

Staying connected

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Staying connected: the importance of timely communication for young people living with a long term condition and their clinical teams

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1 **Abstract**

2 Timely communications are important in enabling young people with long term
3 conditions to stay engaged with their health and manage their condition
4 successfully. This study considers the role of digital communication in helping
5 young people engage with services and the clinical teams providing their care.
6 Data is drawn from 165 young people and 173 NHS staff across 20 clinical
7 settings in the UK treating a variety of long term conditions. Although not the
8 focus of the main study the intersection of digital technologies and timely
9 communication in keeping young people engaged was apparent. We drew on
10 theories of time to understand how time was conceptualised and used in the
11 digital communications between young people and their clinical teams.
12 Through the lens of time we show that digital communications are valued
13 differently by young people with long term conditions and their clinical teams.
14 In the current policy landscape where there is an emphasis on digital
15 technology understanding the temporalities of different groups will help in the
16 introduction of appropriate digital communications channels. Done well digital
17 communications have the potential to improve young patients' autonomy but
18 this must be balanced with the needs of clinical teams, particularly loss of
19 control over work patterns.

20 **Key words**

21 Time; long term conditions; young people; digital communication; health
22 services

23 **Introduction**

24 Managing a long term condition well requires patients and clinicians to develop timely
25 communications pathways. Timely communication can be conceptualised as engaging with
26 the right person at the appropriate time to enable effective condition management.

27 Drawing on data from a wider study that reported how digital communication technologies
28 were used to facilitate communications between clinicians and patients (Griffiths et al.,
29 2017), we ask: how does understanding the intersection of digital technologies and timely
30 communications help to enhance the value of digital communication within a healthcare
31 setting? Unpacking the idea of timely communication we will explore the temporalities of
32 patients and clinical staff alongside time as it relates to the social, to knowledge and to
33 work.

34

35 The study focused on young people in the United Kingdom (UK) who are being treated for
36 long term conditions along with their clinical teams. This group is important as long term
37 conditions are not uncommon among young people in the UK. There are 25,000 under 25's
38 living with Type 1 diabetes (Diabetes UK, 2010) and between 10-20% of adolescents
39 experience mental health conditions in any given year (World Health Organization, 2018)
40 many of whom will live with their condition for a year or more. It is well documented that
41 young people living with long term conditions struggle to stay engaged both with their

42 treatment and their health care teams (Bacigalupe, 2011; Howard et al., 2010; Musumadi et
43 al., 2012; Van Walleggem et al., 2008; Witherspoon & Drotar, 2006) often resulting in
44 negative health outcomes (Bacigalupe, 2011). Furthermore, the period of transition from
45 paediatric to adult services is a particularly vulnerable time for young people which has led
46 to the development of national guidance in the UK on the provision of transition services
47 (NICE, 2016). Whilst transition services have been shown to improve engagement and have
48 demonstrated health benefits, their uptake has not been widespread across the UK
49 (Annunziato et al., 2013; Petersson, 2016). Health sector factors known to negatively affect
50 young people's engagement with services include poor communication, lack of access to
51 people and information, and lack of continuity of care (Bacigalupe, 2011; Bell & Sawyer,
52 2010; Kennedy et al., 2007).

53

54 Keeping young people engaged with services is vital and key to this is timely access which
55 has been shown to be as much about its appropriateness in terms of time, place or clinician
56 seen as it is about speed of contact (Boyle et al., 2010). Digital technologies are seen to have
57 a significant role in engaging patients with healthcare. This is reflected in UK health policy
58 which focuses firmly on the role of digitisation over the next ten years to improve access to
59 services and the ability of patients and their carers to manage their health (NHS England,
60 2019). However, research has suggested that the introduction of new technologies must
61 consider the impact on patients and staff (Hillman et al., 2013) and the specific issues it is
62 aiming to address (Wachter, 2016) rather than being used as a means of saving costs
63 (Adamson, 2016). With the growing pace of change in the field of digital health, including
64 health apps, these considerations cannot be ignored. Added to this is the increasingly

65 connected patient who uses digital communication to access health information online and
66 to develop their own expertise to become an 'informed patient' (Henwood et al., 2003;
67 Henwood et al., 2011; Maller, 2015). The changing digital landscape enables individuals,
68 patient groups, and patient advocacy groups, a space in which to challenge both the health
69 professional as dominant expert and the conceptualisation of the passive patient (Goldner,
70 2006; Koteyko et al., 2015; Oudshoorn & Somers, 2006). Furthermore these transformations
71 in technology are reconfiguring traditional boundaries and fostering new kinds of
72 engagement between doctors and patients (Morrison et al., 2016). Within this context of
73 fast changing digital health, our study examined communications between clinicians and
74 young people who are becoming independent managers of their long term condition.
75 Although not the main focus of the study, the intersection of digital technologies and timely
76 communication to keep the patient group of young people engaged, was a dominant issue
77 (Griffiths et al, 2017).

