UK MS Register substudy: the impact of COVID-19 in patients with multiple sclerosis

STUDY PROTOCOL

Ethics: South West Central Bristol: 16/SW/0194

A study funded by the

MS Society

Swansea University
Prifysgol Abertawe

MS
REGISTER

Contents

Change Log

Version	Change	Date	Made By
1.0	**Creation of document**	**16/03/2020**	**R Nicholas**
1.1	**Formatting and goal changes, added additional investigators**	**24/03/2020**	**R Nicholas**
1.2	**Formatting and structure** **Additional investigators** **Version of survey added**	**26/03/2020**	**R Middleton**

Investigators

Chief-Investigators:
Richard Nicholas (r.nicholas@imperial.ac.uk) 1,2
Nikos Evangelou (nikos.evangelou@nottingham.ac.uk) 3

Co-Investigators:
Katie Tuite Dalton (k.a.tuite-dalton@swansea.ac.uk) 1
Rachel Hunter (r.hunter@swansea.ac.uk.uk) 9
Rod Middleton (r.m.middleton@swansea.ac.uk) 1
Alasdair Coles (ajc1020@medschl.cam.ac.uk) 4
Owen Pearson (owen.pearson@wales.nhs.uk) 5
Martin Duddy (martin.duddy@nuth.nhs.uk) 6
Ruth Dobson (ruth.dobson@qmul.ac.uk) 7
Linda Middleton (linda.middleton@wales.nhs.uk 5
Afagh Garjani (afagh.garjani@nottingham.ac.uk) 3
Roshan das Nair (roshan.dasnair@nottingham.ac.uk) 3
David Rog (David.Rog@srft.nhs.uk)
Stella Hughes (Stella.Hughes@belfasttrust.hscni.net) 10

Approached Investigators

Emma Tallantyre
Pete Connick

Affiliations

1	UK MS Register, Swansea University Medical School
2	Department of Cellular & Molecular Neuroscience, Imperial College, Charing Cross Hospital
3	University of Nottingham and Nottingham University Hospitals NHS Trust
4	Department of Clinical Neuroscience, University of Cambridge
5	Neurology and Clinical Neurophysiology, Swansea Bay University Health board
6	Newcastle upon Tyne Hospitals NHS Trust
7	Preventive Neurology Unit, Queen Mary University London
8	Salford Royal NHS foundation Trust
9	Swansea University, College of Health and Human Science
10	Belfast Health and Social Care Trust, Belfast

GLOSSARY OF TERMS: ABBREVIATIONS, ACRONYMS AND DEFINITIONS,

- **Disease Modifying Drugs (DMDs):** treatments for MS that aim to treat the underlying disease
- **Healthcare Providers (HCPs):** are staff working in the healthcare sector who provide clinical care (interchangeable with healthcare workers)
- **National Health Service (NHS):** UK wide public health system
- **Multiple Sclerosis (MS):** autoimmune, inflammatory, demyelinating disorder of the central nervous system, with variable clinical presentation and illness trajectory (e.g. primary or secondary progressive, relapsing remitting), usually affecting young adults, associated with significant long-term disability
- **People with MS (PwMS)**
- **Web EDSS (webEDSS):** web-based assessment of extended disability status scale [1]
- **MS Impact Score-29 (MSIS-29):** 29 question assessment of impact of MS on PwMS [2]
- **MS walking score-12 (MSWS-12):** 12 question assessment of walking ability in PwMS[3]
- **Hospital Anxiety and Depression Score (HADS):** standardised assessment of mood[4]
- **Fatigue Severity Score (FSS):** assessment of fatigue [5]

LAY SUMMARY OF THIS RESEARCH STUDY

The issue:
COVID-19, the coronavirus infection that has recently emerged[6], has had a devastating impact on the health of affected populations. The disease is currently circulating in the UK[7], causing a major negative effect on the health of all. People with multiple sclerosis (PwMS) are a susceptible group both due to the impact of their disability but also as a result of taking immune modulating treatments. At this point, contradicting guidance is offered by different authorities, but without a solid evidence base of how COVID-19 affects PwMS.

Currently, we do not know how PwMS on immunomodulatory/immunosuppressive drugs are being affected as the authorities and clinicians are only aware of those presenting to secondary care services. Individuals with mild disease, staying at home, are not tested and not recorded anywhere.

Aims: This study aims to collect information on how PwMS who are part of the UK MS Register are impacted by COVID-19 and other upper respiratory tract infections.

What we will do:
We will contact all PwMS on the UK MS Register and ask them to participate in this MS and COVID-19 study. They will be asked to complete a short questionnaire on their current clinical status and update their information stored on the UK MS Register, including details of the MS clinical team who normally coordinate their care. As some patients will fall ill with COVID-19 or other respiratory tract infections, we may contact them by phone to ask about their symptoms, if they had provided consent and their telephone number on the UK MS register or the questionnaire for us to do so. We will also collect current data regarding DMD use, suspension or cessation, switching or extending dosing interval as part of this, using a telephone interview questionnaire. For those patients with a confirmed or suspected diagnosis of COVID-19, we will ask for their consent, over the phone, to contact their MS clinical team to gather more information about their health, using another brief questionnaire. Also, we are planning to call a random sample of PwMS, who have provided consent to be contacted, without symptoms suggestive of COVID-19 to record more detailed information about their MS and their response to the COVID-19 outbreak.
We will generate timely rolling updates of the data collected to inform and support clinicians' decision-making about the optimal treatment approaches in the context of COVID-19 pandemic and how it affects PwMS.

The location for this study and who will be involved:
The study will be conducted in the context of the UK MS Register, a UK MS Society-funded study on PwMS in the UK.

BACKGROUND TO THIS RESEARCH STUDY

Multiple sclerosis (MS) is a chronic, inflammatory, demyelinating disease of the central nervous system that mainly affects people between the ages of 20 and 40 years. An estimated 2.5 million people have MS worldwide. Approximately 125,000 people and their families are affected by MS in the United Kingdom. People with MS represent a heterogeneous population, whilst some have little disability, MS can result in profound physical and psychological impacts as the disease progresses. Infection is a major issue for those who experience increasing disability - worsening MS symptoms, driving admission to hospital and ultimately causing death in a significant proportion. Disease modifying drugs (DMDs) are now widely used in relapsing MS, aiming to prevent subsequent disability. Recently, DMDs have also become available for the progressive stage of the disease, both primary progressive MS – ocrelizumab, and secondary progressive MS – Siponimod, where PwMS can have significant disability. All current DMDs target the immune system to a greater or lesser extent and this is believed to affect the risk of COVID-19 [8]. However, the extent of the impact each DMD has on susceptibility to COVID-19 and the severity of the illness, in the context of prior disability due to MS, is unknown. Furthermore, it appears that the pathogenesis of COVID-19 is partly through dysregulation of the immune response to the virus[9]Various immunomodulatory and immunosuppressive drugs are being tested as potential treatments for severe complications of this infection[10]including fingolimod which is a DMD used in MS[11]Therefore, studying the effects of these immunomodulatory/immunosuppressive DMDs used in MS on the natural course of the COVID-19 infection can be very informative.

COVID-19 and multiple sclerosis

COVID-19 is a coronavirus infection that is currently affecting multiple countries throughout the world with a major impact on the health of all within the population. It has, however, been more severe in those with multiple comorbidities, physical limitations, and most significantly increasing age, resulting in death in 0.6-3.5% of the population. In the absence of widespread testing for the virus[12], it is essential to understand how many people are infected, which can include asymptomatic or minimally symptomatic patients.

In this prospective study, we aim to understand the true impact of COVID-19 on patients with MS. Initially, PwMS on the UK MS Register will be contacted by email to confirm their agreement to take part in the study by answering an online survey. Through this approach, we will identify the MS patients who have not been affected by COVID-19 yet, in addition to those who have symptoms suggestive of COVID-19 or have been given a diagnosis of COVID-19. We will then capture their ongoing health status through regular follow up online surveys.

