported by evidence from contact tracing. Pre-print data from 391 cases from Shenzhen and 1286 close contacts show 6x higher odds of infection in household contacts (secondary attack rate 15%) than in other close contacts (19). The CDC also investigated 445 close contacts of 10 travel-related cases and reported two infections in household members (secondary attack rate 10,5%) and zero in other contacts (20).

Asymptomatic / Presymptomatic transmission

Asymptomatic infection at the time of laboratory confirmation has been reported from many settings (21–25). A large proportion of these cases developed some symptoms at a later stage of infection, although there are reports of cases remaining asymptomatic throughout the whole duration of laboratory and clinical monitoring (24,25).

Several arguments are in favor of asymptomatic and/or pre-transmission transmission:

- A limited number of case reports have described asymptomatic/pre-symptomatic transmissions within family clusters (26,27).
- Viral load in the upper respiratory tract is highest immediately one day before and the days immediately after onset of symptoms (28–31).
- Similar nasopharyngeal viral loads in asymptomatic versus symptomatic cases are reported in several studies (23,28).
- In a modelling study, pre-symptomatic transmission was deemed likely based on a shorter serial interval (the period between onset of symptoms in the first case and onset of symptoms in the second case) than the mean incubation period (32).
- Investigation of all 243 cases of COVID-19 reported in Singapore during January 23–March 16 identified seven clusters of cases in which presymptomatic transmission is the most likely explanation for the occurrence of secondary cases (33).

Major uncertainties remain however with regard to the influence of asymptomatic and pre-symptomatic transmission on the overall transmission dynamics of the pandemic. In a modelling study, the proportion of pre-symptomatic transmission was estimated between 48% and 62% (32). This study uses data from when quarantine measures were in place, so pre-symptomatic transmission becomes relatively more important. In contrast, of the 157 locally acquired cases in Singapore, only 10 (6.4%) were attributed to presymptomatic transmission. In the Lombardy outbreak, during the first week of data collection, both symptomatic patients and symptomatic/asymptomatic contacts were investigated through contact tracing. Among 380 positive subjects detected on the first day, 17 (4.5%) were defined as asymptomatic, 295 (77.6%) were classified as symptomatic, and information on symptoms was missing for 68 cases (17.8%). The authors concluded that the limited number of asymptomatic infected subjects identified through contact tracing during the first week of data collection suggests a minor role of asymptomatic individuals in the overall spread of the infection in Lombardy (23). The potential for presymptomatic transmission will be higher in collectivities where people live in prolonged and close contact with each other and care givers. Data from a nursing home in the US showed that, 16 days after introduction of the virus and despite early adoption of infection prevention and control measures, 30.3% of residents tested positive in facility-wide testing. Approximately half of all residents did not have any symptom (although difficult to ascertain in a cognitively-impaired population!) and viral loads were comparable for symptomatic and asymptomatic residents. (34) The relative importance of a/presymptomatic transmission will also depend on which other measures (quarantine, contact tracing…) are in place.

Efficiency of masks – INWARD protection

WHO recommends the use of a **surgical mask, gown, gloves, and goggles or faceshields** for health care workers coming into close contact with a possible or confirmed case (<1,5m), except for aerosol-generating procedures, in which case an FFP2 mask is recommended (35). During the SARS epidemic, adherence to these precautions was found to be effective to avoid infection in health care workers. The effect was largest for hand hygiene and use of masks (36).

Surgical Masks vs. FFP2

Different health care authorities have issued different advice on the recommended PPE (6), which has led to confusion. Current recommendations must take into account the actual context of shortage of PPE and the need to manage the risk with the best evidence available, and could potentially change with a decrease in case numbers, new evidence and/or better availability of PPE.

In the above-mentioned trial during the SARS epidemic (36), no difference in protection of health care workers (HCWs) was found between the use of N95 masks or surgical masks. Randomized control trials (RCTs) in Canada and the US (the larger of which included 2826 participants) have evaluated the use of surgical masks versus N95/FFP2 masks in prevention of respiratory diseases in health care workers and have found them to be both equally effective (37,38). This conclusion was confirmed by a meta-analysis including six RCTs published very recently (13 March 2020) by the Chinese Cochrane Center (39) and another even more recent review including four RCTs (40). Some specific evidence for SARS-CoV-2 is also available from South Korea, where 41 health care workers were unknowingly exposed to *aerosol-generating procedures* on a COVID-19 patient. Of the thirty-five HCWs (85%) that wore a surgical mask, none were infected. Reassuringly, the WHO China Joint Mission Report notes that most infected HCWs in China were infected within their households (41).

Aerosol-generating procedures

Aerosols differ from droplets because of their smaller size, which allows them to stay suspended in the air for much longer. In different guidelines, aerosol-generating procedures are often either not defined or include different procedures. The evidence, the best of which comes from studies of SARS-CoV, suggests a consistent association between pathogen transmission and **tracheal intubation** (42). In addition, a few studies reported an increased risk of SARS-CoV infection associated with tracheotomy, noninvasive ventilation, and manual ventilation before intubation. However, because these findings were identified from only a few studies of very low quality, interpretation and practical application are difficult (43). No other procedures were found to be significantly associated with an increased risk of acute respiratory infection transmission. The lack of evidence does however not necessarily mean an absence of increased risk.