78 ***Perceptions of time***

79 Adam's (1990, 1995) seminal works on time theorise that individual conceptualisation of
80 time impacts on the ways in which we relate to everything in our lives, including our bodies
81 and health. Furthermore, time must be understood in relation to social systems and the way
82 these systems are reproduced over time (Adam, 1990). Adam (1995) asserts that it is
83 through the link between time and money that time can be conceptualised as a resource,
84 with Western societies equating efficiency with performing tasks in the shortest time
85 possible. Time spent away from production is conceptualised as free. It then follows that
86 time is not equal rather is experienced as a hierarchy with that which can be commodified
87 taking precedent over that which cannot (Adam,1995). Time is thus experienced individually

88 even during interpersonal interaction. For example, during a consultation a clinician and a
89 patient will experience time differently according to their role and the purpose of the
90 consultation. Understanding the social construction of time will enable the understanding of
91 these interactions. Clinicians work in an environment where services are commissioned;
92 bounded by competition, contracted volumes, wait times and markets (Wenzel and
93 Robertson, 2019). Time, as a resource within this marketized system, is therefore
94 commodified (Zigmond, 2020). For young people, time is contextual and bound by norms
95 set in different contexts where it is imbued with value judgement and hierarchies (Bennett
96 & Burke, 2017). In health settings young people with long term conditions have been found
97 to prioritise short term gains over prioritising their long term future (Reach, 2019). Although
98 clinicians may conceptualise this as having a poor time projection it can be considered a
99 logical response for young people for whom distant future health has less salience (Reach,
100 2019). Furthermore, technologies which could be expected to help young people manage
101 their health (i.e. health apps) prove more complex as some young people find they disrupt
102 their temporal relation to healthcare activities (Trnka, 2016). In understanding how young
103 people construct and understand time and temporality in relation to health it is important
104 to consider the context in which they are operating.

105

106 Hospitals have been the focus of much work on temporality in healthcare settings with an
107 emphasis on understanding socially based temporal order (Ancona et al., 2001; Blue &
108 Spurling, 2016; Reddy & Dourish, 2002; Zerubavel, 1979). This work helps us to understand
109 the organisational practice and behaviour of hospitals from the large scale (shift patterns) to
110 fine grained activity (lab results) (Ancona et al., 2001; Reddy & Dourish, 2002). Zerubavel

111 (1979) also recognises that at the individual level doctors and nurses have differing
112 temporal logics based on activity. This work focuses on the organisation of hospitals and
113 clinicians but does not consider the temporality of patients. Toombs (1990) considers time
114 conceptualised by clinicians and patients, arguing there is a dualism that enables us to
115 recognise that patients and clinicians will experience the temporality of health and illness
116 differently. Patients prioritise internal or lived time over the external or clock time that
117 governs the experience of clinicians (Toombs, 1990). Furthermore patient satisfaction is
118 linked to their experience of time in a consultation where the quality of the interaction is
119 more important than its length (Sterponi et al., 2019). The differing temporalities within a
120 hospital setting are not experienced equally. Marineau (2015) argues that some times are
121 dominant and others marginalised through mechanisms of power where clock time has
122 become dominant through the link between time and value within capitalist societies. In
123 this way the clock time of a clinician in a marketized NHS (Zigmond, 2020), particularly a
124 consultant, during a consultation can be conceptualised as more valuable than that of a
125 patient, particularly patients whose time is more loosely connected to production, such as
126 students.

