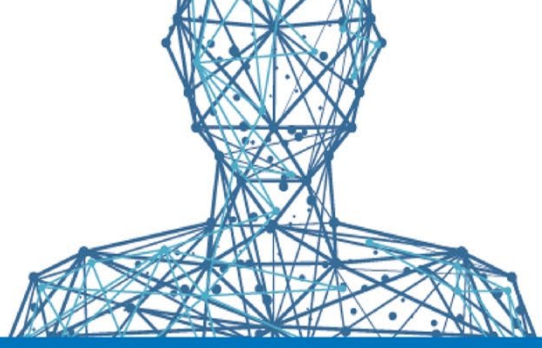
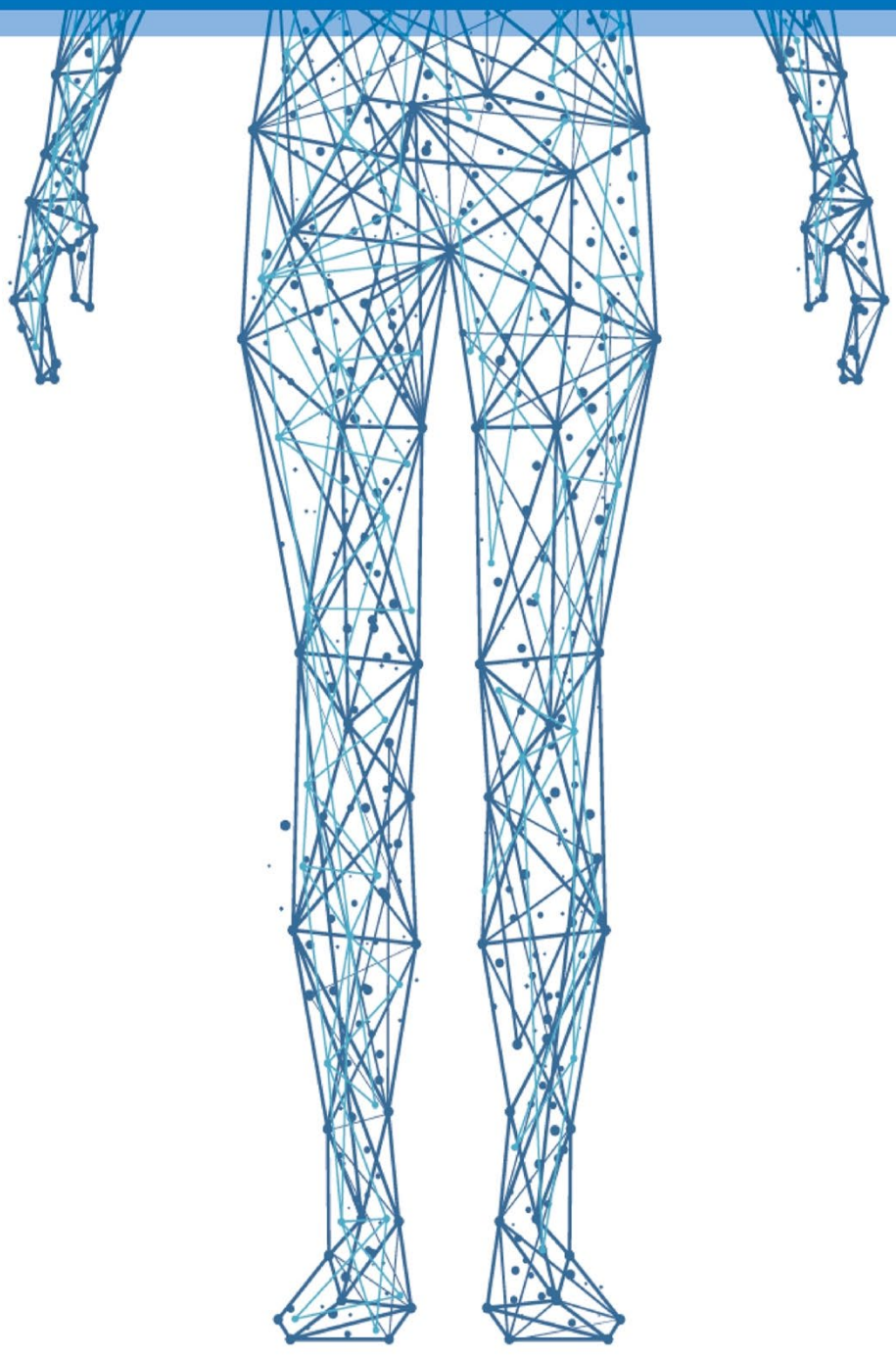


A clinical case definition of post COVID-19 condition by a Delphi consensus

6 October 2021

World Health Organization



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WHO continues to monitor the situation closely for any changes that may affect this document. Should any factors change, WHO will issue a further update. Otherwise, this document will expire 2 years after the date of publication.

