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## Relative importance of informational items in Participant Information Leaflets for trials: a Q-Methodology approach.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2018-023303
Article Type:	Research
Date Submitted by the Author:	09-Apr-2018
Complete List of Authors:	Innes, Karen; University of Aberdeen, Health Services Research Unit Cotton, Seonaidh; University of Aberdeen, Health Services Research Unit Campbell, Marion; University of Aberdeen, Health Services Research Unit Elliott, Jim; University of Aberdeen, Health Services Research Unit Gillies, Katie; University of Aberdeen, Health Services Research Unit
Keywords:	Q-methodology, Participant Information Leaflet, Informed Consent, Randomised Controlled Trial

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3 **Relative importance of informational items in Participant Information Leaflets for trials: a**  
4 **Q-Methodology approach.**  
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8 Karen Innes<sup>1</sup>

9 Seonaidh Cotton<sup>1</sup>

10 Marion K Campbell<sup>1</sup>

11 Jim Elliott<sup>1</sup>

12 Katie Gillies<sup>1\*</sup>

- 13  
14  
15  
16  
17 1. Health Services Research Unit, 3rd Floor Health Sciences Building, Institute of  
18 Applied Health Sciences, School of Medicine, Medical Sciences and Nutrition,  
19 University of Aberdeen, Foresterhill, Aberdeen AB25 2ZD, UK  
20  
21  
22  
23

24 \* Corresponding author – k.gillies@abdn.ac.uk  
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**Abstract (249 words)**

**Objectives:** To identify which information items potential participants and research nurses rank as the most important, and the reasons for this, when considering participation in a randomised controlled trial.

**Design:** Q-methodology approach alongside a think-aloud process. Using a vignette outlining a hypothetical trial, participants were asked to rank statements about informational items usually included in a participant information leaflet (PIL) on a Q-grid, whilst undertaking a real-time think-aloud process to elicit the underpinning decision processes. Analysis of quantitative data was conducted using descriptive statistics and qualitative data was coded using content analysis.

**Participants:** 20 participants (10 potential trial participants and 10 Research Nurses)

**Setting:** UK-based participants.

**Results:** Ten research nurses and ten potential trial participants provided data for the study. Both stakeholder groups ranked similar statements in their top three most important statements, with 'What are the possible disadvantages and risks of taking part?' featuring in both. However, considerable variability existed between the groups with regard to their ranking of statements of least importance. Participants identified that sufficient information to make a decision was secured using around 14 items. Participants also identified other items of importance not routinely included in PILs.

**Conclusions:** This study has provided a unique insight into how and why different trial stakeholder groups rank informational items currently contained within PILs. These results have implications for those developing future PILs and those who develop guidance on their content – PILs should focus most on the information items that potential trial participants want and need to make an informed choice about trial participation.

**Keywords:**

Q-methodology, Participant Information Leaflets, informed consent, randomised controlled trials

### Strengths and Limitations

- This study is one of the first to provide evidence on the importance of informational items prescribed in the regulatory guidance with regard to making an informed choice about RCT participation to potential trial participants and research nurses.
- Our study used a novel methodology (Q methodology) to obtain rankings of informational items for PILs from different trial stakeholder groups, namely potential trial participants and research nurses.
- The solely UK based self-selecting sample may hold different views to those in other countries with different social norms and cultures.

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## Background

Research is an important part of the development of medicine, including the development of new treatments, services and technologies. In particular, Randomised Controlled Trials (RCTs) are considered the gold standard for evaluating the efficacy and safety of new treatments and effectiveness of existing interventions (1,2). Central to the successful delivery of RCTs are the participants who agree to take part. Strict regulations and legislation are in place governing the process of approaching and consenting potential participants to take part in order to ensure that their rights and interests are protected (3,4).

