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Student nurses as a future General Practice Nursing workforce. Implementing Collaborative Learning in Practice: implications for placement learning and patient access. A mixed methods study.

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1 Student nurses as a future General Practice Nursing workforce.
2 Implementing Collaborative Learning in Practice: implications for
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4

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21

22

23 Abstract

24 Background

25 There is a global shortage of nurses, with particularly acute shortfall in General Practice Nursing in
26 the United Kingdom estimated at as high as 50% vacancy rate by 2031 by some sources. There has
27 previously been reluctance for General Practices to host student nurses on placement, but it has
28 become imperative to increase placement capacity if practices are to be able to recruit a future
29 workforce. Collaborative Learning in Practice is a means of organising placement learning for student
30 nurses using a coaching model, that allows for leadership development, peer support and earlier
31 engagement in patient care, and increases placement capacity.

32 Methods

33 This was a mixed methods study using qualitative data from focus groups to evaluate the
34 implementation of Collaborative Learning in Practice, and routinely collected audit data on numbers
35 of clinic appointments to investigate the potential impact an increased capacity of student nurses
36 might have on patient access to services.

37 The aims of this study were: to implement and evaluate Collaborative Learning in Practice in General
38 Practice Nursing settings; to explore issues of interprofessional learning; to explore patient access to
39 services related to increased student nurse capacity.

40 Results

41 Our qualitative data indicated the following themes as important to students and staff: Peer
42 Support; Interprofessional Learning; and the Importance of 'own clinics' for students to see patients.
43 The audit data indicated that having students leading their own clinics increased the clinic numbers
44 available by approximately 20% compared to when students were not in placement.

45 Conclusions

46 This study shows that student nurses increased clinic capacity and improved access for patients.
47 Students valued their placement, felt that they were more 'part of the team' than in other
48 placements and consequently had a greater sense of belonging. This was multifaceted, coming in
49 part from the welcoming practice staff, in part from the opportunities for peer support engendered
50 by the collaborative learning in practice model, and in part from the interprofessional learning
51 opportunities available. General Practice Nursing placements for students are important for future
52 workforce recruitment and can help meet Quality and Outcomes Framework targets for General
53 Practices.

54 Key words

55 General Practice Nursing; student nurses; placement learning; mixed methods research.
56

57 Background

58 Collaborative Learning in Practice (CLIP) is a method of organising practice learning for student
59 nurses that has become popular in the United Kingdom (UK) in recent years [1]. It originated in
60 Amsterdam with initial UK development by the team at University of East Anglia [2] [3] and support
61 and facilitation from Health Education England [4] (HEE). HEE exists to provide leadership in
62 education and training for the healthcare workforce in England. CLIP combines several previously
63 novel features including students taking responsibility for patient care at an early stage of their
64 programmes, under supervision of registered nurses (RNs, who in the UK are at least educated to
65 Bachelor's degree level). CLIP uses a coaching model as opposed to a mentoring model, in which the
66 coach takes a more facilitative, structured and questioning approach to student supervision and
67 assessment when compared to the more individualised approach of the mentor [3]. Students receive
68 training prior to starting placement about how the CLIP model works. Once in placement, students
69 typically work in small teams, often including third year students taking a leadership role at the head

70 of a group of students including first, second and third years, as well as Trainee Nursing Associates
71 who undertake a two year foundation degree programme leading to NMC registration, , and
72 unregistered nursing staff such as Health Care Assistants (HCAs) [5]. CLIP was initially implemented
73 in hospital settings, where wards were required to increase placement capacity [2], and was found
74 to have a positive impact on patient safety [6]. Latterly, CLIP has also been trialled in community
75 settings [7], children’s mental health care [8], maternity care [9] and physiotherapy placements [10]
76 in the UK. There seems to be no international equivalent term to CLIP, but the concept of Dedicated
77 Education Unit (DEU) appears to offer similar potential for collaborative Interprofessional Learning
78 (IPL) facilitated by clinical coaches [11]. Internationally, projects report success with a collaborative
79 approach to IPL for community care in Singapore [12] and with dental students in Canada [13], and it
80 is also clear that general practice is a fertile ground for IPL [14] [15].

