A qualitative study of stakeholder views regarding participation in locally commissioned enhanced optometric services

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A qualitative study of stakeholder views regarding participation in locally commissioned enhanced optometric services.

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ABSTRACT

Objectives: to explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services

Design: qualitative study using free-text questionnaires and telephone interviews

Setting: a Minor Eye Conditions Scheme (MECS) and a Glaucoma Referral Refinement Scheme (GRRS) based in accredited community optometry practices

Participants: 41 optometrists, 6 ophthalmologists and 25 GPs

Results: the most common reason given by optometrists for participation in enhanced schemes was to further their professional development; however as providers of 'for-profit' healthcare, it was clear that participants had also considered the impact of the schemes on their business. Lack of fit with the 'retail' business model of optometry was a frequently given reason for non-participation. The methods used for training and accreditation were generally thought to be appropriate, and participating optometrists welcomed the opportunities for ongoing training. The ophthalmologists involved in MECS and GRRS expressed very positive views regarding the schemes and widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. GPs involved in MECS were also very supportive. They felt that the scheme provided an 'expert' local opinion that could potentially reduce the number of secondary care referrals.

Conclusions: the results of this study demonstrated strong stakeholder support for the development of community-based enhanced optometric services. Although optometrists welcomed the opportunity to develop their professional skills and knowledge, enhanced schemes must also provide a sufficient financial incentive so as not to compromise the profitability of their business.

Keywords:

Optometry, qualitative research, delivery of healthcare

ARTICLE SUMMARY

Article focus:

- To explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services.
- To determine the reasons for optometrists' participation or non-participation in enhanced schemes and to make these data available to inform the design of future eye care services.

Key messages:

- There was strong stakeholder support for the development of community-based enhanced optometric services.
- Optometrists welcomed the opportunity, provided by enhanced schemes, to develop their professional skills and knowledge, however sufficient financial incentives need to be provided so as not to compromise the profitability of their business.

Strengths and limitations of this study:

- This is the first study to describe the views and attitudes of optometrists and other key stakeholders regarding the development and operation of community-based enhanced optometric services. Importantly, the study also investigated reasons for optometrist non-participation
- All ophthalmologists surveyed were actively involved in the development and operation of the schemes and their views may not be representative of all UK ophthalmologists.

1. INTRODUCTION

During the past 45 years, the NHS General Ophthalmic services (GOS) has provided a clinically effective and cost-effective system for provision of community eye care, encompassing detection and correction of refractive errors and opportunistic case-finding for eye disease. In recent years, notable changes in statutory legislation have had a direct impact on the scope of optometric practice. In 2000, an amendment to the General Optical Council (GOC) 'Rules relating to injury or disease of the eye' allowed community optometrists, for the first time, to decide not to refer patients with a disease or abnormality of the eye to a medical practitioner if there is no justification to do so.[1] In 2005, the rules were further changed to allow referral to a more specialist optometrist colleague with appropriate qualifications or expertise to manage the patient.[2] In parallel with these changes, amendments to medicines legislation have facilitated access to therapeutic agents. Consequently, the last decade has witnessed significant changes to the role boundaries of UK optometrists, through creation of new clinical roles, together with an expansion of existing roles.

A review of the scope, structure and organisation of the GOS was commissioned by the Department of Health in 2005.[3] The primary focus of the review was to examine how to support healthcare commissioners in the development of a wider range of community-based eye care services. The review recommended establishment of a three-tiered GOS framework consisting of:

- essential services, i.e. provision of standard GOS sight tests
- additional services, e.g. domiciliary sight testing, and
- enhanced services, such as schemes for the treatment and management of acute eye care conditions and community refinement of referrals to the Hospital Eye Service (HES).

Enhanced optometric services have to be locally commissioned and are therefore dependent on the needs of the local population and the configuration of existing eye care services. A variety of enhanced service schemes (ESS) have been commissioned across England e.g. direct cataract referral[4], triage of acute eye disease[5,6] and glaucoma referral refinement.[7,8] These schemes aim to relieve part of the HES burden, either by confirming the necessity of referral or by managing the patient in a community setting.

This paper reports on a qualitative study to determine views and attitudes of stakeholders regarding the development and operation of two representative ESS: a Minor Eye Conditions Scheme (MECS) in South London and a Glaucoma Referral Refinement Scheme (GRRS) in Manchester. The study also

aims to determine reasons for optometrists' participation or non-participation in such schemes and to make these data available to inform the design of future services.

2. METHODOLOGY

2.1. Research team

All authors are optometrists working in academia, the HES and/or primary care settings. One author on the current study (RH) was involved in the design of the GRRS and the training and accreditation for the scheme. No other authors had any prior involvement with either scheme evaluated.

2.2. Organisation of MECS and GRRS

Under the MECS scheme, patients presenting to their GP with an eye problem, and satisfying certain inclusion criteria, are referred to specially trained community optometrists. The scheme also allows self-referral to a MECS community optometrist. Awareness of the scheme was raised by widespread local advertising.

In the Manchester GRRS, patients with suspected glaucoma or ocular hypertension (OHT) following a standard GOS sight test are referred to accredited community optometrists working within their own practices, instead of the usual pathway via the GP and then to the HES. These accredited optometrists work to an agreed set of referral criteria and, depending upon whether or not patients meet these criteria, either refer the patients to Manchester Royal Eye Hospital (MREH) or discharge them.

For both schemes, accredited community optometrists were remunerated for their services by the Clinical Commissioning Group (CCG).

2.3. Design, participants and data collection

The method chosen for qualitative data collection was adapted for each target group to maximise response rates (Table 1). Methods included: free-text paper-based or online questionnaires or semi-structured telephone interviews.

Table 1 Healthcare professionals approached for the purposes of this study for MECS and GRRS

	MECS		GRRS	
	N	Data Collection Method	N	Data Collection Method
Participating Optometrists	10	Semi-structured online questionnaire	17	Semi-structured online questionnaire
Participating Ophthalmologists	4	Semi-structured online questionnaire	2	Semi-structured online questionnaire
GPs	25	Semi-structured paper-based questionnaire		N/A
Glaucoma Specialist Optometrists		N/A	4	Semi-structured online questionnaire
Non-participating Optometrists	13	Semi-structured telephone interview	19	Semi-structured online questionnaire

The sampling strategy was designed to capture the views of all ESS optometrists, plus those of other key stakeholders (ophthalmologists, specialist hospital optometrists and GPs). The views of non-participating optometrists, who had been invited to join either the MECS or GRRS scheme but chose not to, were also sought.

A topic guide was developed by the research team, in consultation with external stakeholders. The guide formed the basis for open-ended questions used in questionnaires and telephone interviews. The topic guide covered the following broad subject areas:

- Enablers and barriers to pathway adoption

- Views on the impact of ESS on community optometry practices and existing eye care services
- Views on training and accreditation
- Frequency and quality of inter-professional communication

Each scheme had different groups of participants, described in Table 1. Both MECS and GRRS included community optometrists and ophthalmologists. GPs were also important stakeholders within MECS as service users, while glaucoma specialist hospital optometrists participated in the GRRS as trainers and also received referrals from GRRS accredited optometrists. A total of 10 optometrists and 4 ophthalmologists were involved in MECS and all were contacted for their views as part of the MECS evaluation, while 2 ophthalmologists, 17 optometrists and 4 glaucoma specialist optometrists were in GRRS and all were contacted for their views regarding GRRS. A total of 25 GPs who attended a regional educational event in South London, which focussed on MECS, were contacted. Finally, 32 optometrists who had been invited to participate in either MECS or GRRS by their Local Optical Committee but opted not to participate were also invited to provide their views. Each group contacted (e.g. optometrists, GPs etc) was asked to respond to a series of open-ended free-text questions that were adapted to their role.

2.4. Data Analysis

Data from online surveys, telephone interviews and from paper-based questionnaires were transferred into an Excel spreadsheet. One researcher (EK) conducted the initial process of coding and thematic analysis.[9] During this process, responses were reviewed line by line and as each emerging concept was identified, it was assigned a code. Identically coded sections of each response or transcript were compared to check if they represented the same concept. Through this iterative process emerging themes were identified and interpreted. Other team members (RH, JL and DE) reviewed codes and emerging themes, discussed and resolved minor disagreements and all authors reached a consensus on interpretation.

The study was approved by the Research and Ethics committee of the School of Health Sciences, City University London. The research followed the principles of the Declaration of Helsinki.

3. RESULTS

Of the 94 healthcare professionals contacted, a total of 74 responses were received, an overall response rate of 78.7%. Table 2 shows the response rate for each professional group.

Table 2. Response rates for healthcare professionals approached for this survey

	MECS		GRRS	
	Approached	**Responded *(%)***	**Approached**	**Responded *(%)***
Participating Optometrists	10	10 *(100%)*	17	15 *(88.2%)*
Participating Ophthalmologists	4	4 *(100%)*	2	2 *(100%)*
GPs	25*	25 *(100%)*	N/A	N/A
Glaucoma Specialist Optometrists	N/A	N/A	4	4 *(100%)*
Non-participating Optometrists	13	7 *(53.8%)*	19	7 *(36.8%)*

* Total number of GPs attending the regional event

3.1. Participating community optometrists

3.1.1. Reasons for participation

The most evident reason for participation among GRRS and MECS community optometrists was to further their professional development. Optometrists felt that participation in ESS would allow them to be exposed to more challenging clinical cases and consequently have opportunities to use their clinical skills to a greater extent. Interestingly, glaucoma specialist optometrists working in the glaucoma clinics in MREH also felt that the GGRS would enhance their own professional role since GRRS would result in the retention of lower risk patients in the community, allowing glaucoma specialist optometrists to deal with a more complex case-mix.

Another reason for participation was the perceived benefit for patients and the wider NHS. Community optometrists felt that ESS would improve care pathways for patients in terms of

convenience and a reduction in waiting times. The GRRS was also anticipated to enhance the detection of glaucoma in the community by improving participating optometrists' knowledge of the disease and reducing false positive referrals. Optometrists participating in both schemes were also conscious of potential benefits to the wider NHS in terms of reducing the HES burden and overall healthcare costs. Typical comments included:

> *"[The MECS scheme] frees up the Hospital Eye Service's time and resources to deal with the more serious conditions"* (MECS community optometrist).
>
> *"[The GRRS] stops unnecessary referrals to the Hospital Eye Service, therefore saving the tax payer money"* (GRRS community optometrist).

Many optometrists in the schemes revealed that financial incentives and opportunities to develop their business were important drivers for choosing to participate. Approximately 40% of optometrists participating in MECS reported that participation was a means of receiving appropriate remuneration for their professional services. In terms of business development, it was felt that patients examined within ESS may subsequently return to the practice for a future sight test. Optometrists within the GRRS also reported that they had joined the scheme to enhance the reputation of their practice and in some cases to avoid having to refer their patients to competitors. Typical comments included:

> *"I dislike having to refer pathology to other optometrists for them to decide whether or not it can be referred to the hospital eye service. I would prefer to be able to refer myself. Joining the scheme was the only way to ensure this"* (GRRS community optometrist).
>
> *"I enjoy [being part of GRRS] and would not want to […] lose the reputation gained in the eyes of other professionals"* (GRRS community optometrist).
>
> *"As an independent we like to be able to offer as many services as possible to our patients. This is another string to our bow"; "[The GRRS offers] great benefits in keeping the refinement within our own practice"* (GGRS community optometrists).
>
> *"[through MECS we see] more patients, hence hopefully these patients come back in the future"* (MECS community optometrist).