Surgical masks vs. cloth masks

Only one RCT has compared the efficacy of cloth masks with surgical masks to protect health care workers from respiratory infections (44). The trial included 1607 HCWs in Vietnam who worked in high-risk wards (emergency services, infectious disease unit, intensive care unit and pediatric department) and were randomized to either standard practice (including a lot of mask wearing, either cloth or medical), full-time cloth mask wearing (2 layers of cotton) or full-time medical mask (2 layers). Laboratory testing of the masks revealed a penetration of particles through the cloth masks of 97% and of 44% for medical masks. When analyzing the three groups (control, cloth, medical), use of cloth masks compared with use of medical masks was associated with a relative risk for ILI of 13.2 [1.7-101] and of lab-confirmed viral disease of 1.7 [0.92-2.91]. When splitting up the control group into users of medical masks and users of cloth masks, and comparing only two groups (medical masks vs. cloth masks) use of cloth mask was associated with an increased risk of ILI (RR 6.64 [1.45-28.6]) and lab-confirmed viral infection (RR1.72 [1.01-2.94]). Whilst impossible to determine whether the results are solely due to a protective effect of the surgical mask, or whether there might be an additional detrimental effect of the cloth mask (e.g. due to moisture retention, reuse…), the authors argue that since the filtration efficacy of this type of medical masks was poor, an additional harmful effect of cloth masks may be present.

Efficiency of masks – OUTWARD protection

As the main route of transmission is believed to be droplet transmission, social distancing measures have been advised to reduce spread – including spread by a/presymptomatic individuals. There are however situations in which maintaining a distance of >1,5m is impossible. Moreover, concerns have been raised about the pertinence of the recommended 1,5m distance, in view of possible long-range airborne

transmission. Additionally, research from MIT showed that a person sneezing emits a multiphase turbulent gas cloud containing droplets of all sizes which travel for up to 7-8m (45).

There is little doubt that wearing a medical mask by a sick person with symptoms is effective as source control (46–48) even though data from four SARS-CoV-2 patients in South Korea could not show this (49). Whether wearing a mask by seemingly healthy people is beneficial, is less certain**.** Droplets are emitted not only when coughing or sneezing, but also when breathing or speaking, though these droplets differ in size (50). A recent article investigated the protective effect of wearing a medical mask in 243 participants with a respiratory infection ('common cold', including non-SARS-coronaviruses) and reported that viral RNA was also detected in a small number of participants who did not cough at all during the 30-minute exhaled breath collection, suggesting transmission is possible from individuals with no obvious signs or symptoms. However, they also note that 'the majority of participants did not shed detectable virus in aerosols or droplets. For those who did shed, viral load in both tended to be low, implying that prolonged close contact would be required for transmission'. **Modeling data for Influenza suggest that population-wide use of masks could importantly reduce spread of the virus (51–53)**. The filtration capacity of home-made mask is lower than that of medical masks, but they do offer outward protection, despite imperfect fit or adherence (54). WHO, after reviewing all the evidence, still recommended against the use of community masks on April 6th, pointing out the importance of other measures like social distancing, cough and hand hygiene (47). ECDC lists a number of potential risks and benefits without either recommending or discouraging the use (55). On the other hand, important health authorities like CDC and Robert Koch Institute are now advising wearing of home-made masks for the population, in addition to social distancing measures and strict hand hygiene (56,57) whilst acknowledging the absence of compelling evidence. Likewise, both in scientific and in popular literature, several experts have insisted on the universal use of masks to be included in guidelines (58–61). **A review of the evidence compiled on April 10th by a consortium of scientists not only concluded that there is evidence on the efficiency of cloth masks but also that, based on experience with other preventive measures, the claim that their use would lead to increased risk behavior and less observance of other measures is unfounded** (60).

Mitwirkende

Les experts suivants ont contribué à la rédaction de ce document :

FAGG-AFMPS :
Katrien Martens

Sciensano :
Laura Cornelissen (coördination)

SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement:
Pierre Kerkhofs

Comité Scientifique :
Steven Van Gucht

Conseil Supérieur de la Santé :
Yves Van Laethem, Anne Simon, Michèle Gérard

Risk Assessment Group :
Roel Van Giel (Domus Medica), Michèle Gérard (ULB), Tinne Lernout (Sciensano), Dirk Wildemeersch (Agentschap Zorg en Gezondheid), Sophie Lokietek (AViQ), Melissa Vermeulen (COCOM)

Literaturverzeichnis

1. Personal protective equipment (PPE) needs in healthcare settings for the care of patients with suspected or confirmed novel coronavirus (2019-nCoV) [Internet]. European Centre for Disease Prevention and Control. 2020 [cited 2020 Apr 8]. Available from: https://www.ecdc.europa.eu/en/publications-data/personal-protective-equipment-ppe-needs-healthcare-settings-care-patients

2. Sciensano. COVID-19 - Epidemiological situation [Internet]. [cited 2020 Apr 8]. Available from: https://epidemio.wiv-isp.be/ID/Pages/2019-nCoV_epidemiological_situation.aspx

3. RIVM. Hergebruik mondmaskers en isolatiekleding [Internet]. [cited 2020 Apr 8]. Available from: https://www.rivm.nl/documenten/hergebruik-mondmaskers-isolatiekleding