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Contents

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Contributions: Joan B Soriano, Janet V Diaz, John Marshall, Srin Murthy and Pryanka Relan wrote the research protocol; Joan B Soriano and John Marshall wrote the first draft of the manuscript; Pryanka Relan performed the data analysis; all authors contributed to the writing and approved the final version.

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Abbreviations

AIDS	acquired immune deficiency syndrome
CDC	Centers for Disease Control and Prevention
COVID-19	coronavirus disease 2019
HIV	human immunodeficiency virus
ICD	International Classification of Diseases
NICE	National Institute for Health and Care Excellence
PICS	post-intensive care syndrome
SEIS	systemic exercise intolerance syndrome
STROBE	Strengthening the Reporting of Observational studies in Epidemiology
WHO	World Health Organization

Abstract

Background: A proportion of those infected with SARS-CoV-2 experience long-term symptoms. Definitions of this emerging condition vary, leading to complexities in advancing research and clinical policy development. Over the course of the pandemic, various terminology including long COVID, long-haul COVID or the WHO-recommended post COVID-19 condition have been proposed. Still, a globally standardized clinical case definition of this condition remains lacking.

Aim: We aimed to determine the most important domains and variables for inclusion into a globally relevant and standardized clinical case definition for post COVID-19 condition.

Methods: We conducted a two-round Delphi exercise, followed by a mixed, iterative consensus process. Five groups of stakeholders were engaged: patients, patient-researchers, external experts, WHO staff and others. Participants were chosen for balanced representation across age, gender, specialty, area of expertise and geography. Pre-defined statistical thresholds for consensus and disagreement were established.

Results: There were 265 participants in Round 1, with 241 complete responses and 24 incomplete responses. In Round 2 there were 195 participants, with 178 complete responses and 17 incomplete responses. From an initial list of 14 domains identified, 11 were selected in Round 1, and one was added in Round 2 for a final total of 12. Each domain consisted of multiple questions and a total of 45 items were asked in the survey. A clinical case definition was developed with those domains that reached the pre-defined thresholds and further expanded with values that reached borderline significance. Wording was trimmed in an iterative process with patients and patient-researchers.

Conclusion: Through a large global consensus process, a working clinical case definition of post COVID-19 condition, including 12 domains, is now available for use in all settings. This definition may change as new evidence emerges and our understanding of the consequences of COVID-19 continues to evolve.

1. Research in context

1.1 Evidence before this study

Most patients who suffer from coronavirus disease 2019 (COVID-19) fully recover, but some remain with long-term effects on several body systems, including pulmonary, cardiovascular and nervous systems, as well as psychological effects. These effects appear to occur irrespective of the initial severity of infection, but occur more frequently in women, middle age, and in those with more symptoms initially/ The absence of both a single terminology and a clinical case definition have been repeatedly signalled as drawbacks to advance on research and management of these patients.

1.2 Added value of this study

By means of a Delphi methodology, and in two rounds, this study identified the domains and variables to be included in a clinical case definition of post COVID-19 condition, which is the name proposed by the WHO International Classification of Diseases (ICD) – ICD-10 U09. They were scored by patients, clinicians, researchers and others, representing all WHO regions. A clinical case definition was built, and it was further expanded with those domains that reached the pre-defined thresholds and values that reached borderline significance. Wording was trimmed in an iterative process with a small group of patients and patient-researchers. Those involved in assessing the Delphi findings submitted conflict of interest forms that were reviewed and managed by the WHO technical unit. No conflicts of interest were identified. A definition with 12 domains and 88 words was identified.

Post COVID-19 condition occurs in individuals with **a history of probable or confirmed SARS-CoV-2** infection, **usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.** Common symptoms include **fatigue, shortness of breath, cognitive dysfunction** but also others (see **Table 3** and **Annex 2**) which generally have an **impact on everyday functioning.** Symptoms may be **new onset,** following initial recovery from an acute COVID-19 episode, or **persist** from the initial illness. Symptoms may also **fluctuate** or **relapse** over time. A separate definition may be applicable for children.

1.3 Implications of all the available evidence

A clinical case definition of post COVID-19 condition based on existing evidence objectively assessed with a robust methodology and pre-determined statistical thresholds is presented. This definition is a first, necessary, step to optimize the recognition and care of persons experiencing post COVID-19 condition in community and health care settings, while awaiting outcomes from ongoing research exploring the use of electronic health records of representative samples of patients identified in primary care linked with hospital care, with comparator groups of individuals fully recovered after acute infection. Given the many unknowns surrounding the natural history and recovery/sequelae from COVID-19, further discussion and agreement of a definition should help future research and management of these patients.

2. Introduction

As of August 2021, over 210 million confirmed cases of COVID-19 and over 4.4 million deaths have been reported to WHO *(1)*, although estimates greatly surpass these figures *(2)*. However, the natural history, clinical course and consequences of this new disease are still not completely understood *(3)*.