81 A common international thread through healthcare and nursing literature is that of staff shortages
82 [16] [17]. As well as global shortages, the World Health Organisation’s (WHO) State of the World’s
83 Nursing report [18] also calls for practitioners capable of working in community settings at the point
84 of registration. In the UK, it is estimated that there was a shortage of 46,828 nurses in June 2022,
85 meaning that in some regions approximately 20% of nursing posts are unfilled. Failure to invest in
86 General Practice Nursing (GPN) recruitment and training is projected to see UK-wide shortfall of
87 around 6400 nurses, more than one in four posts, by 2030-31. More pessimistic modelling indicates
88 this could be as high as one in two vacancies unfilled in that time frame [19].

89 A central drive in the popularity of CLIP is that it increases placement capacity, with clinical areas in
90 our previous studies supporting approximately three or four times the numbers of students in CLIP
91 placements than at other times [2, 6]. Elsewhere it is noted that CLIP functions using a coaching
92 approach to placement learning, as distinct from the mentoring approach in evidence when there
93 was only one student alone in placement [3]. It is argued from qualitative findings, that introducing
94 student nurses to direct responsibility for patient care and leadership from their third year ought to

95 lead to better preparedness for registrant practice [1, 3], but this has yet to be more formally
96 evaluated with new graduates.

97 Access to GPN placement experience for students has traditionally been problematic when practices
98 have not seen a direct benefit or financial incentive to host them [20]. The National Health Service
99 England (NHSE) Sonnet Report on the strategic value of GPNs asserts that education and training are
100 vital to the future GPN workforce, and that student nurses bring particular benefits to practices [21].

101 It is axiomatic that student nurses are the future workforce of any organisation, and that
102 recruitment needs to be strengthened [22]. This is represented in the NHSE GPN 10 point plan,
103 designed to increase recruitment and retention of GPNs [23] and in our region much work has been
104 done with GPs), GPNs and practice managers to enable students' access to placements within local
105 Primary Care Networks (PCNs). When this study began, PCNs were groups of practices designed to
106 develop and deliver existing primary care services to patients, involving proactive and coordinated
107 multidisciplinary care, and synergies commensurate with economies of scale [24]. In the UK, GPs are
108 in a unique position as part of the NHS, existing simultaneously as independent contractors. GPs are
109 incentivised to deliver services benchmarked to a national standard, through a national GP contract
110 [25], which is assured through the Quality and Outcomes Framework [26], and this includes detailed
111 standards relating to patient access and standards of expected care.

112 Research has indicated that student nurses do not necessarily see GPN as an appropriate job
113 destination on graduation, but also that exposure to GPN can have a positive influence on their
114 perceptions of it as a first destination [27] [28] [29]. As a result, Health Education England (HEE) has
115 developed a Workforce Plan [30], which specifically calls for a greater visibility for GPN in nurse
116 education, increases in the numbers of student nurses accessing GPN placements, and proposing
117 GPN roles as a first destination, as well as appropriate education pathways for careers after
118 registration.

119 Having outlined the international, national and local context of shortages of nurses in GPN settings,
120 pressures to recruit nurses and make GPN an attractive first job destination, we argue that it is
121 appropriate to implement and evaluate CLIP in GPN placements in our regions, and this paper
122 reports a project undertaken to address those issues.

123

124 Methods

125 Aim

126 The aims of this study were threefold.

127 1. To implement and develop CLIP in GPN settings and evaluate that implementation.

128 2. To explore issues of interprofessional learning in GPN settings.

129 3. To explore issues of patient access to services relating to CLIP and increased student nurse
130 capacity in GP practices.