4. FDA. Battelle Decontamination System - Letter of Authorization [Internet]. [cited 2020 Apr 8]. Available from: https://www.fda.gov/media/136529/download

5. RKI - Coronavirus SARS-CoV-2 - Hinweise zur Verwendung von Masken (MNS-, FFP- sowie Mund-Nasen-Bedeckung) (2.4.2020) [Internet]. [cited 2020 Apr 8]. Available from: https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Arbeitsschutz_Tab.html?nn=13490888

6. World Health Organization. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations (Scientific Brief) 29th March [Internet]. [cited 2020 Apr 8]. Available from: https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

7. Xiao S, Li Y, Wong T, Hui DSC. Role of fomites in SARS transmission during the largest hospital outbreak in Hong Kong. PLOS ONE. 2017 Jul 20;12(7):e0181558.

8. Yu IT-S, Qiu H, Tse LA, Wong TW. Severe Acute Respiratory Syndrome Beyond Amoy Gardens: Completing the Incomplete Legacy. Clin Infect Dis. 2014 Mar 1;58(5):683–6.

9. Booth TF, Kournikakis B, Bastien N, Ho J, Kobasa D, Stadnyk L, et al. Detection of Airborne Severe Acute Respiratory Syndrome (SARS) Coronavirus and Environmental Contamination in SARS Outbreak Units. J Infect Dis. 2005 May 1;191(9):1472–7.

10. Doremalen N van, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. 2020 Mar 17 [cited 2020 Mar 19]; Available from: https://www.nejm.org/doi/10.1056/NEJMc2004973

11. Escombe AR, Oeser CC, Gilman RH, Navincopa M, Ticona E, Pan W, et al. Natural ventilation for the prevention of airborne contagion. PLoS Med. 2007 Feb;4(2):e68.

12. Ong SWX, Tan YK, Chia PY, Lee TH, Ng OT, Wong MSY, et al. Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient. JAMA [Internet]. 2020 Mar 4 [cited 2020 Mar 15]; Available from: https://jamanetwork.com/journals/jama/fullarticle/2762692

13. Santarpia JL, Rivera DN, Herrera V, Morwitzer MJ, Creager H, Santarpia GW, et al. Transmission Potential of SARS-CoV-2 in Viral Shedding Observed at the University of Nebraska Medical Center. medRxiv. 2020 Mar 26;2020.03.23.20039446.

14. Wang W, Xu Y, Gao R, Lu R, Han K, Wu G, et al. Detection of SARS-CoV-2 in Different Types of Clinical Specimens. JAMA [Internet]. 2020 Mar 11 [cited 2020 Mar 15]; Available from: https://jamanetwork.com/journals/jama/fullarticle/2762997

15. Cai J, Xu J, Lin D, Yang zhi, Xu L, Qu Z, et al. A Case Series of children with 2019 novel coronavirus infection: clinical and epidemiological features. Clin Infect Dis. 2020 Feb 28;ciaa198.

16. Peng L, Liu J, Xu W, Luo Q, Deng K, Lin B, et al. 2019 Novel Coronavirus can be detected in urine, blood, anal swabs and oropharyngeal swabs samples. medRxiv. 2020 Feb 25;2020.02.21.20026179.

17. Wu Y, Guo C, Tang L, Hong Z, Zhou J, Dong X, et al. Prolonged presence of SARS-CoV-2 viral RNA in faecal samples. Lancet Gastroenterol Hepatol [Internet]. 2020 Mar 19 [cited 2020 Mar 26];0(0). Available from: https://www.thelancet.com/journals/langas/article/PIIS2468-1253(20)30083-2/abstract

18. Woelfel R, Corman VM, Guggemos W, Seilmaier M, Zange S, Mueller MA, et al. Clinical presentation and virological assessment of hospitalized cases of coronavirus disease 2019 in a travel-associated transmission cluster. Nature. 2020 Mar 8;2020.03.05.20030502.

19. Bi Q, Wu Y, Mei S, Ye C, Zou X, Zhang Z, et al. Epidemiology and Transmission of COVID-19 in Shenzhen China: Analysis of 391 cases and 1,286 of their close contacts. medRxiv. 2020 Mar 4;2020.03.03.20028423.

20. Burke RM. Active Monitoring of Persons Exposed to Patients with Confirmed COVID-19 — United States, January–February 2020. MMWR Morb Mortal Wkly Rep [Internet]. 2020 [cited 2020 Mar 17];69. Available from: https://www.cdc.gov/mmwr/volumes/69/wr/mm6909e1.htm

21. Kam K, Yung CF, Cui L, Lin Tzer Pin R, Mak TM, Maiwald M, et al. A Well Infant with Coronavirus Disease 2019 (COVID-19) with High Viral Load. Clin Infect Dis [Internet]. [cited 2020 Mar 4]; Available from: https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa201/5766416

22. Mizumoto K, Chowell G. Transmission potential of the novel coronavirus (COVID-19) onboard the diamond Princess Cruises Ship, 2020. Infect Dis Model. 2020;5:264–70.