Seeking informed consent (usually prospectively) from potential participants is a prerequisite for their inclusion within almost all RCTs. A printed participant information leaflet (PIL) is a key document that aims to support the informed consent process. A PIL should provide the reader with clear and easy to understand information (3,4). Regulatory bodies have prescribed the inclusion of set content which they deem to be required to ensure that the consent given is 'informed' (3,4). In addition to providing information about the proposed research, a PIL provides a mechanism to support conversations about the trial between the potential participant and the researcher and/ or health professional, allowing the participant the opportunity to ask any questions important to their decision and discuss the research in more detail (5). Ideally, the aim of the PIL should be to provide information to assist the participant in making a decision as to whether to take part in a trial or not (5).

In the UK, current guidelines for PILs are set out by the Health Research Authority (HRA) – the body established to ensure that the interests of patients who take part in research are protected and also to promote good quality research in the UK. The HRA's guidance list 36 topic areas for inclusion in PILs for research (5). These 36 items were informed by legislation on informed consent for research and cover aspects such as: the purpose of the research; potential benefits and risks; the right to refuse or withdraw; treatment alternatives (3, 4).

At present there is a lack of evidence about whether the topic areas identified in the HRA guidelines are perceived as important, or useful for decision making, from the participants' perspective. A systematic review by Kirkby *et al*, emphasised the lack of empirical evidence

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3 to support the items included in the HRA guidance with regard to what topics participants  
4 want to know about when considering taking part in research (not just trials) (6).  
5 Furthermore Armstrong *et al* (7) suggest that PILs are written with the primary focus being  
6 regulatory review as opposed to a principal role in supporting participants' decision making.  
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11 Existing research also suggests that PILs may not be fit for purpose and that trial participants  
12 have a lack of understanding about key aspects of the trial (8,9). This includes those  
13 participants actively participating in trials and those who are considering participation in  
14 trials (10). To date, existing research on PILs for trials has tended to focus on structure –  
15 redesigning and rewriting to improve readability and understanding, exploring easy to read  
16 consent statements versus standard consent statements or short vs long PILs (8, 9, 10). The  
17 majority of this existing research has not questioned the information content (specified by  
18 the regulatory guidelines) that should be contained in PILs from the perspectives of  
19 potential participants and/or other stakeholders engaged in the trial consent process.  
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29 Aside from the participants themselves, research nurses (RN) play a vital role in clinical trial  
30 delivery (certainly in the UK), particularly during the informed consent process. The role of  
31 an RN is that of the patient advocate, supporting any potential research participant  
32 throughout the research process. As RNs are routinely involved in seeking informed consent  
33 from potential research participants they also have a unique insight into the topic areas and  
34 questions that may arise during the informed consent conversation. However, whether the  
35 informational items RNs perceive as being important to support decision making when  
36 discussing trials aligns with desires of potential participants is not known. Understanding  
37 whether these groups are similar or differ in their perspectives could provide important  
38 insights to improve the informed consent process for RCTs.  
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48 The aim of this study is to identify and assess which of the prescribed information items  
49 potential participants and research nurses rank as the most important, and the reasons for  
50 this, when considering participation in a Phase III RCT. A related objective was to explore  
51 whether there were any differences in how the information is ranked between the different  
52 groups.  
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## Methods

This research study used a Q-methodology approach to determine the relative importance of informational items presented in PILs to potential trial participants during the informed consent process. Q-methodology uses a mixed-methods approach that aims to identify shared views, opinions, beliefs and attitudes across a population, forcing people to trade off different dimensions and rank items in order of importance (11). The Q-sort technique provides participants with a question/topic of interest and a set of associated relevant statements linked to the topic (the Q-set) which are then ranked by the participant according to what they feel are most and least important from their perspective in relation to the question posed by the researcher. The participant places statements onto a specialised grid (known as a response grid) and is asked to provide justification for placement through a 'think-aloud' process. Here, participants verbalise in real-time the thought processes underlying their choice of where to place each statement on the response grid.

