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A mixed-methods evaluation of patients' views on primary care multi-disciplinary teams in Scotland

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Abstract

Background

Expanding primary care multi-disciplinary teams (MDTs) was a key component of the 2018 Scottish GP contract, with over 4,700 MDT staff appointed since then.

Aim

To explore patients' views on primary care MDT expansion in Scotland.

Design and methods

(1) Survey of patients recently consulting a GP in deprived-urban, affluent-urban and remote/rural areas, assessing awareness of five MDT roles and attitudes towards receptionist signposting; (2) 30 individual interviews exploring MDT-care experiences.

Results

Of 1,053 survey respondents, most were unaware of the option of MDT rather than GP consultations for three out of five roles (69% unaware of link worker appointments; 68% mental health nurse; 58% pharmacist). Reception signposting was less popular in deprived-urban areas (34% unhappy vs 29% in remote/rural vs 21% affluent-urban; $p < 0.001$), and in patients with multimorbidity (31% unhappy vs 24% in non-multimorbid; $p < 0.05$).

Two-thirds of interviewees had multimorbidity and almost all reported positive MDT-care experiences. However, MDT-care was generally seen as a supplement rather than a substitute for GP care. Around half of patients expressed concerns about reception signposting. These patients were more likely to also express concerns about GP access in general. Both of these concerns were more common in deprived-urban areas than in remote/rural or affluent-urban areas.

Conclusion

MDT-care has expanded in Scotland with limited patient awareness. Although patients understand its potential value, many patients are unhappy with reception signposting to first-contact MDT care, especially those in deprived-urban areas living with multimorbidity. This represents a barrier to the aims of the new GP contract.

Introduction

Multi-disciplinary teams (MDTs) are an increasingly common feature of primary care systems worldwide¹⁻⁵. Services that bring together a range of healthcare professionals to deliver care alongside general practitioners (GPs) are assumed to be better equipped to provide accessible and comprehensive primary care⁴⁻⁸, especially given the global shortage of GPs^{9, 10}. MDT-based models of care (also referred to as multi-professional teams, interdisciplinary care, interprofessional care, and interprofessional collaborative practice) have been shown in some studies to improve health outcomes and reduce healthcare costs^{11, 12}. Accordingly, the expansion of MDTs has been a common feature of recent primary care reforms in high income countries, as health systems seek to address challenges of increasing multimorbidity, population ageing, rising costs and growing health inequalities¹³.

In Scotland, the expansion of primary care MDTs was a key part of the new GP contract introduced in April 2018 against a background of service redesign¹⁴. In April 2016, the Quality Outcome Framework pay-for-performance system was abolished and GP practices began to be organised into geographic clusters, promoting shared quality improvement. The 2018 GP contract formalised these changes and further refocused the role of the GP as the expert medical generalist leading a multi-disciplinary team of professionals, including practice nurses, advanced nurse practitioners, physiotherapists, mental health nurses, pharmacists and community link workers¹⁴. By increasing the amount of care provided by professionals other than GPs, the contract aimed to improve the quality and accessibility of care for patients, while reducing GP workload¹⁴. In turn, this was intended to free-up GP time to spend with patients with complex needs. Between 2018 and 2023, 4,730 whole-time equivalent new MDT-staff were appointed in primary care in Scotland, covering 911 practices^{15, 16}.

As well as addressing pressures of increasing multimorbidity and population ageing, a stated aim of the 2018 GP contract was addressing health inequalities. These are widening in Scotland, with disparities not only across socioeconomic groups, but also by gender, ethnicity and geography¹⁷. The latter is of particular relevance in Scotland, where over 15% of the population live in remote and rural areas^{17, 18}. The expansion of primary care MDTs (including community link workers who focus on connecting patients to non-medical community resources in deprived areas) was central to this aim of addressing health inequalities. The extent to which this has been achieved is unknown, but our recent research suggests it has not, with GPs in deprived areas reporting that the new contract has failed to free-up GP time to spend with complex patients, and those in rural areas viewing it as too 'city centric'¹⁹⁻²¹.

Most evaluations of MDT-based models of primary care have focussed on health outcomes and costs^{11, 12}. Our previously published qualitative evaluations have explored the views of a range of professionals with regard to the new GP contract in Scotland^{19, 20}, but the views and experiences of patients remains under-explored^{8, 13, 22, 23}. This study aims to assess the awareness, attitudes and experiences of patients in Scotland regarding primary care MDT expansion, and, given the aims of the new GP contract with respect to inequalities, to look for differences between socio-geographic groups.