131 Design and setting of the study

132 We placed 31 student nurses into six GP practices in three PCNs; this being 15 students in Winter
133 2021 and 16 students in Summer 2022. Previously (pre-CLIP) one or two of those practices might
134 have had one or two students in total. This was a mixed methods study using qualitative data from
135 focus groups to evaluate the implementation of CLIP, and routinely collected audit data (meaning
136 anonymous monitoring data that would have been collected out-with this research project) on
137 numbers of clinic appointments to investigate the potential impact that an increased capacity of
138 student nurses might have on patient access to services. We used a mixed methods approach
139 because it was an appropriate study design to access the beliefs of students and staff across several
140 locations and times in our qualitative Microsoft Teams focus groups (FGs), coupled with quantitative
141 data about patient access to GPNs. This study took place in GP surgeries in three counties in the

142 Southwest of England. Students and staff all received training about CLIP and their roles, including
143 supervisory training for staff. One important characteristic regarding these students' placements is
144 that students received training in venepuncture immediately prior to their placements, meaning that
145 they could take blood from patients in phlebotomy clinics. After a period of familiarisation, students
146 were also able to lead their 'own clinics' under indirect supervision (called 'CLIP clinics') from an
147 early stage in the placement, honing their skills through the ethos of coaching within CLIP
148 placements. There was a weekly Friday meeting where students and supervisors met to debrief,
149 reflect on their learning, and set learning goals for the following week. How this was organised
150 varied between practices, but it typically meant that student nurses would be seeing patients
151 independently, with their student status known and available for patients, so that they could
152 undertake simple procedures like blood tests, hypertension checks and uncomplicated dressings that
153 otherwise would have been undertaken by other staff, registered or unregistered. Direct or indirect
154 supervision from Registered GPNs was always available, however these GPNs were not routinely in
155 the same room as the students, although they could be present immediately if required.
156 Opportunities for discussion and debriefing of students were available through the working day, as
157 well as at the Friday meetings.

158

159 [Data collection and analysis.](#)

160 Data collection took place during two periods: January 2021 and July 2022. These were periods
161 when student nurses were on placements in the GP practices.

162 For Aims 1 and 2, we conducted separate Microsoft Teams FGs with students and GPN staff to
163 explore their experiences of CLIP working and interprofessional learning. Focus groups are semi-
164 structured discussions with groups of people who explore issues of joint interest, and rely on
165 interaction between group members to share experiences as part of offering understanding of the
166 topics in question, as group interaction encourages respondents to explore individual and shared

167 perspectives [31]. MS Teams on-line platform was enabled to generate transcripts. These transcripts
168 were anonymised by omitting any identifying features such as names and locations and the
169 recordings locked so that they are not accessible except to the lead researcher. The qualitative data
170 analysis involved the following steps: familiarisation and construction of initial themes or concepts;
171 indexing, labelling, and tagging the data to construct links between categories by sorting them
172 according to levels of generality and employing a hierarchical structure so that themes and
173 subthemes start to emerge; followed lastly by descriptive analysis, where the themes are refined,
174 finalised and agreed between the research team [32] [33]. As a step to reduce potential bias and
175 enhance rigour, this data analysis process was undertaken independently by two researchers, who
176 then met to discuss and agree the final themes and subthemes based on inferential reasoning [34].

177 For Aim 3 regarding issues of patient access to services, we used routinely collected audit data,
178 anonymised at source from one GP practice as a case study, to quantify the difference that having
179 student nurses in CLIP made in terms of patient access to appropriate appointments.

180

181 Ethical issues

182 The project had approval from the Faculty of Health Research Ethics Committee and permission to
183 proceed via the UK Health Research Authority (HRA) Integrated Research Application System (IRAS).
184 This was extended from an earlier qualitative study to include all the data collection methods used in
185 this study. IRAS project ID: 259485. All potential participants were contacted by professional email
186 addresses and given the Participants' Information Sheet which included details of the study, and a
187 consent form. Students and staff were given the usual guarantees for confidentiality, anonymity and
188 right to withdraw, and were asked to sign written consent to take part in the MS Teams FGs. Study
189 information and consent to participate was re-iterated prior to the FGs, and the initial minutes of the
190 recordings document that all those who participated understood and consented to the study. No

191 participants subsequently asked to withdraw data. This study was funded by Health Education
192 England with an ad hoc grant.

193

194 Results

195 Characteristics of participants

196 The student nurses were all female **except** for one male. All the GP placement staff were registered
197 nurses with experience in student support as well as in GPN. All staff were female. We conducted
198 two FGs with student nurses, one in January 2022 and another in July 2022. Of 31 students invited,
199 seven attended in Jan 2022 and another five different students attended in July 2022. With regards
200 to staff data collection, we conducted two FGs with placement staff, one in January 2022 and
201 another in July 2022. Of 42 GPNs invited, five attended in Jan 22 and a further six attended in July
202 (one staff member attended both groups).