127

128 How we, as individuals, function within our complex world is impacted by time with the
129 need for slowness as a counter-balance to the arguable acceleration of time in modern
130 society (Wajcman, 2008, 2015). Cilliers (2005) explored the concept of 'fast' and 'slow' time
131 arguing that a 'certain slowness' can, at times, be appropriate, allowing for reflection on
132 what is remembered and anticipated and on what is important to the person. In a paper
133 written with a clinician, he contends that a 'certain slowness' is important for a healing

134 relationship between clinicians and patients (Sturmborg & Cilliers, 2009). Enabling slowness
135 is not easy in pressured health service environments and some turn to technology in an
136 attempt to relieve time pressure. Analysing the perceived acceleration of time in modern
137 society, Wajcman (2008) suggested we look to digital technologies for solutions, however,
138 she described a paradox - we 'turn to digital technologies to alleviate time pressure and yet
139 blame them for driving it' (Wajcman, 2015, p. 2). Whilst digital technologies may enable
140 work to be organised over time rather than space, the extent of their positive or negative
141 effect on time pressure in the workplace is largely dependent on an individual's autonomy
142 over their work patterns (Wajcman, 2015). This may apply to clinicians providing healthcare
143 and extend beyond the workplace to those accessing healthcare.

144

145 This paper draws on data gathered from 20 different clinical settings in the UK using
146 interviews with young people and their clinical teams that sought to understand the ways in
147 which digital technologies were used to enhance communication. We argue that by using
148 the lens of time we can usefully help in understanding the value of new forms of
149 communications for clinical teams and patients.

150

151 **Methods**

152 This paper reports analysis of data collected for a study on the use of digital communication
153 between clinical teams and young people with long term conditions, known as the LYNC
154 study (Griffiths et al., 2017; Ignatowicz et al., 2018; Kim et al., 2018). Using a mixed method case
155 study design (Yin, 2009), the study examined patient safety, ethics, cost and the clinical

156 impact of the use of digital communication between clinical teams and young people. In
157 addition we considered how digital communications are used and their perceived impact.

158

159 ***The study and its participants***

160 We identified a total of 104 clinical teams, across England and Wales, as potential case study
161 sites through web searches for information in publicly available NHS Trust documents and
162 through snowball recruitment through professional networks and organisations. Inclusion
163 criteria for clinical sites were: provision of specialist care for young people (we included
164 those aged 16-24 years) with long term conditions and the clinical team expressed interest
165 in the use of two-way digital communications. Of those teams, 47 were eligible and
166 interested in participating and we purposively sampled 20 teams to give a range of clinical
167 condition, digital clinical communication, size and geographical location [Table 1 near here].
168 Data collection took place between June 2014 and March 2016.

169

170 We use the term clinician to refer to any member of the clinical team interacting with the
171 young person about clinical issues e.g. consultant (senior doctor), specialist nurse, therapist,
172 dietician. Within each study site we undertook individual semi-structured interviews with
173 young people with long term conditions and their clinicians. Interviews lasted between 20
174 and 50 minutes and face to face interviews were undertaken in the clinic in a private space.
175 Interviews were guided by a schedule that considered how digital communications were
176 used for clinical purposes, focusing on the advantages and concerns participants had about
177 its use. At each case study site we aimed to interview up to 15 clinical team members,

178 ensuring that we had included representatives of all professions. For teams with fewer than
179 15 members we intended to interview all members of the team. We aimed to interview 15
180 young people at each clinic. When based within a clinic all young people who had
181 appointments to see a clinical team member were sent information about the study ahead
182 of their appointment. When they attended clinic they were approached by a member of the
183 clinical team or one of the researchers and asked if they would participate in the research.
184 In the UK young people aged over 16 are considered capable of giving consent to participate
185 in health research (NHS, 2018). After consent was obtained all participants were given the
186 choice of being interviewed face to face, or by telephone, and young people were also given
187 the choice of interview by email, Skype, Facebook or text. Transcripts were generated from
188 transcribing verbal interviews verbatim and through saving email, Facebook and text
189 interactions with each participant being given an anonymised identifier.

190

191 A researcher was based with each clinical team for between 2 and 10 days. The local
192 collaborator at each site made the team aware of the study and researchers wore a T-shirt
193 identifying them as researchers. Posters were displayed in clinics during the study period to
194 advertise the study. General observation data were collected on a pro forma noting how the
195 clinic functioned, the use of digital communications within the team and how it was used in
196 the wider clinic space. These data were collected ad hoc when the researcher was in the
197 clinic and not undertaking interviews or shadowing staff. We shadowed members of staff as
198 they went about their day-to-day work using a separate pro forma to record if and how
199 digital communication was used for clinical purposes. Staff members were approached for
200 interviews and shadowing and consent was obtained for each.