Methods

Study Design

The overall study design was mixed-methods, with a postal survey of patients who had recently consulted a GP, followed by individual telephone interviews with a subsample of respondents.

Sampling and recruitment

Three regional Health Boards (out of 14 across Scotland) were selected to give a range of geographic and socioeconomic characteristics. Four clusters were recruited from each of these Health Boards, and one practice recruited from each cluster. Practices were grouped according to whether they served mainly deprived-urban (n=6), affluent-urban (n=2) or remote/rural (n=4) areas. A random sample of 6291 adult patients who had consulted a GP within the past 30 days were identified from practice records.

Surveys were sent with a cover letter, which included an optional expression-of-interest form to identify potential participants for follow-up qualitative interviews. Surveys were posted between 31st August and 15th September 2022. Collection of responses ran until 30th November 2022. Interviews were conducted between 26th October 2022 and 11th January 2023.

A total of 1053 questionnaire responses were received (overall response rate 17%). Response rates were higher in affluent-urban practices (27%) than in remote/rural areas (20%) and deprived-urban areas (12%). Of those who returned expression-of-interest forms, 30 patients were purposively sampled for interview (10 from each Health Board), with two-thirds aged over 65 years and two-thirds with multimorbidity (two or more chronic conditions).

Data collection

The questionnaire collected sociodemographic information including respondents' age, gender and postcode which was used to define individual Scottish Index of Multiple Deprivation (SIMD) decile, with one being the most deprived 10% and 10 the least deprived 10%²⁴. Multimorbidity was

assessed using a checklist of 17 common chronic conditions, with space to add additional conditions not listed, as in our previous studies^{25, 26}.

The questionnaire included several validated and bespoke items assessing health characteristics, patterns of consulting and consultation experience, results from which have been published separately²¹. For the present paper, the questionnaire included bespoke items (Box 1) assessing respondents' awareness of the possibility of being offered an appointment with the following five MDT professionals: a nurse (including practice nurse, advanced nurse practitioner, or health care assistant); a mental health nurse based at the practice; a physiotherapist; a pharmacist or pharmacy technician based at the practice; and a community link worker or welfare advisor. Respondents were also asked how happy they would feel (using a four-point Likert scale) if they were asked about their health concern by the receptionist for the purpose of signposting, if appropriate, to an MDT professional without seeing a GP first.

One-to-one, semi-structured telephone interviews lasting 40-60 minutes were conducted with the 30 selected patients. Interviews were audio recorded and transcribed verbatim. The interview topic guide covered patients' views and experiences regarding access to appointments, GP care, MDT care, telephone consultations and the impact of the COVID-19 pandemic (Supplementary Box 1). The present paper focusses on MDT care and reception signposting, with other results published separately²⁷.

Data analysis

Descriptive analysis of the questionnaire results was performed using SPSS version 27. Differences between the three population groups (deprived-urban, affluent-urban, remote/rural) were assessed using the appropriate parametric or non-parametric tests (ANOVA and Kruskal-Wallis, respectively), depending on the distribution of the variables, with further pairwise comparisons conducted (using independent t-tests or Mann-Whitney tests) where a significant difference was found on three-way testing. Differences were also assessed according to age and multimorbidity.

Thematic analysis was conducted on the interview transcripts to identify common themes in patients' views and experiences of MDT care and reception signposting, and to identify similarities and differences according to age, multimorbidity status and population group. Three authors (ED, SWM, KS) independently identified codes based on individual analysis of selected interview transcripts, arriving at a common coding framework through discussion. Transcripts were coded using NVivo version 12 by ED and KS. Six phases of thematic analysis (as outlined by Braun and Clarke²⁸) were applied by ED and KS as follows: familiarisation with the data; generation of initial

codes; searching for themes; reviewing themes; defining and naming themes; and summarising themes for a final report.

Integration and synthesis of findings from the quantitative and qualitative components of this study were conducted by KS and SWM according to Farmer and colleagues' triangulation protocol, using a convergence coding matrix to identify areas of convergence, divergence and silence^{29, 30}.

