**Caring through distancing: spatial boundaries and proximities in the cystic fibrosis clinic**

This paper re-examines relations between proximity, distance and care, focusing on practices of ‘distancing’ in the cystic fibrosis (CF) clinic. While care is often thought of in terms of proximity, literature on ‘landscapes of care’ highlights the potential for ‘care at a distance’. We extend this literature to examine practices of social distancing, specifically the act of maintaining a ‘space between’ bodies in communal areas – a practice currently brought to the fore by the COVID-19 pandemic. Using the CF clinic as a case study, we examine how distancing can be understood as an emplaced practice of care, shaped by – and shaping - architectures and materialities in particular contexts. We explore these issues drawing on data from *Pathways, practices and architectures: containing antimicrobial resistance in the cystic fibrosis clinic*, a UK AHRC funded study (AH/R002037/1) examining practices in three cystic fibrosis clinics using visual and ethnographic methods. Clinical staff practices of maintaining distancing were often regarded by patients as ‘care-ful’, part of personalised ‘care in place’, embroiling a wider care assemblage including ancillary staff, materialities and architectures. Patients also actively participate in distancing as an ‘ethic of care’, using strategies of ‘holding back’ and ‘looking out’ in confined spaces. Yet our findings also highlight tensions between care, proximity and distance in circulation spaces and communal areas, including transient spaces where the assemblage of care breaks down. The article concludes by considering wider implications for healthcare design and for the COVID-19 pandemic.

**Keywords:** care;infection prevention; cystic fibrosis; distancing; architectures; materialities; place; boundary work

**Introduction**

Care is often theorised in terms of proximity – the physical proximity of direct hands on ‘bodywork’ (Twigg et al. 2011), and relations of empathy and emotional closeness (Wuest 1997). In contrast, emotional and physical distance have been associated with ‘cold care’ (Pols 2012). Yet literature on ‘landscapes of care’ troubles these distinctions between proximity and distance, in seeking to understand ‘the thoroughly spatial ways in which care [is] structured and practiced’ (Milligan and Wiles 2010 p.283, citing Brown 2003). This includes exploring the potential of new Information and Communication Technologies (ICTS) to facilitate ‘care at a distance’, and the use of telecare such as webcams and electronic monitors to communicate with care recipients and transmit data (Pols 2012).

This paper extends this literature to examining practices of ‘distancing’ in the context of infection prevention. The COVID-19 pandemic, spreading globally at the time of writing, has brought references to ‘social distancing’ (Public Health 2020a) or ‘physical distancing’ (Hensley 2020) to the fore of policy and everyday practice. Social distancing has been defined as ‘keeping a safe space between yourself and other people’ (Centres for Disease Control (CDC) 2020). Guidance varies across countries and is currently in flux, with Government recommendations in England initially advising a distance of ‘2 metres away’, which was later relaxed to a minimum of 1 metre (Cabinet Office 2020a). Other measures of social distancing include avoiding crowded places and reducing the number of social contacts outside your household. Practices of distancing have significant implications for how care is experienced and practiced (Romania 2020), raising new issues concerning relations between care, proximity and distance.

While ‘distancing’ has only recently been brought into public consciousness, strategies of maintaining physical distance have for some time been common practice in the context of Cystic Fibrosis (CF). CF is a genetic condition, resulting in abnormal sticky secretions in the lungs and digestive systems, leading to diverse symptoms including lung inflammation, digestive problems, infertility, and CF related diabetes (Lowton and Gabe 2006). One of the most common symptoms is chronic lung infections, leading to coughing and shortness of breath (Brown et al., 2020a, Lowton and Gabe 2003). CF patients ‘grow’ different bacteria in their lungs, which can be dangerous for other CF patients, although rarely harmful to others without CF (CF Trust 2019, CF Foundation 2014). Cross infection guidance advises patients to avoid close proximity to other CF patients (CF Trust 2019), and in the US, to keep a distance of two metres apart (CF Foundation 2014).

We draw together concepts of ‘carescapes’ with those of ‘riskscapes’ to examine how distancing is enacted in the CF clinic, in relation to architectures and materialities. Literature on ‘carescapes’ highlights the mutual shaping of care and place, and role of materialities and buildings as part of care assemblages (Ivanova et al. 2016). In the field of infection prevention, the concept of ‘riskscapes’ has been applied to understanding how perceptions of risk shape how staff use healthcare spaces, and how materialities such as personal protective equipment (PPE) can be used to negotiate risky spaces (Gee and Stovdahl 2017). Research on ‘boundary work’ describes how clinical staff adapt spatial and material arrangements to create safe zones (Mesman 2009, 2012). Drawing together these approaches we explore how meanings of care and risk intersect in shaping practices of distancing, in dialogue with the material environment of the hospital.

We explore these issues drawing on data from *'Pathways, practices and architectures: containing antimicrobial resistance in the cystic fibrosis clinic’* (PARC), a UK Arts and Humanities Research Council (AHRC) funded study (AH/R002037/1) that examined practices, pathways and architectures in three CF clinics, conducted 2018-2020, completed immediately prior to the COVID-19 pandemic. The study used qualitative methods including graphic interviews, walking interviews and ethnographic observations, examining the experiences of patients and staff (Brown et al. 2019). We begin by looking at staff practices of distancing, and how they can be viewed as part of personalised ‘care in place’ (Ivanova et al. 2016). We then examine patient strategies of distancing as an ‘ethic of care’, involving a sense of responsibility and caring about the ‘distant other’ (Milligan and Wiles 2010, p.741). These practices depend on the support of a diverse range of actors and materials, as part of a wider ‘care assemblage’ (Dombroski et al. 2016, Fox 2011, Locock et al. 2016). Yet tensions and dilemmas emerge between distance, proximity and care. The paper concludes by considering implications for design and for the COVID-19 pandemic.

