Bronchiectasis cough during the COVID-19 pandemic: a qualitative study

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ABSTRACT

AIM: Cough and airway secretions are part of daily life for people living with bronchiectasis. During the COVID-19 pandemic, infections associated with airway inflammation and cough amplified the health-related stigma and social unacceptability of coughing. This study explored the experiences and perceptions of adults with bronchiectasis during the pandemic to better understand the holistic impact of cough on their lives.

METHOD: A qualitative, interpretive descriptive study was undertaken using semi-structured interviews with 15 adults living with bronchiectasis resident in Counties Manukau, Aotearoa New Zealand.

RESULTS: Insights into the lives of adults living with bronchiectasis during the pandemic highlighted how they were impacted on multiple levels. Four key themes were developed that described participants' struggle: "feeling vulnerable but keeping safe"; "being treated differently"; adjusting to "becoming a virtual patient"; and participants articulating an increased focus on "self-care and supportive communities" as key strategies. Communication with health teams became crucial, offering essential support for respiratory health, medication access, reassurance and social connectivity.

CONCLUSIONS: Health professionals play a key role in increasing public awareness around bronchiectasis and cough, helping to reduce stigma. While it is unknown when another disease outbreak mirroring that of COVID-19 will occur, the stigma of cough continues and warrants improved understanding.

Nearly 5 years have passed since the emergence of COVID-19, a disease caused by the severe acute respiratory syndrome coronavirus. The subsequent pandemic resulted in overwhelmed healthcare systems and unprecedented global disruption.[1] Symptoms associated with COVID-19 include high fever, severe cough and shortness of breath,[2] which are synonymous with infective exacerbations of respiratory disease, including bronchiectasis. People living with long-term respiratory conditions were a particularly vulnerable group, with many experiencing anxiety and stress related to fear of exposure to the virus.[3–6]

Bronchiectasis is a chronic lung condition characterised by permanent dilation of bronchial airways and an impaired mucociliary escalator, resulting in a productive cough.[7,8] This impairment, often caused by repeated infections, leads to bacterial invasion and mucus pooling in the bronchi, increasing susceptibility to further infections and reduced quality of life.[2] Treatment aims to manage cough and sputum production, preserve lung function, reduce exacerbations and hospital admissions, and improve mortality and quality of life.[9] Effective airway clearance, alongside pharmacological management and regular health professional reviews, are crucial for long-term management and optimising quality of life.[10,11]

An estimated 8,053, or 162 per 100,000, people live with severe bronchiectasis in Aotearoa New Zealand.[12] In addition, rates of hospitalisation (29.5 per 100,000) and death from bronchiectasis are increasing (tripling from 42 per year in 2000/2001 to 154 in 2017).[12] While it is less common than other respiratory conditions such as chronic obstructive lung disease, population patterns of bronchiectasis are associated with significant social gradient for Māori, Pacific peoples and people living in lower socio-economic communities in Aotearoa New Zealand.[12] Compared with other regions, Counties Manukau has the highest social deprivation, population of Māori and prevalence of severe bronchiectasis, making the understanding of the holistic experiences of people with bronchiectasis essential.[12]

People with bronchiectasis are accustomed to respiratory symptoms and infection risks, with cough being the most common daily symptom.[13] However, coughing poses challenges and impacts daily life, causing discomfort and embarrassment.[14,15] Cough, especially a productive cough of airway secretions, is also associated with social stigma[16] and a high prevalence of anxiety and depression.[17] Research into cystic fibrosis (CF), a hereditary condition also typically associated with a productive cough, found stigma was evident and resulted in discriminatory attitudes and behaviours by members of the public, similar to people living with human immunodeficiency virus (HIV).[18] During the early pandemic phase, Williams et al.[16] highlighted how coughing took on new significance, especially in public spaces, leading to verbal exchanges, significant anxiety and fear of judgement, causing some healthy individuals to either stay home or suppress their cough in public.

Of the limited research relating to the psychological and social impact of pandemics such as COVID-19, no literature has examined living with cough in a population of adults with bronchiectasis whereby cough is both synonymous with their condition and an essential focus of treatment. This study therefore aimed to explore the experiences of adults living with bronchiectasis in Counties Manukau, Aotearoa New Zealand, during the COVID-19 pandemic.