23. Cereda D, Tirani M, Rovida F, V D, M A, P P, et al. The early phase of the COVID-19 outbreak in Lombardy, Italy. ArXiv200309320 Q-Bio [Internet]. 2020 Mar 20 [cited 2020 Mar 26]; Available from: http://arxiv.org/abs/2003.09320

24. Nishiura H, Kobayashi T, Suzuki A, Jung S-M, Hayashi K, Kinoshita R, et al. Estimation of the asymptomatic ratio of novel coronavirus infections (COVID-19). Int J Infect Dis. 2020 Mar;S1201971220301399.

25. Luo S-H, Liu W, Liu Z-J, Zheng X-Y, Hong C-X, Liu Z-R, et al. A confirmed asymptomatic carrier of 2019 novel coronavirus (SARS-CoV-2). Chin Med J (Engl) [Internet]. 2020 Mar 23 [cited 2020 Mar 26];Publish Ahead of Print. Available from: https://journals.lww.com/cmj/Citation/publishahead/A_confirmed_asymptomatic_carrier_of_2019_novel.99353.aspx

26. Hu Z, Song C, Xu C, Jin G, Chen Y, Xu X, et al. Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China. Sci China Life Sci. 2020 Mar 4;

27. Qian G, Yang N, Ma AHY, Wang L, Li G, Chen X, et al. A COVID-19 Transmission within a family cluster by presymptomatic infectors in China. Clin Infect Dis Off Publ Infect Dis Soc Am. 2020 Mar 23;

28. Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. N Engl J Med. 2020 Feb 19;0(0):null.

29. Xu T, Chen C, Zhu Z, Cui M, Chen C, Dai H, et al. Clinical features and dynamics of viral load in imported and non-imported patients with COVID-19. Int J Infect Dis. 2020 Mar;S1201971220301417.

30. Young BE, Ong SWX, Kalimuddin S, Low JG, Tan SY, Loh J, et al. Epidemiologic Features and Clinical Course of Patients Infected With SARS-CoV-2 in Singapore. JAMA [Internet]. 2020 Mar 3 [cited 2020 Mar 26]; Available from: https://jamanetwork.com/journals/jama/fullarticle/2762688

31. To KK-W, Tsang OT-Y, Leung W-S, Tam AR, Wu T-C, Lung DC, et al. Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study. Lancet Infect Dis [Internet]. 2020 Mar 23 [cited 2020 Mar 26]; Available from: http://www.sciencedirect.com/science/article/pii/S1473309920301961

32. Ganyani et al. Estimating the generation interval for COVID-19 based on symptom onset data | medRxiv [Internet]. [cited 2020 Mar 26]. Available from: https://www.medrxiv.org/content/10.1101/2020.03.05.20031815v1

33. Wei WE. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020. MMWR Morb Mortal Wkly Rep [Internet]. 2020 [cited 2020 Apr 6];69. Available from: https://www.cdc.gov/mmwr/volumes/69/wr/mm6914e1.htm

34. Kimball A, Hatfield KM, Arons M, James A, Taylor J, Spicer K, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility - King County, Washington, March 2020. MMWR Morb Mortal Wkly Rep. 2020 Apr 3;69(13):377–81.

35. WHO. Rational use of personal protective equipment for coronavirus disease (COVID-19): interim guidance, 27 February 2020. 2020 [cited 2020 Mar 24]; Available from: https://apps.who.int/iris/handle/10665/331215

36. Seto W, Tsang D, Yung R, Ching T, Ng T, Ho M, et al. Effectiveness of precautions against droplets and contact in prevention of nosocomial transmission of severe acute respiratory syndrome (SARS). The Lancet. 2003 May 3;361(9368):1519–20.

37. Loeb M, Dafoe N, Mahony J, John M, Sarabia A, Glavin V, et al. Surgical Mask vs N95 Respirator for Preventing Influenza Among Health Care Workers: A Randomized Trial. JAMA. 2009 Nov 4;302(17):1865–71.

38. Radonovich LJ, Simberkoff MS, Bessesen MT, Brown AC, Cummings DAT, Gaydos CA, et al. N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel: A Randomized Clinical Trial. JAMA. 2019 03;322(9):824–33.

39. Long Y, Hu T, Liu L, Chen R, Guo Q, Yang L, et al. Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis. J Evid-Based Med [Internet]. [cited 2020 Mar 25];n/a(n/a). Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/jebm.12381

40. Bartoszko J, Farooqi M, Alhazzani W, Loeb M. Medical Masks vs N95 Respirators for Preventing COVID-19 in Health Care Workers A Systematic Review and Meta-Analysis of Randomized Trials. Influenza Other Respir Viruses [Internet]. 2020 Apr 4; Available from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/irv.12745

41. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19) [Internet]. [cited 2020 Mar 24]. Available from: https://www.who.int/publications-detail/report-of-the-who-china-joint-mission-on-coronavirus-disease-2019-(covid-19)

42. Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare workers: a systematic review. PloS One. 2012;7(4):e35797.

43. WHO | Infection prevention and control of epidemic-and pandemic prone acute respiratory infections in health care [Internet]. WHO. [cited 2020 Mar 26]. Available from: https://www.who.int/csr/bioriskreduction/infection_control/publication/en/

44. MacIntyre CR, Seale H, Dung TC, Hien NT, Nga PT, Chughtai AA, et al. A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. BMJ Open. 2015 Apr 1;5(4):e006577.