3.1.2. Scheme administration and organisation

Most participating community optometrists did not encounter any particular administrative difficulties when joining either scheme. An initial set-up period was often required to resolve problems (particularly relating to IT issues), but these were generally anticipated by most participants. Most community optometrists within MECS identified the need to adapt their booking system e.g. keeping free appointments or extending testing times. However, the need for flexibility was acknowledged:

> *"We offer same day or next day appointments for most referrals, and if the symptoms require immediate investigation, those patients will wait and be seen when the optometrist is available. The longest waiting time hitherto, has been 45 minutes"* (MECS community optometrist).

Although it was not generally felt that extra staff would be required, approximately half of participating optometrists reported that they needed to train reception staff in a number of MECS/GRRS related issues, e.g. to ensure understanding of the scheme and associated paperwork, recognising urgency of conditions (specific to MECS) and managing patients.

Although most practices did not feel any obligation to purchase additional equipment to be able to provide services according to GRRS or MECS protocols, several practices decided to upgrade existing consulting room equipment e.g. slit-lamp, and/or bring forward the purchase of more specialist equipment e.g. fundus camera.

3.1.3. Training/accreditation

Training for both MECS and GRRS included a combination of theoretical learning and HES clinic attendance. For MECS, theory was taught via an online module, whereas in GRRS optometrists attended lectures. No MECS optometrists had received any specialised training before participation in the scheme. Approximately 40% of optometrists new to the GRRS had previously received training relevant to glaucoma or IOP refinement, while 53% of participants had been involved in the previous Manchester GRRS and had been through a similar accreditation process.

The training for both GRRS and MECS was deemed to be appropriate by all participants. Distance learning was regarded as an acceptable mode of delivery for MECS training, although two optometrists would have liked the opportunity to ask questions and others wished that training had included practical sessions. It was also commonly reported by GRRS optometrists that there should have been more time between lectures to allow better understanding of the content.

Approximately 85% of the MECS optometrists and all GRRS optometrists identified that training had an overall beneficial effect on their practice, improving clinical knowledge, recognition of clinical signs and clinical decision-making skills.

> *"[The training] has increased my awareness and confidence in managing many conditions within the practice"; "…we were given guidelines on when to refer and when not, as this can be a grey area… it was nice for us to be given advice on this"* (MECS community optometrist).

All GRRS optometrists felt their glaucoma detection skills had improved significantly, particularly the recognition of potential false positive cases;

> *"[The training] increased my knowledge on glaucoma and the role of corneal thickness that help to distinguish false positives"*; *"[I am] better able to assess whether they are normal, suspect or glaucoma therefore giving the patient a better explanation of the results and not sending them to hospital if a visit can be avoided"* (GRRS community optometrist).

A minority of participants felt that training requirements had a negative impact on the practice, due to the need to cancel clinics to attend the Hospital training, or lectures in the case of the GRRS;

> *"As a locum, the practice did not want me to attend when I was scheduled to work there and would not pay for me to attend in their time; but I was willing to attend at another time"* (GRRS community optometrist).

Almost all participating optometrists in MECS and GRRS expressed an interest in doing more clinical training and had a number of suggestions in terms of their areas of interest. Additional distance learning, gonioscopy, hospital placements and peer review groups were most popular amongst MECS optometrists, while GRRS optometrists suggested training in gonioscopy, visual field assessment, unusual glaucoma cases and optic nerve head assessment.

GRRS ophthalmologists acknowledged the commitment required by optometrists to become trained and accredited, but also the need for the HES to be compensated for providing training;

> *"[The] hospital would need to be recompensed for the time required to deliver quality training and the community optometrists would need some incentive to be able to leave their practices for the required time for training"* (GRRS ophthalmologist).

Similarly, time commitments to the scheme and/or the training were also an issue;

> *"If I did not have a paid session of my time dedicated to MECS it would be very difficult to give the scheme the appropriate time"* (MECS ophthalmologist).

3.1.4. Inter-professional communication

Communication between ophthalmologists/GPs and optometrists was reported to be poor before the commencement of MECS. The vast majority of optometrists stated they rarely received feedback on their referrals or the diagnosis of referred patients; where feedback was provided it generally came from patients. Optometrists primarily wished to receive feedback on the outcome/diagnosis and quality of their referral.

> *"I would like to know what I could do to improve my referrals and what I should not be referring*" (MECS community optometrist).

Optometrists felt that participation in MECS would improve communication with secondary eye care services.

> *"Being part of MECS has allowed me to build better relations with GPs and ophthalmology departments"* (MECS community optometrist).

In terms of the GRRS, good communication between specialist optometrists working in the glaucoma clinic and community optometrists appeared to be well established. Most respondents reported that hospital specialist optometrists provided detailed clinical feedback on their referrals.

> *"I almost always receive useful letters from hospital specialist optometrist. They either agree with my findings (which is reassuring!) or if I'm a bit wide of the mark or have missed something they always word it very tactfully so that I feel I've learned something but without feeling intimidated"* (GRRS community optometrist).

3.2. Non-participating optometrists

Although the benefits of participation for professional development were recognised, the main reasons given for non-participation for both ESS were: inadequate remuneration, insufficient capacity within the practice, limitations in relation to attending training or succeeding in the accreditation and the perceived administrative burden.

> *"I felt that the rewards would not be sufficient to justify the extra work load and time required to perform all the tests accurately and to the standard required […] I may refer 3 or 4 patients a month on to GRRS and for that low volume it would not be a problem. My concern was that if we were getting patients referred from other practices for GRRS, this would have an adverse effect on my business."* (Non-participating optometrist (GRRS)

Non-participating optometrists believed that participating in the scheme would have required their practice to adapt significantly in terms of its booking system, testing times and purchase of new equipment. A minority expressed a reluctance to undergo additional training. However, despite their

personal reservations, most optometrists who chose not to participate had positive views of the schemes.

3.3. Medical views

Ophthalmologists participated for reasons that were more patient-centred compared to optometrists; reduction of unnecessary referrals, relieving patient anxiety, improving patient care and reductions in patient waiting times.

All participating ophthalmologists acknowledged that both ESS had the potential to reduce the number of referrals to the HES, as well as HES waiting lists;

> *"This helps us manage the increased suspect glaucoma workload referred to the MREH since the introduction of NICE guidelines for managing glaucoma"* (GRRS ophthalmologist).

Additionally, it was felt ESS would result in a higher proportion of patients receiving appropriate treatment.

Ophthalmologists also reported that they participated in ESS to promote better use of healthcare resources and to help optometrists develop their clinical skills;

> *"…this is something most [optometrists] have been doing for years anyway and it is a way of facilitating it…"* (MECS ophthalmologist)

> *"[I participated to] support the professional development of other healthcare professionals and better use of healthcare resources"* (GRRS ophthalmologist)

> *"…it is important that ophthalmic practitioners develop the necessary skills to see many of the straightforward problems in primary care" (*MECS ophthalmologist).

Training and accreditation for both schemes was deemed appropriate by all participating ophthalmologists. It was, however, acknowledged by MECS ophthalmologists that optometrists should have a point of contact should problems arise and highlighted the importance of clinical experience;

> *"…as long as there is someone [the optometrists] can contact where problems arise or things are not clear"*. (MECS ophthalmologist)

> *"The trouble is that it is probably more 'spot diagnosis' stuff and the huge importance of good history taking and symptoms identification is often secondary. Only experience and sitting in on clinics helps develop this […]"*. (MECS ophthalmologist)

Ongoing clinical training was supported by GRRS and MECS ophthalmologists;

"Optometrists should have a couple of sessions per year in the clinic with consultant team or (glaucoma specialist) optometrists to make sure their skills are still up to date and improving" (GRRS ophthalmologist)

"*[…] the plan is to have much more ongoing training with optometrists attending casualty sessions on a regular basis"* (MECS ophthalmologist)

GPs using the MECS reported that they typically saw 2-3 patients with eye problems per week. Almost all GPs thought MECS would improve care and the 'journey' for patients with eye problems, as well as reduce waiting times. GPs believed the scheme offers patients more choice and provides a more cost-effective and accessible service for minor eye conditions. Some GPs expressed the view that MECS will make their job easier and potentially reduce their workload. Furthermore, by using optometrists' skills the scheme would help with those clinical presentations where GPs would normally have some difficulty in making a diagnosis e.g. red eyes, flashes and floaters.

4. DISCUSSION

The current study has focussed on two locally commissioned ESS: a referral refinement scheme for glaucoma and a triage scheme for minor eye conditions. Although previous studies have evaluated similar schemes in terms of their clinical outcomes and cost effectiveness,[4-8] these studies did not investigate the views and attitudes of optometrists and other key stakeholders regarding the initial development and overall operation of the schemes.

4.1. Reasons for optometrists participation in ESS

The relevant Local Optical Committees worked closely with commissioners to develop and implement the schemes. All local optometrists were given the opportunity to participate; however participants needed to commit to compulsory training and were required to meet the terms of the service specification. The reason most commonly given by optometrists for participating in ESS was to further their professional development. Under the terms of the standard GOS contract in England, optometrists are not obliged to refine their own referrals and receive no additional remuneration for performing discretionary supplementary tests or procedures. Involvement in ESS allows optometrists to make better use of their clinical skills and provides a more challenging case-mix. Similarly, specialist optometrists working in hospital glaucoma clinics expressed the opinion that the GRRS would retain lower risk cases in the community and thereby provide more time for them to see more complex cases. Approximately 4% of the optometric profession are employed in the HES and hospital optometrists are becoming increasingly involved in extended roles; particularly in glaucoma, medical retina and eye casualty.[10]

Although optometrists expressed views regarding potential benefits to patients from a service redesign of primary eye care, it was also apparent that optometrists had considered the business implications of participation in ESS. Community optometry is a market-driven system that works in partnership with the NHS. The GOS fee represents a declining proportion of practice revenue for optometrists and there has been an increasing cross-subsidisation of sight test costs by sales of optical appliances.[11] In many cases, optometrists viewed ESS as a means of expanding or developing their business. In the current market-driven system, optometrists must compete with each other, as members of the public are free to consult any eye care provider.

Improved communication and relationship building with other healthcare professionals involved in the patient care pathway (e.g. GPs and ophthalmologists) was cited as an additional benefit of participation. Optometrists participating in MECS reported that prior to the development of the scheme they rarely received feedback on their referrals, thereby denying a much needed learning opportunity. Several studies have previously highlighted the poor communication between community optometrists and the medical profession, particularly lack of feedback on referral.[12,13] By contrast, the nature of the glaucoma service in Manchester meant that many patients with suspect glaucoma were seen by specialist hospital optometrists and the GRRS optometrists valued the frequency and quality of the feedback on their referrals received from their hospital colleagues.

Although all community optometrists were given the opportunity to participate in ESS, only half of eligible practitioners came forward. The principal reasons for non-participation were the perceived negative impact on their business, insufficient capacity to meet the terms of the service specification or not wishing to purchase new equipment. In some cases, there was reluctance to undertake the necessary training. Despite these reservations non-participants generally expressed a positive attitude towards ESS. A recent study of the organisation of eye care services in the West Midlands,[14] found that only a third of optometrists responding to a survey were involved in any extended role or enhanced service. The reported barriers included lack of time, inadequate remuneration and need for training.

4.2. Views on training and accreditation

Compulsory training was required for both schemes. However, the mode of educational delivery varied; for MECS, participants had to complete an online training module and were required to attend ophthalmology clinical sessions at the hospital, whereas for GRRS optometrists completed a didactic training course and attended glaucoma clinics. The need for compulsory training was broadly supported by optometrists and the content of training was deemed to be appropriate. For

MECS, although the distance learning module was generally well received, some expressed the view that they would have liked more practical sessions and an opportunity to ask questions of trainers. Systematic reviews[15,16] of randomised controlled trials of educational interventions have found that the effectiveness of e-learning is equivalent to traditional delivery methods for the training of health care professionals. This finding is relevant to training optometrists for ESS. Distance learning has the advantage that it can be accessed at a time convenient to trainees, particularly important for busy practitioners, who would otherwise need to leave their practices to attend didactic training sessions. However, distance learning is not appropriate for teaching practical clinical skills which would still require attendance at a training course.