STUDY AIM

The aim of the study is to understand the impact of COVID-19 on PwMS in the UK.

Study objectives

1. To identify the incidence of upper respiratory tract symptoms: fever, cough and breathing difficulties, other symptoms suggestive of COVID-19 infection, respiratory tract infections suggestive of COVID-19, and COVID-19 confirmed by laboratory testing among the UK MS population

2. To establish if some DMDs increase the risk of COVID-19 infection

3. To determine the incidence and effectiveness of self-isolation in the MS population. To examine the impact self-isolation has on mood, fatigue, and other routinely collected patient reported outcome measures from the MS Register.

4. To determine the clinical outcome of respiratory tract infections, including confirmed and suspected cases of COVID-19, in terms of symptoms, time to recovery, hospital admission, requirement for ventilation, and death.

5. To determine the longer-term impact of COVID-19 on MS, using routinely collected MS outcomes in the MS register, including impact on disability, relapses and changes in DMDs as assessed at 3 monthly intervals.

6. To determine where people are obtaining their health information during the COVID-19 outbreak.

7. To establish changes in DMDs prior to and as a result of symptoms related and unrelated to COVID-19

STUDY DESIGN AND RATIONALE

To realise our study aims, we will run this as a sub-study for those who have consented to be part of the UK MS Register. Therefore, all questionnaires and procedures will be conducted in accordance with the ethical approval covered under the umbrella of the current ethical approval for the UK MS Register (16/SW/0194 South West Central Bristol). Contacting all members of the UK MS Register and confirming if a person wishes to offer data will enable us to get a clear baseline of an unaffected MS population. We will then be able to follow-up this group regularly via email contact. In addition, we will inform PwMS who are not members of the MS Register about the Register and this study and request them to join, so they can participate in the study, if they wish to do so. The recruitment campaign will happen through social media and NHS MS clinics communications.

Inclusion criteria for PwMS completing the questionnaires

1. Being part of the UK MS Register
2. Adults aged 18+yrs with a confirmed diagnosis of multiple sclerosis
3. Consent to take part in the questionnaire sub-study

Inclusion criteria for PwMS completing the interviews

1. Having completed the COVID-19 questionnaire
2. Consent to take part in the interview sub-study

Recruitment process for PwMS for the questionnaire sub-study

PwMS will be part of the UK MS Register and will have given permission to be contacted by email or telephone call about studies that the UK MS Register hosts.

PwMS will be provided with a brief introduction about the sub-study and will be able to complete a brief online consent form and then a short survey about their current clinical status. They will also be asked to update their MS Register details with emphasis on DMD use. If not already registered, they will need to join the UK MS Register before being able to take part in this sub-study.

If patients report that they have been tested positive for COVID-19, we will also ask their consent to contact their clinical team to ascertain clinical details about their MS and the details of their COVID-19 treatment and outcome.

Recruitment process for PwMS for the interview sub-study

PwMS who have completed the COVID-19 questionnaire and who have consented to be contacted for a follow-up interview will be approached by a healthcare professional member of the MS Register team through a telephone call. We will sample all those who have been diagnosed as having COVID-19 Coronavirus, 20% of those who have reported symptoms compatible with COVID-19 but with no formal diagnosis of the infection, and 10% of those who do not report any symptoms in a random fashion.

In addition to patients' surveys, we will run a MS healthcare professional survey requesting clinicians to report, anonymously, clinical details of patients with MS and confirmed COVID-19 infection.

DATA COLLECTION, MEASURES, AND ANALYSIS:

Data are collected within the UK MS Register as per standard procedures[13]. Scales that are routinely used on the MS Register assess mood using the Hospital Anxiety and Depression Scale (HADS), and fatigue using the Fatigue Severity Scale (FSS). Disability is assessed using the web version of the Expanded Disability Status Scale (webEDSS), Multiple Sclerosis Impact Scale (MSIS-29), and Multiple Sclerosis Walking Scale (MSWS-12).

Data that will be collected over the telephone will seek to clarify and collect more details about participants’ response to the questionnaires. We will be using a semi-structured interview schedule to collect these data. PwMS will be told the purpose of the interview on the phone, and verbal consent will be taken and noted in our records. Interviews will be conducted by a clinician who is part of the MS Register team. The research team will not provide clinical care but will signpost patients, if asked, to current national clinical advice regarding COVID-19.

Participants' personal details will only be known to those who currently have access to the UK MS Register under its protocols. All data will be anonymised for use outside of the MS Register team (for example, for dissemination purposes).

Analysis: Data will be analysed by the UK MS Register team on a 2 weekly basis to provide updates for PwMS on the website and Healthcare Professionals (HCPs) involved in the care and management of PwMS.

ETHICAL ISSUES RELEVANT TO THIS STUDY

Coercion

PwMS will be free not to respond to our contact email regarding this sub-study. They will be free to leave this sub-study at any time by choosing not to respond to the questionnaires and shutting the web-browser, or by emailing the MS Register team. This will not affect their rights to remain within the UK MS Register.

Identification of potentially unwell PwMS

The MS Register will provide all current information regarding current national advice if a participant reports symptoms suggestive of COVID-19.

Confidentiality

All data will be stored in accordance with the EU General Data Protection Regulation (GDPR), the Data Protection Act and existing MS Register data management protocol (3.1[14])

DISSEMINATION

We will ensure local, national and international dissemination channels to stakeholders, including public and professional. This will take place via the UK MS Register and UK MS Society websites, as well as via publications in scientific journals and presentations at conferences nationally and internationally.

Data transfer and storage

All data will be stored by Swansea University Medical School as the operators of the UK MS Register as per standard protocols.

Record keeping and archiving

All data will be archived within the UK MS Register as per standard protocols.

MANAGEMENT AND GOVERNANCE OF THIS STUDY

The Steering Committee will be the primary scientific governing body for the study responsible for designing the protocol, overseeing the administrative progress of the ongoing study, analyzing the study data, and interpreting the results. The Steering

Committee prepared the study protocol and once the study is initiated, will meet at least once every 6 weeks to monitor participant accrual, participant retention, and study conduct. The Steering Committee will determine whether the study should be stopped, or the protocol amended.

The study Steering Committee will be co-chaired by the two co-PIs (Prof R. Nicholas and Dr N. Evangelou) and will also have PPI member, key investigators (R. Middleton, K. Tuite-Dalton, Dr E. Gray, Prof D. Ford, Prof R. Das Nair, Dr O. Pearson, Dr M. Duddy, Dr R. Dobson, Dr L. Middleton, Dr D. Rog, Prof J. Chataway, Dr Rachel Hunter, Dr Stella Hughes and Prof A. Coles), and study statisticians. The co-PIs will hold calls every two weeks with Rod Middleton, Katie Tuite-Dalton, Prof R. Das Nair and Dr A. Garjani in addition to Steering Committee meetings.
Currently investigating adding this study to clinicaltrials.gov or other registration body. UK MS Register is already an NIHR portfolio study. Other investigators have been invited to be part of the study as we aim to be as inclusive as country wide as possible.

REFERENCES

1. Leddy S, Hadavi S, McCarren A, Giovannoni G, Dobson R. Validating a novel web-based method to capture disease progression outcomes in multiple sclerosis. J Neurol. 2013;260:2505–2510.

2. Hobart J. The Multiple Sclerosis Impact Scale (MSIS-29): A new patient-based outcome measure. Brain. 2001;124:962–973.

3. Hobart JC, Riazi A, Lamping DL, Fitzpatrick R, Thompson AJ. Measuring the impact of MS on walking ability: The 12-Item MS Walking Scale (MSWS-12). Neurology. 2003;60:31–36.

