THE LANCET Infectious Diseases

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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A clinical case definition of post-COVID-19 condition by a Delphi consensus

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Date: December 2021

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'Consensus' will be obtained on a question **if 70% or more** of the responses fall within the same response on a 9-point Likert scale.

'Disagreement' will occur if 35% or more of responses fall in both of the two extreme ranges of possible options on the Likert scale.

All other combinations of panel answers will be considered 'partial agreement'.

L	imited	importa	nce	Importa	nt but no	ot critica		Critical to	o include	•
ſ	(1) O	(2) 〇	(3) O	(4) 〇	(5) 〇	(6) O	(7) O	(8) 〇	(9) O	Not my expertise

Appendix 2. Repository of published/available definitions of Post COVID-19 condition

Source	Text
Wellcome	Symptoms persisting beyond four weeks after symptom onset suggestive of COVID-19. ¹
Lancet	Multiorgan symptoms after COVID-19 are being reported by increasing numbers of patients. They range from cough and shortness of breath, to fatigue, headache, palpitations, chest pain, joint pain, physical limitations, depression, and insomnia, and affect people of varying ages. At the Lancet– Chinese Academy of Medical Sciences conference on Nov 23, Bin Cao presented data (in press at The Lancet) on the longterm consequences of COVID-19 for patients in Wuhan, and warned that dysfunctions and complications could persist in some discharged patients for at least 6 months. So-called long COVID is a burgeoning health concern and action is needed now to address it. ²
NICE	Signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis. ³
Scientific	Individuals whose symptoms persist or develop outside the initial viral infection, but the duration
American	and pathogenesis are unknown. ⁴
Royal Society	The onset of persistent or recurrent episodes of one or more of the following symptoms, within x* weeks of infection with SARS-CoV-2 and continuing for y* weeks or more. ²
French Auth.	Three criteria: Having presented with a symptomatic form of Covid-19; presenting with one or more
de Santé	initial symptoms 4 weeks after the start of the disease; and none of these symptoms can be explained by another diagnosis. ⁵
CDC	Long COVID: While most persons with COVID-19 recover and return to normal health, some
	patients can have symptoms that can last for weeks or even months after recovery from acute illness. Even people who are not hospitalized and who have mild illness can experience persistent or late symptoms. ⁶
Wikipedia	Condition characterized by long-term sequelae—persisting after the typical convalescence period— of coronavirus disease 2019 (COVID-19). ⁷
Nature	post-acute COVID-19 as persistent symptoms and/or delayed or long-term complications of SARS- CoV-2 infection beyond 4 weeks from the onset of symptoms. ⁸
	····

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- Editorial. Facing up to long COVID. Lancet. 2020 Dec 12;396(10266):1861. doi: 10.1016/S0140-6736(20)32662-3.
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- Scientific American (By Carolyn Barber on December 29, 2020) https://www.scientificamerican.com/article/the-problem-of-long-haul-covid/?print=true [accessed April 22, 2021].
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Delphi questionnaire - Version 10 May 2021

Questionnaire for the Post COVID-19 condition clinical case definition WHO Delphi study

Thank you for agreeing to participate in this Delphi study to help develop a clinical case definition of Post COVID-19 condition. Please read through items 1 to 4 before proceeding to the survey page.

1. Delphi purpose and description

The purpose of this WHO Delphi study is to obtain opinions, including on which domains, and their eventual values or thresholds, should be applied to the development of a clinical case definition of Post COVID-19 condition.

There are many unknowns and lingering issues on Post COVID-19 condition, including the need for a standard clinical case definition to be used by all parties and in all settings. The list of available, related definitions is growing (see **Appendix 1** in the study protocol), but to date none is universal. WHO has engaged in developing a clinical case definition of Post COVID-19 condition based on existing evidence by applying the most objective Delphi methodology.

This Delphi study will consist of two (2) rounds send out for completion in May 2021. You will have five days to complete each round. This is round 1.

2. Where did the domains considered for inclusion in the definition come from?

The domains (or variables) were derived from a literature review on current evidence, interviews with patients and consultations with knowledge leaders. COMET DelphiManager software, a web-based system designed to facilitate the building and management of Delphi surveys, will be used to complete this Delphi exercise.