4.3. Medical views regarding ESS

The ophthalmologists involved in MECS and GRRS expressed very positive views regarding ESS. It was widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. Ophthalmologists were supportive of the professional development of optometrists, although there was recognition of the need for ongoing training to maintain their competency. Particular value was placed on attending further outpatient clinics or eye casualty sessions. The strong inter-professional trust apparent within both schemes was largely due to the close involvement of the ophthalmologists in the development and organisation of the schemes and the delivery of training. The importance of relationship building in reducing inter-professional tensions has been previously reported.[17]

A survey of the views of GPs involved in MECS, demonstrated that they were also very supportive of the scheme. It was generally felt that MECS would benefit their patients by providing an 'expert' local opinion and could potentially reduce the number of HES referrals.

4.4. Strengths and limitations of this study

One strength of the current study is the representative nature of the two schemes. Schemes that refine referrals for glaucoma or triage acute ophthalmic presentations in the community are amongst the most widely commissioned ESS. The sampling technique used in the present study attempted to capture a maximum variation of opinions by inviting all participants in the schemes to take part in the qualitative surveys, and there was a good response rate from all stakeholders.

There are some limitations of the study. Both schemes are exemplar in terms of the level of integration between primary and secondary care. All ophthalmologists surveyed were actively involved in development of the schemes and in training and accreditation of optometrists. Furthermore, ophthalmologists involved in MECS were given protected time to support the scheme.

Therefore, the positive opinions expressed may be a function of their familiarity with the scheme, and possibly with the individual participants, rather than be representative of all UK ophthalmologists.

4.5. Conclusions

Optometrists represent a skilled primary care workforce that with further training can provide effective referral refinement and ocular disease management in the community through the provision of ESS. The present study identified that the primary reason for participation in these schemes is the desire to develop professional skills and knowledge. However, as 'for-profit' providers of healthcare schemes have to provide sufficient financial incentives so as not to compromise business profitability. Optometrists recognised the need for additional training and viewed this favourably whether it was delivered online or face-to-face. ESS were well received by GPs and by participating ophthalmologists working in secondary care. Both professional groups recognised the advantages of integrating community optometry into eye care pathways to provide an appropriate delivery of care in a convenient High Street setting.

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A qualitative study of stakeholder views regarding participation in locally commissioned enhanced optometric services

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A qualitative study of stakeholder views regarding participation in locally commissioned enhanced optometric services.

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ABSTRACT

Objectives: to explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services

Design: qualitative study using free-text questionnaires and telephone interviews

Setting: a Minor Eye Conditions Scheme (MECS) and a Glaucoma Referral Refinement Scheme (GRRS) based in accredited community optometry practices

Participants: 41 optometrists, 6 ophthalmologists and 25 GPs

Results: the most common reason given by optometrists for participation in enhanced schemes was to further their professional development; however as providers of 'for-profit' healthcare, it was clear that participants had also considered the impact of the schemes on their business. Lack of fit with the 'retail' business model of optometry was a frequently given reason for non-participation. The methods used for training and accreditation were generally thought to be appropriate, and participating optometrists welcomed the opportunities for ongoing training. The ophthalmologists involved in the MECS and GRRS expressed very positive views regarding the schemes and widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. GPs involved in the MECS were also very supportive. They felt that the scheme provided an 'expert' local opinion that could potentially reduce the number of secondary care referrals.

Conclusions: the results of this study demonstrated strong stakeholder support for the development of community-based enhanced optometric services. Although optometrists welcomed the opportunity to develop their professional skills and knowledge, enhanced schemes must also provide a sufficient financial incentive so as not to compromise the profitability of their business.

Keywords:

Optometry, qualitative research, delivery of healthcare

ARTICLE SUMMARY

Article focus:

- To explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services.
- To determine the reasons for optometrists' participation or non-participation in enhanced schemes and to make these data available to inform the design of future eye care services.

Key messages:

- There was strong stakeholder support for the development of community-based enhanced optometric services.
- Optometrists welcomed the opportunity, provided by enhanced schemes, to develop their professional skills and knowledge, however sufficient financial incentives need to be provided so as not to compromise the profitability of their business.

Strengths and limitations of this study:

- This is the first study to describe the views and attitudes of optometrists and other key stakeholders regarding the development and operation of community-based enhanced optometric services. Importantly, the study also investigated reasons for optometrist non-participation
- All ophthalmologists surveyed were actively involved in the development and operation of the schemes and their views may not be representative of all UK ophthalmologists.

1. INTRODUCTION

During the past 45 years, the NHS General Ophthalmic services (GOS) has provided a clinically effective and cost-effective system for provision of community eye care, encompassing detection and correction of refractive errors and opportunistic case-finding for eye disease. In recent years, notable changes in statutory legislation have had a direct impact on the scope of optometric practice. In 2000, an amendment to the General Optical Council (GOC) 'Rules relating to injury or disease of the eye' allowed community optometrists, for the first time, to decide not to refer patients with a disease or abnormality of the eye to a medical practitioner if there is no justification to do so.[1] In 2005, the rules were further changed to allow referral to a more specialist optometrist colleague with appropriate qualifications or expertise to manage the patient.[2] In parallel with these changes, amendments to medicines legislation have facilitated access to therapeutic agents. Consequently, the last decade has witnessed significant changes to the role boundaries of UK optometrists, through creation of new clinical roles, together with an expansion of existing roles.

A review of the scope, structure and organisation of the GOS was commissioned by the Department of Health in 2005.[3] The primary focus of the review was to examine how to support healthcare commissioners in the development of a wider range of community-based eye care services. The review recommended establishment of a three-tiered GOS framework consisting of:

- essential services, i.e. provision of standard GOS sight tests
- additional services, e.g. domiciliary sight testing, and
- enhanced services, such as schemes for the treatment and management of acute eye care conditions and community refinement of referrals to the Hospital Eye Service (HES).

Enhanced optometric services have to be locally commissioned and are therefore dependent on the needs of the local population and the configuration of existing eye care services. A variety of enhanced service schemes (ESS) have been commissioned across England e.g. direct cataract referral[4], triage of acute eye disease[5,6] and glaucoma referral refinement.[7,8] These schemes aim to relieve part of the HES burden, either by confirming the necessity of referral or by managing the patient in a community setting.

This paper reports on a qualitative study to determine views and attitudes of stakeholders regarding the development and operation of two schemes that are representative of the most commonly commissioned enhanced optometric services: a Minor Eye Conditions Scheme (MECS) in South

London and a Glaucoma Referral Refinement Scheme (GRRS) in Manchester. The study also aims to determine reasons for optometrists' participation or non-participation in such schemes and to make these data available to inform the design of future services.

2. METHODOLOGY

2.1. Research team

All authors are optometrists working in academia, the HES and/or primary care settings. One author on the current study (RH) was involved in the design of the GRRS and the training and accreditation for the scheme. No other authors had any prior involvement with either scheme evaluated.

2.2. Organisation of the MECS and GRRS

Under the MECS scheme, patients presenting to their GP with an eye problem, and satisfying certain inclusion criteria, are referred to specially trained community optometrists. The scheme also allows self-referral to a MECS community optometrist. Awareness of the scheme was raised by widespread local advertising.

In the Manchester GRRS, patients with suspected glaucoma or ocular hypertension (OHT) following a standard GOS sight test are referred to accredited community optometrists working within their own practices, instead of the usual pathway via the GP and then to the HES. These accredited optometrists work to an agreed set of referral criteria and, depending upon whether or not patients meet these criteria, either refer the patients to Manchester Royal Eye Hospital (MREH) or discharge them. The GRRS was initially launched in 2000 and was recently updated to include measurement of central corneal thickness.

For both schemes, accredited community optometrists were remunerated for their services by the Clinical Commissioning Group (CCG).

2.3. Design, participants and data collection

The method chosen for qualitative data collection was adapted for each target group to maximise response rates (Table 1). Methods included: free-text paper-based or online questionnaires or semi-structured telephone interviews.

Table 1 Healthcare professionals approached for the purposes of this study for the MECS and GRRS

	MECS		GRRS	
	N	Data Collection Method	N	Data Collection Method
Participating Optometrists	10	Semi-structured online questionnaire	17	Semi-structured online questionnaire
Participating Ophthalmologists	4	Semi-structured online questionnaire	2	Semi-structured online questionnaire
GPs	25	Semi-structured paper-based questionnaire		N/A
Glaucoma Specialist Optometrists		N/A	4	Semi-structured online questionnaire
Non-participating Optometrists	13	Semi-structured telephone interview	19	Semi-structured online questionnaire

The sampling strategy was designed to be inclusive and capture the views of healthcare professionals participating in community schemes and their associated care pathways. These included: all MECS and GRRS optometrists, as well as other key stakeholders (participating ophthalmologists, specialist hospital optometrists and GPs). The views of non-participating optometrists, who had been invited to join the schemes but chose not to, were also sought.

A topic guide was developed by the research team, in consultation with the Enhanced Scheme Evaluation Project (ESEP) Steering Group (a multidisciplinary group consisting of optometrists, ophthalmologists and methodologists). The guide formed the basis for open-ended questions used

in questionnaires and telephone interviews. The topic guide covered the following broad subject areas:

- Enablers and barriers to pathway adoption
- Views on the impact of ESS on community optometry practices and existing eye care services
- Views on training and accreditation
- Frequency and quality of inter-professional communication

Each scheme had different groups of participants, described in Table 1. Both the MECS and GRRS included community optometrists and ophthalmologists. GPs were also important stakeholders within the MECS as service users, while glaucoma specialist hospital optometrists participated in the GRRS as trainers and also received referrals from GRRS accredited optometrists. A total of 10 optometrists and 4 ophthalmologists were involved in the MECS and all were contacted for their views as part of the MECS evaluation, while 2 ophthalmologists, 17 community optometrists and 4 hospital-based glaucoma specialist optometrists were in GRRS and all were contacted for their views regarding GRRS. A total of 25 GPs who attended a regional educational event in South London, which focussed on the MECS, were contacted. Finally, 32 optometrists who had been invited to participate in either the MECS or GRRS by their Local Optical Committee but opted not to participate were also invited to provide their views. Each group contacted (e.g. optometrists, GPs etc) was asked to respond to a series of open-ended free-text questions that were adapted to their role.

2.4. Data Analysis

Data from online surveys, telephone interviews and from paper-based questionnaires were transferred into an Excel spreadsheet. One researcher (EK) conducted the initial process of coding and thematic analysis. [9] During this process, responses were reviewed line by line and as each emerging concept was identified, it was assigned a code. Identically coded sections of each response or transcript were compared to check if they represented the same concept. Through this iterative process emerging themes were identified and interpreted. Other team members (RH, JL and DE) reviewed codes and emerging themes, discussed and resolved minor disagreements and all authors reached a consensus on interpretation.

The study was designed and reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist and was approved by the Research and Ethics committee of the School of Health Sciences, City University London.

3. RESULTS

Of the 94 healthcare professionals contacted, a total of 74 responses were received, an overall response rate of 78.7%. Table 2 shows the response rate for each professional group.

Table 2. Response rates for healthcare professionals approached for this survey

	MECS		GRRS	
	Approached	**Responded *(%)***	**Approached**	**Responded *(%)***
Participating Optometrists	10	10 *(100%)*	17	15 *(88.2%)*
Participating Ophthalmologists	4	4 *(100%)*	2	2 *(100%)*
GPs	25*	25 *(100%)*	N/A	N/A
Glaucoma Specialist Optometrists	N/A	N/A	4	4 *(100%)*
Non-participating Optometrists	13	7 *(53.8%)*	19	7 *(36.8%)*

* Total number of GPs attending the regional event

The results of the qualitative analysis for each group of healthcare professionals are presented below using sub-headings to reflect each thematic domain.