Most patients with COVID-19 return to baseline after acute infection with SARS-CoV-2, but a proportion report ongoing health issues. How many people are affected with longer term sequelae after acute COVID-19 remains unknown, but published reports indicate that approximately 10–20% of COVID-19 patients experience lingering symptoms for weeks to months following acute SARS-CoV-2 infection *(4).*

Several organizations and societies have proposed definitions based upon the constellation of symptoms that affect people after acute SARS-CoV-2 infection (**Annex 1).** In September 2020, and in response to requests from Member States, the Classification and Terminologies unit at the WHO created ICD-10 and ICD-11 codes for "post COVID-19 condition" *(5)*. However, standardization of this nomenclature and clinical case definition of post COVID-19 condition is still required to facilitate global discussion and streamline research methodologies, management strategies and policies. The objective of this study is to determine the domains and variables for inclusion into a standardized clinical case definition for post COVID-19 condition.

3. Methods

3.1 Study design

The research protocol is available as pre-print elsewhere *(6).* This study is a prospective Delphi consensus-seeking exercise, and mixed iterative survey of internal and external experts, patients and other stakeholders. The Delphi method is a structured communication technique originally developed as a systematic, interactive forecasting method which relies on a panel of experts *(7,8)*. Delphi has been widely used for research and has certain advantages over other structured forecasting approaches *(9,10).*

3.2 Study participants

The primary users of a clinical case definition for the post COVID-19 condition will include patients, relatives and caregivers, clinicians, researchers, advocacy groups, policy-makers, health and disability insurance and media. We therefore aimed to have a diverse representation of participants including clinicians with expertise in a variety of specializations, quality improvement and/or research, patients who have suffered from COVID-19 and its mid- and longer term effects, researchers, policy-makers and others from countries representing all WHO regions and World Bank income levels. There were no specific exclusion criteria for participants. A statement explaining implied consent was on the title page of the survey, with consent to participate in the survey implied by answering and returning the surveys.

3.3 Study procedures

Participants were identified from the list of clinician and patient researchers that attended a previous WHO webinar on post COVID-19 condition Expanding our understanding of post COVID-19 condition: Webinar 2 (who.int), members of WHO COVID-19 clinical characterization and management research working group working on post COVID-19 condition, members of WHO

COVID-19 clinical network working on post COVID-19 condition, members of LongSOS patient group and clinicians and/or patients nominated by WHO regional office case management officers.

Eligible participants were invited to participate via an online recruitment letter soliciting participation and engagement, along with an explanation of study objectives, instructions and outputs. The survey contained listed options regarding domains and variables to consider in the definition and initially were kept as broad and comprehensive as possible. The agreed domains and variables were followed by a series of questions relating to these variables with eventual values/thresholds related to each (**Annexes 2**). Survey responses were anonymous and tabulated by groups only. Registration of panellists and the actual Delphi questionnaire were accessible via https://delphimanager.liv.ac.uk/DefiningPostCOVID/Delphi

All questions were evaluated on a 9-point Likert scale, from 1 (least important) to 9 (most important) and participants were asked to choose the level of importance for each variable in the definition. Wherever there was a value in the DelphiManager rating column that was something other than the Likert scale values of 1 to 9, the system coded “-9”, the value allocated when an outcome had not been rated; or “10”, the value allocated to the “unable to rate” option.

The first round of the Delphi exercise lasted 14 days, and participants were sent two reminders to complete the online survey. The second round, conducted 5 weeks later, used a modified questionnaire based on iterative feedback and consensus during Round 1, and lasted 8 days, again with two reminders. In Round 2, participants were provided with the number/percentage of respondents having chosen that answer, and a reminder of their individual answer in Round 1. During each round, participants had the opportunity to add comments for each item, and also during Round 1 only, to add variables.

4. Statistical plan

4.1 Sample size and power

We aimed to obtain a diverse sample of participants from all stakeholders. Considering that some participants could be experts in more than one category, at least 20 experts from each of the five categories were invited with the goal of a sample size of at least 75–100 participants. Allowing for a 10–15% non-response (or non-desire to participate) rate, and 10% dropout rate, at least 100 participants were invited *(11).*

4.2 Primary and secondary endpoints

The primary outcome was to achieve consensus on the importance of variable and value inclusion in the definition. “Consensus” was achieved on a question if 70% or more of the responses fell within 7 to 9 on the 9-point Likert scale (**Fig. 1**). “Disagreement” was considered to occur if 35% or more of responses fell within both of the two extreme ranges of possible options on the Likert scale (1 to 3 and 7 to 9). All other combinations of panel answers were considered “partial agreement”. For each question, consensus proportions were considered based on the number/percentage of respondents (excluding the category “not my area of expertise”). Therefore, the denominator for the consensus included only participants with knowledge and expertise for that specific question. Participant responses, including baseline and demographic characteristics, were analysed using basic statistics such as mean (standard deviation), median (interquartile range) and range. Responses on all other domains were analysed in proportion and illustrated using histograms.