Results

Survey results

The characteristics of survey respondents, and comparison with non-responders, are described in our previous paper and summarised in Supplementary Table 1²¹. Survey results are summarised in Tables 1 and 2. Overall, a minority of respondents were aware of link workers (31%), mental health nurses (32%) or pharmacists (42%). Awareness was slightly higher for physiotherapists (58%) and much higher for nurses (86%). The affluent-urban group reported lower awareness of all MDT roles than both the deprived-urban and remote/rural groups ($p < 0.001$), except for nursing staff, where deprived-urban and affluent-urban groups were similar. Awareness of nursing, physiotherapy and pharmacy staff was significantly higher in remote/rural areas than in both other groups (p -values < 0.001 , < 0.001 and 0.003 respectively), while awareness of link workers and mental health nurses were similar between deprived-urban and remote/rural areas. Awareness of physiotherapy and pharmacy roles was also higher in patients with multimorbidity than those without ($p < 0.01$). Patients aged 65 years or older were significantly more likely to be aware of the nurse role ($p < 0.05$) and less likely to be aware of the link worker role than those under 65 ($p < 0.01$).

Attitudes towards reception signposting (Table 1) were positive on the whole, with 71% of respondents being very (26%) or quite (45%) happy with this system. There was no significant difference between affluent-urban and remote/rural areas, but there were significantly more negative views in the deprived-urban group (34% very or quite unhappy vs 21% affluent-urban vs 29% remote/rural; $p < 0.05$). Acceptability of reception signposting (Table 2) was also significantly lower for patients with multimorbidity (31% quite or very unhappy vs 24% in those without; $p < 0.05$).

Interview results

The demographic details and multimorbidity status of the 30 interviewees across the three Health Boards are given in Supplementary Table 2. The mean age of interviewees was 61.4 years (range 21-83), 22 interviewees had multimorbidity and the mean number of long-term conditions (LTC) was 3.5 (range 0-9). These were similar across Health Boards.

Theme 1: Attitudes towards MDT expansion

The majority (n=22) of 30 patients interviewed were open towards the idea of receiving care from MDT staff for appropriate issues, even though most patients' direct experience was limited to nurse interactions. Increased availability of appointments and added expertise (in situations such as physiotherapy appointments for musculoskeletal complaints) were perceived benefits of MDT expansion.

If [seeing another professional] would still get to the root of the problem and potentially negate the long waiting times of waiting for a GP, then, yes, certainly that's something I'd be interested in. [For my condition], I would be totally happy to see a qualified physio, because that's going to be better for me than seeing a GP.

P10. (SIMD 4, 2 LTCs)

Some patients (n=8) expressed reservations about first-contact MDT care. Such views were expressed in all 3 population groups (deprived-urban n=3; affluent-urban n=2; remote/rural n=3), and in patients both with (n=5) and without (n=3) multimorbidity. Many viewed MDT care as a supplement rather than a substitute for holistic, personalised GP care.

On one side, [seeing other professionals] helps the GP. But on the other side, the GP actually knows you, they see how you are and pick up on not just your ailment but also your mental health. [The GP] could be seeing them for, say, a migraine, but there might be a drunken husband or a runaway child. [If they] know a wee bit about the history of the family they've got a bit more knowledge. When [care] is dotted around different people all seeing you, some of that can get lost, you know? Some of what else is happening in the background can get totally lost. That is just one of the things that worries me [about these changes].

P21. (SIMD 4, 9 LTCs)

Access to GP care, especially when patients feel they need it for serious or worrying issues, was an overriding priority for many patients, including those who were more open to MDT care.

I still would rather value a GP's opinion than any of the other healthcare professionals. It does depend very much on what your query is but if you're feeling really ill I think you need to have a GP examining you. I think you should be listened to carefully about your symptoms before you're referred to somebody other than the GP.

P18. (SIMD 10, 1 LTC)

By contrast, MDT care was felt to be most appropriate for simple, focussed, task-orientated interactions.

My consultation [with the nurse practitioner] was fine because it wasn't for anything that I felt a doctor should be consulted for. It was to do with a fungal infection on my toenail. So, that's fine. And I don't expect to see a doctor for blood tests and things like that... [But] when my husband was ill, we saw a nurse practitioner, [and] personally I think I would have been happier to see a doctor because of the state of his illness.