3.1. Participating community optometrists

3.1.1. Reasons for participation

The most evident reason for participation among GRRS and MECS community optometrists was to further their professional development. Optometrists felt that participation in ESS would allow them to be exposed to more challenging clinical cases and consequently have opportunities to use their clinical skills to a greater extent. Interestingly, glaucoma specialist optometrists working in the glaucoma clinics in MREH also felt that the GRRS would enhance their own professional role since

GRRS would result in the retention of lower risk patients in the community, allowing glaucoma specialist optometrists to deal with a more complex case-mix.

Another reason for participation was the perceived benefit for patients and the wider NHS. Community optometrists felt that ESS would improve care pathways for patients in terms of convenience and a reduction in waiting times. The GRRS was also anticipated to enhance the detection of glaucoma in the community by improving participating optometrists' knowledge of the disease and reducing false positive referrals. Optometrists participating in both schemes were also conscious of potential benefits to the wider NHS in terms of reducing the HES burden and overall healthcare costs. Typical comments included:

> *"[The MECS scheme] frees up the Hospital Eye Service's time and resources to deal with the more serious conditions"* (MECS community optometrist).
>
> *"[The GRRS] stops unnecessary referrals to the Hospital Eye Service, therefore saving the tax payer money"* (GRRS community optometrist).

Many optometrists in the schemes revealed that financial incentives and opportunities to develop their business were important drivers for choosing to participate. Approximately 40% of optometrists participating in the MECS reported that participation was a means of receiving appropriate remuneration for their professional services. In terms of business development, it was felt that patients examined within ESS may subsequently return to the practice for a future sight test. Optometrists within the GRRS also reported that they had joined the scheme to enhance the reputation of their practice and in some cases to avoid having to refer their patients to competitors. Typical comments included:

> *"I dislike having to refer pathology to other optometrists for them to decide whether or not it can be referred to the hospital eye service. I would prefer to be able to refer myself. Joining the scheme was the only way to ensure this"* (GRRS community optometrist).
>
> *"I enjoy [being part of GRRS] and would not want to […] lose the reputation gained in the eyes of other professionals"* (GRRS community optometrist).
>
> *"As an independent we like to be able to offer as many services as possible to our patients. This is another string to our bow"; "[The GRRS offers] great benefits in keeping the refinement within our own practice"* (GGRS community optometrists).
>
> *"[through MECS we see] more patients, hence hopefully these patients come back in the future"* (MECS community optometrist).

3.1.2. Scheme administration and organisation

Most participating community optometrists did not encounter any particular administrative difficulties when joining either scheme. An initial set-up period was often required to resolve problems (particularly relating to IT issues), but these were generally anticipated by most participants. Most community optometrists within the MECS identified the need to adapt their booking system e.g. keeping free appointments or extending testing times. However, the need for flexibility was acknowledged:

> *"We offer same day or next day appointments for most referrals, and if the symptoms require immediate investigation, those patients will wait and be seen when the optometrist is available. The longest waiting time hitherto, has been 45 minutes"* (MECS community optometrist).

Although it was not generally felt that extra staff would be required, approximately half of participating optometrists reported that they needed to train reception staff in a number of MECS/GRRS related issues, e.g. to ensure understanding of the scheme and associated paperwork, recognising urgency of conditions (specific to the MECS) and managing patients.

Although most practices did not feel any obligation to purchase additional equipment to be able to provide services according to GRRS or MECS protocols, several practices decided to upgrade existing consulting room equipment e.g. slit-lamp, and/or bring forward the purchase of more specialist equipment e.g. fundus camera.

3.1.3. Training/accreditation

Training for both the MECS and GRRS included a combination of theoretical learning and HES clinic attendance. For the MECS, theory was taught via an online module, whereas in GRRS optometrists attended lectures. No MECS optometrists had received any specialised training before participation in the scheme. Approximately 40% of optometrists new to the GRRS had previously received training relevant to glaucoma or IOP refinement, while 53% of participants had been involved in a previous iteration of the Manchester GRRS and had been through a similar accreditation process.

The training for both GRRS and the MECS was deemed to be appropriate by all participants. Distance learning was regarded as an acceptable mode of delivery for MECS training, although two optometrists would have liked the opportunity to ask questions and others wished that training had included practical sessions. It was also commonly reported by GRRS optometrists that there should have been more time between lectures to allow better understanding of the content.

Approximately 85% of the MECS optometrists and all GRRS optometrists identified that training had an overall beneficial effect on their practice, improving clinical knowledge, recognition of clinical signs and clinical decision-making skills.

> *"[The training] has increased my awareness and confidence in managing many conditions within the practice"; "…we were given guidelines on when to refer and when not, as this can be a grey area… it was nice for us to be given advice on this"* (MECS community optometrist).

All GRRS optometrists felt their glaucoma detection skills had improved significantly, particularly the recognition of potential false positive cases;

> *"[The training] increased my knowledge on glaucoma and the role of corneal thickness that help to distinguish false positives"*; *"[I am] better able to assess whether they are normal, suspect or glaucoma therefore giving the patient a better explanation of the results and not sending them to hospital if a visit can be avoided"* (GRRS community optometrist).

A minority of participants felt that training requirements had a negative impact on the practice, due to the need to cancel clinics to attend the Hospital training, or lectures in the case of the GRRS;

> *"As a locum, the practice did not want me to attend when I was scheduled to work there and would not pay for me to attend in their time; but I was willing to attend at another time"* (GRRS community optometrist).

Almost all participating optometrists in the MECS and GRRS expressed an interest in doing more clinical training and had a number of suggestions in terms of their areas of interest. Additional distance learning, gonioscopy, hospital placements and peer review groups were most popular amongst MECS optometrists, while GRRS optometrists suggested training in gonioscopy, visual field assessment, unusual glaucoma cases and optic nerve head assessment.

3.1.4. Inter-professional communication

Communication between ophthalmologists/GPs and optometrists was reported to be poor before the commencement of the MECS. The vast majority of optometrists stated they rarely received feedback on their referrals or the diagnosis of referred patients; where feedback was provided it generally came from patients. Optometrists primarily wished to receive feedback on the outcome/diagnosis and quality of their referral.

> *"I would like to know what I could do to improve my referrals and what I should not be referring*" (MECS community optometrist).

Optometrists felt that participation in the MECS would improve communication with secondary eye care services.

> *"Being part of MECS has allowed me to build better relations with GPs and ophthalmology departments"* (MECS community optometrist).

In terms of the GRRS, good communication between specialist optometrists working in the glaucoma clinic and community optometrists appeared to be well established. Most respondents reported that hospital specialist optometrists provided detailed clinical feedback on their referrals.

> *"I almost always receive useful letters from hospital specialist optometrist. They either agree with my findings (which is reassuring!) or if I'm a bit wide of the mark or have missed something they always word it very tactfully so that I feel I've learned something but without feeling intimidated"* (GRRS community optometrist).

3.2. Non-participating optometrists

Although the benefits of participation for professional development were recognised, the main reasons given for non-participation for both ESS were: inadequate remuneration, insufficient capacity within the practice, limitations in relation to attending training or succeeding in the accreditation and the perceived administrative burden.

> *"I felt that the rewards would not be sufficient to justify the extra work load and time required to perform all the tests accurately and to the standard required […] I may refer 3 or 4 patients a month on to GRRS and for that low volume it would not be a problem. My concern was that if we were getting patients referred from other practices for GRRS, this would have an adverse effect on my business."* (Non-participating optometrist (GRRS)

Non-participating optometrists believed that participating in the scheme would have required their practice to adapt significantly in terms of its booking system, testing times and purchase of new equipment. A minority expressed a reluctance to undergo additional training. However, despite their

personal reservations, most optometrists who chose not to participate had positive views of the schemes.

3.3. Medical views

Ophthalmologists participated for reasons that were more patient-centred compared to optometrists; reduction of unnecessary referrals, relieving patient anxiety, improving patient care and reductions in patient waiting times.

All participating ophthalmologists acknowledged that both ESS had the potential to reduce the number of referrals to the HES, as well as HES waiting lists;

> *"This helps us manage the increased suspect glaucoma workload referred to the MREH since the introduction of NICE guidelines for managing glaucoma[1]"* (GRRS ophthalmologist).

Additionally, it was felt ESS would result in a higher proportion of patients receiving appropriate treatment.

Ophthalmologists also reported that they participated in ESS to promote better use of healthcare resources and to help optometrists develop their clinical skills;

> *"…this is something most [optometrists] have been doing for years anyway and it is a way of facilitating it…"* (MECS ophthalmologist)

> *"[I participated to] support the professional development of other healthcare professionals and better use of healthcare resources"* (GRRS ophthalmologist)

> *"…it is important that ophthalmic practitioners develop the necessary skills to see many of the straightforward problems in primary care" (*MECS ophthalmologist).

Training and accreditation for both schemes was deemed appropriate by all participating ophthalmologists. It was, however, acknowledged by MECS ophthalmologists that optometrists should have a point of contact should problems arise and highlighted the importance of clinical experience;

[1] The introduction of the NICE glaucoma guideline in 2009 (http://www.nice.org.uk/guidance/CG85) had significant impact on optometrist' referral behaviour with a reported doubling of referrals post-NICE which was not associated with an increase in the absolute numbers of positive diagnoses.

"…as long as there is someone [the optometrists] can contact where problems arise or things are not clear". (MECS ophthalmologist)

"The trouble is that it is probably more 'spot diagnosis' stuff and the huge importance of good history taking and symptoms identification is often secondary. Only experience and sitting in on clinics helps develop this […]". (MECS ophthalmologist)

Ongoing clinical training was supported by GRRS and MECS ophthalmologists;

"Optometrists should have a couple of sessions per year in the clinic with consultant team or (glaucoma specialist) optometrists to make sure their skills are still up to date and improving" (GRRS ophthalmologist)

"*[…] the plan is to have much more ongoing training with optometrists attending casualty sessions on a regular basis"* (MECS ophthalmologist)

However, GRRS ophthalmologists whilst acknowledging the commitment required by optometrists to become trained and accredited, also expressed the view that the HES should be compensated for providing training;

"[The] hospital would need to be recompensed for the time required to deliver quality training and the community optometrists would need some incentive to be able to leave their practices for the required time for training" (GRRS ophthalmologist).

Similarly, for the MECS, time medical commitments to the scheme and/or the training were also an issue;

"If I did not have a paid session of my time dedicated to MECS it would be very difficult to give the scheme the appropriate time" (MECS ophthalmologist).

GPs using the MECS reported that they typically saw 2-3 patients with eye problems per week. Almost all GPs thought the MECS would improve care and the 'journey' for patients with eye problems, as well as reduce waiting times. GPs believed the scheme offers patients more choice and provides a more cost-effective and accessible service for minor eye conditions. Some GPs expressed the view that the MECS will make their job easier and potentially reduce their workload. Furthermore, by using optometrists' skills the scheme would help with those clinical presentations where GPs would normally have some difficulty in making a diagnosis e.g. red eyes, flashes and floaters.

4. DISCUSSION

The current study has focussed on two locally commissioned ESS: a referral refinement scheme for glaucoma and a triage scheme for minor eye conditions. Although previous studies have evaluated similar schemes in terms of their clinical outcomes and cost effectiveness,[4-8] these studies did not investigate the views and attitudes of optometrists and other key stakeholders regarding the initial development and overall operation of the schemes.

