Developing the Intervention and Outcome Components of a Proposed Randomised Controlled trial (RCT) of a National Screening Programme for Open Angle Glaucoma (OAG)

Medical Research Council funded trial platform study (G0701759)
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November 2008-2010

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1. Importance

Glaucoma is the second to macular degeneration as the most common cause of blindness in the UK, and worldwide is the leading cause of irreversible blindness. OAG is the most common form of glaucoma.[1] If OAG is identified early, treatment is effective at reducing progressive disease.[2] The current UK practice of opportunistic case finding, however, misses a majority of cases. Late detection is a major risk factor for glaucoma blindness.[3] The two main reasons for late detection are: 1) poor uptake of community eye care services and 2) inaccurate diagnosis.

Addressing this issue is timely as population screening for OAG is currently under consideration by the UK National Screening Committee (UKNSC). Before the introduction of a screening programme several criteria need to be met concerning the condition, the test and the screening programme.[4] Specifically, the UKNSC recommends that direct evidence is required from high quality randomised controlled trials (RCTs) that a screening programme is effective in reducing mortality or morbidity.

The available literature on the clinical and cost-effectiveness of screening for OAG was summarised in a recent health technology assessment (HTA) undertaken by our group.[5] No RCTs of screening were identified.[6] We developed an economic model using parameter estimates derived from a series of systematic reviews; this suggested that screening of 'high risk' groups might be cost-effective, and concluded that a formal targeted RCT was needed. Groups identified as having sufficiently high risk of OAG were those with a family history of glaucoma in a first degree relative or those of black ethnicity. People with myopia and/or diabetes were also at increased risk but, based on the economic modelling, the prevalence might not be sufficient to justify a targeted screening programme for them, as they are already examined either through the National Diabetic Retinopathy screening programme, or through regular visits to optometrists. Considerable uncertainty surrounded the model parameter estimates due to limited primary data and further research is required to improve on the model estimates to inform the decisions about best practice for screening. A HTA from Finland concluded that in a Finnish context an organised screening programme for glaucoma could be a cost-effective strategy, although the model found, in contrast to our findings, that screening was more likely to be cost-effective in older age groups.[7] These differences are most likely explained by differences in model structure and cost parameters.

Prompted by these findings and the public health importance of OAG, the international ophthalmic community (at specialist society meetings) have called for a trial of screening for OAG versus current practice.

However, we showed that prior to the conduct of any large definitive screening trial, more robust evidence is required to address a number of crucial uncertainties.[5] These include: selection of optimal screening approaches (including the choice of screening test); the organisational context and which healthcare professionals would administer the test; how best to identify individuals in the 'at risk' groups e.g. having a family history is the most significant risk factor in the UK, but the most effective and acceptable methods for identifying the index case in the population and then identifying relatives is uncertain; and how attendance for screening could be maximised. Targeted screening involves issues of ethics, equity, and acceptability to all stakeholders. Furthermore, recognition of potential harms and benefits of screening have not been explored in a glaucoma context.

Glaucoma is a chronic disease with relatively slow progression requiring long-term monitoring to determine effectiveness in terms of reduced incidence of visual impairment. In cancer screening RCTs the primary outcome is usually mortality and ascertained from routine data (deaths). An equivalent measure for glaucoma would use routinely collected data on blind and partial sighted registration, but such data are currently incomplete and not sufficiently detailed by cause[8] to be used a trial outcome measure, although efforts are underway to improve this. Therefore, an appropriate outcome assessment needs to be determined.

Any outcome assessment should include factors important to the patient. The risks of moderate visual loss (the ability to continue to drive) and long-term blindness are reported as the most important factors to patients.[9] A systematic review of patient reported measures applicable to glaucoma (Burr, unpublished results) found that of the existing instruments (generic, vision and glaucoma specific) no single instrument appears to have adequate sensitivity, validity, or responsiveness for use in its present form as a patient reported outcome (PRO) measure in a glaucoma screening trial. Our group have developed a short glaucoma-specific profile instrument, which provides a utility score for glaucoma.[10] However, the optimal PRO measure(s) for the definitive trial needs to comprise items relevant to both disability (e.g. impaired vision; loss of driving licence on account of poor vision, and loss of independence) and the screening process (capturing benefits such as early detection and treatment and adverse effects such as heightened anxiety).