3. What happens after I complete this first Delphi round?

We will inform you when all Round 1 data have been received and analysed. We will then give you access to Round 2, which will include a summary of the responses from Round 1 and empirical evidence for each item derived from further literature review.

You will then re-vote on each item in Round 1 that was scored as "critical" by at least 70% of Delphi respondents and as of "limited importance" by less than 15% of respondents.

4. Participation and confidentiality

Participating in this WHO Delphi study is voluntary. Only anonymized and aggregate data will be shared and published. No one other than an authorized member of the research team will be able identify you through your survey responses.

You will be invited to complete all rounds. Note that the results may be compromised if panellists (participants like you) drop out of the study before it is completed. If people drop out because they feel their opinions are in the minority, the final results will overestimate how much participants agreed.

Please complete Round 1 using the set of instructions, next

Instructions

All survey questions must be **completed from Tuesday 11 May to Saturday 15 May 2021**. The entire survey should take you **less than 10 minutes to complete**. You may complete the survey in more than one sitting by using the "Save & Return" button at the bottom of the survey page.

Please keep in mind that the purpose of this WHO Delphi study is to help identify the minimum and essential domains to include in a clinical case definition of Post COVID-19 condition.

The candidate reporting domains are organized into 11 categories with several sub-categories for voting purposes.

Please rate the IMPORTANCE of including each of these categories and where necessary, sub-categories.

- A rating of 1 to 3 means that you consider the item to be of limited importance to include in the definition.
- A rating of 4 to 6 means that you consider the item to be important but not critical to include in the definition.
- A rating of 7 to 9 means that you consider the item to be critical to include in the definition.
- You may select "Not my expertise" for items that you feel you do not have the appropriate level of expertise to rate.
- A text box is provided at the bottom of each question for you to provide comments about each candidate domain and/or any explanations you would like to provide for your rating.

Please feel free to contact us directly with any questions. Address your queries to Dr JB Soriano at <u>sorianoj@who.int</u>.

To start this Delphi Round 1 survey with DelphiManager, please click "Register" below.

Domain 1 – History of SARS-CoV-2 infection

How important is "<u>having a history of SARS-CoV-2 infection</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: Suspected/probable/confirmed case of SARS-CoV-2 infection. In the link <u>https://www.who.int/publications/i/item/WHO-2019-nCoV-</u> <u>Surveillance Case Definition-2020.2</u> the case definitions for public health surveillance of COVID-19 in humans caused by SARS-COV-2 infection are provided.

Domain 2 – SARS-CoV-2 laboratory confirmation

How important is "<u>having a laboratory confirmed previous history of SARS-CoV-</u> <u>2 infection</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc	0								

Notes: None

Domain 3 - Onset of Post COVID-19 condition

How important is "<u>the inclusion of the following proposed minimum time period</u> (in weeks) between the onset of symptoms of acute COVID-19 (or for asymptomatic cases from date of positive test)" to the clinical case definition of Post COVID-19 condition?

4 wee	eks (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
8 wee	eks (1) ()	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
12 we	eeks (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
16 we	eks o (1) 〇	r more (2) 〇	(3)	(4) 〇	(5)	(6) 〇	(7)	(8) 〇	(9) 〇	Not my expertise

Notes: None

Domain 4 – Minimum duration of symptoms

How important is "the inclusion of the following minimum duration of the

symptoms" to the clinical case definition of Post COVID-19 condition?

At leas	At least 2 weeks											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	0	\bigcirc	0	0								
At least 4 weeks												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	0	\bigcirc	0	0								
At leas	st 6 we	eeks										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	0	0	0	0	0	0	0	0	0	0		
At leas	st 8 we	eks										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0		

Notes: None

Domain 5 – Symptoms (and/or impairments)

How important is "each of **the following symptoms**" to the clinical case definition of Post COVID-19 condition?