201

202 All interview data were digitally recorded, transcribed verbatim and uploaded into a data
203 management software programme (NVivo, 2012). All transcripts, along with observational
204 data, were coded for our LYNC study topic areas – patient safety, ethics, cost, use and
205 perceived impact, along with coding for the research question ‘what works for whom,
206 where, when and why?’ The broad ‘what works’ coding was further coded using a thematic
207 framework initially devised by FG and CB, based on detailed analysis of two clinics. The
208 codes and framework were refined in an iterative process as each subsequent clinic was
209 analysed in depth and discussed by the wider group of researchers until no new themes
210 emerged. Consensus on the meaning and understanding of the codes and thematic
211 framework was reached using this process. The observational data contextualised the
212 interview data and aided in the interpretation. Time and timeliness was a major theme
213 identified during this process. This paper focuses on the data related to time and timeliness.
214 The quotes in this paper are labelled as follows: condition, site number (if more than one
215 site with that condition), young person or clinical team role, interview number for that site
216 numbered for the clinical team and young people separately.

217

218 The study received ethical approval from NRES Committee West Midland – The Black
219 Country. (14/WM/0066)

220

221 **Findings**

222 We interviewed a total of 173 clinic staff and 165 patients aged 16-24 years and shadowed

223 79 members of staff [Table 2 near here]. Of the staff interviews 148 were conducted face to
224 face and 25 by telephone. Most patient interviews were conducted over the telephone
225 ($n = 82$) or in person ($n = 41$) with the rest conducted by e-mail ($n = 35$), via Facebook ($n = 4$),
226 via Skype ($n = 2$) and by text messaging ($n = 1$). Synchronous interviews (in person,
227 telephone or Skype) took between 20 and 60 minutes, with most taking approximately 30
228 minutes. Asynchronous interviews took longer to complete; the longest, via e-mail, took 2
229 weeks. Staff shadowing duration was led by the clinician and usually lasted between 1-2
230 hours but was occasionally longer (maximum 7 hours). The number of patients recruited per
231 site ranged from 5 to 23 (except for the school nurse service where it was not possible to
232 recruit participants because contact with the service is anonymous). The number of staff
233 interviewed ranged from 4 to 22 and the number of staff shadowed ranged from 1 to 11.

234

235 ***Patients***

236 *Managing long term health conditions: temporality and digital communications*

237 Successful management of long term conditions requires good communication between the
238 patient and their healthcare team. Irrespective of their condition, the young people in this
239 study were becoming autonomous patients, many of whom were taking over condition
240 management responsibilities from their parents and guardians. They were building
241 independent relationships with their healthcare teams and the communication channels
242 open to them were important to that communication being successful. Digital
243 communications fundamentally changed patient interactions with their clinical teams, in
244 particular how such communication impacted their daily lives. Young people often talked of

245 how digital technologies enabled communication to fit easily into their lives thus minimising
246 disruption:

247 *So, an email is just quite a quick thing...rather than going home and finding the number*
248 *and ringing them, you can just kind of email them quickly on the go. Cystic fibrosis 1*
249 *Young person 01*

250 Fitting their condition management into their everyday lives highlights these young patients'
251 focus on internal or lived time (Toombs 1990). For them it is not about clock time controlling
252 their communication rather it is 'quick and easy' therefore fitting into their lives at the
253 moment communication is required. This enabled the young people to control the time
254 they took to manage their condition.

255

256 Most, but not all, of the digital communications were initiated by the young people, helping
257 them to take control and to fit condition management into their lives on their own terms.
258 Being able to send a message when a question or thought occurred to them, even if during
259 the night, was greatly valued. This was done with no expectation that a clinician would be
260 there out of work hours to answer queries.

261 *If we email one say 10 o'clock at night they'll always pick it up the next day rather than*
262 *having to wait and to set aside, you know, half an hour [the next day]. Liver Young*
263 *person 17*

264 A further consideration for many young people contacting their clinician was privacy as they
265 wished to text or make a mobile phone call without others overhearing or seeing their
266 communication. Some would struggle during the day to be apart from colleagues, friends and

267 family:

268 *Time wise as well, especially if you are working. I don't have time to find my own space*
269 *and have a private conversation. I don't want people around me to hear. So, being*
270 *able to send him a quick text is so helpful. Cancer 1 Young person 07*

271 The young people prioritise lived time in relation to the management of their condition and
272 value digital communications because it enables them to fit their condition management
273 into their lives.