4. Zigmond, A, Snaith, R.P. The Hospital Anxiety and Depression Scale. Acta Psychiatr Scaninavica. 1983;67:361–370.

5. Krupp LB. The Fatigue Severity Scale: Application to Patients With Multiple Sclerosis and Systemic Lupus Erythematosus. Arch Neurol. 1989;46:1121.

6. Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. JAMA [online serial]. Epub 2020 Feb 24. Accessed at: https://jamanetwork.com/journals/jama/fullarticle/2762130. Accessed March 16, 2020.

7. Public Health England. Coronavirus (COVID-19): guidance [online]. 2020. Accessed at: https://www.gov.uk/government/collections/coronavirus-covid-19-list-of-guidance.

8. Coles A. ABN GUIDANCE ON THE USE OF DISEASE-MODIFYING THERAPIES IN MULTIPLE SCLEROSIS IN RESPONSE TO THE THREAT OF ACORONAVIRUS EPIDEMIC [online]. Accessed at: https://cdn.ymaws.com/www.theabn.org/resource/collection/6750BAE6-4CBC-4DDB-A684-116E03BFE634/ABN_Guidance_on_DMTs_for_MS_and_COVID19.pdf. Accessed March 16, 2020.

9. Qin C, Zhou L, Hu Z, et al. Dysregulation of Immune Response in Patients with COVID-19 in Wuhan, China. SSRN Electron J [online serial]. Epub 2020. Accessed at: https://www.ssrn.com/abstract=3541136. Accessed March 26, 2020.

10. Zhang L, Liu Y. Potential interventions for novel coronavirus in China: A systematic review. J Med Virol. 2020;92:479–490.

11. Ning W. Fingolimod in COVID-19 [online]. Accessed at: https://clinicaltrials.gov/ct2/show/NCT04280588. Accessed February 26, 2020.

12. Department of Health and Social Care. Coronavirus action plan: a guide to what you can expect across the UK [online]. 2020. Accessed at: https://www.gov.uk/government/publications/coronavirus-action-plan/coronavirus-action-plan-a-guide-to-what-you-can-expect-across-the-uk. Accessed March 16, 2020.

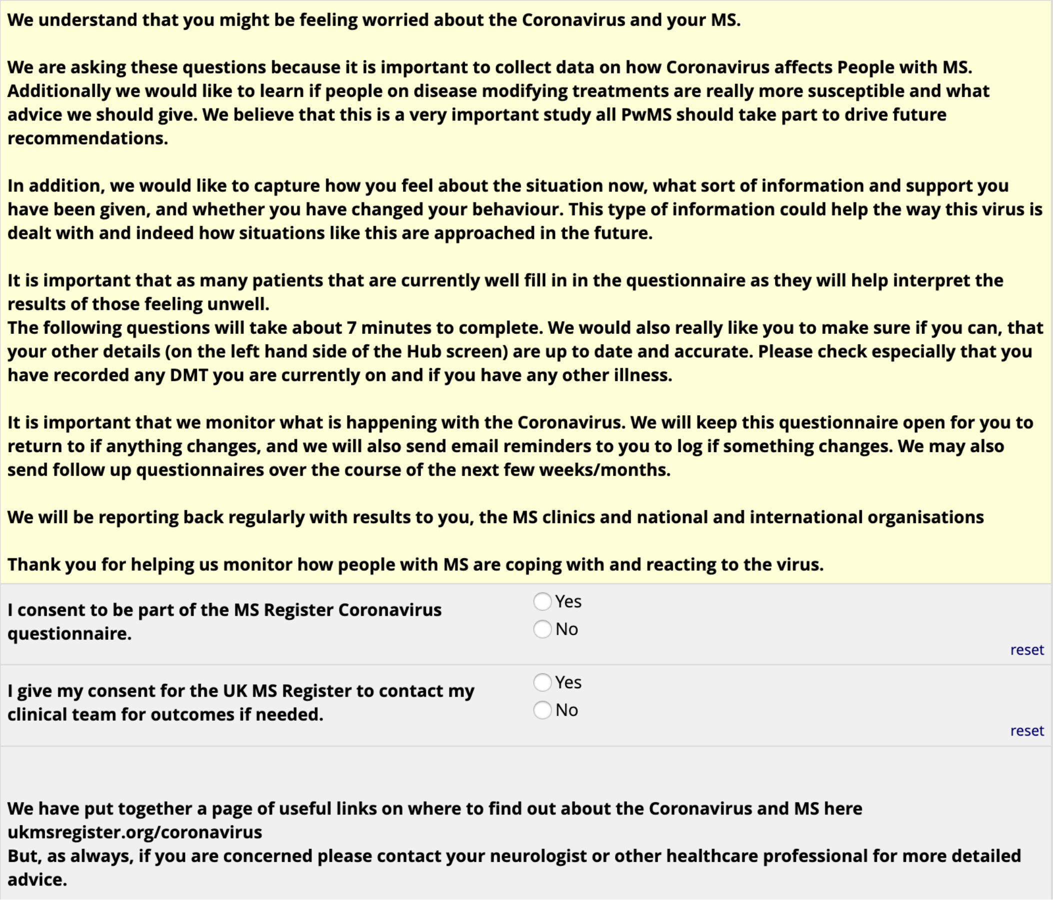
13. Middleton RM, Rodgers WJ, Chataway J, et al. Validating the portal population of the United Kingdom Multiple Sclerosis Register. Mult Scler Relat Disord. 2018;24:3–10.

14. Middleton R. UK MS Register Data Management Protocol [online]. 2016. Accessed at: https://swanseauniversity-my.sharepoint.com/:w:/g/personal/r_m_middleton_swansea_ac_uk/EQvk6EzHqHNOubVVFTj6JBcBs3dAuH04sdSjwix5GRpmdg?e=ORZCdy. Accessed March 17, 2020.

Appendix 1

Launch PwMS Questionnaire

First Page



We understand that you might be feeling worried about the Coronavirus and your MS.

We are asking these questions because it is important to collect data on how Coronavirus affects People with MS. Additionally we would like to learn if people on disease modifying treatments are really more susceptible and what advice we should give. We believe that this is a very important study all PwMS should take part to drive future recommendations.

In addition, we would like to capture how you feel about the situation now, what sort of information and support you have been given, and whether you have changed your behaviour. This type of information could help the way this virus is dealt with and indeed how situations like this are approached in the future.

It is important that as many patients that are currently well fill in in the questionnaire as they will help interpret the results of those feeling unwell.
The following questions will take about 7 minutes to complete. We would also really like you to make sure if you can, that your other details (on the left hand side of the Hub screen) are up to date and accurate. Please check especially that you have recorded any DMT you are currently on and if you have any other illness.

It is important that we monitor what is happening with the Coronavirus. We will keep this questionnaire open for you to return to if anything changes, and we will also send email reminders to you to log if something changes. We may also send follow up questionnaires over the course of the next few weeks/months.