Abdominal (1) 〇	pain (2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Altered m (1) 〇	enstrua (2) 〇	ition (3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Altered sn (1) 〇	nell or t (2) 〇	aste (3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Anxiety (1)	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Blurred vis (1) 〇	sion (2) ()	(3)	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Chest pain (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Cognitive	dysfund	ction/b	orain fo	g					
(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Cough (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise

Depre	ession (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Dizzine	ess (1) 〇	(2) 〇	(3) ○	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Fatigue	e (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Gastr	rointes (1) 〇	itinal is (2) 〇	ssues ((3) 〇	diarrho (4) 〇	oea, co (5) 〇	onstipa (6) 〇	tion, a (7) 〇	cid refi (8) 〇	ux) (9) 〇	Not my expertise
Heada	aches (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Interm	ittent (1) 〇	fever (2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Joint	pain (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Mem	ory iss (1) 〇	(2)	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise

Muscle pain

	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
New	allergi (1) 〇	es (2) 〇	(3) ○	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Neur	algias (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Dinc	and ne	odloc								
PINS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	0	0	0	0	0	0	0	0	0	0
Post-	exertio	nal ma	alaise							
1050	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	0	0	0	0	0	0	0	0	0	0
Shor	tness c	of brea	th							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	0	0	0	0	0	0	0	0	0	0
Sleep	o disor	ders								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	0	0	0	0	0	\bigcirc	\bigcirc	0	0	0
Tach	ycardia				(=)		(<u> </u>)		(6)	
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Tinni	tus, an	d othe	er hear	ing iss	ues					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	\bigcirc	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0	0

Notes: List of symptoms presented in alphabetical order, extracted from: <u>https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html</u> <u>https://www.acpjournals.org/doi/10.7326/M20-5926</u> <u>https://apps.who.int/iris/bitstream/handle/10665/339629/Policy-brief-39-1997-8073-eng.pdf</u> <u>https://www.who.int/publications/i/item/global-covid-19-clinical-platform-case-report-form-(crf)-for-post-covid-conditions-(post-covid-19-crf-)</u>

Domain 6 – Minimum number of symptoms

How important is "having a minimum number of symptoms" to the	ne clinical case
definition of Post COVID-19 condition?	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: None

Domain 7 – Clusters of symptoms

How important is "<u>the inclusion of clusters of symptoms</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: Symptom clusters are defined as consisting of two or more symptoms that are related to each other and that occur together. They are composed of stable groups of symptoms, are relatively independent of other clusters and may reveal specific underlying dimensions of symptoms. [**Reference**: Barsevick A. Defining the Symptom Cluster: How Far Have We Come? Seminars in Oncology Nursing 2016; 32 (4): 334-350.]

Domain 8 – Nature of symptoms

How important is "to include each of the following descriptors on the nature of
symptoms" in the clinical case definition of Post COVID-19 condition?

Fluctuating												
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise		
Increasing												
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise		
New	onset (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise		
Persi	stent (1) 〇	(2)	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise		
Rela	osing (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise		

Notes: None

Please provide any feedback on the wording of this domain, suggestions for other thresholds or values of this domain and/or an explanation of your rating:

Domain 9 – Sequelae of well-described acute complications of COVID-19 How important is to "include only symptoms separate from those that are thought to be a sequela of well-described acute complications of COVID-19 [i.e., stroke, acute respiratory distress syndrome, acute kidney injury, myocarditis, thrombosis, post intensive care syndrome (PICS)]" in the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: None

Domain 10 - Symptoms cannot be explained by an alternative diagnosis How important is "<u>that Post COVID-19 condition be considered a diagnosis of</u> <u>exclusion determined by a health provider when symptoms cannot be</u> <u>explained by an alternative diagnosis</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: None

Domain 11 - Should the definition be applied to all populations? How important is "<u>that the Post COVID-19 condition definition can be applied to</u> <u>all populations, including women who are pregnant or post-partum; young</u> <u>children; neonates; people with chronic disease; people living with HIV; older</u> <u>people; or individuals who are immunocompromised because of other</u> <u>conditions</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: None

Please provide any feedback on the wording of this domain, suggestions for other thresholds or values of this domain, and/or an explanation of your rating:

You have completed this Delphi survey Round 1.

We will contact you with Round 2.

THANKS!

Appendix 4. Questionnaire for Round 2



Delphi questionnaire – v7June2021

Questionnaire for a Post COVID-19 condition clinical case definition WHO Delphi study

Thank you again for agreeing to participate in this Delphi study to help develop a clinical case definition of Post COVID-19 condition.

You will see that some questions have been removed or edited from the previous Round 1.