Methods

This qualitative interpretive descriptive study[19] recruited 15 participants from the outpatient Respiratory Department of Health New Zealand – Te Whatu Ora Counties Manukau. Potential participants were provided with an information flyer about the study by clinicians from the respiratory service, and if they indicated an interest in participating, permission was sought for the clinicians to provide the research team with contact details. Potential participants were required to be English-speaking adults >18 years, with confirmed diagnosis of bronchiectasis on high resolution computed tomography and resident in the Counties Manukau Region. Participation involved an individual face-to-face or online semi-structured interview conducted by a registered nurse and academic experienced in conducting qualitative interviews. Written informed consent was obtained from all participants. Anonymity was preserved by eliminating names and identifiers from transcripts and records, with each participant identified by a pseudonym.

Recruitment and interviews occurred over a period of 15 months in Auckland, from May 2021 to August 2022. A semi-structured interview guide explored participant experiences of day-to-day life with bronchiectasis during the pandemic (Appendix). Participants were invited to have their whānau/family/support people present at the interview and were also given the option to review their transcripts for accuracy before analysis. Interviews were audio-recorded, transcribed by an independent transcriber, de-identified and entered into a Word document in a secure password -protected Teams folder. Data analysis followed Braun and Clarke's[20] reflexive thematic analysis. This involved repeatedly listening to the recorded interviews to grasp the subtle nuances and meticulously reading the verbatim transcripts for accuracy. Following this, a recursive inductive coding process was undertaken to capture the essential meanings. Through this method, a set of experiential themes was constructed. Ethical approval was obtained from the Health and Disability Ethics Committee (21/NTB/30) and Health New Zealand – Te Whatu Ora Counties Manukau research office (Study #1395).

Results

Individual semi-structured interviews were undertaken face-to-face (n=4), via Zoom (n=9) or telephone (n=2) with 15 adults living with bronchiectasis. This included nine females and six males, with ages ranging from 18–83 years (Table 1). Ethnicity included Māori (n=6), Tongan (n=1), Samoan (n=2), Cook Island (n=1) and New Zealand European (n=5).

Findings

Four key themes entitled "becoming a virtual patient", "being treated differently", "feeling vulnerable but keeping safe" and "self-care and supportive communities" were generated from the participants' responses as represented in Table 2.

Becoming a virtual patient

Living with bronchiectasis early in the COVID-19 pandemic involved alterations to the way in which participants interacted with healthcare services, often becoming a virtual patient. The response to virtual appointments was varied, with some participants loving it and others finding the social and non face-to-face disconnection challenging. Several participants talked about how the COVID-19 restrictions imposed were counterintuitive to human nature. There was still a strong need and value placed on human touch and face-to-face interactions.

Table 1: Bronchiectasis participants' demographic characteristics (n=15).

Pseudonym	Ethnicity	Age (years)	Gender
Beatrice	NZ European	70	F
Hana	Māori	43	F
Joe	Māori	34	M
Lois	NZ European	83	F
May	Cook Island	33	F
Sara	NZ European	67	F
Rachel	NZ European	63	F
Maia	Māori	73	F
Lani	Samoan	44	F
Ben	NZ European	21	M
Ngaire	Māori	24	F
Sam	Māori	59	M
Dan	Māori	20	M
Arnold	Samoan	18	M
John	Tongan	52	M

Table 2: Representative quotes.

Becoming a virtual patient	"*It's just that human touch is in us—that is, there is value in the face-to-face contact and being in the same, um, space, but we're all learning, we're adapting, and we still get business done. Just the quality of that is, you know, questionable.*" – Lois "*I had a virtual doctor's appointment, which is perfect cause I work and live a long way from the clinic. So yeah, it was never convenient going to the doctors. I always said to them prior to COVID, 'can we just do a consult over the phone or over a video conference,' and that just wasn't an option. I said, 'I'll pay, I'll pay, just trying to get to you is impossible.' So, one of the pros of COVID for me is now I can beam in and see my doctor at anytime from anywhere and get the medicine that I need, if needed.*" – Hana
Being treated differently	"*When I went in* [to clinic] *they would say 'have you got a cough? … go sit over there' … and away I would go to the naughty corner… didn't get to explain … well yes, I have a cough, but I always have a cough … I don't have COVID.*" – Lani "*Um, you know, I think it's people, the staff that greet you, etc, don't understand, well cause there's really no difference. You know, if somebody's coughing, then somebody's coughing, whether they've got bronchiectasis or whether it's COVID … it's all the same to them.*" – Sara

Table 2 (continued): Representative quotes.

