**Appendix A: Online-survey**

**(translated from German, the original survey in German available upon request)**

**Survey** Entry requested by participant marked in yellow

**Introduction**

Imagine you are working as a physician in an intensive care unit of a hospital. In the following imaginary scenarios, a situation is described in which you will have to take a difficult decision.

You have two very ill COVID-19 patients who only have a chance of survival if they receive mechanical ventilation (a respirator). You only have one ventilator machine available. You must therefore make a decision on who receives the ventilator. You can also draw lots, allowing chance to decide who receives the ventilator. In that case, both patients have equal chances.

How would you decide? How sure are you about your decision? How appropriate do you think the particular characteristic is to determine who receives the ventilator?

This survey includes 10 of these scenarios. At the end of the survey, you will be asked a few questions regarding your age, gender, religious beliefs, and whether you work in healthcare. In total, the survey will take around 20 to 30 minutes.

By clicking *Continue* below you consent to participating in this study.

Continue

**1. Case number 1**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 22 year old, otherwise healthy student was infected with the new coronavirus in Austria during a skiing trip. He developed a severe pneumonia and requires mechanical ventilation to survive. | An 87 year old was admitted from an old-age-home where a corona-positive nurse was working. He started coughing severely and developed increasing shortness of breath. He will die if he is not ventilated mechanically. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **age** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**2. Case number 2**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 54 year old woman who is insured in the public system tested positive for SARS-CoV-2 without a history of sick contact. Her clinical condition markedly deteriorated over the last 24 hours, so that she requires mechanical ventilation in order to have a chance of survival. | A 52 year old, female patient with private health insurance most likely was infected at work by a colleague who also has COVID-19. She developed pneumonia, is in a life-threatening condition and therefore requires mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **insurance status** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**3. Case number 3**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 62 year old who has been in early retirement for the last 15 years receives regular dialysis because of a congenital kidney condition. He was infected with the new coronavirus 10 days ago and is deadly ill due to pneumonia. He would most likely die soon without mechanical ventilation. | An otherwise healthy 65 year old without significant other health issues caught COVID-19 at a tennis club meeting. He became so ill over the last 7 days that the only way to save him would be mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **fateful co-morbidities** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**4. Case number 4**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 58 year old vegetarian fitness enthusiast initially experienced cold symptoms, then was tested positive for SARS-CoV-2. He deteriorated and is now in critical condition, requiring mechanical ventilation. | A 57 year old smoker has a history of pulmonary emphysema. He also has liver cirrhosis due to alcohol consumption. He contracted COVID-19 most likely in a bar where others were also tested positive. Over the last days he became so ill that he urgently requires mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **behaviour-associated co-morbidities** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**5. Case number 5**

|  |  |
| --- | --- |
| Patient A | Patient B |
| An energetic, 44 year old beautician, who just opened a day spa most likely caught COVID-19 at work. She developed pneumonia and severe dyspnea. Without mechanical ventilation, she most likely will die. | A 46 year old nurse who infected herself at work with the new coronavirus in the intensive care. She quickly deteriorated and is now treated for severe shortness of breath with an oxygen mask. She requires mechanical ventilation to survive. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **working in a healthcare profession** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**6. Case number 6**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 38 year old woman who is a German national and has been paying into the German security system since 18th birthday has not been ill except for high blood pressure. She infected herself with the new coronavirus during an excursion. She became increasingly worse off with shortness of breath so that she requires mechanical ventilation for a chance of survival. | A 35 year old female recent refugee from Nigeria whose medical care is covered by the state through tax revenue developed respiratory symptoms shortly after arriving in Germany. She also takes thyroid hormones for a thyroid condition. She is now deadly ill from COVID-19 and requires mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **asylum status and nationality** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**7. Case number 7**

|  |  |
| --- | --- |
| Patient A | Patient B |
| By chance the finance minister of the state you live in is admitted to your service because of severe COVID-19 Pneumonia. He has received several medals of honor from service in the past. He has gone into respiratory failure and urgently requires mechanical ventilation. | Recently a homeless man was admitted to your intensive care unit. He worked odd jobs as a gardener assistant in the past, lived under a bridge and came to the hospital with a cough and fever. He tested positive for the new coronavirus, and has deteriorated fast, has severe shortness of breath and requires mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **social status** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**8. Case number 8**