4.1. Reasons for optometrists participation in ESS

The relevant Local Optical Committees worked closely with commissioners to develop and implement the schemes. All local optometrists were given the opportunity to participate; however participants needed to commit to compulsory training and were required to meet the terms of the service specification. The reason most commonly given by optometrists for participating in ESS was to further their professional development. Under the terms of the standard GOS contract in England, optometrists are not obliged to refine their own referrals and receive no additional remuneration for performing discretionary supplementary tests or procedures. Involvement in ESS allows optometrists to make better use of their clinical skills and provides a more challenging case-mix. Similarly, specialist optometrists working in hospital glaucoma clinics expressed the opinion that the GRRS would retain lower risk cases in the community and thereby provide more time for them to see more complex cases. Approximately 4% of the optometric profession are employed in the HES and hospital optometrists are becoming increasingly involved in extended roles; particularly in glaucoma, medical retina and eye casualty. [10]

Although optometrists expressed views regarding potential benefits to patients from a service redesign of primary eye care, it was also apparent that optometrists had considered the business implications of participation in ESS. Community optometry is a market-driven system that works in partnership with the NHS. The GOS fee represents a declining proportion of practice revenue for optometrists and there has been an increasing cross-subsidisation of sight test costs by sales of optical appliances. [11] In many cases, optometrists viewed ESS as a means of expanding or developing their business. In the current market-driven system, optometrists must compete with each other, as members of the public are free to consult any eye care provider.

Improved communication and relationship building with other healthcare professionals involved in the patient care pathway (e.g. GPs and ophthalmologists) was cited as an additional benefit of participation. Optometrists participating in the MECS reported that prior to the development of the scheme they rarely received feedback on their referrals, thereby denying a much needed learning opportunity. Several studies have previously highlighted the poor communication between community optometrists and the medical profession, particularly lack of feedback on referral. [12,13] By contrast, the nature of the glaucoma service in Manchester meant that many patients with suspect glaucoma were seen by specialist hospital optometrists and the GRRS optometrists valued the frequency and quality of the feedback on their referrals received from their hospital colleagues.

Although all community optometrists were given the opportunity to participate in ESS, only half of eligible practitioners came forward. The principal reasons for non-participation were the perceived negative impact on their business, insufficient capacity to meet the terms of the service specification or not wishing to purchase new equipment. In some cases, there was reluctance to undertake the necessary training. Despite these reservations non-participants generally expressed a positive attitude towards ESS. A recent study of the organisation of eye care services in the West Midlands, [14] found that only a third of optometrists responding to a survey were involved in any extended role or enhanced service. The reported barriers included lack of time, inadequate remuneration and need for training.

4.2. Views on training and accreditation

Compulsory training was required for both schemes. However, the mode of educational delivery varied; for the MECS, participants had to complete an online training module and were required to attend ophthalmology clinical sessions at the hospital, whereas for GRRS optometrists completed a didactic training course and attended glaucoma clinics. The need for compulsory training was broadly supported by optometrists and the content of training was deemed to be appropriate. For the MECS, although the distance learning module was generally well received, some expressed the view that they would have liked more practical sessions and an opportunity to ask questions of trainers. Systematic reviews [15, 16] of randomised controlled trials of educational interventions have found that the effectiveness of e-learning is equivalent to traditional delivery methods for the training of health care professionals. This finding is relevant to training optometrists for ESS. Distance learning has the advantage that it can be accessed at a time convenient to trainees, particularly important for busy practitioners, who would otherwise need to leave their practices to

attend didactic training sessions. However, distance learning is not appropriate for teaching practical clinical skills which would still require attendance at a training course.

4.3. Medical views regarding ESS

The ophthalmologists involved in the MECS and GRRS expressed very positive views regarding ESS. It was widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. Ophthalmologists were supportive of the professional development of optometrists, although there was recognition of the need for ongoing training to maintain their competency. Particular value was placed on attending further outpatient clinics or eye casualty sessions. The strong inter-professional trust apparent within both schemes was largely due to the close involvement of the ophthalmologists in the development and organisation of the schemes and the delivery of training. The importance of relationship building in reducing inter-professional tensions has been previously reported. [17]

A survey of the views of GPs involved in the MECS, demonstrated that they were also very supportive of the scheme. It was generally felt that the MECS would benefit their patients by providing an 'expert' local opinion and could potentially reduce the number of HES referrals.

4.4. Strengths and limitations of this study

A strength of the current study is the representative nature of the two schemes. Schemes that refine referrals for glaucoma or triage acute ophthalmic presentations in the community are amongst the most widely commissioned ESS. The sampling technique used in the present study attempted to capture a maximum variation of opinions by inviting all participants in the schemes to take part in the qualitative surveys, and there was a good response rate from all stakeholders.

There are some study limitations. Both schemes are exemplar in terms of the level of integration between primary and secondary care. All ophthalmologists surveyed were actively involved in development of the schemes and in training and accreditation of optometrists. Furthermore, ophthalmologists involved in the MECS were given protected time to support the scheme. Therefore, the positive opinions expressed may be a function of their familiarity with the scheme, and possibly with the individual participants, rather than be representative of all UK ophthalmologists. The poor response rate for optometrists who chose not to participate and the lack of the views of non-participating ophthalmologists may also have been a source of bias.

4.5. Conclusions

Optometrists represent a skilled workforce that with further training can provide effective referral refinement and ocular disease management in the community through the provision of ESS. The present study identified that the primary reason for participation in these schemes is the desire to develop professional skills and knowledge. However, as 'for-profit' providers of healthcare schemes have to provide sufficient financial incentives so as not to compromise business profitability. Optometrists recognised the need for additional training and viewed this favourably whether it was delivered online or face-to-face. ESS were well received by GPs and by participating ophthalmologists working in secondary care. Both professional groups recognised the advantages of integrating community optometry into eye care pathways to provide an appropriate delivery of care in a convenient community setting. Patients are also important stakeholders and their views of these ESS are currently under investigation and will form the basis of a subsequent publication.

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A qualitative study of stakeholder views regarding participation in locally commissioned enhanced optometric services.

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ABSTRACT

Objectives: to explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services

Design: qualitative study using free-text questionnaires and telephone interviews

Setting: a Minor Eye Conditions Scheme (MECS) and a Glaucoma Referral Refinement Scheme (GRRS) based in accredited community optometry practices

Participants: 41 optometrists, 6 ophthalmologists and 25 GPs

Results: the most common reason given by optometrists for participation in enhanced schemes was to further their professional development; however as providers of 'for-profit' healthcare, it was clear that participants had also considered the impact of the schemes on their business. Lack of fit with the 'retail' business model of optometry was a frequently given reason for non-participation. The methods used for training and accreditation were generally thought to be appropriate, and participating optometrists welcomed the opportunities for ongoing training. The ophthalmologists involved in the MECS and GRRS expressed very positive views regarding the schemes and widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. GPs involved in the MECS were also very supportive. They felt that the scheme provided an 'expert' local opinion that could potentially reduce the number of secondary care referrals.

Conclusions: the results of this study demonstrated strong stakeholder support for the development of community-based enhanced optometric services. Although optometrists welcomed the opportunity to develop their professional skills and knowledge, enhanced schemes must also provide a sufficient financial incentive so as not to compromise the profitability of their business.

Keywords:

Optometry, qualitative research, delivery of healthcare

ARTICLE SUMMARY

Article focus:

- To explore the views of optometrists, GPs and ophthalmologists regarding the development and organisation of community-based enhanced optometric services.
- To determine the reasons for optometrists' participation or non-participation in enhanced schemes and to make these data available to inform the design of future eye care services.

Key messages:

- There was strong stakeholder support for the development of community-based enhanced optometric services.
- Optometrists welcomed the opportunity, provided by enhanced schemes, to develop their professional skills and knowledge, however sufficient financial incentives need to be provided so as not to compromise the profitability of their business.

Strengths and limitations of this study:

- This is the first study to describe the views and attitudes of optometrists and other key stakeholders regarding the development and operation of community-based enhanced optometric services. Importantly, the study also investigated reasons for optometrist non-participation
- All ophthalmologists surveyed were actively involved in the development and operation of the schemes and their views may not be representative of all UK ophthalmologists.

1. INTRODUCTION

During the past 45 years, the NHS General Ophthalmic services (GOS) has provided a clinically effective and cost-effective system for provision of community eye care, encompassing detection and correction of refractive errors and opportunistic case-finding for eye disease. In recent years, notable changes in statutory legislation have had a direct impact on the scope of optometric practice. In 2000, an amendment to the General Optical Council (GOC) 'Rules relating to injury or disease of the eye' allowed community optometrists, for the first time, to decide not to refer patients with a disease or abnormality of the eye to a medical practitioner if there is no justification to do so.[1] In 2005, the rules were further changed to allow referral to a more specialist optometrist colleague with appropriate qualifications or expertise to manage the patient.[2] In parallel with these changes, amendments to medicines legislation have facilitated access to therapeutic agents. Consequently, the last decade has witnessed significant changes to the role boundaries of UK optometrists, through creation of new clinical roles, together with an expansion of existing roles.

A review of the scope, structure and organisation of the GOS was commissioned by the Department of Health in 2005.[3] The primary focus of the review was to examine how to support healthcare commissioners in the development of a wider range of community-based eye care services. The review recommended establishment of a three-tiered GOS framework consisting of:

- essential services, i.e. provision of standard GOS sight tests
- additional services, e.g. domiciliary sight testing, and
- enhanced services, such as schemes for the treatment and management of acute eye care conditions and community refinement of referrals to the Hospital Eye Service (HES).

Enhanced optometric services have to be locally commissioned and are therefore dependent on the needs of the local population and the configuration of existing eye care services. A variety of enhanced service schemes (ESS) have been commissioned across England e.g. direct cataract referral[4], triage of acute eye disease[5,6] and glaucoma referral refinement.[7,8] These schemes aim to relieve part of the HES burden, either by confirming the necessity of referral or by managing the patient in a community setting.

This paper reports on a qualitative study to determine views and attitudes of stakeholders regarding the development and operation of two schemes that are representative of the most commonly commissioned enhanced optometric services~~representative ESS~~: a Minor Eye Conditions Scheme

(MECS) in South London and a Glaucoma Referral Refinement Scheme (GRRS) in Manchester. The study also aims to determine reasons for optometrists' participation or non-participation in such schemes and to make these data available to inform the design of future services.

2. METHODOLOGY

2.1. Research team

All authors are optometrists working in academia, the HES and/or primary care settings. One author on the current study (RH) was involved in the design of the GRRS and the training and accreditation for the scheme. No other authors had any prior involvement with either scheme evaluated.

2.2. Organisation of the MECS and GRRS

Under the MECS scheme, patients presenting to their GP with an eye problem, and satisfying certain inclusion criteria, are referred to specially trained community optometrists. The scheme also allows self-referral to a MECS community optometrist. Awareness of the scheme was raised by widespread local advertising.

In the Manchester GRRS, patients with suspected glaucoma or ocular hypertension (OHT) following a standard GOS sight test are referred to accredited community optometrists working within their own practices, instead of the usual pathway via the GP and then to the HES. These accredited optometrists work to an agreed set of referral criteria and, depending upon whether or not patients meet these criteria, either refer the patients to Manchester Royal Eye Hospital (MREH) or discharge them. The GRRS was initially launched in 2000 and was recently updated to include measurement of central corneal thickness.

For both schemes, accredited community optometrists were remunerated for their services by the Clinical Commissioning Group (CCG).

2.3. Design, participants and data collection

The method chosen for qualitative data collection was adapted for each target group to maximise response rates (Table 1). Methods included: free-text paper-based or online questionnaires or semi-structured telephone interviews.