In full Q-methodology, one is usually concerned with trying to identify how viewpoints cluster together – this is usually undertaken through the use of formal statistical Q-factor analysis (11). In this study, however, we were more interested in the differences/similarities within and across the two stakeholder groups and the reasons why, so we did not proceed with the full factor analysis stage. We rather used descriptive statistics to summarise the perceived importance of items within stakeholder groups and further between stakeholder groups. As we did not use the full Q-methodology, we have described our study as using a Q-methodology approach.

## Scope of study

A vignette (see Additional File 1) was developed, which described a hypothetical Phase III RCT of two treatments for a chronic condition, to help participants contextualise the Q-sort statements and enable them to provide their subjective opinions and points of view. Two vignettes were prepared (based on the same trial example but framed to the perspectives of the two stakeholder groups). The potential trial participant group were asked to consider *'What information would be important to you when making a decision to take part?'* The



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3 research nurse group were asked *'What information would be important to potential*  
4 *participants when making the decision to take part'?*  
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### 8 **Development of the Q-set**

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10 The Q-set of statements were developed using three sources of information: 1. the HRA  
11 guidance on 'Consent and Participation Information Sheets' (5); 2. a published systematic  
12 review that identified empirical evidence to support what potential research participants  
13 want to know about research when considering participation (6); and 3. a published scoping  
14 exercise which had identified desirable features for a centralised public information  
15 resource about clinical trials (12). To avoid duplication of concepts, the development of the  
16 Q-set statements started with a mapping exercise where the individual informational items  
17 identified by Kirkby (6) and Langston (12) were mapped onto the list specified in the HRA  
18 guidance (5). Given the generic focus of our vignette, a number of the more specialised HRA  
19 items (those which cover the particular circumstances of: Radiation, Pregnancy and breast  
20 feeding, Young people and pregnancy, Genetic research, Screening and Exclusion, Adults not  
21 able to consent for themselves and Commercial Exploitation) were excluded from  
22 consideration. This resulted in a final total of 32 statements– these formed the Q-set.  
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34 A list of scripted prompts (related to each statement) were also developed to ensure  
35 consistency in response where further information or clarification was required by  
36 participants regarding what was meant by a particular statement allowing explanations to  
37 be standardised across interviews.  
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42 A 32-element Q-grid was then developed following a quasi-normal distribution as per Q-  
43 methodology standards (see Additional File 2). The grid was split into three areas: columns  
44 1-3 of the Q-grid represent the 'most important' items; columns 4-6 of the Q-grid represent  
45 'neutral' items; and columns 7-9 of the Q-grid the 'least important' items. Statements were  
46 given a reference number and laminated. Three pilot Q-sorts and interviews were  
47 conducted to ensure comprehensiveness of the statements and prompts and ensure no  
48 overlap or duplication between statements.  
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### 56 **Sample size**

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3 For the purpose of this project a sample size of 20 participants, 10 from each trial  
4 stakeholder group, was deemed appropriate. Typically, Q methodology uses relatively small  
5 samples of participants and the literature suggests that a 2:1 ratio of statements to  
6 participants is favoured as a minimum. For example, a study with 40 statements would have  
7 20 participants as a minimum. As this study has 32 statements, following the principle  
8 above, we would require an overall sample of approximately 16 participants as a minimum  
9 (11).  
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## 16 17 18 **Participants**

### 19 *Potential trial participants*

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21 Potential trial participants (PTPs) were identified from the SHARE register. SHARE is a  
22 register of people who have an interest in taking part in research, developed by NHS  
23 Research Scotland (13). For the purposes of this project, people who lived within the NHS  
24 Grampian (NHSG) area (the health board area of the lead researcher to allow face-to-face Q-  
25 sorts to be undertaken) were identified and invited in line with the current SHARE  
26 application process. The details of 17 potentially interested participants were provided by  
27 SHARE. Interested participants were contacted by the researcher by telephone to arrange a  
28 convenient time for a Q-sort interview. Following this conversation participants were sent  
29 postal confirmation of the appointment time and a PIL for the Q-methodology study  
30 (available from the researchers on request). At the Q-sort interview participants were  
31 provided with an opportunity to discuss the research and have any questions answered  
32 before completing a consent form and taking part in the card sort interview. All participants  
33 provided written consent.  
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### 45 *Research Nurses*