5. Results

Initially, a total of 747 invitations were sent by email. There were 265 respondents in Round 1, with 241 complete responses and 24 incomplete responses. In Round 2 there were 195 respondents with 178 complete responses and 17 incomplete responses (**Fig. 2**). The demographics of the 265 participants by stakeholder group, gender, age band and country are presented in **Table 1**. In Round 1, there were 61 (23.0%) patients, 18 (6.8%) patient-researchers, 138 (52.1%) external experts, 33 (12.5%) WHO staff and 15 (5.7%) "other". The gender distribution was as 115 (43.4%) female, 147 (55.5%) male, and 3 (1.2%) "other", with ages ranging from 20 years to 90+ years old but most in their fifties and sixties. Responses were received from participants from countries representing all WHO regions and World Bank income groups (**Fig. 3**). There were no statistically significant differences in the subset of participants in Round 2 (**Table 1**).

From an initial, comprehensive list of identified 14 domains, 11 were selected in Round 1, and then one more added, for a total of 12 in Round 2 (**Table 2**). They were expanded with thresholds, and symptoms for a total of 45 items after further group discussion, namely on those results that reached borderline significance based on pre-defined thresholds (**Annex 2**). During subsequent revision, two domains that did not fully reach pre-specified thresholds were included in the clinical case definition after panel discussion, namely: i) "a minimum time period from onset of symptoms"; and ii) "duration of symptoms". Similarly, the "new onset" nature of symptoms was expanded to incorporate "relapsing and fluctuating" through patient-panel feedback. A clinical case definition was built and further expanded with those domains/thresholds/values, and wording was trimmed in a quantitative/qualitative dedicated discussion with patients and patient-researchers (**Table 3**).

6. Discussion

We present a clinical case definition of post COVID-19 condition to be applied in community and health care setting to optimize recognition and care of persons experiencing post COVID-19 condition. This definition was obtained by a robust, protocol-based methodology (Delphi consensus), engaging a diverse group of representative patients, care givers and other stakeholders from multiple geographies. This definition is compatible and consistent with previous suggestions available elsewhere (**Annex 1**), but is likely to change as new evidence emerges and our understanding of the consequences of COVID-19 continues to evolve. To date there have been several attempts to define different COVID-19 related topics and outcomes *(12,13,14),* but existing definitions do not take into account presentations in low- and middle-income countries and often miss domains that are relevant to various groups of stakeholders. To the best of our knowledge, the one presented here is the first Delphi exercise to define post COVID-19 condition.

From a historical perspective, it took years to define AIDS/HIV, with the first human immunodeficiency virus (HIV) cases identified in June 1981 and the naming of acquired immune deficiency syndrome (AIDS) in September 1982, with the WHO AIDS surveillance case definition developed in October 1985 *(15).* Other examples are systemic exercise intolerance syndrome (SEIS) (formerly called chronic fatigue syndrome) *(16),* and most recently, post-intensive care syndrome (PICS) *(17).*

6.1 Strengths and limitations

The strengths of this study include a robust protocol-based Delphi methodology and inclusiveness and representation of participants from five diverse stakeholder groups, from countries representing all WHO regions and World Bank income groups. We aimed to surpass current

controversies on the naming of the condition by using the WHO terminology of post COVID-19 condition (beyond others such as Chronic COVID-19 Syndrome, Late sequelae of COVID-19, Long COVID, Long haul COVID, Long-term COVID-19, Post COVID syndrome, Post-acute COVID-19, Post-acute sequelae of SARS-CoV-2 infection, etc.). We acknowledge patients' activism conducted under the "Long COVID" umbrella *(18,19).*

Regarding the methodology of the study, a number of limitations must be considered. English language was selected for practicality issues, but subsequent Delphi exercises should include other languages. Response rates in both rounds could have been greater – this is not unexpected, given its conduct during a pandemic. Best practices for enhancing response rates were integrated throughout *(20),* including introductory messages and reminder emails. Responses from the African and Eastern Mediterranean Regions were especially sought and obtained, but their overall proportions were lower than from other geographies. Wording of some domains and values were modified and new items were added from Round 1 to 2, given the enthusiastic persistence of some participants. Inclusion of criteria on timing and duration were agreed after Round 2, even though consensus was not achieved (as timing was deemed important to be included). A third round was considered unnecessary and impractical. Overall, as several pathophysiological mechanisms are in place and interplay during and after acute infection *(21),* and different trajectories for recovery after COVID-19 exist *(22),* it could be considered overtly ambitious to produce a single, universal definition that might work well for clinical, research, policy and advocacy purposes, and for all care levels and severities. The definition presented here (**Table 3**), with 88 words, might be considered a description based on the opinions of those participating, and difficult to operationalize in practice. Not only timing and duration, but the symptoms are subject to subjectivity and bias of participants. We strongly support that its open discussion in an organized way and integrating emerging evidence, such as prospective cohort trials, should help to advance this field.