|  |  |
| --- | --- |
| Patient A | Patient B |
| The 84 year old gentleman that was transferred to you yesterday has COVID-19 and is deteriorating by the hour. Because of his many other medical conditions, you believe that he has almost no chance of long-term survival. However, if he is not ventilated now, he will most likely die in the next hours. | An 88 year old patient has advanced lung cancer but on admission said "the doctors gave me 6 more months to live". He had planned a cruise around the world with his wife next month, but then became infected with COVID-19. You expect him to recover after successful treatment, but then succumb to his pulmonary carcinoma. Right now he urgently needs mechanical ventilation for worsening shortness of breath to survive. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should the **chance of longterm survival (prognosis)** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**9. Case number 9**

|  |  |
| --- | --- |
| Patient A | Patient B |
| a 28 year old music student from another country is spending a semester in Germany through an exchange program. His history includes a suicide attempt 1 month ago. He recently contracted COVID-19 and has rapidly deteriorated, so that there was no chance of obtaining consent for intensive care. His family cannot be reached, but now requires urgent mechanical ventilation to survive. | A 32 year old engineer became deadly ill from an infection with SARS-CoV-2. He has signed the consent for intensive care. His family is present and asks that "everything possible be done for him". He has progressive respiratory failure and will not survive if he is not intubated and ventilated soon. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should explicitly having given **consent** for the intensive care play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

**10. Case number 10**

|  |  |
| --- | --- |
| Patient A | Patient B |
| A 42 year old single woman contracted COVID-19 in a fitness studio. She is single and has no children. She was admitted 5 days ago with fever and a cough, then developed massive pneumonia and now requires mechanical ventilation or will die soon. | A 39 year old mother of 4 children contracted COVID-19, became severely ill over the last 5 days and is going into respiratory failure. She will die without mechanical ventilation. |

a) Who would you make the ventilator available to?

□ Patient A

□ Patient B

□ I would draw lots

b) How sure are you about your decision? Please mark the scale accordingly

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

very unsure neither sure nor unsure very sure

In your opinion, how much should **responsibility for others** play a role in determining who receives the ventilator (lifesaving therapy)?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

not at all somewhat completely

d) Commentary to this scenario (voluntary):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (free text)

11. Questions on decision modalities

In order to help physicians take these difficult life and death decisions, several modalities are being discussed. Please rate your opinion regarding these methods by setting the sliding bar according to your opinion (0 - not appropriate, 100 - most appropriate):

a) Drawing lots: When lifesaving therapies are scarce, they should be distributed by drawing lots. Every patient has the same chance of receiving the therapy. What do you think about this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

b) Treatment by chronologic order (first come - first serve): Patients receive a ventilator until none are left. All subsequent patients do not receive a ventilator until one becomes available again. What do you think about this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

c) Laws: Laws determine exactly who receives the ventilator. Physicians do not have to make their own decisions, they simply follow concrete laws that determine who receives the therapy. What do you think about this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

d) Ethics committee: The physicians treating the patients are supported on-site by an interdisciplinary team of professionals. What do you think about this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

e) Decision committees: The decision who receives the ventilator is made remotely by a multidisciplinary panel, whose members are not directly involved in the patients' care. What do you think about this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

f) Point-system similar to what is used for the distribution of organs in organ transplantation. Every patients is scored according to previously-defined criteria such as age, acuity of the disease, prognosis, quality of life years gained. The patient with the highest score receives the ventiator. What do you think of this method?

0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 100

Not appropriate may be helpful most appropriate

12. Please give us some information about yourself (all entries are **voluntary**).

a) Age in years \_\_\_ years

b) Gender male/female/diverse

c) Religious denomination

catholic/protestant/other Christian/Muslim/Jew/Hindu/Budhist/Atheist-agnostic/ other \_\_\_\_\_

d) Healthcare profession (for example physician, therapist, nurse)? yes/no