Table 1 Healthcare professionals approached for the purposes of this study for the MECS and GRRS

	MECS		GRRS	
	N	Data Collection Method	N	Data Collection Method
Participating Optometrists	10	Semi-structured online questionnaire	17	Semi-structured online questionnaire
Participating Ophthalmologists	4	Semi-structured online questionnaire	2	Semi-structured online questionnaire
GPs	25	Semi-structured paper-based questionnaire		N/A
Glaucoma Specialist Optometrists		N/A	4	Semi-structured online questionnaire
Non-participating Optometrists	13	Semi-structured telephone interview	19	Semi-structured online questionnaire

The sampling strategy was designed to be inclusive and capture the views of healthcare professionals participating in community schemes and their associated care pathways. These included: ~~all ESS~~ all MECS and GRRS optometrists, ~~plus those of~~ as well as other key stakeholders (participating ophthalmologists, specialist hospital optometrists and GPs). The views of non-participating optometrists, who had been invited to join ~~either the MECS or GRRS~~ the schemes but chose not to, were also sought.

A topic guide was developed by the research team, in consultation with the Enhanced Scheme Evaluation Project (ESEP) Steering Group (a multidisciplinary group consisting of optometrists, ophthalmologists and methodologists)~~external stakeholders~~. The guide formed the basis for open-ended questions used in questionnaires and telephone interviews. The topic guide covered the following broad subject areas:

- Enablers and barriers to pathway adoption
- Views on the impact of ESS on community optometry practices and existing eye care services
- Views on training and accreditation
- Frequency and quality of inter-professional communication

Each scheme had different groups of participants, described in Table 1. Both the MECS and GRRS included community optometrists and ophthalmologists. GPs were also important stakeholders within the MECS as service users, while glaucoma specialist hospital optometrists participated in the GRRS as trainers and also received referrals from GRRS accredited optometrists. A total of 10 optometrists and 4 ophthalmologists were involved in the MECS and all were contacted for their views as part of the MECS evaluation, while 2 ophthalmologists, 17 community optometrists and 4 hospital-based glaucoma specialist optometrists were in GRRS and all were contacted for their views regarding GRRS. A total of 25 GPs who attended a regional educational event in South London, which focussed on the MECS, were contacted. Finally, 32 optometrists who had been invited to participate in either the MECS or GRRS by their Local Optical Committee but opted not to participate were also invited to provide their views. Each group contacted (e.g. optometrists, GPs etc) was asked to respond to a series of open-ended free-text questions that were adapted to their role.

2.4. Data Analysis

Data from online surveys, telephone interviews and from paper-based questionnaires were transferred into an Excel spreadsheet. One researcher (EK) conducted the initial process of coding and thematic analysis~~.~~[. [9] During this process, responses were reviewed line by line and as each emerging concept was identified, it was assigned a code. Identically coded sections of each response or transcript were compared to check if they represented the same concept. Through this iterative process emerging themes were identified and interpreted. Other team members (RH, JL and DE) reviewed codes and emerging themes, discussed and resolved minor disagreements and all authors reached a consensus on interpretation.

The study was designed and reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist and was approved by the Research and Ethics committee of the School of Health Sciences, City University London.

3. RESULTS

Of the 94 healthcare professionals contacted, a total of 74 responses were received, an overall response rate of 78.7%. Table 2 shows the response rate for each professional group.

Table 2. Response rates for healthcare professionals approached for this survey

	MECS		GRRS	
	Approached	**Responded *(%)***	**Approached**	**Responded *(%)***
Participating Optometrists	10	10 *(100%)*	17	15 *(88.2%)*
Participating Ophthalmologists	4	4 *(100%)*	2	2 *(100%)*
GPs	25*	25 *(100%)*	N/A	N/A
Glaucoma Specialist Optometrists	N/A	N/A	4	4 *(100%)*
Non-participating Optometrists	13	7 *(53.8%)*	19	7 *(36.8%)*

* Total number of GPs attending the regional event

The results of the qualitative analysis for each group of healthcare professionals are presented below using sub-headings to reflect each thematic domain.

3.1. Participating community optometrists

3.1.1. Reasons for participation

The most evident reason for participation among GRRS and MECS community optometrists was to further their professional development. Optometrists felt that participation in ESS would allow them to be exposed to more challenging clinical cases and consequently have opportunities to use their clinical skills to a greater extent. Interestingly, glaucoma specialist optometrists working in the glaucoma clinics in MREH also felt that the GRR~~GR~~S would enhance their own professional role since

GRRS would result in the retention of lower risk patients in the community, allowing glaucoma specialist optometrists to deal with a more complex case-mix.

Another reason for participation was the perceived benefit for patients and the wider NHS. Community optometrists felt that ESS would improve care pathways for patients in terms of convenience and a reduction in waiting times. The GRRS was also anticipated to enhance the detection of glaucoma in the community by improving participating optometrists' knowledge of the disease and reducing false positive referrals. Optometrists participating in both schemes were also conscious of potential benefits to the wider NHS in terms of reducing the HES burden and overall healthcare costs. Typical comments included:

> *"[The MECS scheme] frees up the Hospital Eye Service's time and resources to deal with the more serious conditions"* (MECS community optometrist).
>
> *"[The GRRS] stops unnecessary referrals to the Hospital Eye Service, therefore saving the tax payer money"* (GRRS community optometrist).

Many optometrists in the schemes revealed that financial incentives and opportunities to develop their business were important drivers for choosing to participate. Approximately 40% of optometrists participating in the MECS reported that participation was a means of receiving appropriate remuneration for their professional services. In terms of business development, it was felt that patients examined within ESS may subsequently return to the practice for a future sight test. Optometrists within the GRRS also reported that they had joined the scheme to enhance the reputation of their practice and in some cases to avoid having to refer their patients to competitors. Typical comments included:

> *"I dislike having to refer pathology to other optometrists for them to decide whether or not it can be referred to the hospital eye service. I would prefer to be able to refer myself. Joining the scheme was the only way to ensure this"* (GRRS community optometrist).
>
> *"I enjoy [being part of GRRS] and would not want to […] lose the reputation gained in the eyes of other professionals"* (GRRS community optometrist).
>
> *"As an independent we like to be able to offer as many services as possible to our patients. This is another string to our bow"; "[The GRRS offers] great benefits in keeping the refinement within our own practice"* (GGRS community optometrists).
>
> *"[through MECS we see] more patients, hence hopefully these patients come back in the future"* (MECS community optometrist).

3.1.2. Scheme administration and organisation

Most participating community optometrists did not encounter any particular administrative difficulties when joining either scheme. An initial set-up period was often required to resolve problems (particularly relating to IT issues), but these were generally anticipated by most participants. Most community optometrists within the MECS identified the need to adapt their booking system e.g. keeping free appointments or extending testing times. However, the need for flexibility was acknowledged:

> *"We offer same day or next day appointments for most referrals, and if the symptoms require immediate investigation, those patients will wait and be seen when the optometrist is available. The longest waiting time hitherto, has been 45 minutes"* (MECS community optometrist).

Although it was not generally felt that extra staff would be required, approximately half of participating optometrists reported that they needed to train reception staff in a number of MECS/GRRS related issues, e.g. to ensure understanding of the scheme and associated paperwork, recognising urgency of conditions (specific to the MECS) and managing patients.

Although most practices did not feel any obligation to purchase additional equipment to be able to provide services according to GRRS or MECS protocols, several practices decided to upgrade existing consulting room equipment e.g. slit-lamp, and/or bring forward the purchase of more specialist equipment e.g. fundus camera.

3.1.3. Training/accreditation

Training for both the MECS and GRRS included a combination of theoretical learning and HES clinic attendance. For the MECS, theory was taught via an online module, whereas in GRRS optometrists attended lectures. No MECS optometrists had received any specialised training before participation in the scheme. Approximately 40% of optometrists new to the GRRS had previously received training relevant to glaucoma or IOP refinement, while 53% of participants had been involved in a ~~the~~ previous iteration of the Manchester GRRS and had been through a similar accreditation process.

The training for both GRRS and the MECS was deemed to be appropriate by all participants. Distance learning was regarded as an acceptable mode of delivery for MECS training, although two optometrists would have liked the opportunity to ask questions and others wished that training had included practical sessions. It was also commonly reported by GRRS optometrists that there should have been more time between lectures to allow better understanding of the content.

Approximately 85% of the MECS optometrists and all GRRS optometrists identified that training had an overall beneficial effect on their practice, improving clinical knowledge, recognition of clinical signs and clinical decision-making skills.

> *"[The training] has increased my awareness and confidence in managing many conditions within the practice"; "…we were given guidelines on when to refer and when not, as this can be a grey area… it was nice for us to be given advice on this"* (MECS community optometrist).

All GRRS optometrists felt their glaucoma detection skills had improved significantly, particularly the recognition of potential false positive cases;

> *"[The training] increased my knowledge on glaucoma and the role of corneal thickness that help to distinguish false positives"*; *"[I am] better able to assess whether they are normal, suspect or glaucoma therefore giving the patient a better explanation of the results and not sending them to hospital if a visit can be avoided"* (GRRS community optometrist).

A minority of participants felt that training requirements had a negative impact on the practice, due to the need to cancel clinics to attend the Hospital training, or lectures in the case of the GRRS;

> *"As a locum, the practice did not want me to attend when I was scheduled to work there and would not pay for me to attend in their time; but I was willing to attend at another time"* (GRRS community optometrist).

Almost all participating optometrists in the MECS and GRRS expressed an interest in doing more clinical training and had a number of suggestions in terms of their areas of interest. Additional distance learning, gonioscopy, hospital placements and peer review groups were most popular amongst MECS optometrists, while GRRS optometrists suggested training in gonioscopy, visual field assessment, unusual glaucoma cases and optic nerve head assessment.

~~GRRS ophthalmologists acknowledged the commitment required by optometrists to become trained and accredited, but also the need for the HES to be compensated for providing training;~~

> ~~*"[The] hospital would need to be recompensed for the time required to deliver quality training and the community optometrists would need some incentive to be able to leave their practices for the required time for training"* (GRRS ophthalmologist).~~

~~Similarly, time commitments to the scheme and/or the training were also an issue;~~

> ~~*"If I did not have a paid session of my time dedicated to MECS it would be very difficult to give the scheme the appropriate time"* (MECS ophthalmologist).~~

3.1.4. Inter-professional communication

Communication between ophthalmologists/GPs and optometrists was reported to be poor before the commencement of the MECS. The vast majority of optometrists stated they rarely received feedback on their referrals or the diagnosis of referred patients; where feedback was provided it generally came from patients. Optometrists primarily wished to receive feedback on the outcome/diagnosis and quality of their referral.

> *"I would like to know what I could do to improve my referrals and what I should not be referring"* (MECS community optometrist).

Optometrists felt that participation in the MECS would improve communication with secondary eye care services.

> *"Being part of MECS has allowed me to build better relations with GPs and ophthalmology departments"* (MECS community optometrist).

In terms of the GRRS, good communication between specialist optometrists working in the glaucoma clinic and community optometrists appeared to be well established. Most respondents reported that hospital specialist optometrists provided detailed clinical feedback on their referrals.

> *"I almost always receive useful letters from hospital specialist optometrist. They either agree with my findings (which is reassuring!) or if I'm a bit wide of the mark or have missed something they always word it very tactfully so that I feel I've learned something but without feeling intimidated"* (GRRS community optometrist).

3.2. Non-participating optometrists

Although the benefits of participation for professional development were recognised, the main reasons given for non-participation for both ESS were: inadequate remuneration, insufficient capacity within the practice, limitations in relation to attending training or succeeding in the accreditation and the perceived administrative burden.