For your information, from the original questionnaire with 11 domains, those outcomes that as per the research protocol achieved 70% or more agreement or 35% or less in either extreme ranges, are excluded. Thus, the domains excluded are:

- Domain 1 History of SARS-CoV-2 infection (N=253 responses; Mean score: 7.6±1.8; 79.4% of responses ≥ 7)
- Domain 5: excluded symptoms

0	Symptom	# of Responses	Mean±SD	%≥7
0	Fatigue	234	7.6±1.5	77.8
0	Shortness of breath	232	7.5±1.6	77.6
0	Cognitive dysfunction	234	7.2±1.7	74.3

- Domain 6 Minimum number of symptoms (N=239; Mean score: 5.4±2.4; 37.7% of responses 7 or greater)
- Domain 10 Symptoms cannot be explained by an alternative diagnosis (N=231; Mean score 7.2±1.8; 71.4% of responses 7 or greater)

In addition, according to feedback and specific comments by respondents, other domains have been rephrased or edited, while one more (Domain 12 - Impact on everyday functioning) has been added to the questionnaire.

You will find tabulated results (Mean score \pm standard deviation and the % of responses \geq 7) for all items again being asked.

Please complete Round 2 using the same set of instructions as per Round 1.

Instructions

All survey questions must be **completed from Monday 7 June to Thursday 10 June 2021**. The entire survey should take you **less than 10 minutes to complete**. You may complete the survey in more than one sitting by using the "Save & Return" button at the bottom of the survey page.

Please keep in mind that the purpose of this WHO Delphi study is to help identify the minimum and essential domains to include in a clinical case definition of Post COVID-19 condition, in keeping with the best current understanding of this condition, acknowledging that the case definition may evolve.

The candidate reporting domains are organized into 8 categories with several subcategories for voting purposes.

Please rate the IMPORTANCE of including each of these categories and, where necessary, subcategories.

- A rating of 1 to 3 means that you consider the item to be of limited importance to include in the definition.
- A rating of 4 to 6 means that you consider the item to be important but not critical to include in the definition.
- A rating of 7 to 9 means that you consider the item to be critical to include in the definition.
- You may select "Not my expertise" for items that you feel you do not have the appropriate level of expertise to rate.
- A text box is provided at the bottom of each question for you to provide comments about each candidate domain and/or any explanations you would like to provide for your rating.

Please feel free to contact us directly with any questions. Address your queries to Dr JB Soriano at <u>sorianoj@who.int</u>

Finally, should your "Country of Residence" not be listed in DelphiManager, please select "Other" and do write in free text the name. Thanks!

To start this Delphi Round 2 survey with DelphiManager, please click "Register" below.

Domain 1 – History of SARS-CoV-2 infection

How important is "having a history of SARS-CoV-2 infection" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
0	0	\bigcirc	0	0	0	0	0	\bigcirc	0

Notes: Suspected/probable/confirmed case of SARS-CoV-2 infection. In the link <u>https://www.who.int/publications/i/item/WHO-2019-nCoV-</u> <u>Surveillance Case Definition-2020.2</u> the case definitions for public health surveillance of COVID-19 in humans caused by SARS-COV-2 infection are provided.

Domain 2: SARS-CoV-2 laboratory confirmation

How important is "<u>having a laboratory-confirmed history of SARS-CoV-2</u> <u>infection, when there is access to laboratory testing</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc	0								

Notes: None

Domain 3: Onset of Post COVID-19 condition

How important is **"the inclusion of a minimum time period (in months) from the onset of COVID-19 to the presence of symptoms**" to the clinical case definition of Post COVID-19 condition?

1 month											
(1))	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise	
С)	\bigcirc									
2 month	c										
(1)	-	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise	
С		0	0	0	0	0	0	0	0	0	
2	_										
3 month (1		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise	
(-) C		\bigcirc									
C		U	C	C	C	C	C	C	C	0	
4 month		(2)	(2)	(4)	(5)	(c)	(7)	(0)	(0)		
(1) C		(2)	(3) 〇	(4) 〇	(5)	(6)	(7) 〇	(8) 〇	(9)	Not my expertise	
C	,	\bigcirc									
6 month											
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise	
С)	0	0	0	0	0	\bigcirc	0	\bigcirc	\bigcirc	
No minimum time period											
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise	
С)	\bigcirc	0	\bigcirc	\bigcirc	\bigcirc	0	\bigcirc	\bigcirc	\bigcirc	

Notes: The proposed time periods are from the onset of symptoms of acute COVID-19 (or for asymptomatic cases from date of positive test) to the diagnosis of Post COVID-19 condition.