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47 Research Nurses were sought from the NHSG research nurse pool. Study information was  
48 provided to the NHSG Research Nurse Manager who disseminated an invitation and the PIL  
49 relating to the study to the NHSG research nurses email distribution list (n=100). Details of  
50 12 interested nurses were received. Interested participants were asked to contact the  
51 researcher by email or telephone to arrange an appointment for a Q-sort interview.  
52 Following this participants were sent an email with confirmation of the appointment time.  
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3 At the Q-sort interview research nurses were provided with an opportunity to discuss the  
4 research project and have any questions answered before completing a study consent form  
5 and taking part in the Q-sort interview. All provided written consent.  
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### 9 10 **Data collection**

11 One author (KI) conducted the Q-sort interviews between August 2015 and March 2016. All  
12 interviews were face-to-face and conducted at the University of Aberdeen. Q-sort  
13 interviews were audio recorded. At the start of the interview participants were presented  
14 with the trial vignette and the 32 statements (in random order each time) and asked to sort  
15 the statements into three initial piles: 1. those that they thought were important when  
16 considering whether or not to take part in the hypothetical Phase III RCT; 2. those which  
17 they thought were less important; and 3. those which they had a neutral view about. Once  
18 the cards had been sorted into three piles, the participant was shown the Q-grid, given an  
19 explanation of how to place the cards onto the grid and asked to start placing them (i.e.  
20 ranking in order of priority) whilst at the same time providing verbal explanation ('think  
21 aloud') as to why they were placing statements in a particular square of the grid. If  
22 participants were unsure of the meaning of any of the statements in the Q-set, the  
23 researcher used standardised prompts, described earlier, to aid understanding. On  
24 completion of the grid, the potential trial participant group were asked if they felt any  
25 information was missing from the statements and also to indicate at which point on the grid  
26 they would be able to make a decision about participation in the hypothetical RCT.  
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40 At the end of the task, participants were asked to complete a demographic details form and  
41 thanked for their participation. A photograph was taken of the completed response grid and  
42 a paper copy of the response grid completed by the researcher. Audio files were  
43 transcribed verbatim and anonymised accordingly.  
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### 49 **Data analysis**

#### 50 *Descriptive statistics*

51 Data was collated across individual participants within each stakeholder group and used to  
52 calculate the following for each of the 32 items: 1. the median importance score (i.e. the  
53 median position given by participants for that statement which could range from 1 -9 (the  
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3 higher the median importance score the less important the statement is i.e. 1 most  
4 important, 9 least important); 2. The Inter Quartile Range (IQR) around the median  
5 importance score; and 3. The range of scores for each item by group. These summary  
6 statistics allowed the statements to be ordered from most to least important for each of the  
7 trial stakeholder groups. The overall ranking of the statements was based on the median  
8 value, however in the case where the median value was the same for more than one  
9 statement the interquartile range was considered (and if necessary the range) in order to  
10 determine order. Differing views on individual items between the potential trial participant  
11 and research nurse group were defined as “discordant” if they exhibited a difference in the  
12 median rankings of  $\geq 2$  points between the groups. The PTP group were asked how many  
13 information cards they would require to make a decision about trial participation. This data  
14 was collated and medians and a range calculated.  
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### 25 *Qualitative analysis*

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27 Transcripts were read and re-read to ensure complete familiarity with the transcripts. Text  
28 within the transcripts was coded by Q-set statement number using a content analysis  
29 approach (14). Quotes were selected that illustrated reasons for ranking for the overall  
30 group majority, or any outliers. Transcripts from the research nurses and potential  
31 participants were initially considered separately but were then systematically compared for  
32 areas of agreement or disagreement.  
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### 39 **Patient Involvement**