**Care, proximity and distance**

Care is a multi-faceted concept and can refer to a feeling or disposition, form of labour, or a social practice (Abbots et al. 2015). ‘Caring for’ as physical care is sometimes distinguished from ‘caring about’ as the affective aspects of care (Millington and Wiles 2010). Proximity in care relations therefore not only refers to physical intimacy, but also emotional or relational closeness (Wuest 1997). The emotional and physical aspects of care are entangled with one another, and as Puig de la Bellacasa (2011) suggests, care is ‘both a doing and ethico political commitment’ (p.100). She suggests that the affective experience or ethical stance of ‘caring about’ can motivate caring as a ‘material doing’, and that care is an ‘ethically and politically charged *practice*’ (p. 90).

Literature on care and place emphasises the significance of proximities for caring encounters, facilitated by the design of spaces and materialities (Buse et al. 2018). Research on therapeutic landscapes illustrates how public spaces – cafes, libraries, parks, gardens– create proximities that can lead to moments of care (Cattell et al. 2008). Brownlie and Spandler (2018) examine how shared spaces and routines enable small acts of mundane care, for instance, shared spaces such as tenement stairwells, or the placement of a seat in a community shop. In Maggie’s Cancer Care Centres the kitchen table is placed at the heart of the building, encouraging people sit, linger and socialise (Martin 2016).

Distance or distancing emerges as more ambivalent practice, a strategy for dealing with the challenges of intimate care. Emotional distancing is used by health and social care staff to cope with distressing encounters, sometimes creating barriers to ‘warm’ care relationships (Maguire 1985, Reeves and Decker 2012). Twigg (2000a, 2000b) has argued that physical and emotional closeness can be in tension, as the intimate nature of physical care can evoke embarrassment or disgust. Her work on bathing and home care illustrates how the material environment can be used to create distance, for instance, where care workers use the side of the bath and bath water as a boundary between themselves and the naked body of the care recipient. Lawton (1998) describes how the architectures of hospice care are used to contain the ‘unbounded’ body, as patients with ‘leaky’ bodies are moved to individual side rooms. This helps to protect patients from embarrassment in public spaces, yet exacerbates isolation and marginalisation.

Literature on ‘landscapes of care’ further disrupts assumptions around proximity, distance and care (Milligan and Wiles 2010). Increasing geographical mobility and technological change mean that ‘caring for’ as well as ‘caring about’ can take place at a distance (Lawson 2007). While it is sometimes argued that telecare diminishes ‘warm’ care, Pols (2012) challenges dichotomies between closeness/distance, good/bad, warm/cold care. She argues that telecare can be part of ‘care that fits’ (p. 20), meeting personalised requirements in a specific context. Although previous research highlights potential for care at a distance, it has generally focused on technological innovations and geographical mobility. Practices such as social distancing in the context of infection prevention raise new considerations for interconnections between care, proximity and distance.

**Infection prevention, segregation and care in the context of CF**

The threat of contagion can disrupt relations of care, proximity and distance, exposing tensions between architectures of isolation and architectures of interaction (VanHeuvelen 2019). Gee and Stovdahl (2017) use the concept of ‘riskscape’ to explore how *perceived* risk shapes the way healthcare spaces are navigated by staff in the context of the Ebola crisis in West Africa. Building on notions of ‘scapes’ used in ‘caringscapes’ literature, they highlight the role of embodied practice and individual experiences of place, within the context of broader social structures and processes. Gee and Stovdahl (2017) describe tensions between risk and care, for instance, staff wearing personal protective equipment (PPE) could impact negatively on care. Other research similarly highlights how infection prevention measures such as protective clothing, isolation rooms and reduced physical contact create barriers to care (Cassidy 2005). Mesman’s (2009, 2012) research illustrates how clinical staff in a neonatal intensive care unit (NICU) perform spatial practices of ‘boundary work’, utilising the material environment including folding screens, instruments trolleys, sinks and sanitisers to create ‘sterile zones’. However, this research on boundary work focuses on the implications of these practices for meanings of safety and sterility rather than their implications for meanings and experiences of *care*.

Literature on boundary work and riskscapes examines clinical staff practice. We aim to broaden this to explore how patients and other hospital staff play an active role in relations of care, risk and distance, in dialogue with the material environment. To develop a holistic notion of care as co-produced by relations between a range of human and non-human actors, we draw on Ivanova and colleagues (2016, p.1337) conceptualisation of ‘carescapes’, which extends earlier notions of ‘caringscapes’, sharpening the focus on the materialities and heterogeneity of care (Buse et al. 2018). They define carescapes as a ‘fluid concept’ that ‘signifies and captures the notion of care emplacement in a context of ontological multiplicity of care and place’ (p. 1338). In theorising carescapes, Ivanova and colleagues draw on the concept of assemblage, which positions care within a network of diffuse human and non-human elements (Fox 2011, Locock et al. 2016), bringing together ‘socialitities, spatialities and materialities’ (Dombroski et al. 2016, p. 235).