P22. (SIMD 4, 4 LTCs)

Theme 2: Views on reception signposting

While some patients were comfortable being signposted towards MDT care by receptionists, many were unhappy with this system. These reservations sometimes related to the nature of the interaction with receptionists (including confidentiality concerns) rather than MDT care itself. Concerns regarding reception signposting were more likely in those patients who were also concerned about GP access, with patients unhappy about feeling challenged by receptionists to justify seeking a GP appointment. Both of these concerns were stronger and more common in deprived-urban areas (where they were expressed by a majority) than in remote/rural or affluent-urban areas.

It's not their place. They are just the receptionist. I'm not saying they are not intelligent... but suddenly they have the authority to send you to a physio or refer you to a pharmacist? What authority does a receptionist act on?

P26. (SIMD 3, 6 LTCs)

I don't think the onus should be put on the receptionist. It never used to happen. I'm a bit hesitant [about it]. I don't like discussing [personal issues] with the receptionist. If you're making an appointment with the GP, then you obviously feel you need the GP. I don't make an appointment for the sake of it. [Reception signposting] kind of undermines your request.

P22. (SIMD 4, 4 LTCs)

On the other hand, many patients (particularly in affluent-urban areas) had no objections to the reception signposting system and recognised its value.

It's good if they know who would be the best person to help you. Sometimes, with the training that the receptionists have had, some of them are fantastic. They will say, well, actually it's probably better if you see this person rather than that person. They are a very valuable member of the team because they know exactly where to point you for you to get the best outcome. So I'm quite happy for them [to ask].

P13. (SIMD 8, 5 LTCs)

Theme 3: Experiences of MDT care

Almost all patients interviewed had received MDT care and described positive experiences (n=27). Encounters with nurses (either practice nurses or advanced nurse practitioners) were most common (n=20). Physiotherapy (n=10) and pharmacy (n=7) consultations were also familiar to many patients, and were felt to be particularly beneficial in terms of perceived expertise and reduced time pressure.

The physio was very attentive, told you what to do and why you had to do it. They explained things a bit better [than the GP]. That's what I felt anyway. It was much easier [to arrange that appointment]. Face-to-face, straight away, done and dusted. And it's an easier experience seeing another healthcare professional, it's a more relaxed experience. I'm not saying the GP is a bad experience, but it's often, "what's wrong with you? Aye, this, that, that's fine, oh aye". That's it and away you go, you know what I mean? [With the physiotherapist] there was more time.

P26. (SIMD 3, 6 LTCs)

Mental health nurse (n=2) and Link Worker (n=1) interactions were least common, occurring only in practices serving deprived-urban areas, but the value of these was also evident.

When I started to go on this Universal Credit, because I didn't understand it, there was someone in the practice [a Link Worker] that explained it to me and told me what I was entitled to and helped me get what I was entitled to...unbelievable...seriously, really helpful.

P6. (SIMD 1, 2 LTCs)

Synthesis of quantitative and qualitative results

Table 3 gives the convergence coding matrix derived from the triangulation of survey and interview results. There was a high degree of convergence on several findings. Some themes covered in the interviews did not have corresponding data in the survey (coded as 'silence' on the matrix) because interview occurred after the survey and explored wider, contextualising questions. There was also some divergence of findings, specifically that the high awareness of pharmacy and physiotherapy roles reported by survey respondents in remote/rural areas was not reflected in the interviews. This is likely due to the small sample size of interviewees.

Discussion

Summary

Four years since the introduction of the new GP contract in Scotland, MDT care has expanded with limited patient awareness, but patients do recognise its potential value. Patients who had received MDT care reported positive experiences and highlighted improved access and added expertise as perceived benefits. However, many patients were unhappy with reception signposting to first-contact MDT care, especially those in deprived-urban areas living with multimorbidity. Access to GP care, especially when patients feel they need it for serious or worrying issues, was an overriding priority for many patients, and MDT care was seen as a supplement rather than a substitute for this. Concerns about reception signposting were more likely in those patients who were also concerned about GP access.

There were also differences in patients' awareness of MDT roles across geographic and socioeconomic groups, as well as by age and multimorbidity. Pharmacy and physiotherapy roles were most familiar to patients with multimorbidity and those in remote/rural areas, while awareness of mental health nurses and link workers was lowest in affluent-urban areas. Patients aged 65 years and old had significantly lower awareness of link workers.