274

275 *Speed and ease of communication: digital communications save time*

276 Contacting clinicians through an NHS hospital switchboard can be a time-consuming
277 business. The young people talked of the time it took to get transferred to the correct
278 number, being on hold and the frustration of calls frequently being unanswered or getting
279 through to find the staff member away from their desk:

280 *Just because I know it is such a fuss getting through; you get through to switchboard*
281 *and then you can get put through to the wrong department and it's happened so*
282 *many times that I just can't be bothered. Liver Young Person 07*

283 These barriers can be enough to dissuade young people from contacting their clinical team.

284 The young people in the study valued the difference being able to text or email made to
285 them:

286 *It [text] was quick and easy, it meant that I didn't have to sit, you know, find time in*
287 *my day to sit and try and get hold of someone for two hours. Cancer 1 Young person*

289 The availability of digital channels differed by clinic and the young people made judgements
290 on which they were willing to use and for what purpose. Text and email were most often
291 offered by clinics and where available were generally well liked and used. Some young people
292 preferred to use synchronous communication, as this young person talks of the mobile phone
293 they can call directly, as they considered asynchronous too slow:

294 *You're talking to someone that can answer your question directly, you don't have to*
295 *wait too long for them to reply. It's just a lot more quick and direct* Cystic fibrosis 2

296 Young person 07

297 These young people are not making the distinction between urgent and non-urgent queries
298 rather are prioritising their time and willingness to wait over other considerations. Wajcman
299 (2015, p. 103) argues that people move between synchronous and asynchronous modalities
300 as a way of 'developing multidimensional time practices, creating new rhythms of work'. We
301 found young people in our study created similar 'multidimensional time practices' whilst
302 working to manage their health and happily moved between them as their needs and
303 circumstances changed.

304 *If I had kind of a specific question that's not particularly in depth or necessarily*
305 *revealing about my health.....that would be something I would be quite happy*
306 *emailing.....if I have a more in depth question or something that's probably going to*
307 *require going back and forth or.....personal I probably wouldn't email.....ideally a*
308 *phone conversation or.....a face to face appointment.* Liver Young Person 21

309 For the young people in this study, the use of different channels of communication was part

310 of their way of managing their condition on their terms. Although the clinicians controlled
311 the types of communication that were available, it was the young people who made the
312 decisions around their use.

313

314 *The need for taking time: a certain slowness*

315 There were situations when the young people talked of needing to be more measured in
316 their communication and slow time down. Asynchronous communications (usually text or
317 email) allowed patients to do this.

318 *I think my main reason for preferring to use email rather than phoning is because*
319 *you can plan what you're going to say and therefore give more detail in your answer*
320 *and not be put under pressure to answer straight away. Inflammatory bowel disease*
321 *2 Young Person 13*

322 *If I've got something that I think one of my doctors can answer, I'll send an email*
323 *and when they can pick it up they will pick it up...it's just nice to have somewhere*
324 *you can just like, well I'm going to dump my thoughts here and then I might get a*
325 *reply in a few days and that will be fine, you know. Liver Young Person 23*

326 The slowness afforded by asynchronous technologies allowed the young people to
327 formulate questions, ask difficult or embarrassing questions and take time to answer the
328 clinician's questions. Furthermore, the young people articulated an awareness of their
329 questions creating a burden on their clinicians and saw asynchronous digital communication
330 as a way of reducing this burden.

331

332 *Autonomy and management of long term conditions over time*

333 Using digital communications to contact their clinical teams was seen by the young people
334 as a way of retaining autonomy over their health and its management away from the gaze
335 of others. Heaton et al. (2016) consider the relationship between control and autonomy for
336 young people managing long term conditions and argue that control and autonomy were
337 independent and non-linear elements of young people's lives that had potentially conflicting
338 goals. If young people focus too much on controlling their condition it could take over their
339 lives causing them to lose some autonomy, therefore, they tried to balance their condition
340 control to allow themselves a satisfactory level of autonomy (Heaton et al., 2016).
341 Prioritising autonomy over control may result in young people disengaging with their clinical
342 teams, therefore, giving them access to their clinical team in ways which enhance
343 autonomy, such as through digital channels, may counter this.