Feeling vulnerable but keeping safe	"*I was just so afraid of contracting it, I think I was just so anxious, really anxious! So afraid to even leave the house initially when it first came. I mean, even now, um, if I travel on the train, you know there's been the odd person without a mask who have coughed and I'm very, very anxious about being away from them*." – Lani "*Um, you know, I ended up sort of being very, very careful with cleanliness … and keeping a distance were very important, and I was anxious of someone around if he was coughing or, you know, in the supermarket when everyone's mask on and stuff like that. If I did have to go out, say to the supermarket (which I avoided as much as possible) I washed my hands many times* [laughter] *and, like, cleaned the steering wheel and everything, including the doorknobs and light switches … anything just to keep yourself safe*." – Sara
Self-care and supportive communities	"*They worry about me. But I worry about them. I know how to handle myself, look after myself and not get sick, but they are the ones that I worry will catch it, and they are old so it wouldn't be good. I do all the things to keep them safe*." – Ngaire "*I mean, I had much lower exposure to viruses and stuff, and, like, the kids weren't at school, so they weren't bringing home bugs, so in a lot of ways it was quite good like that*." – Sam

The notion that interactions with health professionals via phone or Zoom were somehow less empathetic and/or less therapeutic was a sentiment shared by many participants. Older participants missed attending face-to-face appointments, whereas younger participants appreciated the convenience of having check-ups from home. Some missed the routine and elements of a typical appointment such as having lung function tests, sputum testing or X-rays.

Despite having to make these adjustments, participants felt strongly positive that advice from their specialist team members, general practice services and pharmacists were readily available and overall felt connected and supported to self-manage their bronchiectasis.

> *"Phone virtual appointments and conversations with the team made me feel safe and cared for. The physio was great, always there to give advice, even if I didn't always follow it* [laugh]*."* – Joe

For some participants, having the option of virtual appointments was seen as an improvement to a system that was sometimes described as inflexible: "*… So, one of the pros of COVID for me is now I can beam in and see my doctor at anytime from anywhere*." – Hana. Many participants drew attention to their experience of accessing medications and the ease of which they attained prescriptions and advice about medications during the pandemic. There was a strong message from the participants that although there were some downsides to not being seen in person, becoming a virtual patient was "*not all bad*," with most participants describing easy access to advice and education, and that this connection helped their confidence and contributed to them "*feeling like they weren't alone*."

Being treated differently

As the pandemic evolved and lockdown restrictions lessened, some participants returned to face-to-face clinics or required hospitalisation. They described feeling that they were treated differently in healthcare spaces. Upon entering a clinic or hospital, they were always asked, "*Do you have a cough?*" Most participants answered "*yes*" and were immediately judged as "*COVID-19 suspects*," which was a source of frustration and disappointment. This usually occurred with public-facing administrative staff, but sometimes also with healthcare professionals.

Some participants felt staff "*should know better*," but they equally recognised how COVID-19 had resulted in widespread fear and when someone coughed "*all reason goes out the window*." Attending any public spaces, especially clinics or a doctor's office, was anxiety provoking, as participants recognised everyone had a heightened sensitivity to hearing a person cough. Although participants mostly understood the rationale and accepted these inconveniences, such experiences contributed to them feeling "*different*."

> *"Well yeah, I was treated differently because, you know, now that everybody, no matter who it is that has any kind of respiratory problem, they put them in the corner … like, you know there's the area separate from everyone else … and, um, I mean, I don't mind because, you know, everyone is trying to do their best to be safe from the virus, but it did feel a bit like I was contagious."* – May

The COVID-19 pandemic amplified feelings of "difference", and several mentioned how it would have been nice to have had "*a sign or a card*" they could have held up that said, "*I have a cough, it's from bronchiectasis, not COVID-19*." They noted that as the pandemic progressed there was a shift in the way questions about cough were asked by front-facing staff, where instead of saying, "*'do you have a cough?', they asked, 'do you have a new cough?'*" This change in questioning was well received by participants, who felt this was a more inclusive, understanding approach to their situation, given coughing was a normal part of their daily life.