Comparison with existing literature

The differences found in MDT awareness between deprived-urban, affluent-urban and remote/rural areas likely reflects differing exposure to MDT care due to differences in individuals' health needs and in practices' MDT provision. Lower MDT awareness in affluent-urban areas, for example, is in keeping with the lower frequency of GP attendance, better general health and lower levels of multimorbidity in these areas, than deprived-urban and remote/rural areas^{21, 25, 31, 32}. However, significantly higher awareness of mental health nurses was found in remote/rural than affluent-

urban areas, despite the fact that mental-physical multimorbidity and levels of anxiety and depression are similar between affluent-urban and remote/rural areas²¹. The reasons for this discrepancy are not clear.

A range of challenges affecting the expansion and integration of primary care MDTs in Scotland was highlighted in our recent qualitative evaluations of the views of primary care professionals and stakeholders.^{19, 20} The importance of involving and engaging patients in the redesign of primary care services has been highlighted by the Organisation for Economic Cooperation and Development (OECD), but our recent systematic scoping review of OECD countries and China found limited evidence of it happening^{13, 33}.

Both the levels of awareness of MDT roles and the acceptability of reception signposting found in this study are very similar to those found in a recent Scottish Government survey with a nationally representative sample of over 1000 patients³⁴. This also showed that patients view the GP as the first point of contact and prefer signposting by a GP, results which echo the findings of our qualitative interviews. Additionally, the Scottish Government survey found high levels of trust in the advice of nurses, physiotherapists and pharmacists in primary care (76%, 66% and 65%, respectively, compared with 75% with complete trust in GPs and 52% in mental health nurses)³⁴. These results fit with our interview findings of positive experiences of care for these three MDT roles in particular.

A number of international reviews have highlighted the paucity of evidence evaluating patients' views and experiences of MDT care^{8, 13, 22}. However, our findings of broadly positive patient experiences are consistent with a recent integrative review of 48 international studies²³.

Interestingly, and in close alignment with our study, as well as finding generally positive patient experiences of MDT care, this review highlighted concerns that increased access to MDT care did not necessarily increase care quality, and that MDT care was "inconsistently holistic"²³.

Evidence on patients' views regarding reception signposting is also lacking, although a recent study of staff views reported concerns over the lack of clarity over receptionists' role and remit, and the need for appropriate training and development³⁵. These findings echo the reservations expressed by patients in our study. While this paper focusses on the views of patients with respect to MDT expansion, we have also published a more comprehensive summary of patients' views and experiences of primary care in Scotland²⁷.

Strengths and limitations

The strengths of this study include its use of mixed-methodology to explore and evaluate patient views, the relatively large survey sample and the inclusion of three populations of interest. The

strength of the survey findings are limited by the low response rate of 17% (12% deprived-urban vs 27% affluent-urban vs 20% remote/rural), although this is not dissimilar to that seen in Scottish Government patient surveys³⁶. Of note, the deprived-urban group, which, like in other surveys, had a much lower response rate, was the biggest group in our sample, comprising 58% of distributed surveys. The response rates may also have been limited by the use of a postal survey, rather than in-person data collection at the GP practice, a method which was dictated by the pandemic. Additionally, the funding constraints of the study meant that postal reminders were not possible.

Survey responders differed from non-responders in terms of age in all groups (deprived-urban, affluent-urban and remote/rural). In the deprived-urban group, responders were also significantly less deprived than non-responders (Supplementary Table S1). While this affects the generalisability of the survey findings, it may in fact mean that the differences found between the deprived-urban and affluent-urban groups are an underestimate, as those responding were the “least deprived of the deprived”.

With respect to the qualitative methods, the reliance on telephone rather than face-to-face interviews as a result of the pandemic may have affected the quality of evidence obtained, given the absence of non-verbal communication, although research suggests there is little difference in quality between these modes of interview³⁷. The recruitment of interviewees from a volunteer subset of questionnaire respondents creates a risk of bias since this method may give prominence to those with strong views. However, while our findings do not claim to be fully generalisable, the number of interviews conducted, the purposive sampling method and the saturation of data suggest that our findings give a valuable representation of the range of views held by patients across geographic and socioeconomic groups and, in particular, older patients with multimorbidity.

The study would be strengthened by the inclusion of data on practice-level differences in MDT care availability, reception signposting methods and appointment booking systems, as these differences are likely to have influenced patients’ responses. Local variations in the implementation of the contract have been reported, including the provision of MDT services in some areas through ‘hubs’ rather than individual GP practices.^{19, 38} However, it was not possible to collect data on these practice-level differences within the resource constraints of the study. The high level of awareness of nurse appointments is also likely to have been skewed by the broad definition of ‘nurses’ used in the survey (which covers practice nurses, advanced nurse practitioners, and health care assistants), limiting the interpretation of this finding.