344

345 Balancing autonomy and control is further complicated when the young person's state of
346 health was susceptible to rapid change. Digital communications were cited as one
347 important way that enabled the young person to act to stabilise their condition as this
348 young person explained:

349 *I have my phone on me most of the time, and like say I'm at college and something*
350 *has gone wrong then I could text them... Diabetes 1 Young person 01*

351 Digital communication enabled young people to gain autonomy by controlling the time of
352 their communication, disassociating it from the clinic in a physical sense (Wajcman, 2015).
353 The young people reported that using a variety of communication methods that they were

354 comfortable with helped them to better organise their own care and keep their condition
355 under control.

356

357 ***Clinicians***

358 *Using digital communications: clinicians' perspectives*

359 Within the clinical teams we studied, specialist nurses most frequently used digital
360 communication with patients (Griffiths et al., 2017). Staff at all levels used digital
361 communications however consultants reported the lowest use of digital communications
362 with young patients and were most likely to be concerned by the potential for patients
363 being more demanding. *'Boundaries that's what I am worried about.'* Inflammatory bowel
364 disease 2 Consultant 07.

365 For team members regularly contacting the young patients, digital communication was
366 welcomed as another way to engage young patients with their care.

367 *That's [text] how a lot of young people do communicate now, so ... and often if I'm*
368 *struggling to get hold of a young person, if you text them you normally do get a*
369 *response.* Cancer 1 Young people worker 04

370 They used both synchronous and asynchronous channels to help them make successful
371 contacts with their young patients whilst enabling their patients to retain some control over
372 the interactions.

373 *The practitioner sends a text to a young person before he phones them. The text asks*
374 *if it is alright to phone at that time or to warn them he will phone in five or ten*

375 *minutes. It helps with the young person's agency as they can control the timing of the*
376 *interaction.* Observation notes from shadowing Mental health 3 (outreach team)
377 Mental health practitioner 06

378 Asynchronous communication (email, text and web portal) was more frequent and included
379 one-off communications, more complex exchanges requiring a number of iterations and
380 therapy delivered over a specified period of time.

381 *We encourage it * with the DBT's [patients participating in Dialectical Behavioural*
382 *Therapy], we encourage them to get hold of us should they feel that they want to*
383 *self-harm so that we can remind them which skills to use. They have to use the skills*
384 *afterwards, they have to text us with the intent of using what we're asking them to*
385 *do.* Mental health 3 (outreach team) DBT co-ordinator 10[*phone support delivered
386 by text]

387

388 Our data suggest that, within the constrained choice of digital channel available for
389 communication between clinicians and the young patients, the preferences of the young
390 patients and their clinicians for synchronous or asynchronous communications depended on
391 the purpose of that communication and were in broad agreement.

392

393 Clinicians were hesitant about the use of digital communication in some situations, such as
394 when discussing a particularly sensitive or complex issue or when they did not have an
395 existing relationship with the patient.

396 *If it's somebody that you haven't necessarily met before, I'd be a bit more reluctant*

397 *to give them a lot of advice over email, because you can't judge as well, I think, how*
398 *knowledgeable the patient is,... if you talk to them on the phone, you have a bit more*
399 *of a clue into their disease understanding.* Inflammatory bowel disease 2 specialist
400 nurse 05

401

402 *Time, communication and the workplace*

403 This research was considering the role of digital communications between young people and
404 their clinicians therefore the communications we report were all work related for the
405 clinicians. Unlike the young people who are trying to fit communication into their lives,
406 clinicians in the work environment, are trying to manage their workload therefore experience
407 time through the clock (Toombs, 1990). Clock time is an important organising element of their
408 work into which digital communications fits irrespective of whether it is seen positively or
409 negatively. Talking about their day-to-day work, some clinicians valued the use of digital
410 communications for organising their time and responding quickly to simple questions:

411 *...you can give that small bit of advice that isn't urgent but you can give that quickly*
412 *and then they've got the advice they want.* Diabetes 1 HCA 01