Numerous statements such as "*coughing is socially embarrassing*," "*I felt embarrassed to go out*," "*I hate the cough*" and "*people look at you sideways*" highlights how impactful the cough was to each of the participants. Participants used a range of strategies to avoid being embarrassed or "*caught out*" (Beatrice) by their cough, including "*always having a drink handy when out in public*" (Sara, Lani, Ben), "*being prepared with an inhaler*" (Arnold), "*doing deep breathing and coughing in the car before getting out*" (Lois, Joe, John), "*not breathing*" (Dan) and/or "*holding in their cough*" (Beatrice, Joe, May, Maia, Lani, Ngaire) until they could get somewhere where they felt comfortable to cough. However, the pandemic also posed challenges to where they could go to undertake their airway clearance, to cough and clear their sputum. Staying at home was a common strategy; "*reduced the embarrassment of coughing and the hassle of having to deal with sputum when out in public*" (Ngaire), demonstrating the social impact of living with cough during the pandemic.

Feeling vulnerable but staying safe

All participants described being afraid of catching COVID-19, feeling apprehensive to go out and nervous about being close to people (even family) when they did not know if they had been exposed to COVID-19, making the pandemic experience daunting for them.

> *"I was just so afraid of contracting it, I think I was just so anxious, really anxious! So afraid to even leave the house initially when it first came."* – Lani

Maia and Lani described how their own experiences of respiratory illness, cough and fatigue gave them a different perspective, an inside knowledge of what it was like to struggle with respiratory issues. They feared COVID-19 would make things worse.

> *"If I didn't have a lung condition, I'd probably be totally different. I knew that if I were to get COVID it would be much worse situation for me, you know, more than for someone else."* – John

Others also echoed feelings of vulnerability, noting that "*for them*" the risks were more pronounced "*than for others without a lung condition like bronchiectasis*." These worries and general feelings of anxiety resulted in heightened awareness of risk and a subsequent cautious approach to daily life. Participants avoided public places, kept their distance from people when they did go out and took advantage of delivery services for groceries and medications. In addition, several participants described how they developed a new hypervigilance around hygiene and cleaning. When asked to describe their experiences during different levels of lockdown, many recalled staying in their "bubbles" at home. For some, this meant spending a lot of time on their own, whereas for others they were living with multiple family members; however, they were very vigilant in following the COVID-19 mandated rules. Social distancing and isolation were viewed as a protective mechanism and survival strategy during the unknown time of the pandemic.

> *"We were just really mindful no one went out or no one left our premises, uh, we were not open to anyone coming over. To the point where I was nearly tempted to lock my front gate, not*

> *so much as my back gate because no one really uses it, but, yeah, very tempted to lock it, that's how serious our household took that."* – Hana

Self-care and supportive communities

A strong theme among participants was the immeasurable support from neighbours, health workers and community members, including their church. Older participants who lived alone mentioned neighbours left notes, offered to get groceries or checked in on them from a distance to ensure they were okay. Health workers also helped by shopping and picking up medications. For others, they drew strength, connection and a sense of wellbeing from their church community, even during online services.

> *"Being part of the community—making connections influences mood and wellbeing. Being surrounded by good people, positive energy is empowering. The church community has been a huge support throughout COVID, even when we had online services."* – Lani

Family was described as one of the most important support systems. Some saw lockdowns as "*a great time to be with family*," while for others there were differences of opinions about isolation rules, and some participants worried about their older family members catching COVID-19.

Participants emphasised the importance of self-care during lockdowns and doing their physiotherapy i.e., airway clearance more regularly, feeling they had more time and space to walk, take breaks, get small projects completed and connect with friends/family through gaming, FaceTime and Zoom.

> *"I don't know, I feel like I just had more time to do my physio, and I went for walks and stuff. Normally I always make an excuse for not doing it* [physio] *(even though I know I should), but during the lockdowns there was just more time."* – Ben

In another positive way, the mandated isolation meant participants were "*less exposed to viruses and sick people*"; therefore, described fewer exacerbations. Only two participants out of the 15 reported they required hospitalisation for treatment of their bronchiectasis during lockdowns three and four.

Discussion

The four key themes developed from the findings of this study contribute knowledge about the experiences of people living with bronchiectasis in Counties Manukau during the COVID-19 pandemic. Participants articulated how they learned to navigate and adjust to becoming a virtual patient, how they were challenged by being treated differently in health settings and how the pandemic heightened their sense of vulnerability. Despite these challenges, participants developed a number of strategies to cope with this complex and stressful period.