45. Bourouiba L. Turbulent Gas Clouds and Respiratory Pathogen Emissions: Potential Implications for Reducing Transmission of COVID-19. JAMA [Internet]. 2020 Mar 26 [cited 2020 Apr 3]; Available from: https://jamanetwork.com/journals/jama/fullarticle/2763852

46. Driessche KV, Hens N, Tilley P, Quon BS, Chilvers MA, de Groot R, et al. Surgical Masks Reduce Airborne Spread of Pseudomonas aeruginosa in Colonized Patients with Cystic Fibrosis. Am J Respir Crit Care Med. 2015 Oct 1;192(7):897–9.

47. WHO. Advice on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus (COVID-19) outbreak [Internet]. [cited 2020 Apr 8]. Available

from: https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

48. Leung NHL, Chu DKW, Shiu EYC, Chan K-H, McDevitt JJ, Hau BJP, et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. Nat Med. 2020 Apr 3;1–5.

49. Bae S, Kim M-C, Kim JY, Cha H-H, Lim JS, Jung J, et al. Effectiveness of Surgical and Cotton Masks in Blocking SARS–CoV-2: A Controlled Comparison in 4 Patients. Ann Intern Med [Internet]. 2020 Apr 6 [cited 2020 Apr 7]; Available from: https://annals.org/aim/fullarticle/2764367/effectiveness-surgical-cotton-masks-blocking-sars-cov-2-controlled-comparison

50. Johnson GR, Morawska L, Ristovski ZD, Hargreaves M, Mengersen K, Chao CYH, et al. Modality of human expired aerosol size distributions. J Aerosol Sci. 42(12):839–51.

51. Tracht SM, Del Valle SY, Hyman JM (2010) Mathematical Modeling of the Effectiveness of Facemasks in Reducing the Spread of Novel Influenza A (H1N1). PLOS ONE 5(2): e9018. https://doi.org/10.1371/journal.pone.0009018

52. Brienen NCJ, Timen A, Wallinga J, van Steenbergen JE, Teunis PFM. The effect of mask use on the spread of influenza during a pandemic. Risk Anal Off Publ Soc Risk Anal. 2010 Aug;30(8):1210–8.

53. Yan J, Guha S, Hariharan P, Myers M. Modeling the Effectiveness of Respiratory Protective Devices in Reducing Influenza Outbreak. Risk Anal. 2019 Mar 1;39(3):647–61.

54. Sande M van der, Teunis P, Sabel R. Professional and Home-Made Face Masks Reduce Exposure to Respiratory Infections among the General Population. PLOS ONE. 2008 Jul 9;3(7):e2618.

55. ECDC. Using face masks in the community - Reducing COVID-19 transmission from potentially asymptomatic or pre-symptomatic people through the use of face masks [Internet]. Available from: https://www.ecdc.europa.eu/en/publications-data/using-face-masks-community-reducing-covid-19-transmission

56. BfArM - Empfehlungen des BfArM - Hinweise des BfArM zur Verwendung von selbst hergestellten Masken (sog. „Community-Masken“), medizinischem Mund-Nasen-Schutz (MNS) sowie filtrierenden Halbmasken (FFP2 und FFP3) im Zusammenhang mit dem Coronavirus (SARS-CoV-2 / Covid-19) [Internet]. [cited 2020 Apr 8]. Available from: https://www.bfarm.de/SharedDocs/Risikoinformationen/Medizinprodukte/DE/schutzmasken.html

57. CDC. Coronavirus Disease 2019 (COVID-19) [Internet]. Centers for Disease Control and Prevention. 2020 [cited 2020 Apr 8]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover.html

58. Leung CC, Lam TH, Cheng KK. Mass masking in the COVID-19 epidemic: people need guidance. The Lancet. 2020 Mar 21;395(10228):945.

59. Klompas M, Morris CA, Sinclair J, Pearson M, Shenoy ES. Universal Masking in Hospitals in the Covid-19 Era. N Engl J Med. 2020 Apr 1;0(0):null.

60. Howard J., Huang A., Li Z., Tufekci Z., Zdimal V., van der Westhuizen H., von Delft A., Price A., Fridman L., Tang L., Tang V., Watson G.L., Bax C.E., Shaikh R., Questier F., Hernandez D., Chu L.F., Ramirez C.M., Rimoin A.W. Face Masks Against COVID-19: An Evidence Review. Preprints 2020, 2020040203 https://www.preprints.org/manuscript/202004.0203/v1 Submitted to PNAS

61. Javid B, Weekes MP, Matheson NJ. Covid-19: should the public wear face masks? BMJ [Internet]. 2020 Apr 9 [cited 2020 Apr 12];369. Available from: https://www.bmj.com/content/369/bmj.m1442

Annexe : exemple de procédure de stérilisation masques FFP2

Procédure de stérilisation de Masque FFP2

CHU St Pierre - Version du 10 avril 2020

Personnes de contact stérilisation

Mme Maria Curto,

Responsable Stérilisation

CHU St Pierre, 322 rue Haute, 1000 Bruxelles

Email: maria_curto@stpierre-bru.be

Mme Delphine Hubens

Adjointe Stérilisation

CHU St Pierre, 322 rue Haute, 1000 Bruxelles

Email: delphine_hubens@stpierre-bru.be

Avertissement

Les informations contenues dans le présent document sont les procédures mises en place par le CHU Saint-Pierre, pour ses besoins internes, en date du 4 avril 2020. Elles vous sont fournies à titre d'information et n'engage en rien la responsabilité du CHU St Pierre tant au niveau de la procédure du traitement des masques que du résultat que vous obtiendrez.