In the context of CF, risk, distance and care take on specific significance. CF clinics segregate patients who ‘grow’ different types of bacteria in the lungs, to prevent cross infection between them. This has been a significant change in the treatment of CF, as prior to the 1990s CF care was organised to facilitate interaction and mutual support (Brown et al. 2019). However, by the early 1990s, clinical studies had established causal relationships between social contact among CF patients and the spread of bacterial infections such as an epidemic strain of the *Burkholderia cepacia comple*x *(B.* *cepacia*) (Fothergill et al. 2012). Patients with *B. cepacia* have been isolated from other CF patients since the early 1990s, but in 2001 the UK CF trust recommended the segregation of patients with *Pseudomonas aeruginosa (pseudomonas)* (Russo 2007). It is now recommended that all CF patients are separated from one another (Saiman 2014).

Guidance for CF patients on minimising cross infection risks has parallels with emergent ‘social distancing’ recommendations for COVID-19. In the US, it has been recommended since 2014 that CF patients keep 2 metres apart from one another (CF Foundation 2014). This is based on research suggesting that infectious airbourne droplets from coughing, sneezing or talking can travel up to 2 metres (Saiman 2014). In the UK, there is not an agreed ‘safe distance’, but the CF Trust (2019, p.2) advises that patients ‘avoid being in close proximity to others unless you are sure they do not have cystic fibrosis’. In the context of COVID-19, the ‘2 metre rule’ became widespread in the UK (Cabinet Office 2020b, Public Health England 2020a). It was later relaxed to allow a distance of 1 metre with ‘risk mitigation’ (e.g. wearing masks), aiming to mitigate economic impact in the hospitality and retail sectors, while acknowledging that evidence suggests 2 metres is safer (Cabinet Office 2020a). Research on CF has highlighted the implications of segregation for isolation and stigmatisation (Russo 2007), particularly for those with *B. cepacia* who are subject to stricter isolation procedures (Duffy 2002). These issues have also been discussed in the context of COVID-19, with the World Health Organisation advocating a change from ‘social distancing’ to ‘physical distancing’ to encourage support at a distance (Hensley 2020).

While previous research on segregation and CF has explored implications for patient experiences of stigma and marginalisation (Duffy 2002, Russo 2007), and patient concerns about risk (Lowton and Gabe 2006), it has not explored how segregation shapes meanings and practices of care. The practice of ‘distancing’ – maintaining the space between bodies in shared spaces – raises new issues for literatures on care, distance and proximity. We integrate concepts of ‘riskscapes’ with ‘carescapes’ to examine how meanings of care intersect with those of risk, and how practices of distancing are shaped by a wider ‘care assemblage’ including materialities and architectures (Buse et al. 2018).

**Methods**

Fieldwork for the PARC study took place across 3 case study CF clinics between September 2018 and August 2019, working with hospital staff and patients. The sample includes 54 respondents who took part in interviews (34 hospital staff, 15 patients, 2 family members and 3 architects involved in the design of hospital buildings for CF/infectious diseases). Patients were initially approached by clinical staff at the 3 sites, who provided information sheets and expression of interest forms. Patients were sampled to include variation according to bacterial ‘cohort’ (e.g. *pseudomonas, pseudomonas free, B. cepacia*)*.* At each site we recruited members of the CF team across different clinical roles (consultants, nurses, healthcare assistants, physiotherapists) as well as ancillary staff involved in mitigating cross infection (including cleaners, infection prevention staff and estates personnel).

All three clinics segregate CF patients according to their bacterial ‘cohort’ to prevent cross infection, and also stagger appointment timings and encourage patients to remain two metres apart (see below). However, architectural environments and clinic size vary, with implications for distancing:

* **Site 1** is a small CF clinic treating around 35 adult patients, based in a 1970s-built hospital. Outpatient services take place within a busy department alongside other clinics. Inpatient services and ‘ad hoc’ (last minute or urgent) outpatient appointments take place in a respiratory ward on the third floor. Corridors are narrow and busy, with implications for distancing (see below).
* **Site 2** has around 400 CF patients; outpatient services are in a dedicated area of a 1990s wing of an infectious disease hospital, built during the early 1900s, with wide corridors and ground floor access. Inpatient services and ‘ad hoc’ outpatient appointments take place in a CF ward on the sixth floor of a busy hospital. Having dedicated spaces means corridors in CF areas are quieter, and staff have a shared awareness of CF and cross infection (see below).
* **Site 3** has over 300 CF patients, with outpatient services based within a busy department built during the early 1990s. Inpatients are treated in segregated wards for patients with different bacterial infections. Site 3 is the only clinic where outpatients wait in a shared waiting area, due to the large clinic size, and limited access to clinic rooms.

Data were gathered using a range of qualitative research methods, including ethnographic and visual methods. This included 45 graphic interviews with patients, hospital staff, family members and healthcare architects – some interviews were conducted as group interviews, including 2-3 people. During graphic interviews we used architectural plans to elicit discussion (Bagnoli 2009), asking participants to mark their routes, ‘risky’ areas, mitigating practices, and design changes using different coloured pens.