6.2 Future implications

As mentioned above, this proposal of a clinical case definition is likely temporary, as new data continue to emerge. Initial reports describing post COVID-19 condition were from small patient samples, with an inherent short follow-up, and likely subject to bias *(23),* and will be unravelled in ongoing meta-analyses *(24).* New research is exploring the use of electronic health records from representative samples of patients identified in primary care and elsewhere *(25).* The use of comparator samples of individuals fully recovered after acute infection is envisaged. By using cluster analysis and other mathematical tools to determine specific symptoms and their minimum number, they all could be formally identified, and eventually clustered for different phenotypes. Importantly, time thresholds from onset of infection or the duration of these symptoms could be established *(26,27).*

7. Conclusion

COVID-19 will remain a challenge for the foreseeable future *(28).* Many pending answers surrounding COVID-19 and its sequelae remain, with new questions constantly being formulated *(29,30,31).* This definition of post COVID-19 condition will help to advance both advocacy and research but will likely change as new evidence emerges and our understanding of the consequences of COVID-19 continues to evolve.

Tables and figures

Fig. 1. Agreement rules and thresholds for consensus and disagreement

‘**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’**.

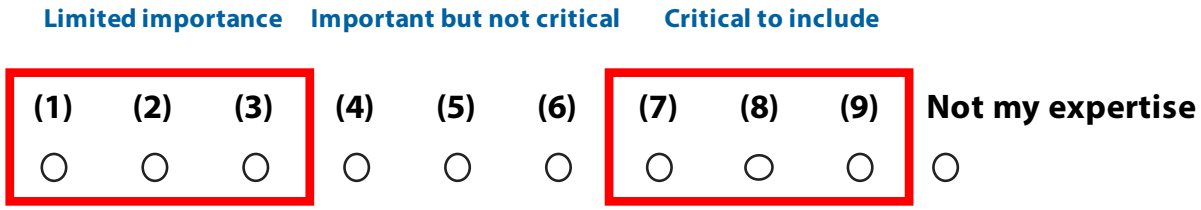


Fig. 2. STROBE flowchart of participation in the two Delphi rounds

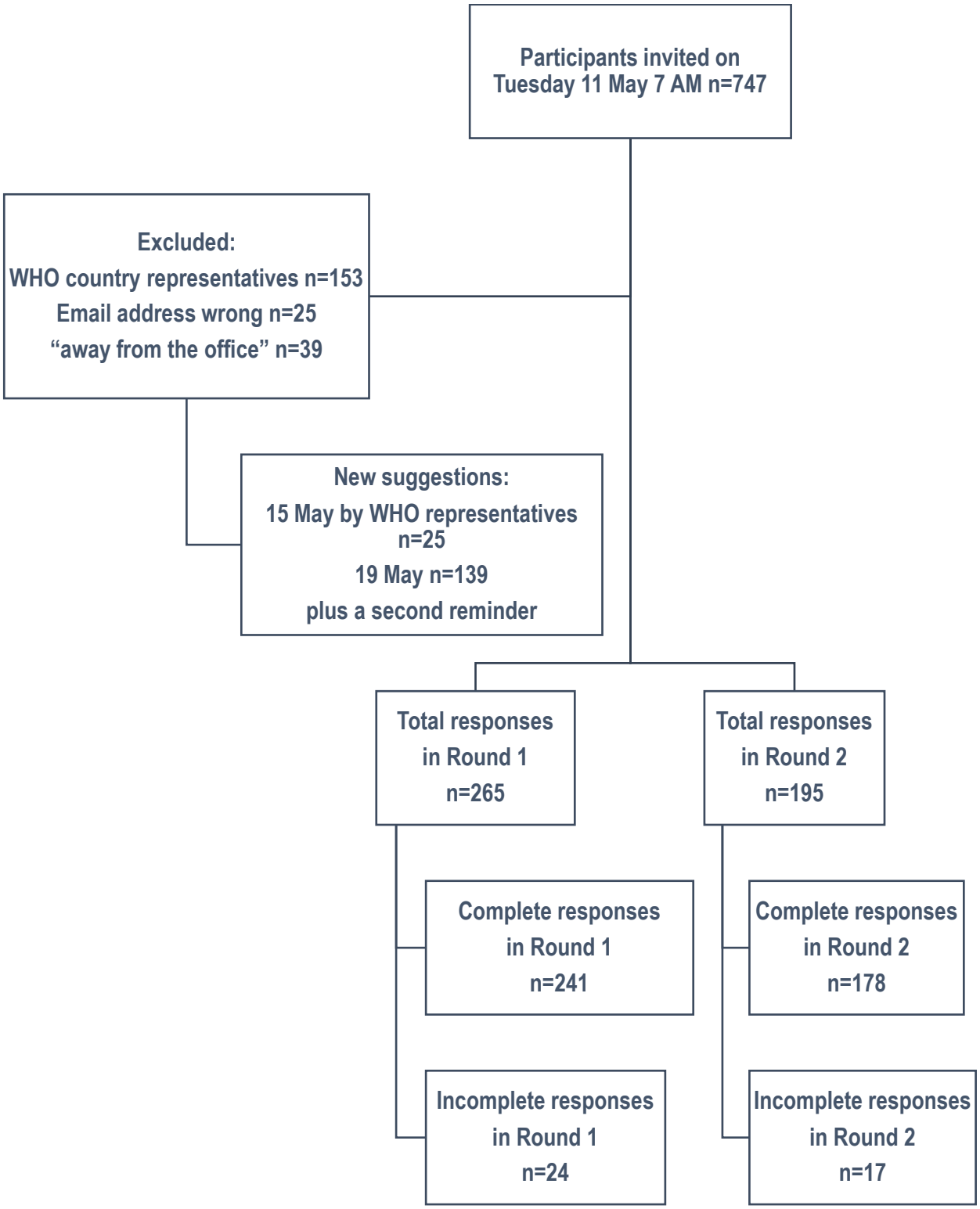
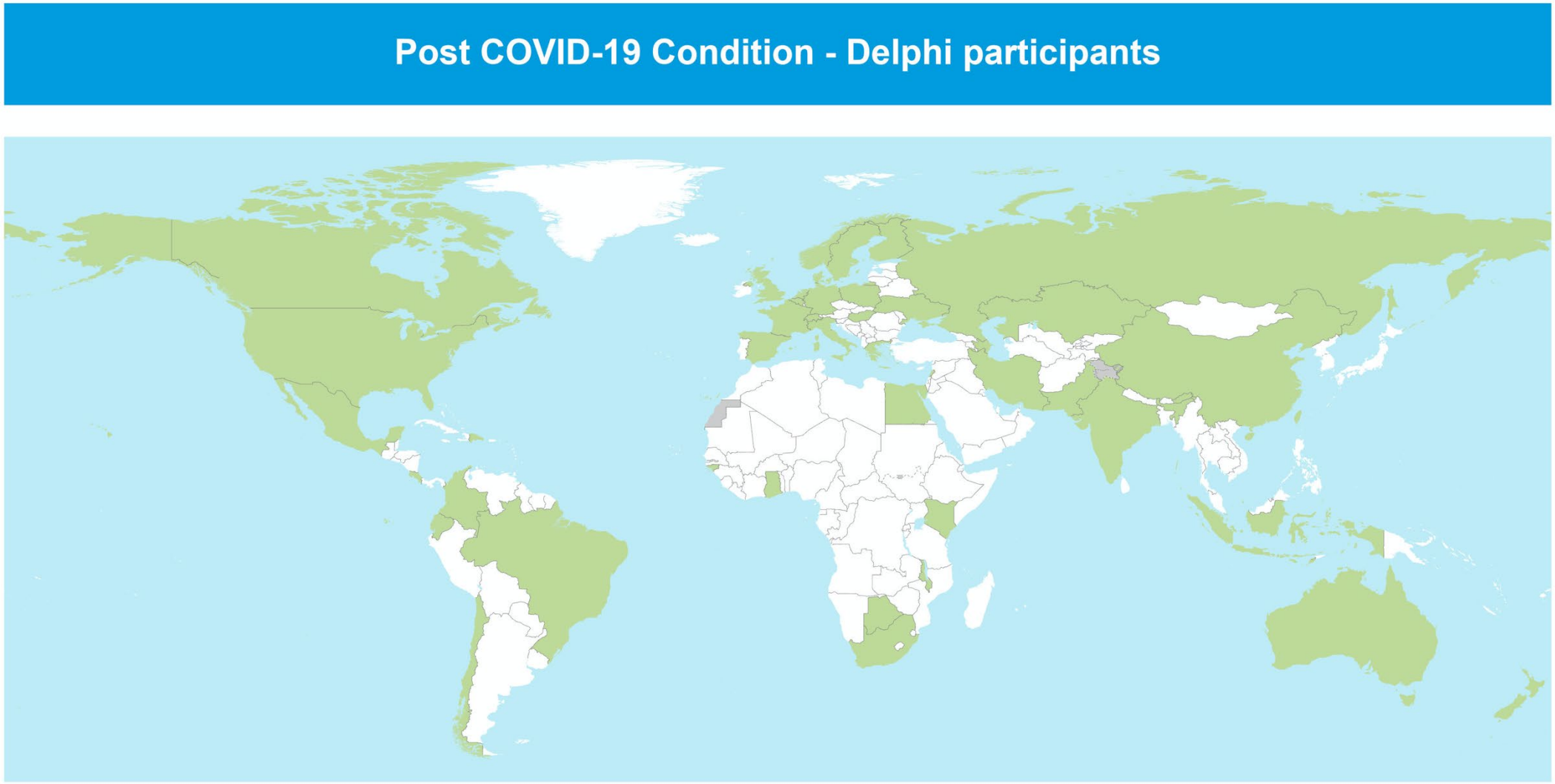