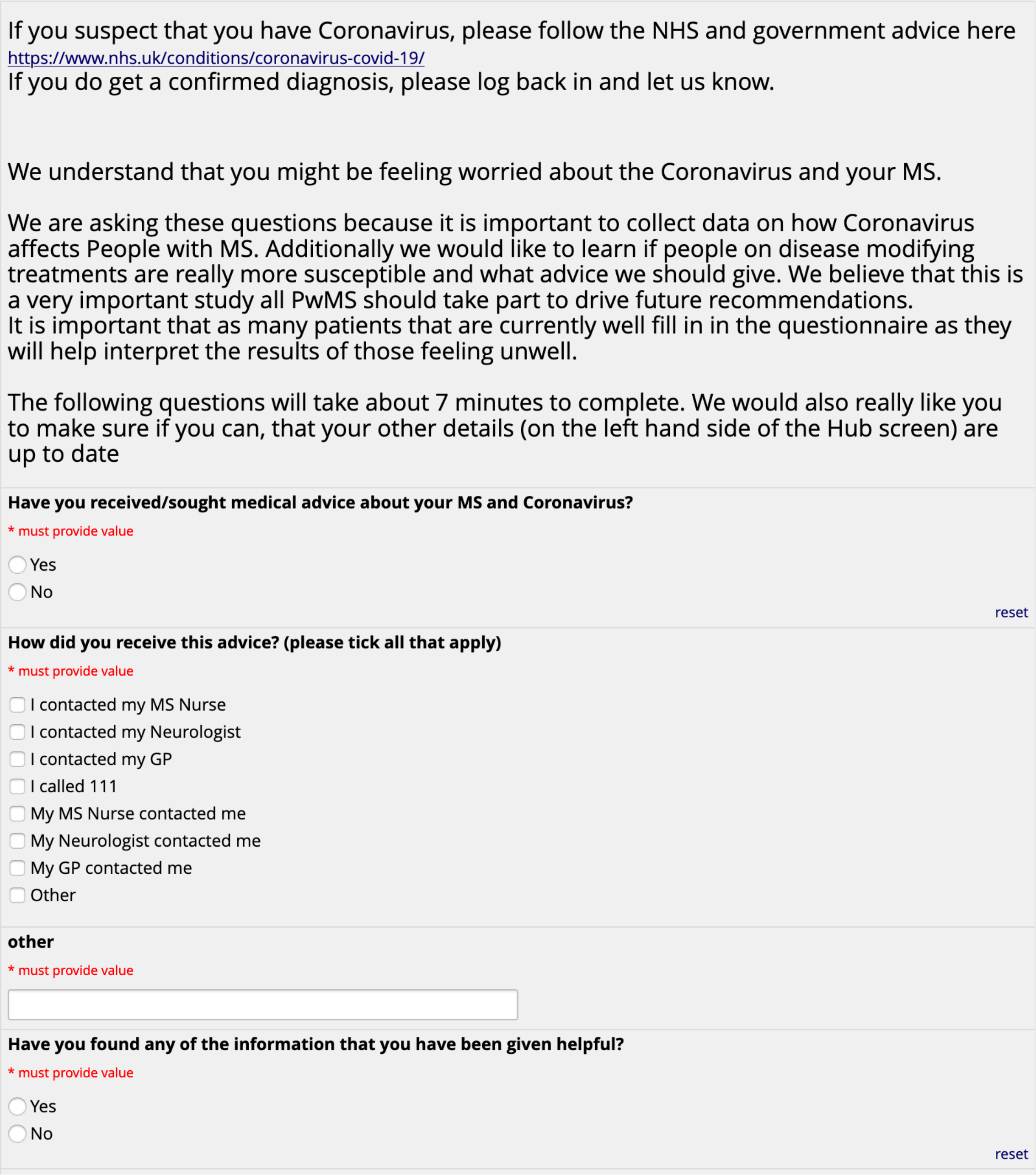
We will be reporting back regularly with results to you, the MS clinics and national and international organisations

Thank you for helping us monitor how people with MS are coping with and reacting to the virus.

I consent to be part of the MS Register Coronavirus questionnaire.
○ Yes
○ No

I give my consent for the UK MS Register to contact my clinical team for outcomes if needed.
○ Yes
○ No

We have put together a page of useful links on where to find out about the Coronavirus and MS here ukmsregister.org/coronavirus
But, as always, if you are concerned please contact your neurologist or other healthcare professional for more detailed advice.



If you suspect that you have Coronavirus, please follow the NHS and government advice here https://www.nhs.uk/conditions/coronavirus-covid-19/
If you do get a confirmed diagnosis, please log back in and let us know.

We understand that you might be feeling worried about the Coronavirus and your MS.

We are asking these questions because it is important to collect data on how Coronavirus affects People with MS. Additionally we would like to learn if people on disease modifying treatments are really more susceptible and what advice we should give. We believe that this is a very important study all PwMS should take part to drive future recommendations.
It is important that as many patients that are currently well fill in in the questionnaire as they will help interpret the results of those feeling unwell.

The following questions will take about 7 minutes to complete. We would also really like you to make sure if you can, that your other details (on the left hand side of the Hub screen) are up to date

Have you received/sought medical advice about your MS and Coronavirus?

* must provide value

○ Yes
○ No

How did you receive this advice? (please tick all that apply)

* must provide value

☐ I contacted my MS Nurse
☐ I contacted my Neurologist
☐ I contacted my GP
☐ I called 111
☐ My MS Nurse contacted me
☐ My Neurologist contacted me
☐ My GP contacted me
☐ Other

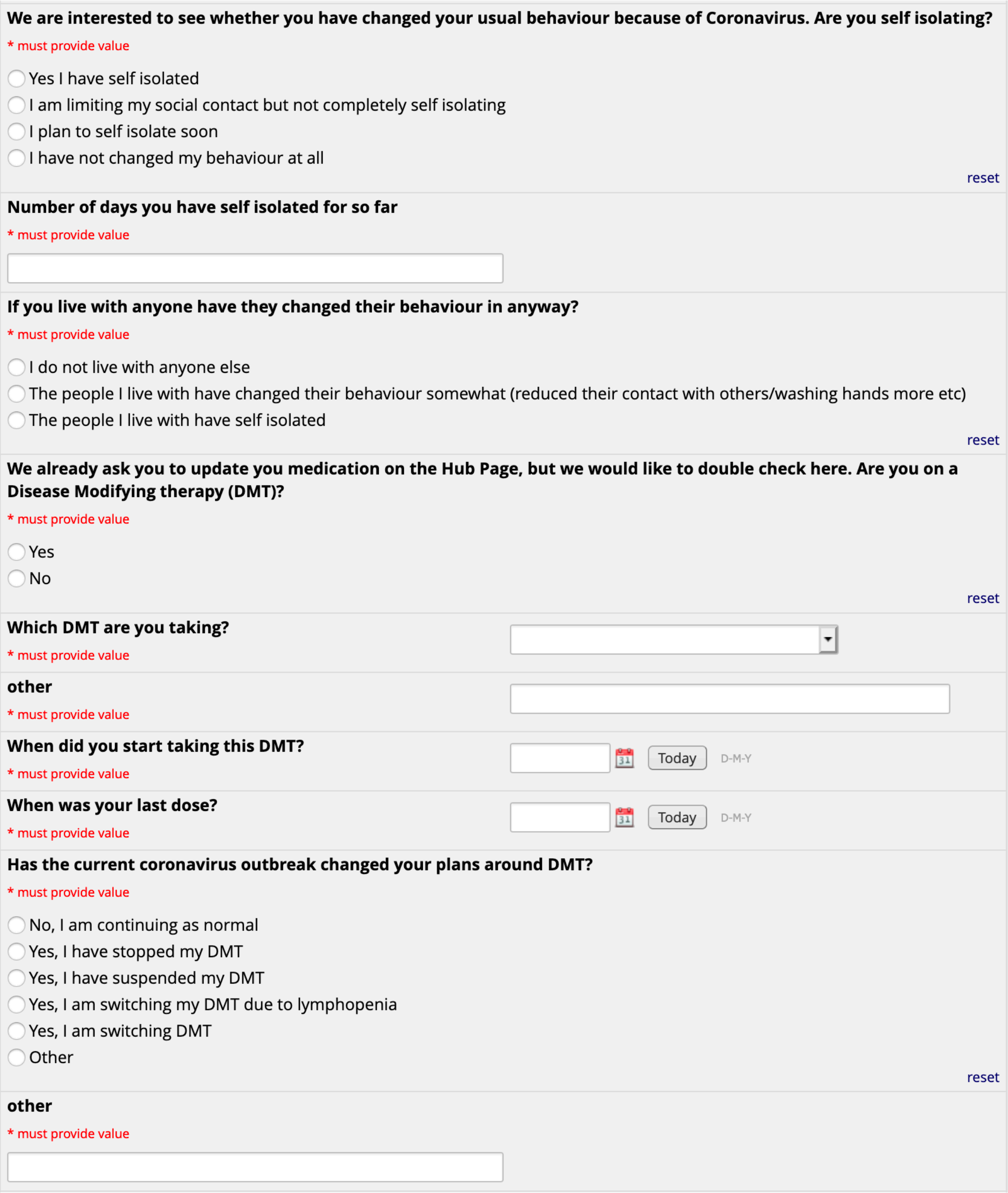
other

* must provide value

Have you found any of the information that you have been given helpful?