413 Others found it a burden, especially lengthy text exchanges:

414 *So if you're sort of just speaking to someone over the phone you're able to have free*
415 *flowing conversation....I can do this time, can you do that time? Obviously if it is by*
416 *text message that could end up being ... I can't do that time, can you do that time?*

417 Mental health 4 (Early intervention) Assistant Psychologist 15

418 If something was considered 'urgent' synchronous communication was preferred by all

419 clinicians as it was considered the quickest way of resolving an issue. Some clinicians raised
420 concerns over the possibility that a young person would contact them out of hours using an
421 asynchronous digital channel which would not be picked up in a timely manner. Although it
422 was a concern there were few examples given where it had transpired. Most clinical teams
423 had guidelines on the use of each technology which patients generally followed.

424

425 *Time as a resource for clinicians*

426 All the clinics we observed were busy places with team members interacting to accomplish a
427 complex set of tasks during the working day. Clinicians valued changes to working practices
428 that reduced the time burden of tasks. For some, getting in touch with young people using
429 digital channels made that task more time efficient:

430 *It's just a quick way to get their query answered and saves time. Otherwise previously*
431 *they would have phoned in, a secretary would have had to take the message, then*
432 *the secretary would have to find me, then I would have to phone them back and they*
433 *might not be there, so that takes ages whereas I can just whip off a two line email.*

434 Liver Consultant 02

435 This consultant demonstrates the ways in which the clinicians conceptualise time as a
436 commodity to be spent or saved (Adam, 1995). Adam (1995) talks of the commodification of
437 time leading to the creation of hierarchies of value and within teams, time saving for
438 consultants could be viewed more highly than for the administrators or indeed patients.
439 However, the consultant quoted above identifies the importance of time savings for all
440 those involved thereby disregarding the traditional dominance of those in positions of

441 power (Martineau, 2015). Our data also suggests that the clinical teams are recognising the
442 importance for young people of fitting their engagement within their lived experiences
443 thereby levelling out the hierarchy between paid clinicians and their patients.

444

445 The commodification of time for clinicians highlights that their time is a resource that has
446 economic value (Adam, 1990, 1995). Whilst not referencing cost saving per se clinicians
447 talked of constant efforts to manage their worktime efficiently. Many clinical teams
448 regarded email and text messaging as time saving:

449 *And I think the advantage of email is that I can answer in my time, I don't have to*
450 *break off from a patient or I don't have to spend time trying to phone back another*
451 *patient and not getting through... It seems to be less frustrating having an email*
452 *conversation than it is having a voicemail conversation, playing telephone tennis.*

453 Cystic fibrosis 1 Specialist nurse 03

454 Managing time here is closely aligned with an individual's need for autonomy over the
455 organisation of their work.

456

457 There was some disagreement among clinicians about how much time was saved by the
458 introduction of digital communication. For some, not having to spend time chasing young
459 people on landlines that they rarely use, has to be balanced with the amount of time taken
460 to write a text or email, as texts and emails must be carefully constructed to ensure that
461 their content is clear and unambiguous.

462 *People feel that it's easier to ask over text, but I think what's harder to do is to*

463 *actually answer them over text because it is, from a professional point of view that's*
464 *quite hard ... quite often if people text me and it is quite a difficult conversation then I*
465 *would ring them back.* Cancer2 clinical nurse specialist 08

466 Clinicians did not see themselves as creating more time through any time saved by
467 contacting young people using digital communications. Wajcman (2008) calls this 'time
468 displacement' – time saved in one way is countered by activity in another.

469 *.....communications with patients is key and it's a part of everyday working life, it has*
470 *to be done in one form or another..... you engage more with a patient if you do it the*
471 *way they want it done.* Cystic Fibrosis 2 Physiotherapist 10

472 Of equal importance to this clinician is communicating in a way that is most acceptable to
473 the young patient. Clinicians recognised that the use of digital communication had improved
474 the quality of some of their communication with patients, allowing a certain slowness
475 (Cilliers & Sturmberg, 2005, 2009).

476 *It does give you as a clinician a luxury that you don't normally have, because normally*
477 *your communication is face to face or over the phone and therefore it's very*
478 *instantaneous ... it means that the patient can take things in their own time.* Cystic
479 *fibrosis 1 Specialist physiotherapist 02*

480

481 *Time, space and autonomy*

482 Clinicians did not have more time but using digital channels they could manage their activity
483 based on time rather than space because they could communicate from anywhere
484 (Wajcman, 2008). Not being tied to a landline or desktop computer in an office they could

485 respond to communications when they had a few minutes of unallocated time or they set
486 aside dedicated time during the day.