Fig. 3. World map distribution of participants



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization, DelphiManager
Map Production: WHO Health Emergencies Programme

World Health Organization

Table 1. Demographic characteristics of participants

Variable and values	Round 1, n (%)	Round 2, n (%)
Stakeholder group		
Patient	61 (23.0)	47 (24.1)
Patient-researcher	18 (6.8)	13 (6.7)
External expert	138 (52.1)	103 (52.8)
WHO staff	33 (12.5)	22 (11.3)
Other	15 (5.7)	10 (5.1)
Gender		
Female	115 (43.4)	86 (44.1)
Male	147 (55.5)	107 (54.9)
Non-binary	1 (0.4)	0
Prefer not to say	2 (0.8)	2 (1.0)
Age band		
20 to 29 years old	16 (6.0)	11 (5.6)
30 to 39 years old	53 (20.0)	42 (21.5)
40 to 49 years old	86 (32.5)	63 (32.3)
50 to 59 years old	73 (27.5)	52 (26.7)
60 to 69 years old	32 (12.1)	22 (11.3)
70 to 79 years old	4 (1.5)	4 (2.1)
90 years or older	1 (0.4)	1 (0.5)
WHO region		
African	9 (3.4)	8 (4.1)
American	53 (20.0)	36 (18.5)
Eastern Mediterranean	7 (2.6)	4 (2.1)
European	94 (35.5)	70 (35.9)
Southeast Asian	10 (3.8)	8 (4.1)
Western Pacific	19 (7.2)	18 (9.2)
Country not specified	73 (27.5)	51 (26.2)
World Bank income group		
High income	140 (52.8)	110 (56.4)
Upper middle income	37 (14.0)	22 (11.3)
Lower middle income	13 (4.9)	10 (5.1)
Low income	2 (0.8)	2 (1.0)
Country not specified	73 (27.5)	51 (26.2)
Total	265 (100)	195 (100)

Table 2. Domains that achieved consensus by participants in each Delphi stage

Domain number	Domain name
1	**History of SARS-CoV-2 infection**
2	SARS-CoV-2 laboratory confirmation
3	Minimum time period from onset of symptoms (or from date of positive test for asymptomatic) 3 months
4	Minimum duration of symptoms at least 2 months
5	Symptoms and/or impairments: **cognitive dysfunction, fatigue, shortness of breath**, others
6	Minimum number of symptoms
7	Clustering of symptoms
8	Time-course nature of symptoms: (fluctuating, increasing, new onset, **persistent**, relapsing)
9	Sequelae of well-described complications of COVID-19 (stroke, heart attack, etc.)
10	**Symptoms cannot be explained by an alternative diagnosis**
11	Application of definition to different populations: *Include separate definition for children*, others
12	*Impact on everyday functioning*

Note: Consensus achieved in **Round 1**, in *Round 2* and after Delphi panel group discussion.

Table 3. A definition of post COVID-19 condition

Post COVID-19 condition occurs in individuals with **a history of probable or confirmed SARS-CoV-2** infection, **usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.** Common symptoms include **fatigue, shortness of breath, cognitive dysfunction** but also others* and generally have an **impact on everyday functioning.** Symptoms may be **new onset** following initial recovery from an acute COVID-19 episode or **persist** from the initial illness. Symptoms may also **fluctuate** or **relapse** over time.

A separate definition may be applicable for children.

Notes:
There is no minimal number of symptoms required for the diagnosis; though symptoms involving different organs systems and clusters have been described.
*A full list of described symptoms included in the surveys can be found in Annexes 2 .

Definitions:
Fluctuate – a change from time to time in quantity or quality.
Relapse – return of disease manifestations after period of improvement.
Cluster – 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 *(32).*

Annex 1. Repository of published/available definitions of post COVID-19 condition

Source	Text
Wellcome	Symptoms persisting beyond 4 weeks after symptom onset suggestive of COVID-19 *(33).*
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 23 November 2020, Bin Cao presented data (in press at the Lancet) on the long-term 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 *(34).*
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 *(35).*
Scientific American	Individuals whose symptoms persist or develop outside the initial viral infection, but the duration and pathogenesis are unknown *(36).*
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: severe fatigue, reduced exercise capacity, chest pain or heaviness, fever, palpitations, cogintive impairment, anosomia or ageusia, vertigo and tinnitus, headache, peripheral neuropathy, metallic or bitter taste, skin rash joint pain or swelling *(3).* * Maximum period between acquisition of the infection (if known) and the onset of symptoms, and the minimum duration of symptoms, should be specified in the definition.
Haute Autorité de santé, France	Three criteria: Having presented with a symptomatic form of COVID-19; presenting with one or more initial symptoms 4 weeks after the start of the disease; and none of these symptoms can be explained by another diagnosis *(37).*
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 *(38).*
Wikipedia	Condition characterized by long-term sequelae – persisting after the typical convalescence period – of coronavirus disease 2019 (COVID-19) *(39).*
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 *(40).*