* must provide value

○ Yes
○ No



We are interested to see whether you have changed your usual behaviour because of Coronavirus. Are you self isolating?

* must provide value

○ Yes I have self isolated
○ I am limiting my social contact but not completely self isolating
○ I plan to self isolate soon
○ I have not changed my behaviour at all

reset

Number of days you have self isolated for so far

* must provide value

If you live with anyone have they changed their behaviour in anyway?

* must provide value

○ I do not live with anyone else
○ The people I live with have changed their behaviour somewhat (reduced their contact with others/washing hands more etc)
○ The people I live with have self isolated

reset

We already ask you to update you medication on the Hub Page, but we would like to double check here. Are you on a Disease Modifying therapy (DMT)?

* must provide value

○ Yes
○ No

reset

Which DMT are you taking?

* must provide value

other

* must provide value

When did you start taking this DMT? Today D-M-Y

* must provide value

When was your last dose? Today D-M-Y

* must provide value

Has the current coronavirus outbreak changed your plans around DMT?

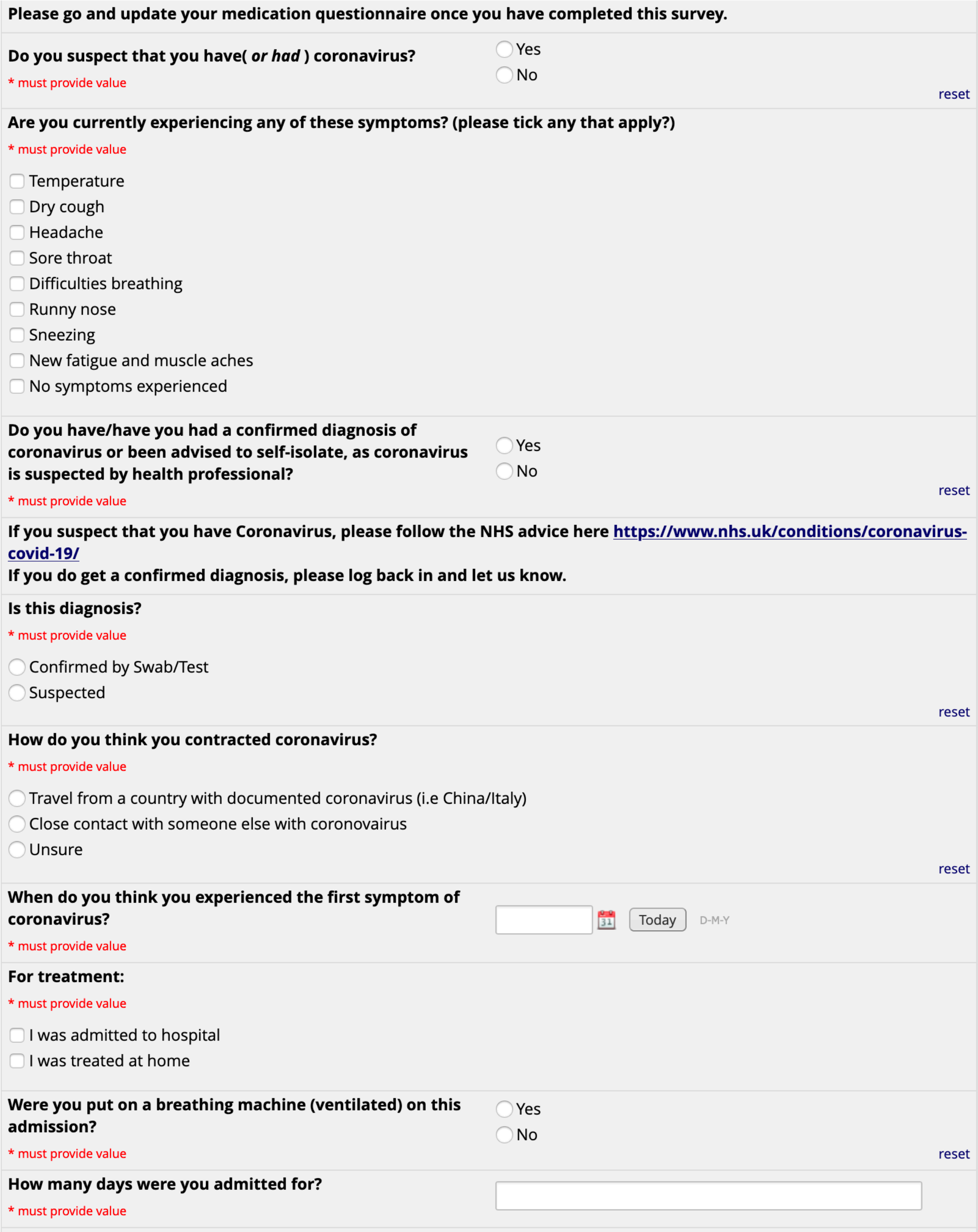
* must provide value

○ No, I am continuing as normal
○ Yes, I have stopped my DMT
○ Yes, I have suspended my DMT
○ Yes, I am switching my DMT due to lymphopenia
○ Yes, I am switching DMT
○ Other

reset

other

* must provide value



Please go and update your medication questionnaire once you have completed this survey.

Do you suspect that you have(*or had*) coronavirus?
* must provide value
○ Yes
○ No
reset

Are you currently experiencing any of these symptoms? (please tick any that apply?)
* must provide value

☐ Temperature
☐ Dry cough
☐ Headache
☐ Sore throat
☐ Difficulties breathing
☐ Runny nose
☐ Sneezing
☐ New fatigue and muscle aches
☐ No symptoms experienced

Do you have/have you had a confirmed diagnosis of coronavirus or been advised to self-isolate, as coronavirus is suspected by health professional?
* must provide value
○ Yes
○ No
reset

If you suspect that you have Coronavirus, please follow the NHS advice here https://www.nhs.uk/conditions/coronavirus-covid-19/
If you do get a confirmed diagnosis, please log back in and let us know.