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41 Patients were not involved as research partners in the design, data collection or data  
42 analysis phases of this research. A patient research partner (JE) was involved in the drafting  
43 of the manuscript for publication. Participants in the research will be offered a summary of  
44 the results of the study.  
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### 50 **Approvals**

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52 The study was approved by NRES Committee London – Bromley (Rec ref: 15/LO/1221) and  
53 NHS Grampian Research and Development department (R&D ref: 2015UA013). All interview  
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3 participants provided their signed consent, which included consent for anonymised quotes  
4 from their interviews to be published.  
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## 8 **Results**

### 11 **Participant characteristics – Potential Trial Participants**

12 Seventeen potential trial participants (PTPs) were approached through the SHARE database  
13 and ten consented to take part in this research project. The ten PTPs had a mean age of 49.4  
14 years (range 34 -73). Five men and five women were interviewed, men had a mean age of  
15 59.2 years and women a mean age of 39.6 years. Education levels varied between this group  
16 - four participants had secondary education (e.g. O level, GCSE, Highers), one of these four  
17 had also completed an apprenticeship. The remaining six had completed higher education  
18 (e.g. a degree). Seven PTPs had no previous experience of research. Q-sort interviews took  
19 an average of 38.7 minutes (range 23.6 - 62.3).  
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### 29 **Participant characteristics – Research nurses**

30 One hundred NHSG Research Nurses (RN) were invited through the Research Nurse  
31 Manager email distribution list and twelve consented and took part in this research project.  
32 Data from ten of the twelve RNs is presented in the analysis due to an early change in the  
33 study documentation affecting the data from two of the participants. The ten RNs whose  
34 data was included in the analysis were all female and had a mean age of 40.4 years (range  
35 28 – 59). All had at least Higher Education (e.g. a degree) and the range of research they had  
36 worked on varied from observational studies to CTIMPs (Clinical Trial on an Investigational  
37 Medicinal Product). Q-sort interviews took an average of 42.2 minutes (range 24.1 – 62.2).  
38 Summary characteristics of study participants are presented in Table 1.  
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### 48 **Ranking of statements**

49 Overall ranking summaries are presented for the potential participant group (Table 2) and  
50 research nurse group (Table 3).  
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### Top ranking items – the most important information

There were several similarities between the RN and PTP groups in terms of the statements that they ranked as most important. PTPs ranked ‘What are the possible side effects of trial treatment?’ as their most important item, with RNs ranking it as fourth. Some of the reasons cited by PTPs for this being the most important related to their own personal safety, not being hurt and knowing the types of events they should report to the trial team

*..if it was going to be taking medication or if it was going to be some other sort of new treatment, it would be important to know as much as you could about what possibly might go wrong with it, so that you can protect yourself. PTP20 – ranked in column 1.*

RNs also reported trial participants want to know about side effects but that, in their perspective, this only mattered to a small number they ranked it lower.

*There has been a very few handful who have asked me for some data of how many percent have had side-effects or how many in the overall study how many -- I have had questions but it's just that it's such a small rare quantity of people. RN5 – ranked in column 4.*

With regard to the second most important item, PTPs ranked ‘What are the possible disadvantages and risks of taking part?’ with RNs ranking it in first place. Although the position of the ranking is different between the groups the reasons provided were similar and related to benefits for self, whilst weighing up any potential negative consequences.

*Well, I think I'd have to hear them both and then decide, you know? So, say, for example, you said with the advantages, it could improve your condition and the disadvantages were... you might get headaches with it or something, so it depends on the strengths of both. PTP18 – ranked in column 2.*

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3 *I think it's kind of almost maybe a sort of selfish kind of individual kind of*  
4 *thought of what does this mean for me rather than looking at the bigger*  
5 *picture of what the study is actually about. RN1 – ranked in column 2.*  
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10 PTPs ranked 'What will I have to do?' as the third most important statement highlighting the  
11 importance of knowing what would be expected of them, whereas RNs ranked this item in  
12 position 6 but with similar reasoning regarding expectations.  
13