Nous ne pouvons offrir aucune garantie que ces procédures soient applicables telles qu'elles dans votre institution. Il convient de les faire valider par vos hygiénistes et votre personnel de la stérilisation compte tenu du matériel dont ils disposent.

Il n'y aucune garantie que ces procédures puissent être transposées à d'autres finalités comme la stérilisation d'un autre type de masque que les FFP2 utilisés au CHU St Pierre

La procédure, même si elle semble aboutie est susceptible de changer.

Toute copie que vous auriez reçue de ce document qui ne proviendrait pas directement du CHU St Pierre pourrait avoir été modifiée et/ou ne plus être à jour. N'hésitez pas à prendre contact avec le CHU St Pierre si vous pensez ne pas disposer de la dernière version du document.

Des directives AFMPS ont été émises depuis notre initiative. Elles sont disponibles ici et la version disponible à la date de création du présent document est reproduite dans les annexes pour votre facilité.

Table des matières

Contexte

Du fait de la pénurie d'approvisionnement et des problèmes de qualité des masques actuellement disponibles sur le marché dans le cadre de la pandémie de covid19, nous avons opté, au CHU Saint-Pierre, pour la re-stérilisation des masques FFP2 selon une méthode de stérilisation professionnelle à l'autoclave à vapeur à 121°C à la stérilisation centrale.

Nous avons évalué la résistance du masque après plusieurs cycles de stérilisation par la technique du fit testing qui permet de voir si le nombre de particules mesurées dans et hors du masque reste conforme.

Sept cycles de stérilisation ne modifient pas le fit des masques. Néanmoins, de petites altérations de la mousse de la barrette nasale étant observée, nous avons choisi de limiter le nombre de stérilisations à 5 fois.

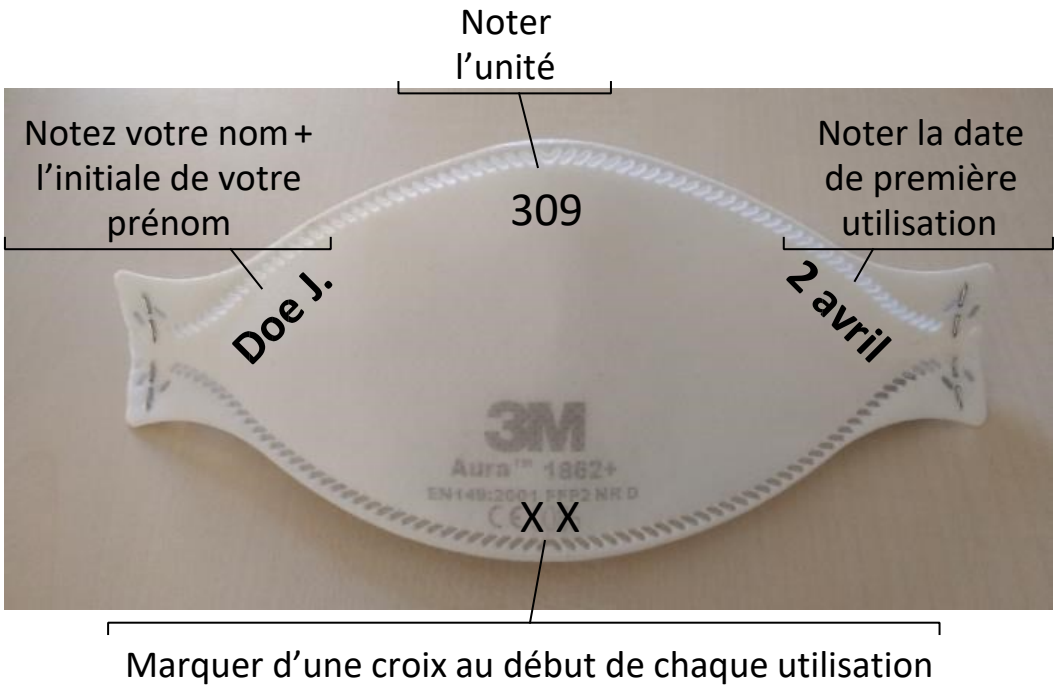
Type de masques testés avec cette procédure

Cette procédure a été testée uniquement sur les masques FFP2 3M 9320 ou 1862.

L'effet de cette procédure sur les masques FFP2 type bec de canard n'a pas été testé.

Procédure de collecte des masques dans les services

1. **J'identifie mon masque selon les recommandations**



2. **A la fin de mon service, je mets mon masque FFP2 usagé <u>dans un sachet</u> coté identifié visible (1 masque par sachet) puis <u>dans le bac prévu à cet effet dans le vidoir.</u>**

L'aide logistique dépose le bac contenant les masques en zone sale en Stérilisation (avant 9h00 et 16h30). Il récupère par la même occasion les masques stérilisés.