203

204 Qualitative findings

205 Table 1 summarises the final themes and subthemes from the qualitative data analysis. Indicative
206 quotes are included in the following analysis. These are coded so that anonymity is maintained,
207 referring to the status of the respondent and which FG they took part in, so for example the suffix
208 'Staff FG 1 Participant 2' indicates that the quote comes from the second staff member speaking
209 who was taking part in the first FG.

210

211 Table 1: themes and subthemes from the qualitative data analysis.

Theme	Subthemes
Peer Support	Psychological support Helped with learning

	Leadership for third years
Interprofessional Learning	Breadth of experiences Multi-disciplinary team case management Sense of belonging
Importance of 'own clinics'	Enhanced Responsibility Validity as a job destination (students) Coaching (staff)

212

213 Theme 1: Peer Support

214 This theme was central to the discourse in staff and student focus groups in both time periods. It is
 215 clear from our findings that these students had spent most of their previous placement experiences
 216 working in environments where they were the only student or, if there were other students, they did
 217 not engage much with them. Students had felt inhibited in their professional relationships with RNs
 218 and other staff, and valued the opportunity that this GPN CLIP placement offered them to interact
 219 with other students, share their experiences and work collaboratively, whilst knowing that there was
 220 appropriate supervision available close by. The subthemes that emerged in this theme were
 221 Psychological support; Helped with learning and Leadership for third years. Regarding Psychological
 222 support, the following quotes are indicative of how students and staff perceived the benefits of CLIP
 223 with its increased capacity:

224 It's nice when you're working alongside other students, and you know that you've got that
 225 Friday where you're all together in the same place and you just kind of offload to each other
 226 about the week. And it's like a way of having a massive, deep group brief as a group, isn't it?
 227 Yeah. Because we're all in the same position. (Student FG 2 Participant 2).

228 This was echoed by staff:

229 They also encourage them to support each other a lot more, so they formed that sort of
 230 close relationships. So, if there was a problem on a shift or even outside of a shift... they
 231 really did communicate well between themselves. (Staff FG 1 Participant 1).

232

233 It was clear that students also valued being able to learn from each other and that being together
234 facilitated that, in line with a second subtheme of 'Helped with learning' shared by staff and
235 students across both FGs:

236 I felt learning from other students was brilliant. I think it boosted my confidence massively.
237 (Student FG 1 Participant 2).

238 And this was reflected in the staff data:

239 I think that the way they do CLIP now and the way they collaborate together [is much
240 better]. I see them learning much more than I used to...having them to bounce off each
241 other. I think it teaches them a little bit more, to be fair. (Staff FG 2 Participant 1).

242

243 One further subtheme that emerged from the data concerned the leadership roles that third year
244 students were able to perform with more junior students:

245 It was good for me as well as a third year... when I first started on the GP surgery, I didn't
246 really know what I was doing. And then having [junior students] coming to us and asking us
247 questions about what we thought, that boosted my confidence, "no, actually, I do know
248 what I'm talking about, and I'm ready to maybe be a [registered] nurse". (Student FG 1
249 Participant 4).

250 And this was echoed in the staff data:

251 If a second year is struggling with something that the third will give them encouragement,
252 you know, that's quite a benefit...it depends on their background but they all will support
253 each other. (Staff FG 2 Participant 2).

254

255 Theme 2: Interprofessional Learning

256 Within the IPL theme, the first sub theme concerned the Breadth of Experiences that were on offer
257 in the GP placement when students were able to link up and work with a wide range of
258 professionals, and in different ways than might be possible in an in-hospital placement or another
259 community setting. For example, students listed themselves as spending time with and learning
260 from: GPs, Advanced Nurse Practitioners, Dieticians, Community Midwives, District Nurses,
261 Physiotherapist, Podiatrists, Specialist Elder Care Nurses, Pharmacists, Well-being Coach, as well as
262 un-registered healthcare staff. Students planned these liaisons themselves, and these were seen as
263 good learning experiences by staff:

264 [Students] having access to the clinics and PCN staff... they can plan their own week without
265 us having that responsibility of making sure they've actually got something allocated every
266 day. If they haven't got a CLIP clinic on, they have taken responsibility for their own
267 allocation, their own learning objectives. (Staff FG 1 Participant 2).