Domain 4: Minimum duration of symptoms

How important is " <u>the inclusion of any of the following minimum duration of</u>												
										ndition?		
At le	ast 0.5	5 mont	:hs (2 v	veeks)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	0	0	0	0	0	0	0	0	0	0		
At least 1 month (4 weeks)												
	(1)	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise		
	U	U	U	U	U	0	U	0	U	0		
At least 1.5 months (6 weeks)												
At le			-	-		(c)	(7)	(0)	$\langle 0 \rangle$			
	(1)	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise		
	U	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	0		
At least 2 months (8 weeks)												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	\bigcirc	\bigcirc	\bigcirc	0	0	\bigcirc	\bigcirc	\bigcirc	0	0		
At le	ast 3 r	nonth	S									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	\bigcirc	\bigcirc	\bigcirc	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc		
At le		nonth										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	\bigcirc	\bigcirc										
No minimum duration												
INO II	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise		
	\bigcirc	\bigcirc										

Notes: None

Domain 5: Symptoms (and/or impairments)

How important is "<u>to include, in addition to FATIGUE, SHORTNESS OF BREATH</u> <u>AND COGNITIVE DYSFUNCTION, any of the following symptoms</u>" to the clinical case definition of Post COVID-19 condition?

Altered smell or taste										
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Anxiet	ty (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Chest	pain (1) 〇	(2) 〇	(3) ○	(4) 〇	(5) 〇	(6) 〇	(7) ○	(8) 〇	(9)	Not my expertise
Cogni	tive d	ysfunc	tion/b	rain fo	g					
	(1) 〇	(2) 〇	(3) ○	(4) 〇	(5)	(6) 〇	(7) ○	(8) 〇	(9) 〇	Not my expertise
Cough	1									
Ū	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Depre	ssion (1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Dizzine	ess (1) ()	(2) 〇	(3) ○	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Fatigue	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise

0 0 0 0 0 0 0 0 0 0

Headaches (1)	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Intermitte (1) 〇	nt feve (2) 〇	r (3) 〇	(4)	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Joint pain									
(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Memory is	CUOC								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0
Menstrual	and pe	eriod p	roblem	IS					
(1)	(2)	(2)	(4)	(=)	$\langle c \rangle$	<i>(</i> _)	(8)	(9)	
0	\bigcirc	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	\bigcirc	\bigcirc	Not my expertise
	0	0							
Muscle pai	n/spasi	ms	0	0	0	0	0	0	0
	0	0							
Muscle pai (1) 〇	n/spası (2)) ms (3)	(4)	(5)	(6)	(7)	(8)	(9)	O Not my expertise
Muscle pai (1)	n/spası (2)) ms (3)	(4)	(5)	(6)	(7)	(8)	(9)	O Not my expertise
Muscle pai (1) O Neuralgias	n/spası (2)	(3)	(4) (4)	(5) ((6) ((7) (7)	(8) (8)	(9) (Not my expertise
Muscle pai (1) O Neuralgias (1)	(2) (2) (2)	(3) (3) (3)	(4) (4)	(5) (5)	(6) (6)	(7) (7)	(8) (8) (8)	(9) (9) (9)	 Not my expertise Not my expertise
Muscle pai (1) O Neuralgias (1)	(2) (2) (2)	(3) (3) (3)	(4) (4)	(5) (5)	(6) (6)	(7) (7)	(8) (8) (8)	(9) (9) (9)	 Not my expertise Not my expertise

Shortness of breath

(1) 〇	(2) 〇	(3)	(4) 〇	(5)	(6) 〇	(7)	(8)	(9)	Not my expertise
Sleep dise	orders								
(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Tachycar	dia/palp	itation	S						
(1) 〇	(2)	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Tinnitus,	and oth	er hea	ring iss	ues					
(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise

Please list up to two other symptoms that you consider very important to include in the definition:

Notes: List of symptoms presented in alphabetical order, extracted from: <u>https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html</u> <u>https://www.acpjournals.org/doi/10.7326/M20-5926</u> <u>https://apps.who.int/iris/bitstream/handle/10665/339629/Policy-brief-39-1997-8073-eng.pdf</u> <u>https://www.who.int/publications/i/item/global-covid-19-clinical-platform-case-report-form-(crf)-for-post-covid-conditions-(post-covid-19-crf-)</u>