Becoming a virtual patient

Individuals with bronchiectasis navigated a shift to virtual healthcare, which offered greater accessibility and convenience but sometimes lacked the empathetic touch of in-person interactions. Globally, the pandemic resulted in a shift of thinking about how education, health promotion, ongoing management and treatment of patients could occur.[21,22] The move to telephone and video consultations in order to minimise face-to-face interactions between healthcare professionals and patients was an obvious solution during the crisis of the pandemic, and healthcare professionals must anticipate patients will continue to expect this option to remain available.[23] Adaptable healthcare systems, with business models that support virtual care with specialist services while maintaining continuity of care with primary care providers, has been touted as a potential solution.[23,24] Evaluation of telehealth during the pandemic, however, also highlighted issues including equity, access to technology and literacy.[23,25] Ensuring that patients affected by the digital divide can access care in safe and inclusive ways is an essential component of quality care.

While many participants missed routine diagnostics and direct contact with providers, they valued the support and ease of access to medical advice, which strengthened their confidence in self-managing their condition. This notion of improved confidence with self-management is an important and relevant clinical finding echoed by other studies of chronic disease management during the pandemic.[26,27] Encouraging self-management through education, empowerment and providing equipment and required medications at the onset of a pandemic has potential to improve confidence and health consequences for patients, as well as decrease the demand on healthcare services.[26]

Being treated differently

As COVID-19 restrictions eased, people with bronchiectasis returned to in-person clinics and/or required hospitalisation, where they felt judged as a potential COVID-19 case due to their chronic cough. Stigmatisation, perceived and actual discrimination, and misinformation magnified the burden on participants living with bronchiectasis. This knowledge of participant experience of stigma is important for health professionals, given its potential impact on health outcomes, healthcare-seeking behaviour and care delivery, as seen in other heath-related stigma.[28] The uncertainty associated with COVID-19 in the beginning of the pandemic provides the background for stigmatisation among healthcare professionals; however, the findings from this study illustrate the need for further research exploring the impact of stigma and cough among bronchiectasis patients. Strategies promoting self-reflection of potential stigma-related judgements and actions by health professionals, correcting wrongful practices including discriminatory language or actions, teaching correct practices and skills and championing structural change could promote an anti-stigma environment, behaviour and health environment.[29] In this study, for example, health professionals addressed the screening questions asked of people with bronchiectasis when they attended clinic, so that people with "normal" cough were not ostracised. De-stigmatising cough in the community through educational forums may potentially improve engagement of people with cough and health services and promote people with cough seeking a medical review and investigation. The inclusion of quality of life questionnaires relating to cough, for example the Leicester Cough Questionnaire, within routine health assessments could be a simple strategy to raise health professional awareness and appreciation of how cough impacts on individuals.[30]

Feeling vulnerable but being safe

Participants described high levels of stress, feelings of vulnerability and anxiety related to the COVID-19 pandemic. In addition, participants expressed fear about developing COVID-19. This amplified their sense of social embarrassment, leading them to adopt strategies to manage or suppress their cough in public. Many avoided public spaces to reduce stigma and the logistical challenges of managing sputum clearance outside the home. This has been reported in other studies involving people with other existing medical conditions, where they feared being forgotten, experienced isolation and anxiety and felt stigmatised.[3,31,32] Other studies have reported the compulsion to self-isolate for fear of catching/dying from COVID-19 among those with chronic obstructive pulmonary disease,[33] CF[31] or other chronic lung diseases, including bronchiectasis.[5] This illustrates the significant anxiety and stress created by the pandemic and points to the important proactive and supportive role of health professionals in maintaining contact with vulnerable patients who may be feeling anxious or stressed.

Vulnerability relating to cough, fear of contracting COVID-19 and having a respiratory condition associated with poor COVID-19 outcomes elicited protective strategies. Participants reported keeping well and safe and looking after themselves as being an important aspect of their COVID-19 experiences. This seemed to result in an improved sense of control, improved health and fewer infections, although this is anecdotal and not scientifically measured. Perceptions, however, are in keeping with a study by Crichton et al.[34] where social distancing measures during the first 12 months of the COVID-19 pandemic were associated with a marked reduction in bronchiectasis exacerbations, but no change in individual chronic respiratory symptoms or quality of life measures. Indeed, influenza virus circulation in Aotearoa New Zealand was noted to be non-existent during the 2021 winter season compared with data from the pre-COVID era,[35] leading to a marked reduction in triggers that would otherwise result in bronchiectasis exacerbations.