268 And students noted how different their participation in learning was in the GP setting compared to
269 hospital placements:

270 As soon as you go into hospital [placement], you can't really do anything. So, you're just sort
271 of watching it. (Student FG 2 Participant 5).

272

273 In all cases this IPL was facilitated by students' exposure to 'Multi-Disciplinary Case Management'.

274 The staff were clearer how this operated and what nursing involvement could be:

275 We have an 11:00 o'clock meeting, which, anybody [any healthcare professional or student]
276 can come to ... we can talk about patients or talk about the home visit that somebody might
277 doing... it's good for all sorts of things, but it's good to hold the team together and it does
278 help with the students. They [students] just bring another dimension to it and other you

279 know, it's another voice. (Staff FG 1 Participant 4).

280

281 Students detailed how they were involved in IPL as they were given project work to do, and this
282 student shows how students collaborated and learned from the experience of investigating patient
283 journeys, eventually meeting one patient:

284 The first week or second week we were given a couple of case studies to look at and then we
285 actually met one of them [patient]... We could ask questions and different things in relation
286 to how he felt he was supported by the surgery and other community people [healthcare
287 professionals]. We also had another patient...and we had to sort of determine how he was
288 diagnosed; it was over three or four years. And it's amazing that he's still alive today to be
289 honest. But yeah, I met him in the GP surgery. I think the week before I left. (Student FG 1
290 Participant 1).

291

292 The third subtheme relating to IPL and the students' experience of working in GPN CLIP placements
293 was how they felt a greater 'Sense of belonging' in the teams in which they worked.

294 This student makes it clear how she felt more valued in her GP placement, and this type of dialogue
295 was echoed by almost every student in this study:

296 The staff treat you a lot differently in primary care than in acute. We like the staff, but that
297 the GP surgery and [name] are amazing. They've all been so lovely, including the doctors as
298 well. And I think that makes a massive impact to your experience. (Student FG 2 Participant
299 1).

300 This quote from a staff member illustrates how the students were valued and how staff worked to
301 make them feel welcome and that they belonged:

302 [The GPs] love it to be fair, one of our partner GPs, he can't wait to call in a student [nurse]
303 and teach them about ECGs... The GP and the other clinicians, they like sharing what they
304 know and encouraging them. Yeah, they really enjoy it. And the reception team do as well.
305 They like having young people around because most of us are 'getting on a bit' now. (Staff
306 FG 2 Participant 3).

307

308 Theme 3: Importance of 'own clinics'

309 Throughout the dialogue from staff and students, the issue of 'how' students worked in the GPN
310 placements was mentioned. This was in their 'own clinics' (called 'CLIP clinics') and from that
311 concept flows several other factors and benefits that accrued to staff and patients and impacted on
312 the way in which staff worked with students. This had implications for students' confidence as
313 independent practitioners, as well as having an impact on their relationship to GPN as a potential job
314 destination, and for improving patients' access to certain services which students were able to
315 deliver. In this overarching theme, staff and students in their respective FGs discussed 'Enhanced
316 responsibility', but there was a distinct dichotomy between staff and students in other subthemes,
317 such that it is justified to report staff and student data separately for the only instance in this paper.
318 Staff discussed how students working in their 'Own clinics' meant they were using supervision at a
319 distance in a coaching approach, but staff did not discuss any impact that the placement may have
320 had on students' job choices on qualification. Students discussed how this GPN placement has
321 fostered a desire to work in GPN, but they did not discuss coaching as a placement learning strategy.

322 The first subtheme 'Enhanced responsibilities' relates to how students and staff perceived that GPN
323 placements for these students had offered them enhanced opportunities to take responsibility for
324 patient care that often were not available from in-hospital placements, largely because they were
325 seeing patients in their 'own clinics', as well as because they were undertaking a range of activities
326 with patients that are elements of the GPN role, many of which are listed below:

327

328 We found that [having our own clinics] an amazing experience...we did lots of things. And as
329 the weeks went on, we added different stuff to our clinics, so it started out with... basic
330 blood pressure, hypertension reviews, diabetic reviews and in the end, we were doing
331 maybe more complex dressings assessments, ECGs, flu vaccines. We were doing a lot. We
332 found it really good and nice to learn in our own space. (Student FG 1 Participant 2).