The length of the eventual RCT can be informed by the economic model, based on the most efficient screening interval, and the sample size for the trial will be determined by the specific group of patients proposed to be screened. The primary outcome will be multidimensional (clinical, patient reported and economic). Data on newly detected glaucoma by severity of visual field loss, as the primary clinical outcome, are available from clinical records (usually hospital based), but whether these are adequately accessible for outcome assessment in the RCT is uncertain and exploratory analysis is required. A sensitive PRO measure could conceivably capture early patient reported effects, and as such be an appropriate outcome measure.

The aim of this IES platform proposal is to develop the components of the optimal screening intervention and outcome assessment to inform the design of the definitive screening trial. In addition to providing direct guidance for a definitive RCT, the proposed research is valuable at a number of levels as it will inform the broader debate about glaucoma screening; provide insights into the configuration of potential future screening programmes; and enhance the relevance to patient and consumer needs of future research on screening.

2. Scientific Potential

2.1 People and track record

The team brings together all the key disciplines required for successful delivery of this proposed IES platform: clinical; ethics; consumer perspective; behaviour change; intervention development; economic analysis; trial design; statistical analysis and psychometrics. Applicants (**Burr, Azuara-Blanco, Garway-Heath, Hernandez, Ramsay, Vale, Viswanathan, Wormald**) and collaborators (**Wright, McPherson**) have worked together in recent years on glaucoma research including systematic reviews, RCTs, diagnostic studies, economic modelling and outcome development. **Burr** has published a HTA project on the clinical and cost-effectiveness of screening for OAG, and developed a preference based measure of health outcome for glaucoma. The applicants include experienced trialists well versed in the design and development of complex trials (**Campbell, Ramsay, Vale**); a chartered health psychologist (**Francis**) specialising in theory-based process evaluations of complex interventions and

intervention components relating to behaviour change, and an applied anthropologist (**Greene**) with theoretical expertise in the social and ethical issues around service users' participation in health services, particularly those with chronic illness. **Crabb**, a reader in statistics and measurement in vision, has a particular expertise in methods for detecting visual field progression in glaucoma; **Wormald,** a consultant ophthalmologist with a special interest in glaucoma and co-ordinating editor of the Cochrane Eyes and Vision group and **Professor Roger Hitchings** is a professor of ophthalmology at Moorfields Eye Hospital and recent president of the European Glaucoma Society (EGS).

An Advisory Panel will be convened prior to the start of the study including the co-applicants and the named collaborators. These are: **Tuulonen**, a Professor of Ophthalmology in Finland, author of the Finnish Evidence Based Glaucoma guidelines, the Finnish HTA on glaucoma screening and a lead in the EGS health economics and glaucoma detection initiatives; **Garway-Heath** and **Viswanathan** are internationally recognised as experts in glaucoma related research and will collaborate in the identification of people with glaucoma staged according to visual field loss for validating the PRO measure as well as being members of the advisory panel. Wright, the Chief Executive of the UK-based patient organisation the International Glaucoma Association (IGA); **McPherson**, a community optometrist with experience in glaucoma care, and member of Optometry Scotland committee; **Bativala** represents the Birmingham Research into Glaucoma and Ethnicity (ReGAE) group. A representative from general practice and a consumer will be invited representing a glaucoma patient and general user perspective. The advisory panel will meet at the beginning and middle of the project. **Johnston** will be a consultant advisor to the project contributing senior level experience as a clinical and health psychologist with respect to techniques for changing screening behaviours, and theorising and measuring patient reported outcomes within the framework of disability.