Graphic-interview participants were then invited to take part in a walking interview, providing further insight into embodied experiences of space, using the material environment as a prompt (Clark and Emmel 2010). Walking interviews also provide insight into mundane practices which are hard to recall in a sit-down interview. During the walking interviews the researcher took photographs of spaces, materials, and signage that participants identified as significant. In total, 25 walking interviews were conducted.

Ethnographic observations were undertaken in CF outpatient clinics at the 3 sites, and in CF inpatient wards that included facilities for ‘ad hoc’ CF outpatient appointments. Incidental observations took place during visits to each site over a 9-10 month period, and we additionally conducted 72 hours of ‘targeted ethnography’ (Sage and Dainty 2012), observing clinic days for different bugs at each site. Observations focused on ‘flows’ of patients, materials and staff during CF clinics, and on key areas including waiting areas, check-in points, corridors and hand sanitisers.

Ethical approval for the research was obtained from the NHS Research Ethics Committee. Informed consent was obtained from participants who took part in audio-recorded interviews. Observations took place in publicly accessible areas, clinical staff were made aware of the researcher’s presence, and a proforma about the research was made available.

Analysis was ongoing and iterative, with emergent themes noted as part of writing up fieldnotes after each visit. A list of codes was developed collaboratively by the research team, and then applied by the researcher to coding data thematically using NVivo qualitative data analysis software. During analysis connections between textual and visual data were explored, using NVivo to create links between data. Themes of distance, proximity and care emerged in fieldnotes, and through thematic analysis of interview and ethnographic data.

**Staff practice: boundary work and distancing**

Managing the risks of cross infection in CF clinics involves the temporal and spatial segregation of patients (see Brown et al. 2019, Lowton and Gabe 2006), preventing proximities and encounters between them. Here we focus on ‘distancing’ as the practice of maintaining spatial distances between patient bodies. In CF outpatient clinics patients are ‘cohorted’ to attend clinics at different days and times according to the type of bacteria they ‘grow’, minimising potential for cross infection. Yet within these separate clinic days, patients are still segregated from one another, because their microbiological status is always changing. As clinicians frequently state ‘you are only as good as your last sputum sample’. The segregation of patients therefore involves managing ‘temporal distance’ as well as spatial distance between CF patients (Simanden 2016). Clinic appointments are staggered, generally 15 minutes apart, so patients do not arrive or leave together. However, clinical staff report that patients often arrive early or late, or sometimes clinics are running late, disrupting the careful scheduling of appointments.

Distancing therefore involves staff – generally nurses, physiotherapists and healthcare assistants - actively monitoring patient pathways, focusing on ‘hotspots’ (Greco and Stenner, 2017) such as corridors, waiting areas, and entrances where there is potential for patients to ‘congregate’. We observed staff walking back and forth and ‘hovering’ in corridors, looking out for patients in order to direct them quickly into an individual clinic room. Mandy (physiotherapist) describes a constant process of walking ‘in and out, up and down’ looking for patients:

*…we’d be sort of in and out, up and down here! Then we’d be going out to the waiting area and back again. Just to catch the people that you’re waiting for. So you may have to do a lot of backtracking around…*

Mandy, physiotherapist, site 3

There are divisions of labour within distancing practices, with consultants less likely perform the work of walking back and forth to check patients are kept at a distance. This was evident during observations, and in the annotated plans produced by participants (see figure 1). As one consultant says, ‘the nurses tend to just monitor…to ensure that nobody has just sat down in the waiting area and not come through’ (Ellie, consultant, site 1).

Rather than being experienced as intrusive, staff attentiveness to keeping patients separate can be viewed as part of personalised care, associated with experiences of being ‘looked out for’ and ‘known’ (Brownlie and Spandler 2018, p.261). Distancing requires ‘knowing’ patients in order to recognise them and recall whether they are present on the correct day and time for their bacterial ‘cohort’. Some nurses say this does not work with new staff or agency staff because they ‘don’t know the patients’. Isobel (patient, site 3) recalls an example when her husband (who attends the outpatient clinic with her on a Monday) visited the outpatient department on a different clinic day with a friend:

*…because they know you so well, my husband had brought a friend of ours here [to the hospital]…it was a Tuesday, so I stayed at home, and he was sitting here with our friend, and the consultant saw Aled [husband] here, and then went out there [to the waiting area], said something, and the CF nurse came out and said Aled, ‘I’m not being rude, but where’s Isobel’? ‘Oh, she’s in [hometown]’, ‘thank god for that’. So they’ve got that much care, that they’d know if I was in the wrong place. I could be here any other day, but not on a Tuesday.*

Isobel, patient, site 3

The fact that the staff remembered and recognised Isobel’s husband in the waiting area, and identified that he was there ‘on the wrong day’ demonstrates to her that ‘they know you so well’ and ‘they’ve got that much care***.***’ Other patients describe how knowing that staff were looking out for them ‘takes away’ some of the worry about cross infection, as Terry (patient, site 3) says ‘I trust them’ and they ‘wouldn’t allow’ anything to happen that would put him at risk. This sense of interpersonal trust is vital to navigating the ‘riskscape’ (Gee and Skovdahl 2017) of the main waiting room at site 3, a busy and anonymous area where seating brings bodies into close proximity. Staff practices of monitoring and ‘looking out’ for patients transform the waiting room into a carescape where they feel ‘known’ and cared about (Ivanova et al. 2016).