333 This was echoed in the staff perceptions:

334 I think for all the practice nurses as well, we were quite concerned that [students] would be
335 running a clinic, seeing their own patients. We wouldn't be in the room; it's just something
336 about having control, isn't it? Now we find it brilliant, because we spend the first couple of
337 weeks training them up and working with them so that we are familiar a bit more with their
338 capabilities. (Staff FG 1 Participant 4).

339

340 It was clear from staff data that they were using a 'coaching' approach in which students were
341 facilitated to be at the centre of care delivery within their competencies, and that the students being
342 independent in their 'own clinics' was central to that, as this exchange shows:

343 If you've got multiple students in general practice, it has to be a coaching approach because
344 you don't have the capacity to be able to mentor, you can't just have one person on a 1 to
345 one because we don't have the capacity for that. (Staff FG 2 Participant 2).

346 I agree with that. Yeah. You it is. It's naturally a coaching thing. Our students sit in with us for
347 the first couple of weeks before they have their own clinics. (Staff FG 2 Participant 3)

348

349 Students discussed how this placement and exposure to GPN had helped them to identify its
350 'Validity as a job destination', which was their second subtheme. This dialogue took place in focus
351 group 1:

352 You know, I never considered general practice nursing. Yeah, after the after [this]
353 placement it is an option that I would consider now, definitely. A lot of students they don't
354 consider that when they graduate. (Student FG 1 Participant 6)

355

356 **Having reported qualitative data regarding Aims 1 and 2, we will now report results for Aim 3**
357 **relating to patient access and audit data results.**

358

359 Patient access audit data results

360 Regarding Aim 3: in one PCN that included two practices in one South West County, between
361 November and December 2021, student nurses in this CLIP placement ran an additional 200 clinic
362 appointments, so the total number of clinic appointments rose from 1060 to 1260, an increase of
363 20%. Students in these clinics saw patients for blood tests, long-term condition monitoring reviews,
364 observations including hypertension reviews, simple dressings, ECGs. (Students did not review
365 medications in their clinics). Also, 65 additional COVID vaccinations took place when student nurses
366 were available. Anecdotal evidence from the PCN data manager indicates that having student nurses
367 in CLIP meant that some patients were able to access same day appointments for blood tests when
368 otherwise there could be a two week wait. This was supported in the FG data analysis.

369 Data synthesis regarding patient access and skill mix

370 Although not well developed enough to stand as a coherent theme or subtheme of the qualitative
371 data, staff and students did allude to issues of patient access and skill mix in the focus group
372 discussions, in ways that support our analysis of the increased clinical appointment opportunities

373 detailed above. As this study took place at the end of COVID-19 pandemic in the UK, when physical
374 access to GP services had been restricted for many months (even though it was available in ways
375 other than direct contact), this was an issue being discussed in the media in the UK. Staff discussed
376 how students could see patients in person and spend much more time with them and outlined how
377 student nurses taking their 'own clinics' could free up other professionals to do other things.
378 Students did not go into detail about this but were clearly able to take on activities such as
379 venepuncture for the patients attending 'their' clinics that might otherwise have been the preserve
380 of HCAs or phlebotomists. The extent to which student nurses had an impact on the skill mix in the
381 practices in which they were placed is also unclear. However, it was clear from the audit data that
382 there was an increase in capacity of clinic appointments available.