Domain 6 – Minimum number of symptoms

How important is "having a minimum number of symptoms" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
0	0	\bigcirc	0	0	\bigcirc	0	0	\bigcirc	0

Notes: None

Domain 7 – Clusters of symptoms

How important is "<u>the inclusion of clusters of symptoms</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: Symptom clusters are defined as consisting of two or more symptoms that are related to each other and that occur together. They are composed of stable groups of symptoms, are relatively independent of other clusters and may reveal specific underlying dimensions of symptoms. [**Reference**: Barsevick A. Defining the Symptom Cluster: How Far Have We Come? Seminars in Oncology Nursing 2016; 32 (4): 334-350.]

Domain 8: Nature of symptoms

How important is "<u>to include, in addition to PERSISTENT, other descriptors of</u> <u>the nature of symptoms</u>" to the clinical case definition of Post COVID-19 condition?

Fluct	uating	5								
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5)	(6) 〇	(7) 〇	(8) 〇	(9)	Not my expertise
Incre	asing									
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
New	onset									
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	(7) 〇	(8) 〇	(9) 〇	Not my expertise
Persi	stent									
	(1) 〇	(2) ○	(3)	(4) 〇	(5)	(6) ○	(7) ○	(8) ○	(9)	Not my expertise
Rela	osing (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc

Notes: None

Please provide any feedback on the wording of this domain, suggestions for other thresholds or values of this domain and/or an explanation of your rating:

Domain 9: Sequelae of well-described acute complications of COVID-19

How important is "to exclude symptoms which are directly related to acute complications of COVID-19 (such as stroke, acute respiratory distress syndrome, acute kidney injury, myocarditis, thrombosis, post-intensive care syndrome)" in the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc	0								

Notes: None

Domain 10 - Symptoms cannot be explained by an alternative diagnosis How important is "<u>that Post COVID-19 condition be considered a diagnosis of</u> <u>exclusion determined by a health provider when symptoms cannot be</u> <u>explained by an alternative diagnosis</u>" to the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
0	\bigcirc	0	0	0	0	0	0	0	0

Notes: None

Domain 11: Should the definition be applied to all populations?

How	impor	tant is	" <u>to in</u>	clude a	a sepai	rate cli	<u>nical c</u>	<u>ase de</u>	finitio	n for Post COVID-
<u>19 co</u>	onditio	on to a	pply fo	or child	lren"?					
	(1) 〇	(2) 〇	(3) 〇	(4) 〇	(5) 〇	(6) 〇	• •	(8) 〇	(9) 〇	Not my expertise
Note	es: Nor	ne								

Domain 12: Impact on everyday functioning

How important is "<u>that the symptoms experienced have an impact on everyday</u> <u>functioning</u>" in the clinical case definition of Post COVID-19 condition?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Not my expertise
\bigcirc									

Notes: Impact on everyday functioning is better understood by the WHO ICF framework which classifies functioning, health and disability. The ICF shifts focus to "life", i.e. how people live with their health conditions, and takes into account the social aspects of disability. In ICF, the term "functioning" refers to all body functioning, activities (such as activities of daily living) and participation society. ICF also lists environmental factors and personal factors that interact with these components: https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

Please provide any feedback on the wording of this domain, suggestions for other thresholds or values of this domain and/or an explanation of your rating:

You have completed this Delphi survey Round 2.

THANKS!