The experience of distancing as part of ‘care that fits’ (Pols 2012) is situated within experiences of care in the CF clinic as personalised and ‘care-ful’ (Milligan and Wiles 2010, p.737). Patients describe their CF service as ‘special’, providing access to ‘nicer’ inpatient facilities, and support from a specialist multidisciplinary CF team. The condition of patients with CF is closely monitored, and they visit the clinic regularly and ‘get to know’ staff, describing them as ‘almost like family’ or ‘friends’. These are often long term relationships, reflecting a generally low staff turnover. Care is sometimes described as reciprocal, as Amy (patient, site 2) says; ‘…you start to learn about people’s kids, what they’re doing at university, if they’re getting married...’ Segregation results in a loss of face-to-face peer support from other CF patients, and staff report that patients ‘need a lot more support from us’ (Irene, physiotherapist, site 2). Although patients may receive face-to-face support from non-CF friends and family, certain issues require insight from lived experience of CF. Staff therefore act as a conduit for sharing experiences between patients, as Irene says ‘we’ve walked alongside a lot of people that have [CF], and from their experiences we can share.’ Staff movements between patients are carefully managed, for instance, wearing PPE when treating patients with transmissible ‘bad bugs’, and visiting them last.

The act of ‘distancing’ also embroils a wider ‘care assemblage’ (Dombroski et al. 2016). Ancillary staff such as ward clerks, housekeepers and cleaners can become part of the work of keeping patients separate, although this depends on the specifics of ‘care in place’ (Ivanova et al. 2016). The CF service at site 2 has been established for 30 years, and they have a dedicated CF inpatient ward, with a team of clinical staff, housekeepers, cleaners and administrators. There is a long central corridor and only one ward entrance/exit, with communal facilities (e.g. kitchen, gym) positioned near to the nurse station. This makes social distancing challenging, but also enables the space to be closely monitored by staff. Patients are allowed to use communal facilities on a strict ‘one-at-a-time’ basis, with appointments to use the gym carefully ordered by physiotherapists, so that patients who have ‘bad bugs’ use the space last. The use of communal spaces is carefully monitored by clinical staff, but also by housekeepers, cleaners and ward clerks, who will ‘look out’ for patients and warn them if another patient is using a communal area. This involves ‘tinkering’ with material arrangements (Ivanova et al. 2016), for instance, healthcare assistants or cleaners putting a sign on a door to indicate that the space has been used by a patient with a ‘bad bug’. Such practices are embedded within meanings of care, for instance, the housekeeper Ivy (who cleans the ward as well as organising meals) describes how she deploys humour when trying to keep patients apart, and to prevent them from using communal spaces such as the kitchen at the same time:

*…some of them’ll be cheeky and just think I don’t care, I’m nipping in! But they…do know not to. If I know them well enough… then I’ll say [in a jovial tone] ‘now come on, one of you’s going out’! You build that rapport.*

Ivy, housekeeper, site 2

Here the emotional labour of care (England and Dyck 2011) is intertwined with embodied, emplaced practices of distancing. Ivy suggests that the ability to separate patients in a friendly manner depends on long-term relationships - she has worked on the ward for seven years and reflects that ‘you get to know the patients, their needs’. This illustrates the significance of ‘ancillary workers’ as part of the care assemblage, although this can be disrupted where these services are contracted out to external organisations (Armstrong and Day 2017, p.31).

**Patient practices – distancing as an ‘ethic of care’**

Patients also participate in practices of distancing and describe this as a form of ‘mutual respect’, ‘shared understanding’ or a ‘responsibility’. This locates distancing strategies as part of an ethic of care – a sense of responsibility towards the self and others, ‘caring about’ others at a distance (Tronto 1993). This has wider significance for COVID-19, where it is suggested that distancing depends on a sense of connectedness and concern for others (Easton 2020, Henriques 2020). The sense of care as moral responsibility is entangled with care as a ‘doing’, through concrete practices of maintaining distance (Puig de la Bellacasa 2017). As one patient Abbi says ‘…we all have that mutual respect…because we all understand why it is the way it is, we go out of the way to not get close to each other.’ Patients use embodied practices of ‘scanning’ spaces and bodies to avoid proximities with other CF patients (Goffman 1971, p.12), as they navigate the ‘riskscape’ of the hospital (Gee and Stovdahl 2017). During ethnographic fieldwork and walking interviews we observed the ‘dance’ of distancing in clinic areas, with patients ‘looking out’ and ‘hanging back’ in ‘hotspots’ such as ward entrances, lifts, narrow corridors or waiting areas, as one patient describes:

*…because I’m conscious of it, I tend not to hang around next to people…who’ve got anything wrong with them…I try and avoid being…in close proximity to them…Because I’m very conscious of….one, me passing anything on to them, and them passing stuff on to me…I just kind of keep away from them!*

 Larry, patient, site 3

The architectural design of buildings could sometimes inhibit practices of distancing (Brown et al. 2020b), for instance the narrow corridors in the outpatient departments at sites 1 and 3. As one patient said: ‘they say you need to be six foot apart…them corridors are only just six foot wide…’ (Karl, patient, site 1). In contrast, in the outpatients hospital at site 2 corridors are wider, facilitating distancing, as Abbi (patient, site 2) describes: ‘if I see someone coming…we can both walk at opposite sides of the corridor.’