3 **Je peux récupérer mon(mes) masque(s) stérilisé(s) au sein de mon unité**

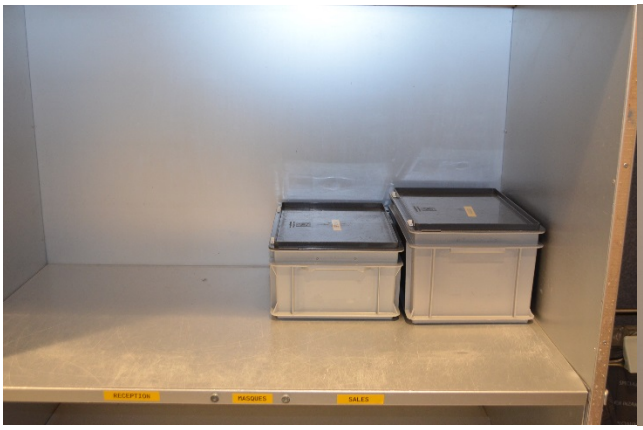
4 **A la sixième croix « X » sur mon masque, je l'échange en fin de shift contre un nouveau masque et il est définitivement éliminé.**

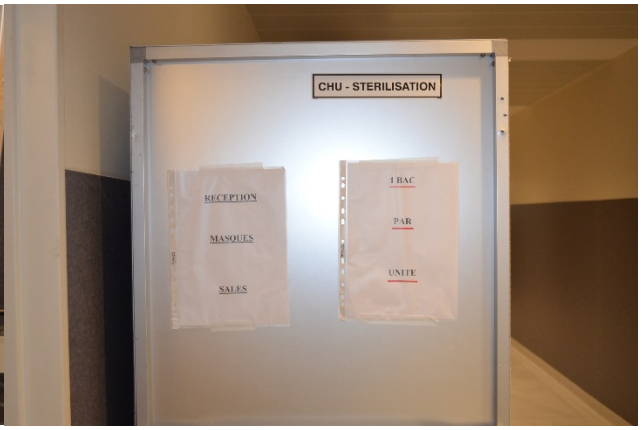
Si le masque présente un défaut technique, il peut être échangé

Procédure de traitement des masques à la stérilisation

Préparation

Bacs déposés dans le chariot en face de la zone lavage

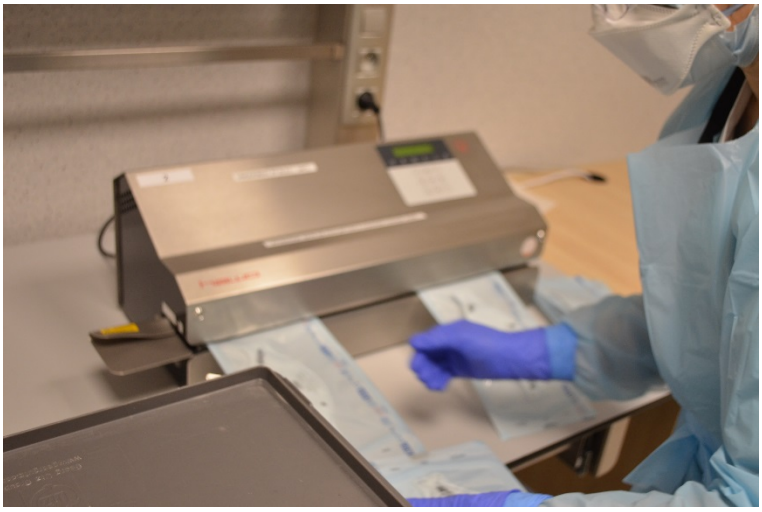




Mettre une surblouse, gants et masques pour récupérer les bacs.

Déposer sur le chariot « sale ».

Sceller les sachets un par un avec la soudeuse en zone réception « sale ».



Disposer 5 sachets de masque soudés dans un grand sachet pour double emballage.

Transporter les grands sachets dans des paniers et dans un chariot propre fermé jusqu'au sas du conditionnement.

Laver les bacs de transports en désinfection thermique dans les laveurs-désinfecteurs.

Nettoyer la table et la soudeuse après utilisation.

Rentrer les paniers avec les grands sachets **dans le sas** la zone de conditionnement.