Appendix 5: Score for every domain/value in Delphi Rounds 1 and 2

Domain	Round	Text	n	Sum 1 to 3 (%)	Sum 7 to 9 (%)
1	1	How important is " <u>having a history of</u> <u>SARS-CoV-2 infection</u> " to the clinical case definition of Post COVID-19 condition?	252	4	79
	2	Not asked in Round 2		-	-
2	1	How important is " <u>having a laboratory</u> <u>confirmed previous history of SARS-</u> <u>CoV-2 infection</u> " to the clinical case definition of Post COVID-19 condition?	253	14	51
	2	How important is " <u>having a laboratory</u> <u>confirmed previous history of SARS-</u> <u>CoV-2 infection</u> " when there is access to laboratory testing, to the clinical case definition of Post COVID-19 condition?	194	10	52
3	1	How important is " <u>the inclusion of the</u> <u>following proposed minimum time</u> <u>period (in weeks) between the onset of</u> <u>symptoms of acute COVID-19 (or for</u> <u>asymptomatic cases from date of</u> <u>positive test)</u> " to the clinical case definition of Post COVID-19 condition? • 4 weeks • 8 weeks • 12 weeks	253 233 230	29 18 16	44 46 60
		 12 weeks 16 weeks or more 	228	29	47
	2	How important is "the inclusion of a minimum time period (in months) from the onset of COVID-19 to the presence of symptoms" to the clinical case definition of Post COVID-19 condition? 1 month 2 months 3 months 4 months 6 months or more No time period	194 192 189 187 184 178	13 14 14 27 34 29	46 43 59 40 37 38
4	1	How important is " <u>the inclusion of the</u> <u>following minimum duration of the</u> <u>symptoms</u> " to the clinical case definition of Post COVID-19 condition?			

			0.40		
		At least 2 weeks	243	44	31
		At least 4 weeks	239	21	41
		At least 6 weeks	235	23	47
		At least 8 weeks	235	23	52
	2	How important is "the inclusion of any			
		of the following minimum duration of			
		symptoms" to the clinical case definition			
		of Post COVID-19 condition?			
		 At least 0.5 months (2 weeks) 	184	38	28
		 At least 1 months (4 weeks) 	184	17	42
		• At least 1,5 months (6 weeks)	183	20	42
		• At least 2 months (8 weeks)	183	17	47
		At least 3 months	178	23	40
		At least 6 months	177	37	32
		No minimum time duration	171	47	27
5	1	How important is it "each of the following	sympt	oms " to	the
		clinical case definition of Post COVID-19 co			
		Abdominal pain	221	27	27
		Altered menstruation	210	32	24
		Altered smell/taste	232	9	57
		Anxiety	230	16	49
		Blurred vision	225	17	38
		Chest pain	230	7	55
		Cognitive dysfunction	234	3	74
		Cough	232	8	63
		Depression	232	13	50
		Dizziness	230	8	47
		Fatigue	234	2	78
		Fever	229	14	46
		Headache	226	8	56
		Impaired memory	230	6	65
		Joint pain	231	8	52
		Muscle spasms	231	5	64
		Neuralgia	225	9	49
		New onset allergies	222	32	27
		Pins and needle sensations	227	15	39
		Post-exertional malaise	231	2	67
		Shortness of breath	232	3	78
		Sleep disorders	231	6	62
		Tachycardia	231	8	60
		Tinnitus	230	° 13	45
	2				45
	Z	How important is " <u>to include, in addition</u> SHORTNESS OF BREATH AND COGNITIVE			, any o
		the following symptoms" to the clinical ca	ase defi	inition o	f Post
		COVID-19 condition?			
		Abdominal pain	178	29	24

		Altered menstruation	172	34	22
		Altered smell/taste	180	6	61
		Anxiety	183	15	49
		Blurred vision	177	20	30
		Chest pain	182	7	56
		Cough	181	8	58
		Depression	180	18	46
		Dizziness	181	10	39
		Fever	178	17	40
		Headache	181	8	54
		Impaired memory	180	4	69
		Joint pain	181	7	53
		Muscle spasms	180	4	63
		Neuralgia	177	11	45
		New onset allergies	172	36	20
		Pins and needle sensations	177	14	29
		Post-exertional malaise	180	2	67
		Sleep disorders	179	6	65
		Tachycardia	180	6	59
		Tinnitus	177	12	38
6	1	How important is " <u>having a minimum</u>	239	25	38
		<u>number of symptoms</u> " to the clinical case definition of Post COVID-19			
		condition?			
	2	Not asked in Round 2		-	-
7	1	How important is "the inclusion of	237	8	55
		clusters of symptoms" to the clinical case definition of Post COVID-19 condition?			
	2	How important is " <u>the inclusion of</u> <u>clusters of symptoms</u> " to the clinical case definition of Post COVID-19 condition?	179	4	68
8	1	How important is " <u>to include each of the</u> <u>following descriptors on the nature of</u> <u>symptoms</u> " in the clinical case definition of Post COVID-19 condition?			
		Fluctuating	231	17	52
		Increasing	231	17	49
		New onset	233	7	69
		Persistent	237	5	78
		Relapsing	230	9	62
	2	How important is " <u>to include, in</u>			
		addition to PERSISTENT, other			
		descriptors of the nature of symptoms"			