Self-care and supportive communities

Fear and social isolation exposed people, including participants, to emotional distress.[36] While they adopted strategies to reduce their vulnerability and optimised their self and bronchiectasis management, communication with health professionals created a lifeline. Irrespective of the form of communication, i.e., phone call, mobile phone messaging or tele-conferencing, participants felt connected and provided with opportunities for health monitoring, reassurance and correcting myths and misinformation. Conversations between participants and health professionals provided both medical and psychological care, with participants also expressing care for staff. This mutual care and reciprocal concern spoke of the unique context and broad impact of the pandemic, as well as the trust established between health professionals and adults living with bronchiectasis in Counties Manukau. Understanding the perspectives of bronchiectasis patients may encourage other health professionals/healthcare services to adopt a proactive approach, incorporating telephone calls or virtual consultations, specifically addressing mental health needs when faced with future pandemics.

Participation in church activities and maintaining spiritual support and religious connections were also essential to the wellbeing of participants. Delivery of groceries and medications provided practical support, together with neighbourly watchfulness, all of which supported and reinforced the safety of participants, especially older participants. Previous research on past pandemics, such as the Ebola and SARS outbreaks[37] and on the COVID-19 pandemic,[38] found that social support plays a key role and is a protective factor, improving mental health and overall wellbeing.

Strengths and limitations

This study provided a unique and valuable insight into the experiences of people with bronchiectasis resident in Counties Manukau during the COVID-19 pandemic. Participants were all recruited from the respiratory outpatient clinics (virtual or face-to-face clinics) and, as such, may not be representative of the wider population of people who did not attend the clinics. Details of potential participants were not recorded, which limits analysis of patient demographics relative to clinic attendance. It is therefore unknown why, for example, Asian adults were not represented. Additionally, cultural differences were not explored in the analyses. Future research inclusive of, for example, Māori and Pacific researchers would ensure that cultural nuances and worldviews are visible and participant voices are accurately presented.

Further research is warranted regarding barriers and facilitators of people with cough and health access and, in addition, attitudes and behaviours of health professionals relating to cough. The study's findings also suggest further research, within the Aotearoa New Zealand context, should focus on interventions enhancing social support resources for patients, given the protective role they play in reducing adverse mental health outcomes. In addition, careful evaluation of the benefits and risks to wellbeing of virtual healthcare and support is warranted.

Conclusion

The impact of COVID-19 was far-reaching and affected every participant irrespective of age, culture and gender. While chronic cough is synonymous with bronchiectasis, this symptom became feared and associated with COVID-19. Participants both feared and experienced stigmatisation, adopting strategies to protect their vulnerability and stay safe. Paradoxically, they valued the physical and social isolation that created a safe space, yet valued connecting virtually with health professionals, community members and their church. It is critical that health professionals appreciate the impact of symptoms such as cough to better understand how lives of people with, for example, bronchiectasis are affected. Health professionals play a crucial role in capturing these narratives, preventing and reducing cough stigma. Their role extends to raising public as well as peer awareness in relation to reducing cough stigma and also promoting people to seek medical assessment regarding chronic cough.

COMPETING INTERESTS

Nil.

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Appendix 1

Topic interview guide for semi-structured interviews

This research study employs an interpretative descriptive methodology and hence relies on the stories and experiences that participants bring to the interview.

It is not the intention of the researcher to enter the interview with prearranged questions.

I am very keen to allow the participants to shape the interview, however the participants may need a beginning point to start from, then I could employ any of the following prompts:

Warm up questions.

Tell me a little about yourself and when you were diagnosed with bronchiectasis?

Other warmups…

What do you understand the study to be about? In your own words…

Then move to study-related prompts:

What has it been like having a cough/bronchiectasis during the COVID-19 pandemic? [*Probes: people with cough/bronchiectasis have described feeling embarrassed or stigmatised about their cough … is that something you have experienced?*]

What kind of reactions have you experienced from other people, including family, healthcare providers, public?

Tell me about a situation where you felt embarrassed by your cough/bronchiectasis?

What kind of changes or alterations to your own behaviour and management of your bx have you had to undertake during the pandemic?

What support and resources have been helpful to you?

What has been the best thing about having bronchiectasis/cough during COVID-19?

What has been the worst/hardest thing about having bronchiectasis/cough during COVID-19?

Anything else you would like to tell me?

Additional prompts which may be used throughout the interview:

When you described … what did you mean

I'm really interested in what you just described…

Can you tell me a bit more about…

What did you understand by that … Why do you think that was like that…