Is this diagnosis?
* must provide value

○ Confirmed by Swab/Test
○ Suspected
reset

How do you think you contracted coronavirus?
* must provide value

○ Travel from a country with documented coronavirus (i.e China/Italy)
○ Close contact with someone else with coronovairus
○ Unsure
reset

When do you think you experienced the first symptom of coronavirus?
* must provide value

For treatment:
* must provide value

☐ I was admitted to hospital
☐ I was treated at home

Were you put on a breathing machine (ventilated) on this admission?
* must provide value
○ Yes
○ No
reset

How many days were you admitted for?
* must provide value

The follow up questionnaire will be appended once compete

Appendix 2 Clinical Questionnaire

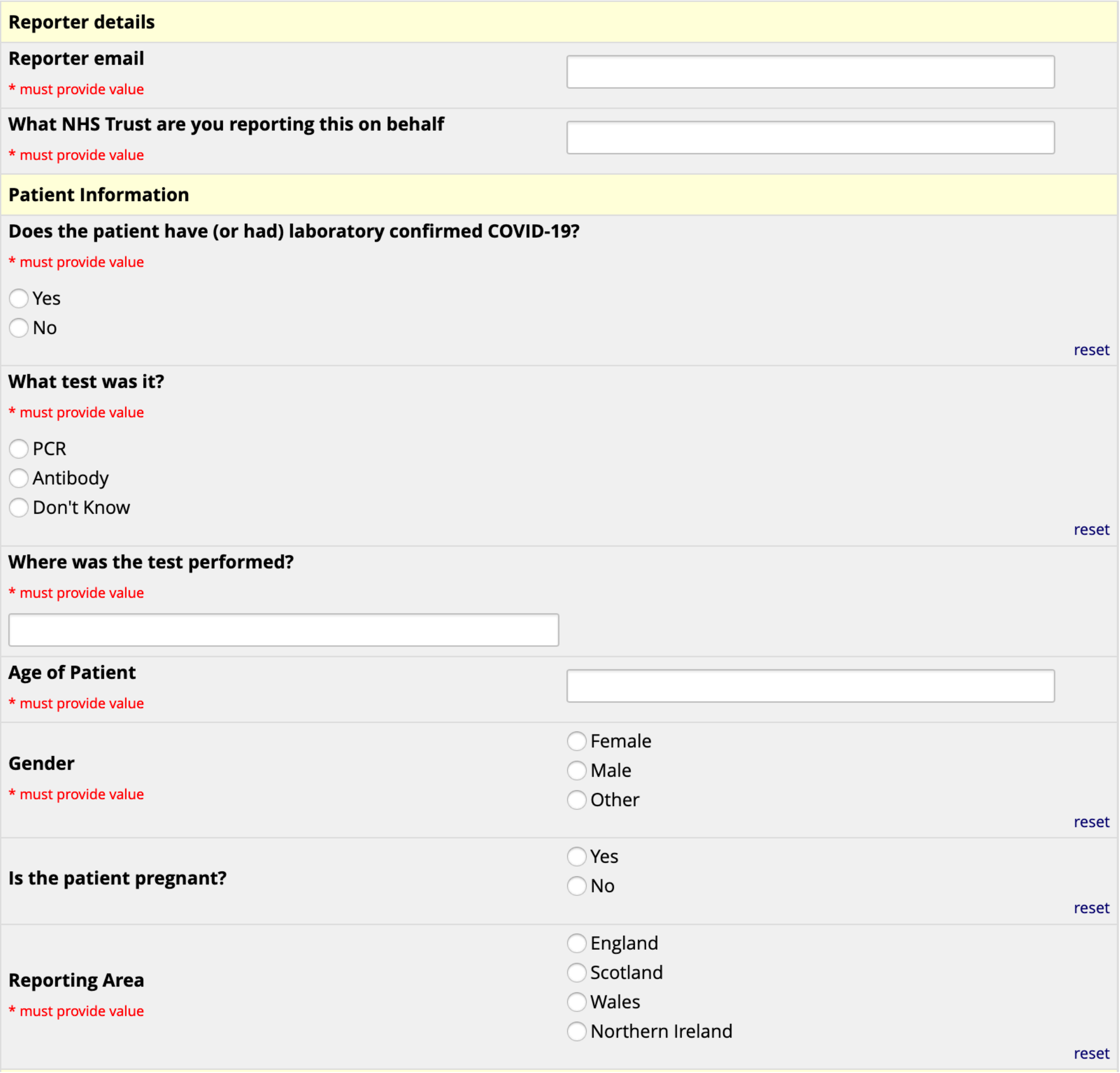
COVID-19 and MS Case Report Form (CRF) for Clinicians

This secure, anonymised CRF has been created in response to the global COVID-19 coronavirus pandemic. It is intended for healthcare professionals caring for patients with MS and documented coronavirus (COVID-19).

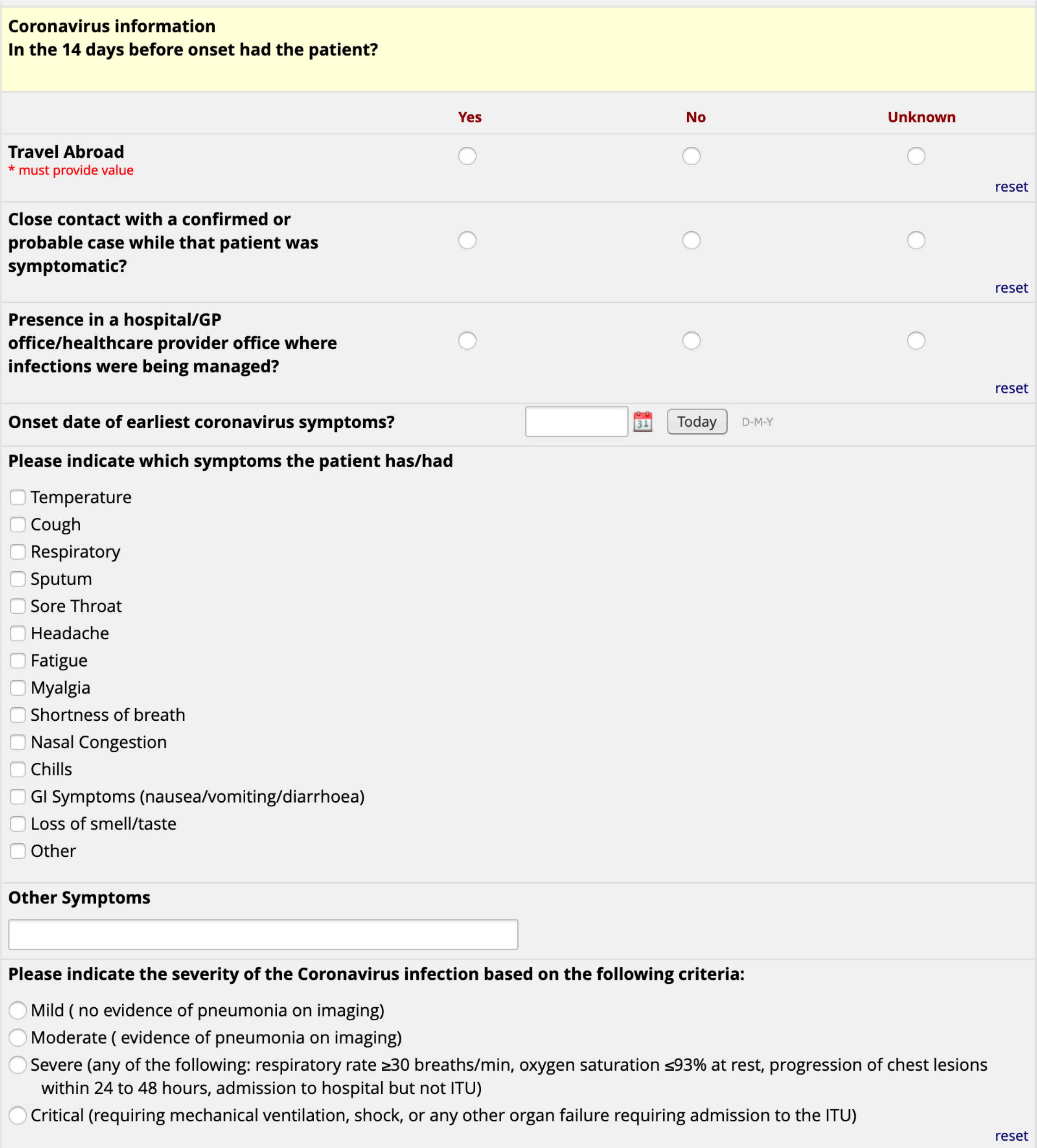
We hope that this CRF will aid MS clinicians and researchers in assessing and treating patients with MS and the coronavirus and in assessing the risk of the virus on patients on DMTs
ONLY ENTER PATIENTS THAT HAVE LAB CONFIRMED COVID-19

This form:
Is for clinicians to use to report any cases of COVID-19 in MS patients.