> *"I felt that the rewards would not be sufficient to justify the extra work load and time required to perform all the tests accurately and to the standard required […] I may refer 3 or 4 patients a month on to GRRS and for that low volume it would not be a problem. My concern was that if we were getting patients referred from other practices for GRRS, this would have an adverse effect on my business."* (Non-participating optometrist (GRRS)

Non-participating optometrists believed that participating in the scheme would have required their practice to adapt significantly in terms of its booking system, testing times and purchase of new

equipment. A minority expressed a reluctance to undergo additional training. However, despite their personal reservations, most optometrists who chose not to participate had positive views of the schemes.

3.3. Medical views

Ophthalmologists participated for reasons that were more patient-centred compared to optometrists; reduction of unnecessary referrals, relieving patient anxiety, improving patient care and reductions in patient waiting times.

All participating ophthalmologists acknowledged that both ESS had the potential to reduce the number of referrals to the HES, as well as HES waiting lists;

> *"This helps us manage the increased suspect glaucoma workload referred to the MREH since the introduction of NICE guidelines for managing glaucoma[1]"* (GRRS ophthalmologist).

Additionally, it was felt ESS would result in a higher proportion of patients receiving appropriate treatment.

Ophthalmologists also reported that they participated in ESS to promote better use of healthcare resources and to help optometrists develop their clinical skills;

> *"…this is something most [optometrists] have been doing for years anyway and it is a way of facilitating it…"* (MECS ophthalmologist)

> *"[I participated to] support the professional development of other healthcare professionals and better use of healthcare resources"* (GRRS ophthalmologist)

> *"…it is important that ophthalmic practitioners develop the necessary skills to see many of the straightforward problems in primary care" (*MECS ophthalmologist).

Training and accreditation for both schemes was deemed appropriate by all participating ophthalmologists. It was, however, acknowledged by MECS ophthalmologists that optometrists should have a point of contact should problems arise and highlighted the importance of clinical experience;

[1] The introduction of the NICE glaucoma guideline in 2009 (http://www.nice.org.uk/guidance/CG85) had significant impact on optometrist' referral behaviour with a reported doubling of referrals post-NICE which was not associated with an increase in the absolute numbers of positive diagnoses.

"…as long as there is someone [the optometrists] can contact where problems arise or things are not clear". (MECS ophthalmologist)

"The trouble is that it is probably more 'spot diagnosis' stuff and the huge importance of good history taking and symptoms identification is often secondary. Only experience and sitting in on clinics helps develop this […]". (MECS ophthalmologist)

Ongoing clinical training was supported by GRRS and MECS ophthalmologists;

"Optometrists should have a couple of sessions per year in the clinic with consultant team or (glaucoma specialist) optometrists to make sure their skills are still up to date and improving" (GRRS ophthalmologist)

"*[…] the plan is to have much more ongoing training with optometrists attending casualty sessions on a regular basis"* (MECS ophthalmologist)

However, GRRS ophthalmologists whilst acknowledging the commitment required by optometrists to become trained and accredited, also expressed the view that the HES should be compensated for providing training;

"[The] hospital would need to be recompensed for the time required to deliver quality training and the community optometrists would need some incentive to be able to leave their practices for the required time for training" (GRRS ophthalmologist).

Similarly, for the MECS, time medical commitments to the scheme and/or the training were also an issue;

"If I did not have a paid session of my time dedicated to MECS it would be very difficult to give the scheme the appropriate time" (MECS ophthalmologist).

GPs using the MECS reported that they typically saw 2-3 patients with eye problems per week. Almost all GPs thought the MECS would improve care and the 'journey' for patients with eye problems, as well as reduce waiting times. GPs believed the scheme offers patients more choice and provides a more cost-effective and accessible service for minor eye conditions. Some GPs expressed the view that the MECS will make their job easier and potentially reduce their workload. Furthermore, by using optometrists' skills the scheme would help with those clinical presentations where GPs would normally have some difficulty in making a diagnosis e.g. red eyes, flashes and floaters.

4. DISCUSSION

The current study has focussed on two locally commissioned ESS: a referral refinement scheme for glaucoma and a triage scheme for minor eye conditions. Although previous studies have evaluated similar schemes in terms of their clinical outcomes and cost effectiveness,[4-8] these studies did not investigate the views and attitudes of optometrists and other key stakeholders regarding the initial development and overall operation of the schemes.

4.1. Reasons for optometrists participation in ESS

The relevant Local Optical Committees worked closely with commissioners to develop and implement the schemes. All local optometrists were given the opportunity to participate; however participants needed to commit to compulsory training and were required to meet the terms of the service specification. The reason most commonly given by optometrists for participating in ESS was to further their professional development. Under the terms of the standard GOS contract in England, optometrists are not obliged to refine their own referrals and receive no additional remuneration for performing discretionary supplementary tests or procedures. Involvement in ESS allows optometrists to make better use of their clinical skills and provides a more challenging case-mix. Similarly, specialist optometrists working in hospital glaucoma clinics expressed the opinion that the GRRS would retain lower risk cases in the community and thereby provide more time for them to see more complex cases. Approximately 4% of the optometric profession are employed in the HES and hospital optometrists are becoming increasingly involved in extended roles; particularly in glaucoma, medical retina and eye casualty~~.~~ [. [10]

Although optometrists expressed views regarding potential benefits to patients from a service redesign of primary eye care, it was also apparent that optometrists had considered the business implications of participation in ESS. Community optometry is a market-driven system that works in partnership with the NHS. The GOS fee represents a declining proportion of practice revenue for optometrists and there has been an increasing cross-subsidisation of sight test costs by sales of optical appliances~~.~~ [. [11] In many cases, optometrists viewed ESS as a means of expanding or developing their business. In the current market-driven system, optometrists must compete with each other, as members of the public are free to consult any eye care provider.

Improved communication and relationship building with other healthcare professionals involved in the patient care pathway (e.g. GPs and ophthalmologists) was cited as an additional benefit of participation. Optometrists participating in the MECS reported that prior to the development of the scheme they rarely received feedback on their referrals, thereby denying a much needed learning opportunity. Several studies have previously highlighted the poor communication between community optometrists and the medical profession, particularly lack of feedback on referral[12,13] By contrast, the nature of the glaucoma service in Manchester meant that many patients with suspect glaucoma were seen by specialist hospital optometrists and the GRRS optometrists valued the frequency and quality of the feedback on their referrals received from their hospital colleagues.

Although all community optometrists were given the opportunity to participate in ESS, only half of eligible practitioners came forward. The principal reasons for non-participation were the perceived negative impact on their business, insufficient capacity to meet the terms of the service specification or not wishing to purchase new equipment. In some cases, there was reluctance to undertake the necessary training. Despite these reservations non-participants generally expressed a positive attitude towards ESS. A recent study of the organisation of eye care services in the West Midlands[14] found that only a third of optometrists responding to a survey were involved in any extended role or enhanced service. The reported barriers included lack of time, inadequate remuneration and need for training.

4.2. Views on training and accreditation

Compulsory training was required for both schemes. However, the mode of educational delivery varied; for the MECS, participants had to complete an online training module and were required to attend ophthalmology clinical sessions at the hospital, whereas for GRRS optometrists completed a didactic training course and attended glaucoma clinics. The need for compulsory training was broadly supported by optometrists and the content of training was deemed to be appropriate. For the MECS, although the distance learning module was generally well received, some expressed the view that they would have liked more practical sessions and an opportunity to ask questions of trainers. Systematic reviews[reviews [15,16, 16] of randomised controlled trials of educational interventions have found that the effectiveness of e-learning is equivalent to traditional delivery methods for the training of health care professionals. This finding is relevant to training optometrists for ESS. Distance learning has the advantage that it can be accessed at a time convenient to trainees, particularly important for busy practitioners, who would otherwise need to leave their practices to

attend didactic training sessions. However, distance learning is not appropriate for teaching practical clinical skills which would still require attendance at a training course.

4.3. Medical views regarding ESS

The ophthalmologists involved in the MECS and GRRS expressed very positive views regarding ESS. It was widely acknowledged that the new care pathways would reduce unnecessary referrals and shorten patient waiting times. Ophthalmologists were supportive of the professional development of optometrists, although there was recognition of the need for ongoing training to maintain their competency. Particular value was placed on attending further outpatient clinics or eye casualty sessions. The strong inter-professional trust apparent within both schemes was largely due to the close involvement of the ophthalmologists in the development and organisation of the schemes and the delivery of training. The importance of relationship building in reducing inter-professional tensions has been previously reported ~~[~~. [17]

A survey of the views of GPs involved in the MECS, demonstrated that they were also very supportive of the scheme. It was generally felt that the MECS would benefit their patients by providing an 'expert' local opinion and could potentially reduce the number of HES referrals.

4.4. Strengths and limitations of this study

~~One~~ A strength of the current study is the representative nature of the two schemes. Schemes that refine referrals for glaucoma or triage acute ophthalmic presentations in the community are amongst the most widely commissioned ESS. The sampling technique used in the present study attempted to capture a maximum variation of opinions by inviting all participants in the schemes to take part in the qualitative surveys, and there was a good response rate from all stakeholders.

There are some study limitations ~~of the study~~. Both schemes are exemplar in terms of the level of integration between primary and secondary care. All ophthalmologists surveyed were actively involved in development of the schemes and in training and accreditation of optometrists. Furthermore, ophthalmologists involved in the MECS were given protected time to support the scheme. Therefore, the positive opinions expressed may be a function of their familiarity with the scheme, and possibly with the individual participants, rather than be representative of all UK ophthalmologists. The poor response rate for optometrists who chose not to participate and the lack of the views of non-participating ophthalmologists may also have been a source of bias.

4.5. Conclusions

Optometrists represent a skilled ~~primary care~~ workforce that with further training can provide effective referral refinement and ocular disease management in the community through the provision of ESS. The present study identified that the primary reason for participation in these schemes is the desire to develop professional skills and knowledge. However, as 'for-profit' providers of healthcare schemes have to provide sufficient financial incentives so as not to compromise business profitability. Optometrists recognised the need for additional training and viewed this favourably whether it was delivered online or face-to-face. ESS were well received by GPs and by participating ophthalmologists working in secondary care. Both professional groups recognised the advantages of integrating community optometry into eye care pathways to provide an appropriate delivery of care in a convenient ~~High Street~~community setting. Patients are also important stakeholders and their views of these ESS are currently under investigation and will form the basis of a subsequent publication.

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Provenance and peer review: not commissioned, externally peer reviewed.

Data sharing statement: The full dataset is available from the author at Evgenia.Konstantakopoulou.1@city.ac.uk

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TOPIC GUIDES FOR QUALITATIVE QUESTIONNAIRES AND INTERVIEWS

Optometrists and Ophthalmologists participating in the Minor Eye Conditions Scheme (MECS): online questionnaire

1. Why have you agreed to participate in the MECS scheme?
2. How accessible have you found the scheme to participate in?
3. Are there any factors that have made it difficult for you to participate?
4. If you have any additional views and comments on the questions in this section please add them below. Please note the question number that your comments refer to.
5. *How will the scheme affect the organisation of your practice/clinic?*
6. How does your practice/clinic intend to cope with the patients referred to your practice via MECS?
7. Will you need to employ extra staff to cover your current service demand while meeting the demands of MECS? Please give details.
8. If you have any additional views and comments on the questions in this section please add them below.
9. Have you had to make any changes to the infrastructure at your practice/clinic to accommodate the MECS scheme? Please give details.
10. What, if any, clinical equipment have you or your practice/clinic had to purchase to participate in MECS?
11. Do you feel your facilities and/or equipment have improved by your practice/clinic taking part in the scheme? If so how?
12. If you have any additional views and comments on the questions in this section please add them below. Please note the question number that your comments refer to.
13. How appropriate do you feel the content of LOCSU /WOPEC distance learning was for training for MECS?
14. What are your views on the distance learning mode of delivery?
15. How much time did you spend in hospital clinics training specifically for MECS?
16. In terms of location, timing and cost how accessible was the training?
17. Have you had any previous training in minor eye conditions? If so what?
18. What new skills did the clinical training provide?