to the clinical case definition of Post COVID-19 condition?18410• Fluctuating18222• Increasing1835• New onset1836• Relapsing183691How important is to "include only symptoms separate from those that are23018	55 36 69 65
• Increasing1835• New onset1836• Relapsing183691How important is to "include only23018	
• New onset1836• Relapsing183691How important is to "include only23018	65
• Relapsing91How important is to "include only23018	
9 1 How important is to " include only 230 18	
	60
thought to be a sequela of well-	
described acute complications of	
COVID-19 [i.e., stroke, acute respiratory	
distress syndrome, acute kidney injury,	
myocarditis, thrombosis, post intensive	
care syndrome (PICS)]" in the clinical	
case definition of Post COVID-19	
condition?	
2 How important is " <u>to exclude symptoms</u> 180 14	63
which are directly related to acute	
complications of COVID-19 (such as	
stroke, acute respiratory distress	
syndrome, acute kidney injury,	
myocarditis, thrombosis, post-intensive	
care syndrome)" in the clinical case	
definition of Post COVID-19 condition?	
10 1 How important is "that Post COVID-19 231 5	71
condition be considered a diagnosis of	
exclusion determined by a health	
provider when symptoms cannot be	
explained by an alternative diagnosis"	
to the clinical case definition of Post	
COVID-19 condition?	
2 Not asked in Round 2 -	_
11 1 How important is "that the Post COVID- 230 7	69
19 condition definition can be applied	
to all populations, including women	
who are pregnant or post-partum;	
young children; neonates; people with	
chronic disease; people living with HIV;	
older people; or individuals who are	
immunocompromised because of other	
conditions" to the clinical case definition	
of Post COVID-19 condition?	
2 How important is " <u>to include a separate</u> 173 2	79
clinical case definition for Post COVID-	
19 condition to apply for children"? 12 1 Not asked in Round 1	

2	How important is "that the symptoms	178	2	77
	experienced have an impact on			
	everyday functioning" in the clinical case			
	definition of Post COVID-19 condition?			

Appendix 6: Recommendation for the Conducting and Reporting of Delphi Studies (CREDES) checklist

Contion/Tonio	щ	Charlist Itom Description	Whore reported				
Section/Topic	#	Checklist Item Description	Where reported				
Rationale for the choice of the Delphi technique							
Justification	1	The choice of the Delphi technique as a method of systematically	"Added value of this				
		collating expert consultation and	study" Lines 101 to				
		building consensus needs to be well justified. When selecting the	100				
Planning and design							
Planning and	2	The Delphi technique is a flexible method and can be adjusted to the	"Methods" Lines 163				
process		respective research aims and	to 166				
		purposes. Any modifications should be justified by a rationale and be	10 100				
Definition of	3	Unless not reasonable due to the explorative nature of the study, an a	"Methods" Lines 227				
consensus	-	priori criterion for consensus	to 229, and Figure 1				
		should be defined. This includes a clear and transparent guide for	to 229, una Figure 1				
		action on (a) how to proceed with					
Study conduct	Study conduct						
Informational	4	All material provided to the expert panel at the outset of the project	"Methods" Line 161,				
input	-	and throughout the Delphi process	and reference 6 (pre-				
		should be carefully reviewed and piloted in advance in order to	nrint of protocol				
Prevention of bias	5	Researchers need to take measures to avoid directly or indirectly	"Methods" Lines 208				
	5	influencing the experts' judgements. If	to 215				
		one or more members of the research team have a conflict of interest,	10 213				
Interpretation	6	Consensus does not necessarily imply the 'correct' answer or	"Methods" Lines 208				
and	0	judgement; (non)consensus and stable					
processing of		disagreement provide informative insights and highlight differences in	to 215				
External	7	It is recommended to have the final draft of the resulting guidance on	Not applicable				
validation	/	best practice in palliative care	Not applicable				
Validation		reviewed and approved by an external board or outbority before					
Reporting							
Purpose and	8	The purpose of the study should be clearly defined and demonstrate	"Added value of this				
rationale		the appropriateness of the use of	study" Lines 101 to				
		the Delphi technique as a method to achieve the research aim. A	100				