Implications for practice, policy and research

MDT expansion is a core feature of not only the Scottish GP contract, but of primary care reforms in healthcare systems elsewhere globally¹³, and the views and experiences of patients with respect to this are under-explored^{8, 13, 22}. Consequently, this study provides an important insight for all primary care systems undergoing similar changes.

The implementation of the new GP contract in Scotland has clearly been affected by the pandemic, and other challenges to MDT expansion have been identified^{19, 20}, but further work is needed to assess variations in the availability of primary care MDT services across Scotland, as this has implications for interpreting differences in patient views on these reforms. Our findings, however, suggest that, despite limited awareness of MDT expansion, it has qualified acceptance and generally leads to positive patient experiences.

However, access to GP care remains an overriding priority for patients and MDT care is seen as a supplement rather than a substitute for this. Concerns about reception signposting to first-contact MDT care are especially strong in patients from deprived areas with multimorbidity. These findings represent a barrier to the expansion of first-contact MDT care, and therefore to the new GP contract's aim of reducing GP work-load and freeing-up time for GPs to spend with the most complex patients. Recent research, including our qualitative studies with professionals, suggest this is not yet happening^{19, 20, 39}. Given that this is a key mechanism by which the contract seeks to reduce health inequalities, these issues must be addressed if continued MDT expansion is to benefit those with the most complex needs.

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Ethical approval

Ethical approval was obtained from the Wales REC 6 Research Ethics Committee (reference: 21/WA/0078), and research and development approval from participating Scottish health boards.

Competing interests

None

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Box 1. Questions from survey covering MDT-care and reception signposting.

1. Due to recent changes in how general practice is organised in Scotland, are you aware that when you call your general practice you could (depending on your health problem) be offered an appointment with one of the following, instead of with a GP?

- a. A Nurse (e.g. general practice nurse, an advanced nurse practitioner, or health care assistant)
I am aware of this I don't know about this
- b. A Mental Health nurse based in the practice
I am aware of this I don't know about this
- c. A Physiotherapist
I am aware of this I don't know about this
- d. A pharmacist or pharmacy technician based in the practice
I am aware of this I don't know about this
- e. Someone who provides advice or links to other services (e.g. a community link worker, a welfare advisor)
I am aware of this I don't know about this

2. When you phone your practice about a health concern, how happy or unhappy would you be for the receptionist to ask you questions and to signpost you to the person (from the list above) that is most appropriate for your needs without seeing the GP first? (Please select one answer)

Very happy Quite happy Quite unhappy Very unhappy

Table 1. Awareness of MDT roles in participating patients from affluent urban, deprived urban, and remote and rural areas

	Remote and Rural (RR) n=332 % (n)	Affluent Urban (AU) n=273 % (n)	Deprived Urban (DU) n=448 % (n)	Overall 3-way comparison (p-value)	2-way group comparisons (p-value)	
Aware of option of seeing the following MDT roles:						
Nurse (or ANP or HCA)	94.4 (306)	81.8 (220)	82.6 (356)	<0.001	DU vs AU	0.784
					AU vs RR	<0.001
					DU vs RR	<0.001
Mental Health Nurse	38.2 (116)	21.0 (55)	33.2 (140)	<0.001	DU vs AU	<0.001
					AU vs RR	<0.001
					DU vs RR	0.166
Physiotherapist	72.3 (225)	41.0 (109)	58.7 (247)	<0.001	DU vs AU	<0.001
					AU vs RR	<0.001
					DU vs RR	<0.001
Pharmacist (or technician)	52.4 (162)	32.2 (86)	41.2 (176)	<0.001	DU vs AU	<0.001
					AU vs RR	<0.001
					DU vs RR	0.003
Link worker	32.9 (101)	23.1 (62)	35.6 (151)	0.002	DU vs AU	<0.001
					AU vs RR	<0.001
					DU vs RR	0.446
Attitude towards reception signposting:				<0.001	DU vs AU	<0.001
					AU vs RR	<0.001
					DU vs RR	0.613
Very happy	29.7 (96)	30.3 (81)	21.4 (93)			
Quite happy	41.2 (133)	48.7 (130)	44.9 (195)			
Quite unhappy	18.6 (60)	14.2 (38)	21.4 (93)			
Very unhappy	10.5 (34)	6.7 (18)	12.2 (53)			
ANP: advanced nurse practitioner; HCA: health care assistant						
Overall group comparisons used Kruskal-Wallis tests. 2-way comparisons used Mann-Whitney tests.						

