Teresa Finlay, Alexander Rushforth, Lucas Seuren, Trish Greenhalgh, Catherine Pope.

Crozier and colleagues (1) make a compelling argument for expanding the case definition for COVID-19 cases to improve the UK's pandemic response, noting the importance of 'unofficial' symptoms and the need to track changes in presentations as the virus mutates.

The WHO case definition for COVID-19 (2) lists fever and cough, or acute onset of three or more of a list of nine additional symptoms. UK NHS and public health advice continues to alert the public to common symptoms of high temperature, new continuous cough and loss/change to sense of smell or taste (3). However, as Crozier et al note, the mutations of the virus, combined with age-related differences in how people experience symptoms, mean that many UK cases have not presented with these recognised symptoms.

Our qualitative interviews with 31 people who experienced COVID-19 in the early phase of the UK pandemic suggests that even in the early phase a reappraisal of symptoms and case definition was warranted and possible. We identified 55 signs/symptoms in our data, and a range of different lay descriptions for these (see Table). This research for the ESRC Remote by Default study confirmed that while the most common symptoms were fatigue, shortness of breath and fever, not all reported these, and several interviewees did not use these terms; for instance some said they lost weight but did not associate this with ageusia or anorexia. Others noted a variety of debilitating pain symptoms rather than 'weakness' *per se*. One person reported their illness starting with pains in the feet and a rash but no fever, cough or breathlessness and said they were not believed by emergency department staff despite having been referred to them following a positive COVID-19 test.

Interviewees reported struggling to access care when their symptoms (or their lay terms for them) did not map onto the officially recognised symptoms. They reported particular difficulties with respect to their interactions with digital triage and assessment, notably with the UK NHS 111 services:

> *They all asked "have you got a fever, have you got a cough?" And each time I'd say "no I haven't got either of those but I've got all these other symptoms. And I know that there's … something wrong and I do believe this to be Covid." "Oh well we don't think it's Covid…" Interviewee 04*

We were surprised by the 'long list' of disparate symptoms some interviewees described, including diarrhoea, brain fog, numbness and hallucinations, as this quote illustrates: .

> *That week I had a variety of things. I had terrible pain in my lower back and in both my legs. My knees were really sore. My calves were very, very painful. My right foot went numb and that was particularly bad in the early evenings ... and at the beginning of that week … the diarrhoea started and I had that for two weeks. Interviewee 29*

Our qualitative research uncovered both the broader spectrum of symptoms people experienced associated with COVID-19 and, perhaps more importantly, the very different ways these are described in lay language. This kind of qualitative work, which can be done rapidly can support clinicians and public health information, as well as informing the kind of expanded case definition Crozier et al propose.

Table: Symptoms listed by interviewees in the Remote By Default study

Symptom	**Frequency**

1. Fatigue/weakness	28
2. Shortness of breath	19
3. Temperature/fever	19
4. Chest pain/tightness	16
5. Headache	13
6. Cough	11
7. Diarrhoea	10
8. Chills/shivery	9
9. Palpitations	8
10. Loss of/altered taste	7
11. Painful eyes	7
12. Muscle/joint pains	7
13. Loss of/altered smell	6
14. Nausea and vomiting or retching	6
15. Light-headed/dizziness	5
16. Loss of appetite	5
17. Brain fog	4
18. Abdominal pain	4
19. Anxiety or panic attack	3
20. Back ache	3
21. Tinnitus	3
22. Sore throat	3
23. Low oxygen saturation	2
24. Sinusitis	2
25. Sweats	2
26. Trapped wind	2
27. Weight loss	2
28. Tremors/shakiness	2
29. Numb foot/feet	2
30. Numb/tingling hands	2
31. Difficulty remembering words	2
32. Mouth ulcers	2
33. Productive cough	2
34. Swelling back and sides	1
35. Numb face	1
36. Muscle weakness	1
37. Leg pains	1
38. ‘Weird’ (new) veins on legs	1
39. Pains in feet	1
40. Rash on feet	1
41. Cold feet	1
42. Stiff hands	1
43. Ear ache	1
44. Hay fever/runny nose	1
45. Nose bleeds	1
46. Visual problems	1
47. Cold sores	1
48. Sore scalp	1
49. Rash on body	1

50. Sensitive skin	1
51. Dry skin	1
52. Insomnia	1
53. Strange sensations	1
54. Hallucinations	1
55. Photophobia	1
NO temperature	5
NO cough	2

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