2.2 Environment

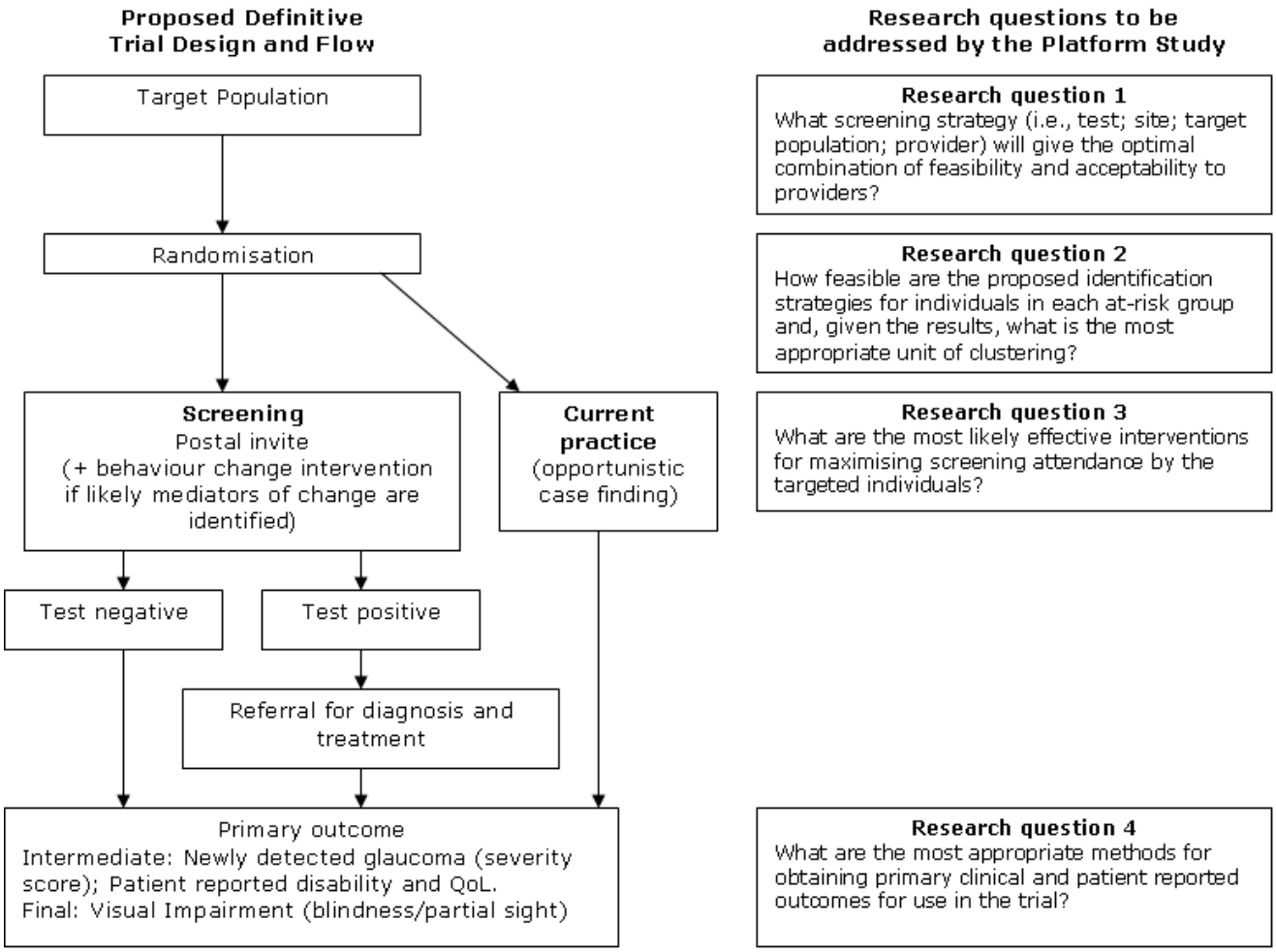
The project will be led from the Health Services Research Unit (HSRU), and the Health Economics Research Unit (HERU), University of Aberdeen. HSRU and HERU are part of the Institute of Applied Health Sciences rated 5 in RAE-2001. HSRU provides a critical mass of researchers in a range of disciplines across two programmes of work that will inform this research. Specifically HSRU has internationally recognised expertise in the design, conduct and analysis, and reporting of multi-centre trials in its Health Care Assessment programme, and anthropology, health psychology, sociology, and service organisation in its Delivery of Care programme, where the emphasis is on research that has potential to inform improvements in the way health care is delivered. HERU has a large and successful economic evaluation department. Both Units have long term infrastructure funding in place, making the ideal environment for undertaking any definitive screening trial with long term follow up.

2.3 Research plans

a) Context

The definitive trial this platform study will inform is a large-scale RCT of a screening intervention to reduce glaucoma blindness. This is currently anticipated to be a two armed cluster RCT, comparing: 1) targeted glaucoma testing (using standard invitation methods ± enhanced invitation [based on behavioural theory to increase uptake]); versus 2) opportunistic case finding (current practice). The proposed definitive trial flow is outlined in figure 1, highlighting the areas of uncertainty and research questions that need to be answered before a screening trial could commence. This proposal addresses each of these questions.