383

384 Discussion

385 This paper has detailed our mixed methods study concerning the implementation of a CLIP
386 placement learning approach in GPN settings. Our findings indicate that the project was successful in
387 increasing capacity, and that students valued their time in general practice, believing that it
388 enhanced their learning by enabling peer support, interprofessional working and beneficial
389 responsibility when practicing in their 'own clinics'. It is also clear that these findings are despite the
390 impact of COVID and because staff were able to facilitate students' learning effectively. Although
391 running their 'own clinics' would appear to individualise students' practice, when opportunities were
392 facilitated or available for sharing and group working (in Friday CLIP sessions and MDT meetings),
393 students took these opportunities to work together and support each other. Peer support has been
394 a consistent theme in our own research [2, 7] and that of others [3, 9] as a key benefit of CLIP.
395 Indeed, it is noted as being central to effective clinical learning in international literature [35, 36]
396 with particularly strong benefits for third year student nurses because they can rehearse leadership
397 roles in the small teams of students in which they learn [35]. Going through formative professional

398 experiences with other people at a similar stage in their development is powerful in fostering
399 effective learning, and can contribute to individual students' decisions about whether they stay on
400 their programmes of study, graduate and enter the workforce [37]. In our study this is coupled with
401 a greater sense of belonging, which was a product of the reportedly more welcoming cultures in
402 these GP surgeries in which the students were placed. Belongingness is a driver in human motivation
403 that influences health and well-being, and when successful, the attachment an individual student
404 nurse experiences to a particular placement is powerful in fostering learning and interpersonal
405 relationships. In our study, the warmth that students experienced from placement staff helped them
406 to perceive themselves as being integral to service provision [38]. Conversely, research has indicated
407 that placement incivility from staff mitigates against a sense of belonging in students [39], and that
408 when students' sense of belonging is low, that is a predictor of stress in placement [40, 41] which in
409 turn is a factor in their decision to leave their programmes of study [42, 43]. Based on our study
410 findings, we believe that staff in these GP practices worked hard to make students feel part of the
411 team and engender a sense of belonging, and that this personal support from placement staff was
412 beneficial to student's learning and overall satisfaction.

413 It must be noted that our students and staff did not report significant disadvantages or negative
414 issues related to their placement experiences, certainly nothing sufficient to constitute a theme or
415 subtheme in our data analysis. We attribute this to the fact that placement staff, students and
416 university personnel have considerable experience of implementing CLIP and facilitating placement
417 learning using it, as CLIP has been used previously in our region. We have evaluated these
418 developments in our programme of HEE-funded research and noted more critical dialogues in those
419 research publications [2, 6, 7].

420 It also appears from our findings that there was a clear recognition of the potential for GPN
421 placements to foster interprofessional learning, and that students were exposed to this on a regular
422 basis. Communication, leadership and training are essential for successful IPL [15], which has long

423 been identified as a feature of community practice settings in the international literature, is
424 discussed as an essential component in multi-disciplinary working [44], and has been linked to
425 beneficial outcomes for patients including wound healing [45], medicines optimisation [46], holistic
426 care and identification of social determinants of health [47], and in managing multimorbidity [48]. In
427 our study, student nurses valued opportunities to learn from a myriad of healthcare professionals
428 and reported that they were welcome to contribute to formal and informal IPL experiences. IPL has
429 been shown to benefit critical thinking, teamworking and cooperation amongst student nurses and
430 other neophyte professionals [49], and so we argue that our GPN settings functioned as exemplars
431 of how interprofessional care can be achieved because they fostered a team vision and shared goals,
432 and sense of belonging to the team [50].

433 Lastly, our study uncovered evidence that increasing the capacity of student nurses across a PCN
434 could improve patients' access to the services that they were able to deliver (under supervision).
435 These services included blood tests, patient monitoring reviews, simple dressings, observations and
436 ECGs. In the one PCN from which we received data, an additional 20% clinic appointments were
437 created, and an additional 65 COVID vaccinations took place when student nurses were available.
438 We were not able to formally evaluate this across the region, but having student nurses made a
439 difference to patient access, may alter the skill mix so that RNs and HCAs can do other things, and
440 that this can help meet the Quality Outcomes Framework (QOF) and the GP contract [25, 26]. For
441 example, the QOF guidance for 2022/23 [26] contains detailed requirements to optimise access to
442 general practice and includes activities including continuous quality improvement and network
443 participation to improve access, which would be helped by GP practices accepting greater numbers
444 of placements for student nurses in CLIP configurations. Specific disease conditions and patient
445 groups are listed in the outcomes [26]: regarding obesity and weight management, the concomitant
446 multimorbidity that obesity generates could benefit from student nurses' involvement in taking
447 observations, advice and referrals as part of their own 'CLIP clinics'; and the greater number of clinic
448 appointments available would improve access for these patients. We argue therefore that our