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15 *...just to make sure it wasn't going to involve too much from what would*  
16 *be the normal sort of scenario, make sure that I wasn't committing to*  
17 *something that maybe...on top of something that might already be quite*  
18 *stressful or is going to add a lot of work or time... PTP7 – ranked in*  
19 *column 3.*  
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25 *...with a chronic condition that patient's not that concerned about the*  
26 *end point of the study, just about getting an option for treatment. So I*  
27 *think they would actually want to know 'what will I have to come in and*  
28 *contribute, how much work will it be?'* RN7 – ranked in column 4.  
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34 The second and third most important items ranked by RNs did not feature in the  
35 PTPs top three. Research nurses ranked 'What is the purpose of this study?' in  
36 position number 2, stating the importance of highlighting to potential  
37 participants how the trial is relevant to them. However PTPs ranked this  
38 statement in position number 9 the rationale being this statement has less to do  
39 with them as individuals. This items exhibited the biggest difference between  
40 groups in terms of items in each groups' top 3, which is not surprising when  
41 considering the individual groups interpretations.  
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47 *I feel this is the most important to let the patients know what we are*  
48 *trying to do, what's the purpose of doing the study to begin with. A bit of*  
49 *explanation as to why we're doing it in the first place. RN3 – ranked in*  
50 *column 1.*  
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3 *“What the purpose is?” probably just to know whether it was something*  
4 *they were going to continue doing, or if it was just a trial and a kind of...*  
5 *guinea pig situation, just to see what happened. I suppose, knowing that*  
6 *if you could help other people with a similar condition, it might sort of*  
7 *give you the incentive to help or be part of it. PTP17 – ranked in column*  
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15 In third place RNs ranked ‘What are the possible advantages of taking part?’ as important,  
16 while PTPs ranked this statement as their fourth most important statement. Although in  
17 slightly different overall position, both RN and PTP gave similar reasons for their ranking,  
18 linked to balancing and weighing up of consequences.

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20  
21 *So it may be that this drug won’t be available to them, it’s not going to be*  
22 *available to them if they don’t take part so it’s important that they know*  
23 *that, that there may be an advantage in the sense that they won’t have*  
24 *access to this drug. RN4- ranked in column 4.*

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31 *I would want to know the worst case scenario and then I’d probably ask*  
32 *after that what would be the benefits, because I would assume that there*  
33 *were going to be benefits, I guess. PTP7 – ranked in column 3.*

### 34 35 36 37 **Lowest ranking items – the least important information**

38  
39 Potential trial participants ranked ‘Will I receive any payments for taking part?’ as the least  
40 important statement in position 32 with reasoning related to expectations of volunteering  
41 not requiring payment and opportunities for treatment outweighing remuneration. In  
42 comparison RNs ranked this in position 23 with some highlighting this as a potential  
43 incentive for patients to participate or provide outcome data.

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47 *Well, I volunteered so I don’t expect to get paid for volunteering to do*  
48 *something. That’s why I say that’s the least important. PTP13 – ranked in*  
49 *column 9.*

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55 *I don’t think patients are also that concerned about being reimbursed for*  
56 *taking part in the study. I think the benefits that they may get from the*



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3 *study, I would say outweigh ... especially if it's a chronic condition that*  
4 *they've got, that they've lived with for a long time, that I think that if they*  
5 *see a glimmer of hope that that's more important than maybe getting*  
6 *payment. If, though, the study was very ... sorry, had a number of visits, I*  
7 *think then that would be where the payments would then move for me.*

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11 RN4 - ranked in column 5.  
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15 From the ranking summary PTPs ranked 'Will there be any impact on any insurance  
16 policies?' as the second least important statement in position 31 and most did not see the  
17 relevance of this item for the decision. Research nurses ranked this in position 17 with  
18 some citing reasons for particular cohorts as influencing their placement.  
19  
20