Figure 1



b) Research proposed as the platform study

The proposed research will consist of four stages addressing each research question (see section c). We will adopt a multi-method, multidisciplinary approach involving social anthropology, health psychology, health economics, statistics and clinical epidemiology to address these questions. The findings of each stage will be used to refine our existing economic model that in turn will inform the final trial design.

c) Research methodology/analysis proposed

Research Question Q1: What screening strategy (i.e., test; site; target population; provider) will give the optimal combination of feasibility and acceptability to providers? (Months 1-12)

Q1a) Aim: To determine the optimal screening strategy (test[s], site, target population and provider). Screening tests for glaucoma include measures of structure (looking at the degree of optic nerve damage by imaging) and function (visual field loss) and intraocular pressure (IOP). There are many screening tests and combinations of tests that could be used in a screening programme; these were identified and evaluated in our recent report.[5] Some performed poorly, but those remaining all performed reasonably well for diagnostic accuracy. No single test or combination of tests was clearly superior. Selection of an optimal test or test combination therefore rests on the feasibility and acceptability to both users and service providers. A matrix of test accuracy, portability, and proportion of users able to undertake the test, 'at risk' population and options for screening sites will be developed based on our previous report.[5] Using this matrix, potential tests, the target population and testing arrangements will be short listed by consensus with expert clinicians and users at the first Project Advisory meeting.

Q1b) Aim: To determine the feasibility and acceptability of these screening strategies in a service context. Although potential screening strategies can be identified, it is important to assess health professionals' views about whether these could be implemented in practice before they are formally accepted as a screening intervention for inclusion in the definitive trial. We will assess

the barriers and facilitators to the introduction of the short listed test strategies through a formal exploration of the context in which such screening techniques could be applied. We will use established methods in social anthropology to tap multiple perspectives to gain an understanding of the issues that impact on the design and implementation of eye care services from the perspectives of key stakeholders (health professionals and policy makers).

We will collaborate with VISION 2020 UK (an umbrella organisation which facilitates greater collaboration and co-operation between organisations within the UK which focus on visual impairment), the relevant Royal Colleges, representatives from the UKNSC and the National Diabetic Retinopathy Screening Programme to identify, and facilitate recruitment, of key personnel from primary and secondary care, and policy makers across the UK. Interviewees will be purposively sampled from this sampling frame to examine variations and perceptions of current testing practices and the potential impact of screening on clinical and process of care outcomes, interdisciplinary working and resource needs. Health care professionals will include GPs, nurse practitioners, and optometrists (n=10+10+10) and secondary care professionals [ophthalmologists] (n=10). Policy makers will include chief executives of primary and secondary care trusts, Directors of Public Health and a representative from VISION2020 and a representative from the UKNSC (n= 5). Semi-structured interview protocols will be designed to address the key research questions and qualitative issues summarised in Boxes 1 & 2, whilst maintaining sufficient flexibility to accommodate respondents' novel ideas. The protocols will be informed by the clinical expertise on the Project Advisory Panel, and policy document review e.g. current planned reconfigurations of eye care services in the UK.[11-13] Interviews with policy makers will address historical, practical and strategic issues as well as reflections on potential for changes in practice. Interviews with clinical staff will focus more closely on perceptions of screening and implications for practice. Interviews will be conducted mainly by telephone and will last no more than an hour.

BOX 1. Current context of glaucoma detection

- ***History & context*** To determine the current strategy of testing; how has this evolved? Who are the key players? What are the lines of responsibility/accountability?
- ***Organisational structure*** To determine what screening / identification strategies (i.e. test; site; provider; population) will be the most feasible and acceptable to providers in the UK?
- ***Managing change:*** What changes to ways of working are anticipated? What are the expected drivers and barriers to change / implementation?
- **Multidisciplinary networking:** How successful is interdisciplinary working across boundaries in the screening context? Perceived obstacles?
- ***Measuring quality and benefits:*** What are the expected benefits for health professionals and policy makers of a screening intervention (i.e. quality assurance and audit)?