19. How do you see these skills helping you to meet the requirements of the MECS patients?
20. What other training would you like to receive to help you best serve the MECS patients?
21. Do you feel the need for ongoing training while the scheme is running? If so what?
22. Has the training had any beneficial or negative effects on your day-to-day working practice? Please give details.
23. If you have any additional views and comments on the questions in this section please add them below. Please note the question number that your comments refer to.
24. What feedback do you receive from GP's and Ophthalmologists on your referrals?
25. What is the frequency and quality of this communication?
26. What information would you like to receive on your referrals from GP's and Ophthalmologists?
27. Do you anticipate MECS improving this communication? If so how?
28. If you have any additional views and comments on the questions in this section please add them below. Please note the question number that your comments refer to.

Questionnaire for GPs participating in the MECS: paper questionnaire

1. In a typical month, approximately how many patients present to you with eye related problems?
2. How many patients have you referred via MECS so far?
3. Based on your experiences and/or knowledge of the scheme, how, if at all, do you feel that MECS could improve the existing care pathway for patients with eye problems?
4. Why have you agreed to be part of the MECS scheme?
5. If you have any additional views or comments regarding MECS please add them below.

Non-participating optometrists (MECS): semi-structured telephone interviews

1. Are you aware of MECS?
2. Would you have considered taking part if you had been aware?
3. Did you choose not to be part of MECS?
4. Why not?
5. Would you consider taking part in MECS in the future?

6. Why would it be better for you to take part in MECS in the future compared to the initial phase?

Optometrists participating in the Glaucoma Referral Refinement Scheme (GRRS): online questionnaire

1. Did you participate in the original Manchester GRRS?
2. Why have you agreed to participate in the new Manchester GRR scheme?
3. How accessible have you found the scheme to participate in? (Please comment on 'original' versus 'new' if appropriate)
4. Are there any factors that have made it difficult for you to participate in the new scheme?
5. How will the scheme affect the organisation of your practice?
6. How does your practice intend to cope with the patients referred to you via GRSS?
7. Will you need to employ extra staff to cover your current service demand while meeting the demands of GRRS? Please give details.
8. Have you had to make any changes to the infrastructure at your practice to accommodate GRRS? Please give details.
9. What, if any, clinical equipment have you or your practice had to purchase to participate in GRRS?
10. Was the arrangement for the purchase of the required pachymeter put in place through the former PCT and is the associated reimbursement of costs to you appropriate?
11. Do you feel your facilities and/or equipment have improved by your practice taking part in the scheme? If so how?
12. How appropriate do you feel the content of the lecture based learning was for training for the new GRRS?
13. What are your views on the lecture based learning mode of delivery?
14. How much time did you spend in hospital clinics training specifically for GRRS?
15. In terms of location, timing and cost how accessible was the hospital training?
16. Have you had any previous training in glaucoma? If so what?
17. What new skills did the training provide you?
18. How do you see these skills helping you to meet the requirements of the GRRS patients?
19. What other training would you like to receive to help you best serve the GRRS patients?
20. Do you feel the need for ongoing training while the scheme is running? If so what?
21. Has the training had any beneficial or negative effects on your day-to-day working practice? Please give details.

22. What feedback do you receive from GP's, hospital glaucoma specialist Optometrists and Ophthalmologists on your referrals?

23. What is the frequency and quality of this communication?

24. What information would you like to receive on your referrals from GP's, hospital glaucoma specialist Optometrists and Ophthalmologists?

25. Do you anticipate GRRS improving this communication? If so how?

Glaucoma specialist optometrists participating in the hospital glaucoma service: online questionnaire

1. How do you expect that the new GRRS will impact on ophthalmology and/or glaucoma services in particular at MREH?

2. In what way do you think the new GRRS will make an impact in comparison to the 'original' GRRS?

3. How appropriate do you feel the content of the lecture based learning was for training optometrists for GRRS?

4. What is your opinion of the clinic-based training for the new GRRS?

5. What other training would you like community optometrists to receive to help them best serve the GRRS patients?

6. Do you feel the need for ongoing training of optometrists while the scheme is running? If so what?

7. What feedback do you currently give to GPs on their referrals?

8. What feedback do you currently give to community optometrists on their referrals?

9. What are the barriers to you giving feedback to GPs and optometrists on their referrals?

10. Do you anticipate the new GRRS improving communication between Glaucoma Specialist Optometrists and community Optometrists? If so how?

11. Do you anticipate GRRS improving communication between Glaucoma Specialist Optometrists and GPs? If so how?

Ophthalmologists participating in the GRRS

1. Why have you agreed to support the GRRS?

2. How easy has it been to promote the establishment of the GRRS? Are there any factors that have made it difficult for you to support the scheme?

3. How do you expect that the new GRRS will impact on ophthalmology and/or glaucoma services in particular at MREH?

4. In what way do you think the new GRRS will make an impact in comparison to the 'original' GRRS?

5. How appropriate do you feel the content of the lecture based learning was for training optometrists for GRRS?
6. What are your views on the lecture based learning mode of delivery?
7. What is your opinion of the clinic-based training for the new GRRS?
8. What other training would you like community optometrists to receive to help them best serve the GRRS patients?
9. Do you feel the need for ongoing training of optometrists while the scheme is running? If so what?
10. What feedback do you currently give to GPs on their referrals?
11. What feedback do you currently give to community optometrists on their referrals?
12. What are the barriers to you giving feedback to GPs and optometrists on their referrals?
13. Do you anticipate the new GRRS improving communication between ophthalmologists and community optometrists? If so how?
14. Do you anticipate GRRS improving communication between ophthalmologists and GPs? If so how?

Non-participating Optometrists (GRRS): online survey

To what extent do you agree with the following statements (please tick):				
	Strongly disagree	**Disagree to some extent**	**Agree to some extent**	**Strongly agree**
1. Participation in the GRR scheme would have helped me improve my professional skills.				
2. Participation in the GRR scheme could have benefited my practice financially.				
3. Participation in the GRR scheme would have improved patient services for those patients in the scheme.				
4. Participation in the GRR scheme would have improved my links with other eye care professionals, e.g. secondary eye care, HES etc				

5. Had I participated in the GRR scheme I would have had to adapt the organisation of my practice.				
6. Had I participated in the GRR scheme I would have had to keep some free appointments for GRR patients.				
7. Had I participated in the GRR scheme I would have had to employ an extra Optometrist or extend testing times.				
8. Had I participated in the GRR scheme I would have had to purchase new equipment.				
9. I was prepared to do the extra training involved.				

10. Have you had any additional training after your registration as an optometrist? If so what?

11. In what year did you obtain your Optometry degree qualification?

12. Are you currently participating in, or have you participated in the past in any other enhanced scheme(s). If yes, please name these schemes and briefly state your overall view of this/these schemes?

13. Were there any specific reasons that led you to decide not to participate in the GRR scheme?

14. What would have made the GRR scheme more appealing to you? Please feel free to share any ideas you might have.

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Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups

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Domain 1: Research team and reflexivity
Personal Characteristics

1. Interviewer/facilitator
Which author/s conducted the interview or focus group?
The questionnaires were designed by the research team (Professor John Lawrenson, Dr Robert Harper, Professor David Edgar and Dr Evgenia Konstantakopoulou) with input from a stakeholder advisory group. Telephone interviews (where applicable) were conducted by Dr Evgenia Konstantakopoulou.

2. Credentials
What were the researcher's credentials? E.g. PhD, MD
See section 2.1 of the paper.

3. Occupation
What was their occupation at the time of the study?
John Lawrenson (JL), Professor of Optometry at City University London and a community practicing Optometrist.
Robert Harper (RH), Consultant Optometrist at Manchester Royal Eye Hospital and an Honorary Senior Lecturer at the University of Manchester.
David Edgar (DE), Professor of Optometry at City University London.
Evgenia Konstantakopoulou (EK), post-doctoral research optometrist at City University London and a research Optometrist at Moorfields Eye Hospital.

4. Gender
Was the researcher male or female?
JL, RH, DE are male, EK is female.

5. Experience and training
What experience or training did the researcher have?
All researchers have extensive experience in health services research.

Relationship with participants
6. Relationship established
Was a relationship established prior to study commencement?
Although some of the optometrist and ophthalmologist participants were known to the research team, in the majority of cases the surveys were conducted online.

7**. Participant knowledge of the interviewer**
What did the participants know about the researcher? e.g. personal goals, reasons for doing the research
Participants were aware that members of the research team were working in academia, the HES and/or primary care settings. They were also aware that the researchers had been commissioned to evaluate the respective enhanced schemes.

8**. Interviewer characteristics. What characteristics were reported about the interviewer/facilitator? e.g. bias, assumptions, reasons and interests in the research topic**
See above.

Domain 2: study design
Theoretical framework

9. Methodological orientation and Theory
What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis
A grounded theory approach underpinned this study. For more details see section 2.3 of the paper.

Participant selection
10. Sampling
How were participants selected? e.g. purposive, convenience, consecutive, snowball
See section 2.3.

11. Method of approach
How were participants approached? e.g. face-to-face, telephone, mail, email
A combination of approaches was used for this study, to maximise response rates (see section 2.3).

12. Sample size
How many participants were in the study?
There was a total of 74 participants (see Table 1).

13. Non-participation
How many people refused to participate or dropped out? Reasons?
There was a response rate of 78.7%. We are not aware of reasons for non-participation.

Setting
14. Setting of data collection
Where was the data collected? e.g. home, clinic, workplace
The majority of surveys were completed online. For the semi-structured telephone interviews, optometrists were contacted through their practice. The GP questionnaire was completed during a regional educational event.

15. Presence of non-participants
Was anyone else present besides the participants and researchers?
N/A

16. Description of sample
What are the important characteristics of the sample? e.g. demographic data, date
See Table 1 for a description of the participants.

Data collection

17. Interview guide

Were questions, prompts, guides provided by the authors? Was it pilot tested?

The questionnaires used are provided as supplementary files.

18. Repeat interviews

Were repeat interviews carried out? If yes, how many?

No repeat interviews were carried out.

19. Audio/visual recording

Did the research use audio or visual recording to collect the data?

No recording took place.

20. Field notes

Were field notes made during and/or after the interview or focus group?

Written notes were taken by EK during the telephone interviews.

21. Duration

What was the duration of the interviews or focus group?

Duration of the telephone interviews was in the region of 10 minutes. Online questionnaires took approximately 15 minutes to complete.

22. Data saturation

Was data saturation discussed?

N/A

23. Transcripts returned

Were transcripts returned to participants for comment and/or correction?

No

Domain 3: analysis and findings

Data analysis

24. Number of data coders

How many data coders coded the data?

One researcher coded the data (EK) and the codings were checked by JL, DE and RH.

25. Description of the coding tree

Did authors provide a description of the coding tree?

N/A

26. Derivation of themes

Were themes identified in advance or derived from the data?

Themes were derived from the data.

27. Software

What software, if applicable, was used to manage the data?

Data was coded within Microsoft Excel.

28. Participant checking
Did participants provide feedback on the findings?
N/A

Reporting

29. Quotations presented
Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. participant number
Coded participant quotations are presented throughout the paper.

30. Data and findings consistent
Was there consistency between the data presented and the findings?
Yes

31. Clarity of major themes
Were major themes clearly presented in the findings?
Yes, see section 3.

32. Clarity of minor themes
Is there a description of diverse cases or discussion of minor themes?
Yes, e.g. section 3.1.3.