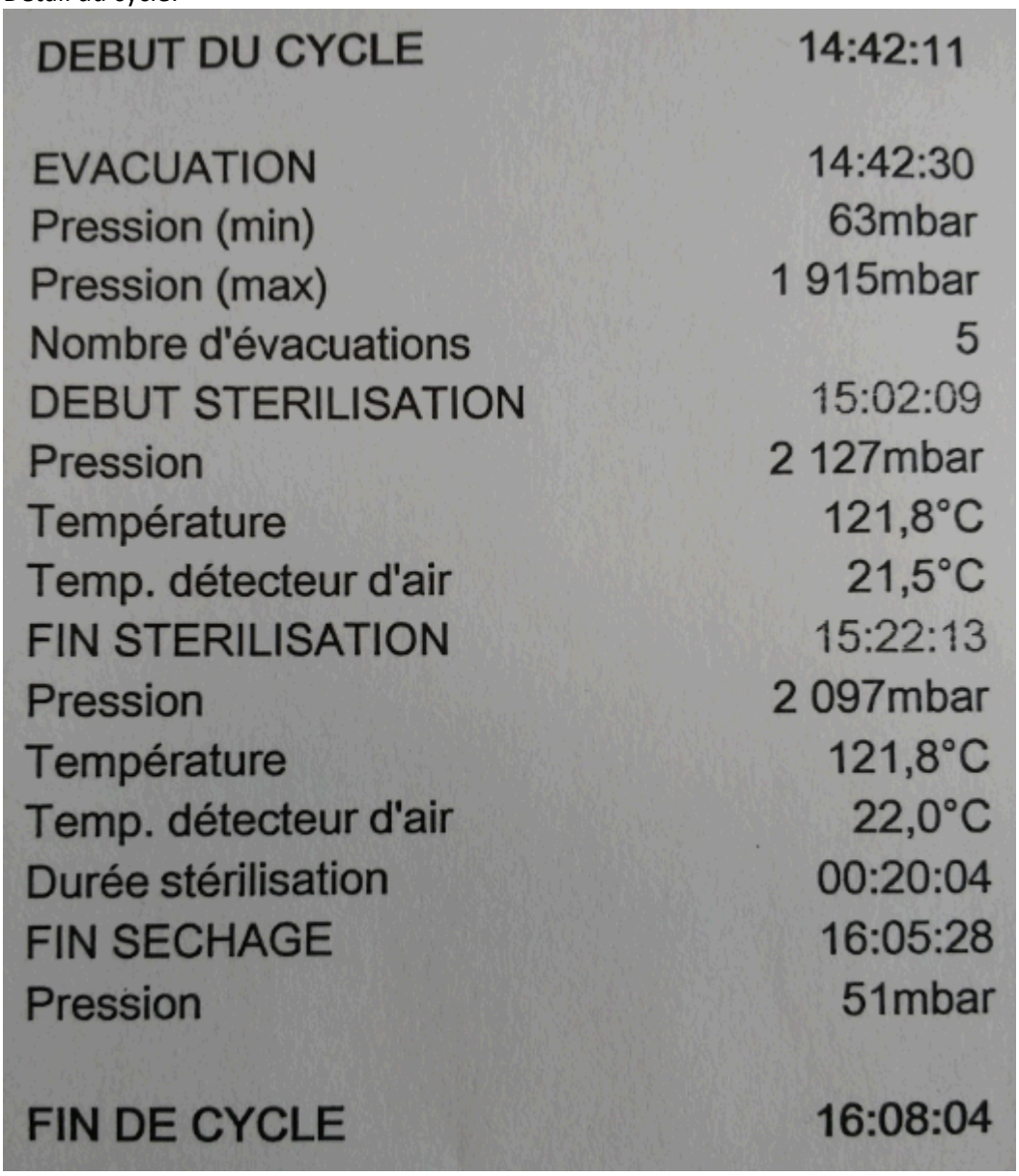
Souder les grands sachets avec la soudeuse dans la zone conditionnement (près des peel pack).

Les disposer dans les paniers sur le chariot de l'autoclave dédié à **121°C**.

Méthode de stérilisation

Selon le fonctionnement habituel d'un autoclave hospitalier, avec une différence qui se situe au niveau de la purge. Nous en faisons 5. La stérilisation dure 20 minutes dans le cycle complet de 1h26.

Détail du cycle:



DEBUT DU CYCLE	14:42:11
EVACUATION	14:42:30
Pression (min)	63mbar
Pression (max)	1 915mbar
Nombre d'évacuations	5
DEBUT STERILISATION	15:02:09
Pression	2 127mbar
Température	121,8°C
Temp. détecteur d'air	21,5°C
FIN STERILISATION	15:22:13
Pression	2 097mbar
Température	121,8°C
Temp. détecteur d'air	22,0°C
Durée stérilisation	00:20:04
FIN SECHAGE	16:05:28
Pression	51mbar
FIN DE CYCLE	16:08:04

Retour vers les services

Les peel pack stérilisé à 121 °C sont placés dans un bac rouge ou gris ou autre couleur !!! 1 par service bien le noter sur le bac !!!
et rangé sur le chariot

La procédure de stérilisation en résumé

1. Déposer le masque FFP2 3M Aura 1862+ dans un sachet Ultra (https://www.dutscher.com/frontoffice/product?produitId=0N-18-21)
2. Souder le sachet Ultra
3. Déposer 5 sachets dans un grand sachet pour double emballage
4. Déposer les grands sachets dans le panier de l'autoclave
5. Déposer les paniers dans le chariot de l'autoclave
6. Lancer le cycle de stérilisation à 121°C

Incidents rapportés

Les premiers retours montrent que pour un petit nombre de masques, l'élastique (bride bleue) peut se rompre.

Liens utiles

Lien vers une vidéo montrant ce qu'est un fit testing

https://www.youtube.com/watch?v=-zRD2GKUkBs

Vers 2min50, ils testent un FFP2 et c'est intéressant à montrer aux gens pour illustrer combien l'ajustement du masque influe sur la qualité de la protection. On voit ici très bien que l'étanchéité est mauvaise quand le masque est mal mis et triple quand il ajuste mieux son nez.

Lien vers un article décrivant en détail le fonctionnement d'un autoclave d'hôpital

https://consteril.com/how-does-a-laboratory-autoclave-work/

Lien vers les vidéos du CHU St Pierre sur comment bien mettre et bien enlever son matériel de protection

https://live.stpierre-bru.be/channels/#hygienegenerale

Lien vers les vidéos du CHU St Pierre "patients hautement contagieux"

https://live.stpierre-bru.be/channels/#maladieshautementcontagieuses