BOX 2. Perspectives on glaucoma screening

- What is understood by OAG screening, i.e., its importance, training required and the service provided?
- What are the issues relating to the ethics and equity of targeting subgroups? Is it acceptable to consider selective screening? Which groups are perceived to be most at risk? How should they be approached?
- What are perceived to have been the major barriers and facilitators to glaucoma detection, e.g., how to test; motivate user attendance; service issues around test positives?
- What role do the different stakeholders play in supporting screening implementation?
- What are the actual and potential benefits and drawbacks of screening as perceived by staff in these practices and specialities?

Anthropological field notes will be taken during and immediately after each interview, interviews will be recorded to enable field note validation (both internal and external validation by getting 20% of interview summaries independently analysed). Two forms of analysis will be presented: holistic anthropological summaries and qualitative content analysis of key themes and issues by stakeholder type. It is likely that the analysis of interviews with health professionals and policy makers will reveal matches and mismatches in perspectives between these different stakeholders. These matches and mismatches will be explored in focus group discussions with optometrists

(max n=6 in group) and ophthalmologists (max n=6 in group) in which similar topics are covered and areas of controversy and dissent within the group specifically explored.[14] The outputs of these discussions will indicate the two most appropriate and feasible configurations of the target population and screening intervention to inform the investigation of research questions 2&3 and clarify any issues in implementation that may need extra care.

Research Question* Q2: *How feasible are the proposed identification strategies for individuals in each at-risk group, and given the results what is the most appropriate unit of clustering? (Months 13-24)

Aim: To determine the target group(s) for screening, and inform the unit of clustering for the definitive trial. Having identified two possible testing strategies, we will explore the feasibility of identifying the population on whom screening is felt to be appropriate and acceptable. The feasibility of identifying the target population from routine data sources will be explored, tested and reported. Identification methods are likely to differ for the different risk groups: e.g. family history (relatives of patients with glaucoma diagnosis – primary care/secondary care records); black ethnicity (community groups); myopia (optometry records); diabetes (diabetes registers). Issues such as accessibility, coverage and accuracy will be recorded. We will also test the feasibility of identifying individuals selected on age alone through primary care databases or using a brief questionnaire asking people to self-identify if they are in one of the specified risk groups. We will work with other relevant groups, including the National Diabetic Retinopathy Screening Programme, other research groups developing strategies to improve case detection for siblings of people with diagnosed OAG,[15-17] the Centre for Research in Ethnic Relations (CRER) based at the University of Warwick and the ReGAE group who are exploring attitudes and beliefs, in an Afro-Caribbean population, related to eye disease[18-20] to build on their collective experience on the feasibility of accessing 'high-risk' groups.

The outcome of this phase of the research will be judged in terms of the feasibility (is it possible) and time (cost) to identify the target population. This will be compared with cost of recruiting the general population, i.e. based on age alone. These data will then be incorporated into the economic model, along with information from Q3b below, to determine whether inviting high-risk individuals remains a viable intervention.

Research question Q3: What are the most likely effective interventions for maximising attendance by the target individuals? (Months 9-24)

Q3a) Aim: To identify relevant beliefs and uptake intentions, to inform a theory based questionnaire. Semi-structured interviews will be conducted with people in the defined target population to elicit their views about attending for a screening test. Description of the screening test and the configuration of the screening test and the target population will be decided on the basis of data from Q1. Interview protocols will be theory-based and will employ the methods used by the research team (MJ, MC, JF) in a current MRC-funded project on acceptability of genetic testing for Paget's disease.[21] Participants will be identified from primary care records, patient and community organisations including the International Glaucoma Association [IGA], the Royal National Institute for Blind people [RNIB], the ReGAE group and volunteers recruited by notices in optometry and glaucoma clinics advertising the study. The sample (n = 20, or more if needed to achieve data saturation) will be purposively sampled to represent a range of demographic characteristics and levels of risk for glaucoma. Data from these elicitation interviews will be used to generate questionnaire items (for Q3b), thereby ensuring that these items have high relevance for these groups. In addition, people (n = 10) who were diagnosed at a late stage, i.e. severe glaucoma, will be interviewed and asked to reflect on when and why they did or did not attend for glaucoma testing; how their condition was detected (e.g. through testing or noticeable symptoms, or whether they were tested and not detected); and at what stage they felt their Quality of Life (QoL) was affected (in terms of Activity limitations and Participation restrictions – see Q4b). These will give rise to further questionnaire items if appropriate.

Q3b) Aim: To identify predictors of intentions to attend for glaucoma screening.