487 *So it means you're not interrupting your daily [work]... that you can collect them all*
488 *together and do them at a certain time.* Sickle cell Consultant 02

489 Some clinicians felt overwhelmed by the potential constancy of digital communication and
490 felt unable to ignore or switch off their work channels when at home. Wajcman (2015)
491 argues that technologies are adopted differently by individuals within one organisation, and
492 that feeling under time pressure is related to the extent to which an individual feels they
493 have autonomy and control over their workload and work pattern. Control and autonomy
494 are often associated with seniority in organisations; however, within our study those who
495 talked most about the constancy of email and the loss of a work/life distinction were the
496 consultants.

497 *Before emails I did have working hours, now I don't. I will be sitting at my desk at, you*
498 *know, midnight answering emails, that is not clinically related but it is work related'*
499 Cancer 1 Consultant 01

500 It is not just digital communications with patients that is problematic but the general
501 increase in workload associated with email communication which they considered to be
502 eroding their work/life balance. Senior clinicians were fearful that opening digital access to
503 patients would lead to an increase in patient demand for responses which they might be
504 expected to deliver over ever shorter time periods. Although consultants are considered the
505 most senior clinician there is evidence they feel they have lost much of their autonomy over
506 their workload and work pattern (Watt et al., 2008). This may influence their reaction to the

507 use of digital communication with patients.

508

509 **Conclusion**

510 Using the lens of time, we have shown that digital communications are valued differently by
511 the young people and their clinical teams, and they experience different temporalities even
512 when they are interacting with each other. The use of digital communication influenced the
513 young patients' sense of autonomy and control over their health condition, allowing them
514 to find their best balance. It changed the clinicians' sense of autonomy and control in their
515 work, but the direction of change varied between clinicians. It was also clear that
516 temporality influenced how technologies were valued by clinicians and young people which
517 is important to take account of when introducing new digital communications technologies
518 in healthcare.

519

520 This study adds to the body of work considering temporality in healthcare. A patient's
521 experience of time during a consultation has been shown to impact patient satisfaction
522 however it is the quality of the doctor patient interaction rather than the length of the
523 consultation that is of most importance (Sterpani et al., 2019).

524 Our study takes the consideration of temporality in healthcare deeper than the structures
525 and process of healthcare organisations (Ancona, 2001; Blue & Spurling, 2016; Reddy &
526 Dourish, 2002; Zerubavel, 1979) into the level of interaction of individual patients and
527 clinical teams. Our results echo work by others on the wider meaning of timely access to
528 healthcare beyond speed alone (Boyle et al., 2010). The experience of time by young people

529 managing their health condition as outpatients impacts on their experience of healthcare as
530 it does for inpatients (Sterpani et al., 2019). We found young people with long term
531 conditions as they move to independently manage their condition valued the ways in which
532 digital communications enabled them to engage with their clinicians at a time that suited
533 them. Other studies have found, as in our study, that digital communications worked best
534 when clinician-patient relationships were already established (Griffiths et al., 2017;
535 Greenhalgh et al., 2018,). It must be acknowledged that access to digital technologies is not
536 equal, nor is the ability to take advantage of new technologies, potentially resulting in
537 increased health inequality (Estacio et al., 2017). The provision of sufficient support for
538 groups who have been identified as at a disadvantage can ameliorate this disparity (Tieu et
539 al., 2017).

540

541 Recent UK health policy has emphasised the importance of widening access to health care
542 through longer hours and weekend appointments (NHS England 2016, 2019). We argue that
543 longer hours themselves will not solve access issues as timely access is not just about clock
544 time. We have shown that different digital technologies have the capability of enhancing
545 access if clinical teams and young people share an understanding of how they are best used.
546 Our study suggests that the introduction and expansion of the use of digital communication
547 for healthcare will be aided by understanding the differing experiences of time by patients
548 and clinicians and how these can vary. We wish to add the caveat that expanding the use of
549 digital technologies in the NHS to address issues of access to services must also take account
550 of equality of access which we were not able to address in this study but requires further
551 research to ensure disadvantaged groups are not left behind.

552

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558

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562

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