- Should be completed after the patient has had COVID19 confirmed.
- The form asks for reporter contact details, but other than that, there is no patient identifiable information collected.
- Follow up details will be sought to the reporter seeking further (minimal data) outcomes.
- Takes around 5-10 minutes to complete.
- This information will be shared securely on request, to any sites contributing data.



Reporter details	
Reporter email * must provide value	
What NHS Trust are you reporting this on behalf * must provide value	
Patient Information	
Does the patient have (or had) laboratory confirmed COVID-19? * must provide value ○ Yes ○ No	reset
What test was it? * must provide value ○ PCR ○ Antibody ○ Don't Know	reset
Where was the test performed? * must provide value	
Age of Patient * must provide value	
Gender * must provide value	○ Female ○ Male ○ Other reset
Is the patient pregnant?	○ Yes ○ No reset
Reporting Area * must provide value	○ England ○ Scotland ○ Wales ○ Northern Ireland reset



Coronavirus information
In the 14 days before onset had the patient?

	Yes	No	Unknown	
Travel Abroad * must provide value	○	○	○	reset
Close contact with a confirmed or probable case while that patient was symptomatic?	○	○	○	reset
Presence in a hospital/GP office/healthcare provider office where infections were being managed?	○	○	○	reset

Onset date of earliest coronavirus symptoms? ☐ Today D-M-Y

Please indicate which symptoms the patient has/had

- ☐ Temperature
- ☐ Cough
- ☐ Respiratory
- ☐ Sputum
- ☐ Sore Throat
- ☐ Headache
- ☐ Fatigue
- ☐ Myalgia
- ☐ Shortness of breath
- ☐ Nasal Congestion
- ☐ Chills
- ☐ GI Symptoms (nausea/vomiting/diarrhoea)
- ☐ Loss of smell/taste
- ☐ Other

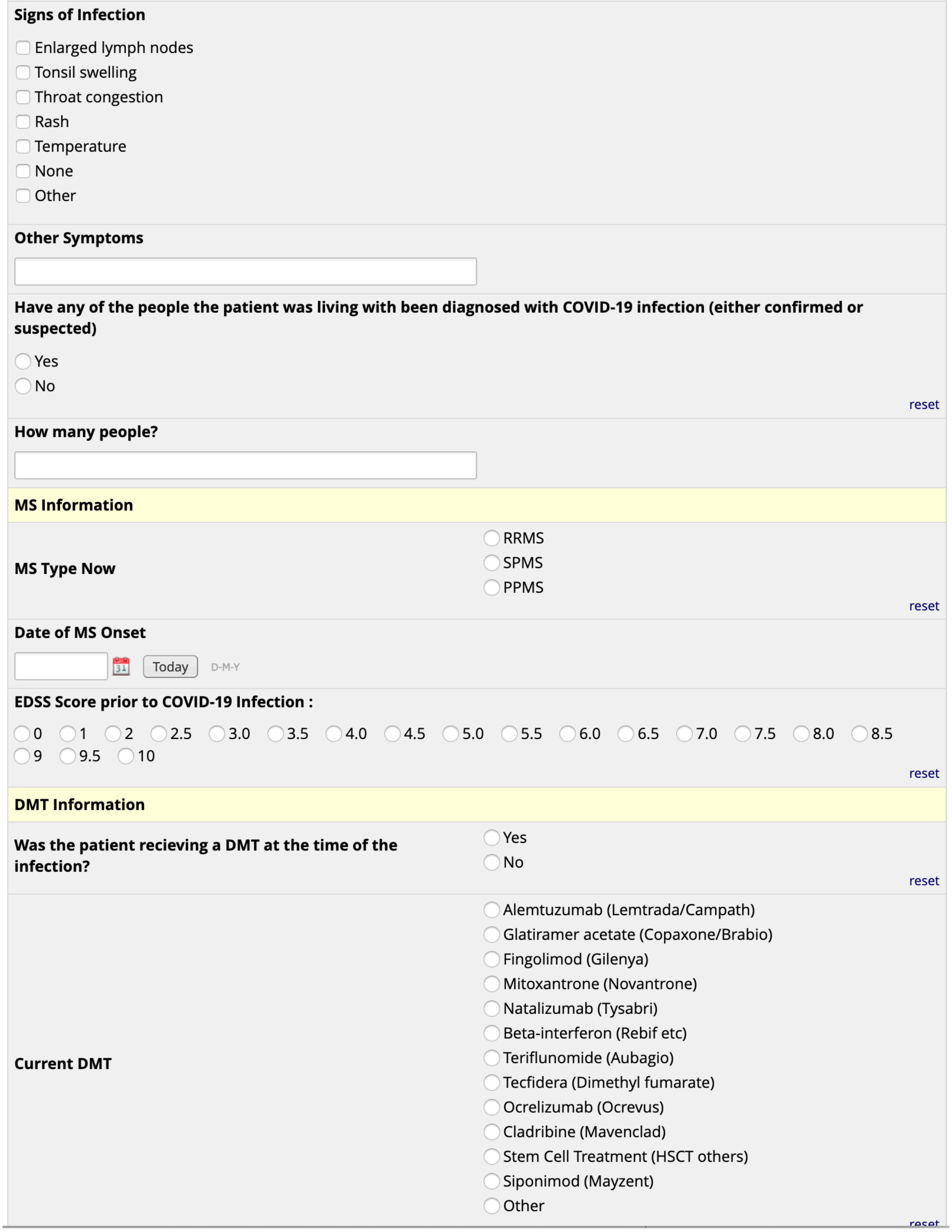
Other Symptoms

☐

Please indicate the severity of the Coronavirus infection based on the following criteria:

- ○ Mild (no evidence of pneumonia on imaging)
- ○ Moderate (evidence of pneumonia on imaging)
- ○ Severe (any of the following: respiratory rate ≥30 breaths/min, oxygen saturation ≤93% at rest, progression of chest lesions within 24 to 48 hours, admission to hospital but not ITU)
- ○ Critical (requiring mechanical ventilation, shock, or any other organ failure requiring admission to the ITU)

reset



Signs of Infection

☐ Enlarged lymph nodes
☐ Tonsil swelling
☐ Throat congestion
☐ Rash
☐ Temperature
☐ None
☐ Other

Other Symptoms

Have any of the people the patient was living with been diagnosed with COVID-19 infection (either confirmed or suspected)

○ Yes
○ No

How many people?

MS Information

MS Type Now

○ RRMS
○ SPMS
○ PPMS

Date of MS Onset

EDSS Score prior to COVID-19 Infection :

○ 0 ○ 1 ○ 2 ○ 2.5 ○ 3.0 ○ 3.5 ○ 4.0 ○ 4.5 ○ 5.0 ○ 5.5 ○ 6.0 ○ 6.5 ○ 7.0 ○ 7.5 ○ 8.0 ○ 8.5
○ 9 ○ 9.5 ○ 10