Screening uptake requires that individuals, first, decide to attend for screening and second, actually attend at the screening location. That is, uptake involves intentional behaviour. Predictive models of intention and behaviour from psychology make the assumption that how people think will influence what they do. Three types of such beliefs and attitudes (whether a person thinks the advantages of attending for screening outweigh the disadvantages); subjective norms (whether a person thinks that other people would approve or disapprove of them attending for

screening); and perceived control over doing the behaviour (whether a person thinks that it is easy or difficult and whether there are barriers or facilitators to attending screening). The types of beliefs assessed will be informed by the theoretical model, the Theory of Planned Behaviour,[22] and the content of the questionnaire items will be determined by the interview data (from Q3a) in accordance with standard practice in the field.[23] The questionnaire will be sent to 200 individuals in each high-risk group and 200 in the general population using the same sampling frame described in Q3a. This sample size will have 80% power to detect a difference of 0.33 SD in intention scores between the general population and targeted groups. The theoretical constructs that predict intention to attend for testing will be identified from questionnaire data using a multiple regression approach. These predictors will be mapped on to select behaviour change techniques most likely to maximise uptake of testing.[24] In addition, the specific beliefs that discriminate between high intenders and low intenders will be identified using t-tests. These 'discriminant beliefs' will also inform the content of the intervention.

Our group (MJ, JF and colleagues) are refining the methods for identifying components of behaviour change interventions most likely to be effective in this context, covering two aspects of change: motivation and action. We will use these methods together with the questionnaire data to specify a behaviour change intervention to maximise screening uptake.

Research Question Q4: What are the most appropriate methods for obtaining primary clinical and patient reported outcomes for use in the trial? (Months 1-24)

Q4a) Aim: To determine the feasibility of ascertaining clinical outcome from patient records and routine data. The primary clinical outcome of the definitive RCT will be newly detected glaucoma, detailed by severity, with blindness as the long-term outcome. We will explore the feasibility and completeness of ascertainment of newly detected glaucoma from UK hospital clinic records. In particular we will determine the coverage of an electronic patient record for glaucoma since this would be the preferred mode of primary outcome assessment in the definitive trial. Feasibility will be determined in terms of availability, and possibility of developing a trial-specific electronic data capture mechanism for the definitive RCT. We will also examine the feasibility and completeness of flagging for glaucoma events through Hospital Episode Statistics (HES) data in England; Information Statistics Division (ISD) data in Scotland; and registration of visual impairment.

Q4b) Aim: To develop and test the patient reported outcome (PRO) measure (content, and validity). Building on our existing work, and our systematic review of PRO measures used in glaucoma, we will systematically identify PRO instruments used in screening or public health intervention studies in other disease areas. Based on these (and our already identified item bank from glaucoma specific measures) potential items (questions) to be included in the PRO to be used in the trial will be determined by a rigorous theoretical approach by mapping each of the items on to the constructs in the WHO model of disability: Impairment (I); Activity limitations (A); and Participation restrictions (P). Using the process of Discriminant Content Validation (developed by MJ and colleagues;[25]) the 'pure' items for each of these constructs will be identified so that relationships between the constructs can validly be explored and a greater understanding of the PRO measure can be achieved. This approach is particularly important for a glaucoma screening RCT as it could distinguish between the QoL effects associated with screening and those associated with vision-related activity limitation and participation restriction. The PRO will be evaluated in the target population (500 participants) identified from three sites (Aberdeen, Birmingham, London [Moorfields Eye Hospital]) including people with OAG (mild, moderate and severe defined on the basis of binocular visual field loss – 125 people in each category) and those without glaucoma (125 people). The evaluation will use exploratory factor analysis to identify components, test convergent validity with other related QoL measures and test discriminant validity across the different categories of people. We will also explore any differences obtained with a Rasch Item Response Theory approach. The sample size of 500 was estimated using the recognised rule of thumb that approximately 20 observations per item in the exploratory factor analysis are required to estimate a valid model.[26] This allows a maximum of 25 items to be used in the exploratory model.

Health Economics: Research questions 1-4 (Months 1-24)

Aim: To refine the existing economic model providing an updated estimate of the cost-effectiveness of alternative screening strategies. One criterion for adoption of screening for OAG will be its cost-effectiveness compared with other relevant strategies. Our proposed RCT will include an economic evaluation, it is important that the included strategies are relevant to the

NHS. The development of these strategies can be informed by a model based economic evaluation, as this model can test the likelihood that different hypothetical strategies might be cost-effective. If some strategies appear potentially cost-effective for a range of feasible values for key model parameters, then, it is likely that these strategies will also be potentially cost-effective within a trial based economic evaluation.