In hospital cafes, atriums and waiting areas, patients choose tables and seats apart from other people who could potentially be CF patients. Site 1 has a busy hospital atrium with a large seating area near to shops, a café and market stalls. To navigate this space, Tina (patient, site 1) utilises the material environment to create an ‘invisible barrier’ or ‘bubble’:

*…it’s just being in your own bubble.…if you imagine sitting in a waiting room, and I’ve got my sandwich and my drink and my crisps and I’ve got my phone, and you draw a circle round, that’s like your safety boundary, and if no-one crosses that you’re alright…You’ve got that invisible barrier.*

Tina, patient, site 1

Tina uses everyday objects – her snacks, drink and phone - as ‘boundary markers’ or ‘spacers’ (Goffman 1971, 42), creating a private zone within the busy public area of the atrium (Buse and Twigg 2014). These mundane materials become part of the care assemblage (Locock et al. 2016) surrounding the CF body, facilitating practices of distancing. This illustrates how patients as well as staff participate in practices of ‘boundary work’ (Mesman 2009, 2012). Tina goes on to describe this practice as ‘safeguarding’ herself and others, suggesting the interconnection of spatial and moral boundaries (Tronto 1993).

Because CF patients are segregated, they don’t normally recognise other patients on sight, so they perform what Goffman (1971, p.13) calls a ‘body check’, scanning the person for certain visual cues e.g. an inpatient bracelet, a port-a-cath dressing on the chest (device inserted under the skin, which is used for intravenous antibiotics), puffy cheeks from steroid treatment, ‘finger nail clubbing’ from poor pulmonary function, a ‘slight’ body shape:

*I think if you’re wise enough, you can spot somebody else with CF straight away, and if I ever saw them I would move to a different area…if anybody’s coughing for example, so finger [nail] clubbing, look at their hands to see what the shape of the fingernails are like… It’s a trained eye thing…there’s loads of clues, subtle clues…*

 Amy, patient, site 2

Amy suggests recognising these cues requires a ‘trained eye’ that comes with experience of living with CF, enabling ‘in-group recognition’ (Robinson 1994). This enacts a form of ‘knowing’ and bodily intimacy at a distance, through recognition of shared experience that is written on the body. Although accounts of recognition often privilege the visible, patients also looked for auditory symptoms - whether the patient had a certain type of cough or ‘wheeze’ (Brown et al. 2020a, Lowton 2004). If it is unclear, the default position is to keep a distance.

Despite physical distance, touching encounters can take place where patients convey meaning and emotion at a distance, as Puig de la Bellacasa (2017) argues, ‘it *is* possible to touch without being touched’ (p.119). CF patients sometimes use social media to facilitate mutual support at distance, reflecting wider literature on virtual communities of care (e.g. Nettleton et al. 2002, Ziebland and Wyke 2012). However, ‘touching encounters’ at a distance can also take place in physical spaces, experienced across the ‘space-in-between’ bodies (Pile 2010, p.6). Isobel describes an example of this in the busy waiting room at site 3:

*…we still know who everybody is because we all try and avoid each other…they sort of nod when they see that you’re struggling. And they might be having a good day…and they will just give you a smile, and you know then they know.*

Isobel, patient, site 3

Here Isobel experiences mutual support from another patient at a distance, through a smile or look that shows that ‘they know’ how she is feeling, indicating reciprocal care at a distance. Eye contact and non-verbal gestures are significant for establishing trust at a distance (Goffman 1971, Simmel 1997), facilitating ways of ‘being alongside’ (Latimer 2013).

These experiences can be facilitated by architectures and materialities. Isobel and her husband Aled describe a television programme in which two people with CF encounter one another through the safe barrier provided by a glass panel:

*Aled: There was a programme on the news…a CF patient, he wanted to lift I think it was a million…weights in 28 days…he was doing it for CF, and there was a little girl, and he was her hero…the little girl knew they shouldn’t ever meet, but they were behind [the] glass… you see her step back from the window when she saw him. And he says ‘no, it’s alright…The glass is in between us, we’re safe…’ And he put his hand on the glass.*

*Isobel: And she touched the other side.*

The glass enables ‘touching encounters’ (Puig de la Bellacasa 2017) but provides a safe boundary between bodies. The potentialities of glass for facilitating ‘being apart together’ is being incorporated into the design of new buildings for CF care. An architect who had designed a new CF centre talks about facilitating a sense of connection using glass, with rooms such as the gym designed as individual glass pods which enable patients to ‘see each other’ without ‘actually interacting with one another.’ This can be in tension with privacy and personal boundaries, and the architect describes the underuse of visible exercise areas because ‘there was a concern about being seen’ among patients, reflecting concerns about bodily privacy (Twigg 2000b).