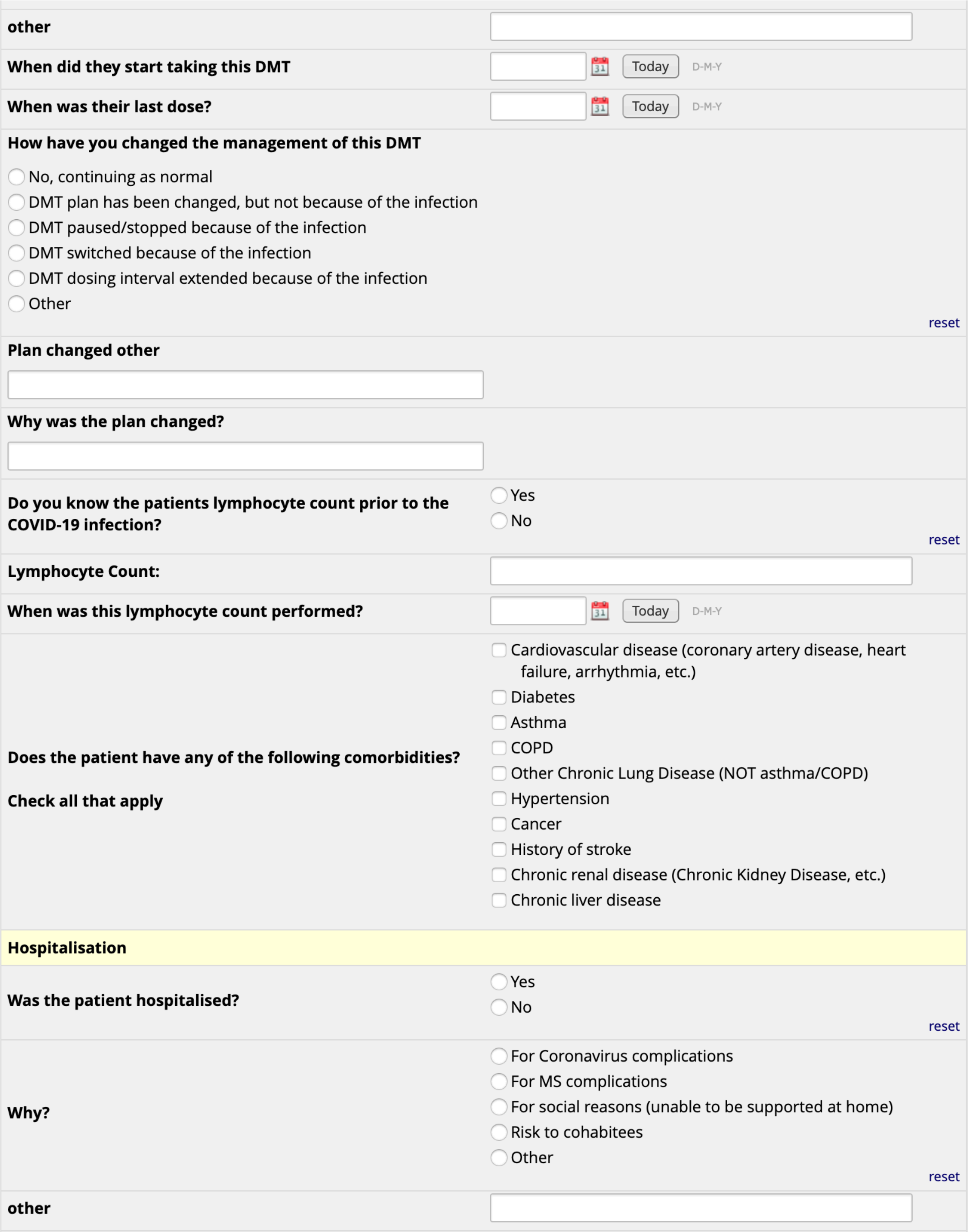
DMT Information

Was the patient recieving a DMT at the time of the infection?

○ Yes
○ No

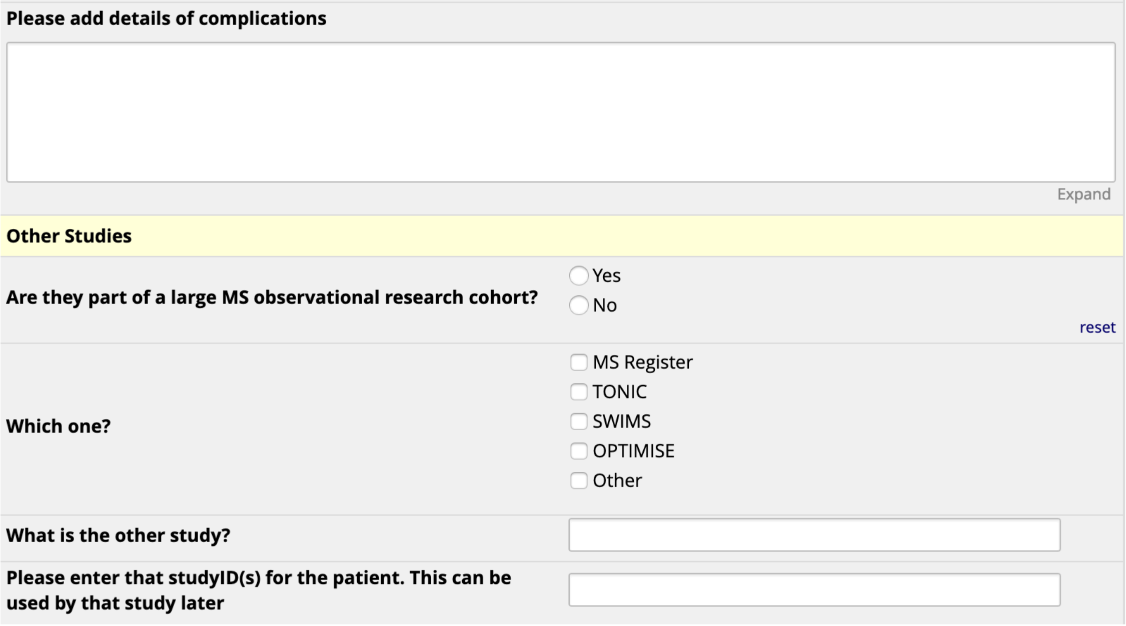
Current DMT

○ Alemtuzumab (Lemtrada/Campath)
○ Glatiramer acetate (Copaxone/Brabio)
○ Fingolimod (Gilenya)
○ Mitoxantrone (Novantrone)
○ Natalizumab (Tysabri)
○ Beta-interferon (Rebif etc)
○ Teriflunomide (Aubagio)
○ Tecfidera (Dimethyl fumarate)
○ Ocrelizumab (Ocrevus)
○ Cladribine (Mavenclad)
○ Stem Cell Treatment (HSCT others)
○ Siponimod (Mayzent)
○ Other



other	
When did they start taking this DMT	Today D-M-Y
When was their last dose?	Today D-M-Y
How have you changed the management of this DMT ○ No, continuing as normal ○ DMT plan has been changed, but not because of the infection ○ DMT paused/stopped because of the infection ○ DMT switched because of the infection ○ DMT dosing interval extended because of the infection ○ Other	reset
Plan changed other	
Why was the plan changed?	
Do you know the patients lymphocyte count prior to the COVID-19 infection?	○ Yes ○ No reset
Lymphocyte Count:	
When was this lymphocyte count performed?	Today D-M-Y
Does the patient have any of the following comorbidities? **Check all that apply**	☐ Cardiovascular disease (coronary artery disease, heart failure, arrhythmia, etc.) ☐ Diabetes ☐ Asthma ☐ COPD ☐ Other Chronic Lung Disease (NOT asthma/COPD) ☐ Hypertension ☐ Cancer ☐ History of stroke ☐ Chronic renal disease (Chronic Kidney Disease, etc.) ☐ Chronic liver disease
Hospitalisation	
Was the patient hospitalised?	○ Yes ○ No reset
Why?	○ For Coronavirus complications ○ For MS complications ○ For social reasons (unable to be supported at home) ○ Risk to cohabitees ○ Other reset
other	

-



Please add details of complications

Other Studies

Are they part of a large MS observational research cohort?	○ Yes ○ No
Which one?	☐ MS Register ☐ TONIC ☐ SWIMS ☐ OPTIMISE ☐ Other
What is the other study?	
Please enter that studyID(s) for the patient. This can be used by that study later	