New information generated within this project will be incorporated into the existing model and where necessary this model will be refined to reflect the new insights gained. Each stage of the research will suggest potential alternative ways in which a screening strategy will be organised. As these new ways are developed they will be considered by the economic modelling exercise and those ways that seem most likely to be cost-effective identified. This information will be fed back to the research team so that the research can be focused on those potential ways of organising a screening strategy that appear most promising. For instance, information from research question Q1a, on potentially acceptable screening strategies, will be used to define a set of screening strategies within the economic model; subsequently, the economic model can be used to assess the expected effectiveness and efficiency of those strategies. These will be presented to the stakeholders (Q1b) and feasibility discussed. Therefore, the economic analyses will be used in an iterative manner alongside other stages throughout this project in order to refine hypotheses and research objectives in subsequent stages.

The economic model will incorporate all new data available on costs, probabilities and health outcomes (e.g. Quality Adjusted Life Years –QALYs-). Model results will be obtained in terms of cost per QALY but also in terms of clinical and natural outcomes e.g. number of cases detected. Model uncertainty will be explored with sensitivity analyses. This is likely to involve deterministic and probabilistic sensitivity analyses. Cost effectiveness acceptability curves are expected to be used to present results. A final element of the modelling exercise will be to explore the value of information of the screening strategies considered most relevant for inclusion in the screening RCT. The purpose of this exercise will be to identify the most important areas for data collection within the trial.

Key deliverables of the proposed research.
By optimising both the screening strategy and the intervention to maximise uptake, and by defining the outcome schedule, this research will enable a precise and evidence-based trial protocol to be developed that has the best opportunity to demonstrate the success or not of a glaucoma screening programme. Specific deliverables from the research will thus include:

1. Acceptable screening strategy (test, site, and target population);
2. Feasible strategies to invite individuals in each of the target groups;
3. Informed trial design (unit of clustering);
4. A decision as to whether a behavioural intervention might increase uptake of screening;
5. An updated economic model to inform the RCT and to which data from an RCT can subsequently contribute;
6. Defined trial outcomes.

Decision rules for progression to definitive trial
The IES platform will be considered successful if a feasible and acceptable intervention can be identified to take to full trial and if primary clinical and patient reported outcomes can be feasibly collected. Questionable feasibility may include a significant minority of a stakeholder group finding any proposed screening intervention unacceptable.

4) Ethics and research governance.
We believe the proposed research does not pose any specific risks to individual participants nor does it raise any extraordinary ethical issues. We will submit our research proposal for review and approval to the appropriate Research Ethics Committees via the National Research Ethics Service and to any relevant NHS Research and Development committees. We will abide by the MRC's guidelines on Good Research Practice and follow the University of Aberdeen's Research Governance guidelines. In addition we will convene a project advisory group to monitor and review the progress of the study.

5) Data preservation for sharing.
The applicants will comply with the MRC policy on data sharing and preservation and agree that valuable data arising from this research will be made available to the scientific community with as

few restrictions as possible and shared in a timely and responsible manner. All consent forms will state that other researchers may wish to access (anonymised) data in the future. Burr as the Chief Investigator will ensure compliance with legal, data protection and ethical guidelines.

6) Public engagement in Science

Involving patients and the public is an important component of decisions regarding a population screening intervention. This research proposal involves potential users and patient organisations throughout. We have worked with the International Glaucoma Association (IGA) on our previous projects in the area.[5,10] David Wright, the Chief Executive of the IGA has agreed, on behalf of the IGA, to collaborate. We will involve two consumers in our Advisory Panel, a glaucoma patient representative and we will seek another consumer identified from a patient organisation or community association.

7) Exploitation and dissemination.

The results if the study will be disseminated in several ways:
1) A final grant report to the MRC; 2) A series of open access publications detailing the results if the study; 3) An updated report to the UK National Screening Committee; 4) Presentations to relevant health care professional and policy audience; 5) lay summaries of main findings for relevant patient organisations and communities, and ultimately to lead and eventually provide evidence from a multi-centre trial of the effectiveness of an intervention to improve case health outcomes for those at risk of losing vision from OAG.

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