**Tensions between care, proximity and distancing**

Despite possibilities for experiencing care at a distance, various tensions emerge between care and distancing. Segregation is sometimes associated with isolation and a loss of ‘community’, and was initially resisted by some CF patients, as Ivor (microbiologist) recalls: ‘there’s been some kickback from the older patients … [segregation] has undermined some of the social networks…which might enhance a fear of isolation.’The sense of being isolated spatially and socially was particularly pronounced for patients with *B. cepacia* who are subject to stricter segregation procedures (Russo 2007, Lowton and Gabe 2006). As inpatients they are seen in a separate ward, away from the main CF ward with its dedicated staff team and specialist facilities. This can create a sense of spatial exclusion or marginalisation, as Amy (patient) describes:

*… people with cepacia…I feel that they’re excluded, or experience exclusionary practices… if I need inpatient treatment in hospital, I’m treated on a ward that isn’t a CF ward…the standards in terms of cross-infection on that ward are not as rigorously adhered to…the rooms, the quality of the services…is not of the same standard...*

Amy, patient, site 2

At site 2, *B. cepacia* patients use a segregated entrance and lifts at the ‘back’ of the hospital. Back entrances are associated with marginalisation, historically designated as the service entrance (Stone, 1991). In order to get from the ‘back’ lift to her inpatient ward, Amy has to cut through a ‘decanting’ ward where patients are moved if their ward is being deep cleaned. In contrast to the long-term relationships on the main CF ward, there is high turnover of staff here, and Amy describes being ‘accosted’ by cleaning staff trying to stop her from walking through the ward. Although she ‘tried to explain…about cross-infection and CF’ she reports that the staff member ‘wasn’t going to understand’. Here the assemblage of care breaks down, as relations between people and places are more transient, and CF patients and segregation practices are not ‘known.’ The ‘tinkering’ required so that CF patients can move safely through corridors and tight spaces, and maintain distances from other CF bodies, cannot take place. While care assemblages are about interconnectedness (Ivanova et al. 2016), sometimes awareness of CF does not ‘travel’ across the boundaries of different hospital departments.

In contrast, spaces that facilitate proximities can lead to ‘by the by helping’, as patients become ‘known’ and ‘looked out for’ (Brownlie and Spandler 2018, p.260). This can be in tension with efforts to keep CF patients segregated. We observed instances of nurses ‘catching up’ with patients in corridors and asking how they were ‘getting on’, while at the same time ‘looking out’ for other CF patients who might be passing. While nurse stations can facilitate the monitoring of distancing, the nurse station on CF wards can become a focal point for staff-patient interactions. We observed patients lingering and chatting with staff at nurse stations, as Rachel (physiotherapist) describes:

*…patients gravitate to the nurses’ station, because they like to catch up with favourite nurses…trying to get them straight into the room rather than coming and having a chat at the desk is quite difficult. And the longer that people are out of the room, the more risk there is of people crossing over…it’s tricky. Because we want to build those relationships…but it comes with a price.*

Rachel, physiotherapist, site 1

In contrast to the dedicated CF inpatient ward at site 2, in site 1 the CF services are based in a general respiratory ward, where staff are not always so acutely aware of distancing. Some CF patients have regular inpatient hospitalisations lasting up to 3 weeks, and therefore build strong relationships with ward staff, as Tina (CF patient, site 1) says it is ‘like coming home’. The care provided in this space can be at odds with practices of distancing - time spent outside of inpatient rooms increases the risk of pathways crossing. The nurse station becomes a carescape ‘where people can be acknowledged and given support “around the edges”’ (Brownlie and Spander 2018, p.263), but also a ‘riskscape’ (Gee and Stovdahl 2017), that evokes anxiety for staff and some patients.

Spaces that encourage proximities also create potential for encounters between patients. In contrast to practices of distancing as an ‘ethic of care’, some patients resist segregation, prioritising mutual face-to-face support and creating ‘dissenting enclaves’ (Lowton and Gabe 2006, p.396). The waiting area for the Tuesday morning clinic at site 3 is a small alcove in the corridor, adjacent to the clinic rooms. The Tuesday clinic is for patients with an epidemic strain of *pseudomonas*, who staff describe as ‘older’ patients who ‘grew up with a culture of you must mix…and you must support each other’ (Andrew, consultant, site 3). Elaine (nurse, site 3) suggests these patients still ‘remember the pool playing days’ when they used to visit a nearby social club together after clinic. Staff ‘tinker’ with the material environment to create distance, positioning the plastic chairs in the waiting area two metres apart at the start of the clinic. Elaine describes these as ‘hard little plastic chairs’ that encourage people to move on, in contrast to seating that encourages lingering and connecting (Brownlie and Spander 2018). However, some of these patients have formed long-standing friendships, and as Elaine suggests ‘nothing’s going to stop them sitting next to each other...’.

The meanings of these proximate encounters between patients vary depending on localised relations between architectures, materialities and patient biographies (Brown et al. 2019). While socialising between patients could be interpreted as an act of friendship, transgression of the norms of ‘distancing’ can be experienced by some patients as distressing, incurring moral judgements (Goffman 1971), and interpreted as a sign that these patients ‘just don’t care’. Decisions about how to tackle these issues evoke competing logics of care and choice (Mol 2008), as one staff member describes: ‘ultimately that is a choice of theirs…we have to mitigate that having an impact on other people who haven’t made that choice’ (Rachel, physiotherapist site 1). While distancing is generally enacted as an informal ethic of care, CF inpatients at site 3 are now required to sign a contract agreeing to keep their distance, in order to ‘protect’ those patients ‘who don’t feel they can tell’ other patients ‘they do not want to talk to them’ (Andrew, consultant site 3). This illustrates the intersection of distancing as a situated ethic of care with more formal legislation and sanctions (Simmel 1950), illustrating tensions around choice, control and power in relations of care (Twigg et al. 2011). While Isobel (CF patient, site 3) felt that the contract helped to protect her from certain patients, she also felt that it was complex and difficult to enforce:

*…when we’re on the ward we have to sign a contract that we will not mix, and we’ll be asked to leave if we mix, and if anybody comes to your [inpatient room] door… it’s not just down to them, you’ve got to tell them to not stand there, because we… can be asked to go, even though they’re the one that’s broken the rules. And that’s hard, because that’s happened a couple of times…*

This raises the difficulties of enforcing regulations around distancing and suggests that when distancing moves outside of an ethic of care, it is difficult to maintain, reflecting dilemmas that are currently emerging in relation to COVID-19 (Easton 2020). In the other two clinics a formal contract was not felt to be required, perhaps indicating the specifics of ‘care in place’ (Ivanova et al. 2016) at these sites, as discussed above.

 **Concluding discussion**

Literature on landscapes of care has troubled associations of care with proximity, and distance with care-less interactions, suggesting that both ‘caring about’ and ‘caring for’ can occur at a distance (Milligan and Wiles 2010). This paper extends these arguments to examine ‘distancing’ in the context of the cystic fibrosis clinic, bringing together concepts of ‘riskscapes’ (Gee and Stovdahl 2017) with ‘carescapes’ (Ivanova et al. 2016) to explore intersections between care, risk, materialities and architectures. While risk and care have previously been situated as distinct from - or in tension with - one another, our research suggests that spatial and material practices of managing risk can sometimes be experienced as care-ful. Distancing has been conceptualised as a practice of maintaining emotional distance in care relations (Maguire 1985, Reeves and Decker 2012), or in government guidance on COVID-19, as a practice of maintaining a space between bodies in public areas (CDC 2020, Cabinet Office 2020a). This paper suggests that when situated within relations of ‘knowing’, ‘remembering’ and ‘recognising’ patients, distancing can be conceptualised as an emplaced practice of care. Our research therefore suggests the importance of extending notions of ‘carescape’ to incorporate intersections between care and risk.

Research on ‘boundary work’ (Mesman 2009, 2012) and the management of ‘riskscapes’ (Gee and Stovdahl 2017) has focused on the spatial practices of clinical staff. As well as staff-patient relationships, this paper highlights how CF patients enact distancing as an ethic of care for the ‘distant other’ (Milligan and Wiles 2010, p.741). Embodied practices of ‘keeping a distance’ and ‘holding back’ in confined spaces are imbued with meanings of ‘caring about’ as responsibility and ‘mutual respect’. Care through distancing also requires the support of a wider ‘care assemblage’ of people, mundane materials and architectures – housekeepers, administrators, sputum pots, lifts, signage, corridors, chairs, glass, waiting areas, and everyday objects. Such assemblages can break down where the ethic of care does not ‘travel’ across spatial boundaries, and where transient social relations do not support distancing as part of ‘knowing’ and ‘caring about’ patients.

Understanding practices of distancing in everyday contexts and their implications for meanings of care is not only salient for CF, but also for the COVID-19 pandemic. Our findings highlight tensions between care and choice, proximities and distance, reflecting debates regarding COVID-19 and distancing (Easton 2020). Practices of distancing construct new norms of bodily proximity (Romania 2020), and those who do not uphold these social norms incur moral judgements, as well as facing legal sanctions (in the UK see Public Health England 2020b). Government guidance has been criticised for its focus on social distancing as an *individualised* practice, masking social divisions and inequalities (Annandale et al. 2020). Our findings suggest that distancing is accomplished through bodies, materialities and architectures working *together*, as part of a care assemblage. This prompts questions for further investigation in the context of COVID-19, to understand how distancing is shaped by the dynamics of care in specific socio-material contexts. Spatial methods such as observations, walking interviews and graphic interviews can facilitate understanding of the ‘messiness’ and complexity of distancing in dialogue with architectural and material arrangements.

These findings also have implications for the design of healthcare spaces, highlighting the potential of materialities and architectures for constraining or enabling practices of distancing. Previous research describes the importance of architectures and materialities that encourage proximities for enabling caring encounters in healthcare spaces (Martin 2016) and community contexts (Brownlie and Spandler 2018. Cattell et al. 2008). Although previous studies of infection prevention practices highlight tensions between architectures of isolation and interaction, this research has generally focused on isolation facilities within a specific hospital ward or unit (Mesman 2009, 2012; VanHeuvelen 2019). While bounded spaces can be carefully managed, the wider hospital journey may disrupt distancing practices, as patients move outside of assemblages of care. Communal areas and circulation spaces (e.g. lifts, narrow corridors, waiting areas, atriums) pose particular challenges to distancing. Spaces that bring people together are simultaneously both ‘carescapes’ and ‘riskscapes’, illustrating the complex ways in which landscapes of risk and care intersect. There is potential for materialities and architectures to facilitate ways of ‘being apart together’, for instance, the use of glass walls or pods to enable a sense of connection without proximity. However, it is important to recognise tensions between architectures of care and control, and between spaces of sociability and bodily privacy (Nord and Hogstrom 2017, Twigg 200b). These issues warrant further consideration not only for CF, but for the design of spaces for mitigating the spread of infections such as COVID-19, and for antibiotic resistance (AMR) (Brown et al. 2019, Brown et al. 2020b).

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