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Table 2. Awareness of MDT roles comparing patients with vs without multimorbidity; and those aged 65 years and over vs those under 65

	Multimorbid n=727 % (n)	Non- multimorbid n=322 % (n)	p-value	Aged 65 years and over n=530 % (n)	Aged under 65 years n=498 % (n)	p-value
Aware of option of seeing the following MDT roles:						
Nurse (or ANP or HCA)	81.7 (617)	83.8 (263)	0.149	88.6 (467)	83.4 (412)	0.016
Mental Health Nurse	32.7 (222)	28.6 (88)	0.196	29.2 (145)	33.6 (164)	0.146
Physiotherapist	62.1 (430)	49.0 (149)	<0.001	60.3 (307)	55.8 (271)	0.146
Pharmacist (or technician)	44.7 (310)	36.7 (113)	0.017	43.9 (225)	40.2 (196)	0.226
Link worker	31.0 (213)	32.4 (100)	0.659	27.6 (140)	35.5 (173)	0.007
Attitude towards reception signposting:			0.005			0.439
Very happy	24.5 (173)	30.9 (97)		25.0 (132)	27.8 (137)	
Quite happy	44.7 (316)	44.9 (141)		45.7 (241)	44.0 (217)	
Quite unhappy	19.1 (135)	17.8 (56)		19.0 (100)	18.1 (89)	
Very unhappy	11.7 (83)	6.4 (20)		10.2 (54)	10.1 (50)	
ANP: advanced nurse practitioner; HCA: health care assistant p-values calculated using Mann Whitney tests						

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Table 3. Triangulation matrix for the findings from the quantitative and qualitative components of the study

Themes	Survey findings	Interview findings	Convergence coding
Awareness of the availability of MDT appointments	High awareness of nurse appointments (86%). Intermediate awareness of pharmacy (42%) and physiotherapy (58%) roles. Low awareness of MHN (32%) and LW (31%) appointments.	Most patients had experience of nurse appointments (n=20). Physiotherapy (n=10) and pharmacy (n=7) were familiar to many. MHN (n=3) and LW (n=1) interactions were less common.	Convergence
Differences in MDT-role awareness between patient groups	High awareness of nurse appointments in all groups, but significantly higher in RR areas. Awareness of physiotherapy and pharmacy roles was highest in RR areas. Awareness of MHN and LW roles was lowest in AU areas, and similar in DU and RR areas. Awareness of physiotherapy and pharmacy roles higher in patients with multimorbidity than without.	Experience of nurse interactions were common in patients across all population groups (DU, AU and RR). Most physiotherapy interactions were reported by patients in DU areas. Most pharmacy interactions were reported by patients in AU areas. MHN and LW interactions were only reported by patients in DU areas. 9 interviewees (out of 30) were non-multimorbid, of which only one had experience of pharmacy or physiotherapy care. 21 interviewees were multimorbid, of which 16 had experience of pharmacy or physiotherapy care.	Partial convergence Divergence <i>Contrary to the survey, interviewees from RR areas had comparatively little experience of physiotherapy or pharmacy care.</i> Partial convergence Convergence
Acceptance of reception signposting	Attitudes towards reception signposting were favourable overall (71% quite or very happy). This was significantly lower in patients in DU areas.	Most patients (n=20) were, on balance, supportive of reception signposting, but many (n=16) raised concerns. These concerns were more common in DU areas, than RR or AU.	Convergence
Attitudes towards MDT care	No data	Most interviewees were open to the role of MDT in primary care. Some expressed reservations about MDT appointments as an alternative to GP care, citing the importance of GP access and holistic, relationship-based care.	Silence <i>Attitudes towards MDT care were only explored in qualitative interviews, so there is silence on this in the quantitative component of the study.</i>
Experiences of MDT care	No data	Experiences of MDT care were overwhelmingly positive and covered all types of MDT staff.	Silence <i>Experiences of MDT care were only explored in qualitative interviews, so there is silence on this in the quantitative component of the study.</i>

MHN = mental health nurse; LW = link worker; AU = affluent urban; DU = deprived urban; RR = remote and rural