449 student nurses help to improve access for patients and that this is in line with the GP contract and
450 QOF requirements [25, 26]. This shows tangible benefits for GPs, GPN leaders and practice managers
451 to develop placements for nursing students and to increase their capacity. Advice and guidance are
452 available on how to make such placements effective [51]. Support from Registered GPNs as a
453 profession for the expansion of placement provision for student nurses and consensus that GPN
454 recruitment depends on expanding placements [21] and central direction from NHS about capacity
455 development [23].

456

457 Limitations

458 Although this study had a relatively large sample size and geographic distribution, it must be
459 acknowledged that it took place in one UK region, with students from one University School of
460 Nursing and Midwifery, and with GPN staff, most of whom were (broadly speaking) active in their
461 engagement with CLIP and supportive of what the project was trying to achieve. This is a feature of
462 much qualitative research; however, we believe that we have taken the necessary steps to ensure
463 transparency and rigour in relation to the data collection and analysis processes we have
464 undertaken.

465 In relation to the quantitative audit data, we acknowledge that this is from one PCN only. Efforts
466 were made to obtain similar anonymous audit data from across the region, but this was
467 unsuccessful. We therefore make no claims that the magnitude of the improved access is
468 generalisable, however we do believe that additional students running their own CLIP clinics (under
469 supervision) would make a difference, with patients able to access some services quicker than if the
470 students were not there.

471 Conclusions

472 In the context of international shortages of nurses, and of UK national shortages of GP practice
473 nurses potentially reaching a 'worst-case' scenario of 50% vacancies unfilled by 2031 [19], it is
474 imperative to attract more registered nurses to this occupational group. Students in our study
475 discussed how their GPN experiences had made them see it as a potential job destination, partly
476 because of the better sense of belonging that they encountered, but also because of the range of
477 activities they were able to undertake and the relative autonomy they enjoyed. Even though we are
478 pleased to report that three of the 31 students in this study have subsequently secured their first
479 registered nurse jobs in GPN, we have not formally quantified an impact on first job destination in
480 this study but, like previous studies [28, 52], our findings indicate that a placement could change
481 student nurses' attitudes towards community working and encourage them to apply there as a first
482 job destination on graduation. We recommend further research in this area with students
483 approaching graduation, and those newly qualified for less than a year, to evaluate how best this can
484 be achieved.

485 Our study also shows that a strong element in the placement was IPL, and so we argue that GPN
486 placements might be considered as an exemplar of IPL in healthcare education [12], and that this
487 could have substantial benefits to patients in the future, although again we have not quantified this.
488 We recommend further research with a focus on IPL and GP surgeries, and the impact that using
489 CLIP as a model for placing all student healthcare professionals might have.

490 Lastly, we demonstrated that having an increased capacity of student nurses in a placement could
491 improve access to services as students were able to lead their own clinics (under supervision). This is
492 likely to have benefits to patients' access, but we have not collected data from patients about their
493 experiences with students, and we therefore recommended further research to illuminate what
494 patients think about seeing students. 'Access' is a problematic area in the UK currently, and any

495 improvements would be welcome, particularly if they reinforce care given by PCNs, support
496 recognition via the QOF and GP contract [25, 26], and enhance the standing of general practice [23].

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517 Authors' contributions

518 Study design: GW, AK, FC, LA, SE, KN. Data collection: GW. Data analysis: GW and AK. Drafting and
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523

524 Declarations

525 Ethics approval and consent to participate

526 All individuals have provided informed consent before the data collection. All participants were over
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528 remain anonymous. Approval for the study was obtained from the Faculty of Health Staff Ethics
529 Committee of the University of Plymouth, and from HRA IRAS project ID: 259485. All methods were
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531 Consent for publication

532 Not applicable.

533 Competing interests

534 The authors declare that this research was conducted in the absence of any commercial or financial
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554 [Availability of data and materials](#)

555 The datasets analysed during the study are available from the corresponding author on request.
556 Data are not public for reasons of confidentiality.

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