Annex 2. Score for every domain/value in Rounds 1 and 2

Domain	Round	Text	n	Sum 1 to 3 (%)	Sum 7 to 9 (%)
1	1	How important is "**having a history of SARS-CoV-2 infection**" to the clinical case definition of post COVID-19 condition?	252	4	79
	2	*Not asked in Round 2*		-	-
2	1	How important is "**having a laboratory-confirmed previous history of SARS-CoV-2 infection**" to the clinical case definition of post COVID-19 condition?	253	14	51
	2	How important is "**having a laboratory-confirmed previous history of SARS-CoV-2 infection 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 "**the inclusion of the following proposed minimum time period (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 weeks** • **8 weeks** • **12 weeks** • **16 weeks or more**	253 23 3 230 228	29 18 16 29	44 46 60 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 19 2 189 187 184 178	13 14 14 27 34 29	46 43 59 40 37 38

4	1	How important is "**<u>the inclusion of the following minimum duration of the symptoms</u>**" to the clinical case definition of post COVID-19 condition? • **At least 2 weeks** • **At least 4 weeks** • **At least 6 weeks** • **At least 8 weeks**	243 2323 9235 2335	44 21 23 23	31 41 47 52
	2	How important is "**<u>the inclusion of any of the following minimum duration of symptoms</u>**" to the clinical case definition of post COVID-19 condition? • **At least 0.5 months (2 weeks)** • **At least 1 months (4 weeks)** • **At least 1.5 months (6 weeks)** • **At least 2 months (8 weeks)** • **At least 3 months** • **At least 6 months** • **No minimum time duration**	184 1841 8318 3178 1771	38 17 20 17 23 37 47	28 42 42 47 40 32 27
5	1	How important is "**<u>each of the following symptoms</u>**" to the clinical case definition of post COVID-19 condition?			
		Abdominal pain	221	27	27
		Menstrual and period problems	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/brain fog	234	3	74
		Cough	232	8	63
		Depression	232	13	50

		Dizziness	230	8	47
		Fatigue	234	2	78
		Intermittent fever	229	14	46
		Gastrointestinal issues (diarrhoea, constipation, acid reflux)	226	17	33
		Headache	226	8	56
		Memory issues	230	6	65
		Joint pain	231	8	52
		Muscle pain/spasms	231	5	64
		Neuralgias	225	9	49
		New onset allergies	222	32	27
		Pins and needles sensations	227	15	39
		Post-exertional malaise	231	2	67
		Shortness of breath	232	3	78
		Sleep disorders	231	6	62
		Tachycardia/palpitations	230	8	60
		Tinnitus and other hearing issues	226	13	45
	2	How important is "**to include, in addition to FATIGUE, SHORTNESS OF BREATH AND COGNITIVE DYSFUNCTION, any of the following symptoms**" to the clinical case definition of post COVID-19 condition?			
		Abdominal pain	178	29	24
		Menstrual and period problems	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
		Intermittent fever	178	17	40
		Gastrointestinal issues (diarrhoea, constipation, acid reflux)	179	17	33
		Headache	181	8	54
		Memory issues	180	4	69
		Joint pain	181	7	53
		Muscle pain/spasms	180	4	63
		Neuralgias	177	11	45
		New onset allergies	172	36	20
		Pins and needles sensations	177	14	29
		Post-exertional malaise	180	2	67
		Sleep disorders	179	6	65
		Tachycardia/palpitations	180	6	59
		Tinnitus and other hearing issues	177	12	38
6	1	How important is "**having a minimum number of symptoms**" to the clinical case definition of post COVID-19 condition?	239	25	38
	2	*Not asked in Round 2*		-	-
7	1	How important is "**the inclusion of clusters of symptoms**" to the clinical case definition of post COVID-19 condition?	237	8	55
	2	How important is "**the inclusion of clusters of symptoms**" to the clinical case definition of post COVID-19 condition?	179	4	68
8	1	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**	231	17	52
		• **Increasing**	231	17	49
		• **New onset**	231	7	69
		• **Persistent**	233	5	78
		• **Relapsing**	237	9	62

			230		
	2	How important is "**to include, in addition to PERSISTENT, other descriptors of the nature of symptoms**" to the clinical case definition of post COVID-19 condition? • **Fluctuating** • **Increasing** • **New onset** • **Relapsing**	184 182 183 183	10 22 5 6	55 36 69 65
9	1	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?	230	18	60
	2	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?	180	14	63
10	1	How important is "**that post COVID-19 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?	231	5	71
	2	*Not asked in Round 2*		-	-
11	1	How important is "**that the post COVID-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?	230	7	69

	2	How important is "**to include a separate clinical case definition for post COVID-19 condition to apply for children**"?	173	2	79
12	2	How important is "**that the symptoms experienced have an impact on everyday functioning**" in the clinical case definition of post COVID-19 condition?	178	2	77

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