21 *...I don't know, maybe I'm a bit blasé about that as well. That just didn't*  
22 *come into my head at all. Even at the moment I'm thinking...no just*  
23 *wouldn't affect me one little bit...I think even if I was given an*  
24 *information leaflet on the impact on insurance policies I probably*  
25 *wouldn't even read it, to be honest. PTP7 – ranked in column 9.*  
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31 *And insurance policies, I think that's important because not all of the*  
32 *patients you have will be in their eighties and not having holidays*  
33 *anymore. So insurance is important for the younger ones, maybe in their*  
34 *fifties or younger, looking to go on holiday. RN3 – ranked in column 5.*  
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41 The third least important items ranked in position 30 by potential trial participants was 'Will  
42 expenses be reimbursed?' and again referenced their health as taking precedent over  
43 expenses but it may be important dependent on contribution. However, RNs ranked this  
44 statement in position 18 based on real examples of patients being out of pocket and this  
45 impacting on recruitment.  
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49 *That's less important for me, mostly because I wouldn't perceive much in*  
50 *the way of expenses for myself for anything, because I live near the city*  
51 *centre and walk most places...I wouldn't have thought – unless the study*  
52 *happened to be in another city or anything like that – that I would have*  
53 *far to go. PTP10 – ranked in column 8.*  
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5 *But they [patients] are thinking, and I know the study I'm involved at the*  
6 *moment is involving extra visits for the patients, and I'm expecting that to*  
7 *be a bit of a hurdle if there's not a budget for these extra visits and*  
8 *parking outside the hospital and things like that. RN7 – ranked in column*  
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15 RNs ranked 'Who has approved the study?' as the least important statement in position 32  
16 and in comparison PTPs ranked this statement in position 17. Collectively RNs seemed to  
17 think this was important information for professionals but not for potential trial participants  
18 yet the PTP group placed this higher suggesting it is of value.  
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21  
22 *...whenever I have been consenting somebody and said where the*  
23 *approvals are from or anything, there's not really any interest at all. RN1*  
24 *– ranked in column 9.*  
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29 *I know there's a whole process involved for these things so I wouldn't*  
30 *want to see and I wouldn't really need to know. I would assume it had*  
31 *been properly approved. PTP1 – ranked in column 5.*  
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35 The second least important items ranked by RNs in position 31 was 'How have patients and  
36 the public been involved in the design of the study?' with PTPs ranking this items at position  
37 26. Both groups recognised the importance of the contribution of patients and the public  
38 (although it was not clear if the PTP group fully understood what this item meant) but  
39 thought other aspects were more important.  
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44 *...I don't think patients think about that...I don't think it's of any relevance*  
45 *to them...its obviously important because for a study to work then it has*  
46 *to be in research for a reason and if you have patients involved in the*  
47 *design of it then compliance rates are going to be better. RN2 – ranked in*  
48 *column 9.*  
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53 *Yeah, I'd be interested in knowing that but I don't think I would*  
54 *immediately want to know how the study had been put together. PTP9 –*  
55 *ranked in column 7.*  
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5 The RNs ranked 'Has the scientific quality of study been checked?' as the third least  
6 important statement in position 30 largely because in their experience this is not raised as a  
7 concern by patients. Interestingly, PTPs ranked this in position 11 stating that these quality  
8 checks on research were important. With a difference of 19 ranked position (median score  
9 difference of 3.5 (PTP = 4.5 vs RN = 8) this items has one of the largest variations in ranking  
10 between the groups and the largest difference between the groups across the top and  
11 bottom three.  
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16 *Never had any questions about that. I have had patients or relatives who are well*  
17 *educated, they would want to know the purpose of the study but they would*  
18 *not...They don't want to know overall how many people you require, its more about*  
19 *whether we have any experience doing this thing. RN5 – ranked in column 9.*

20 *I think that would be very important to know. I know there's all sorts of rules about*  
21 *what's a good sample size and things like that, you know, so I would like to be able to*  
22 *access that information. It wouldn't be as important, I think, as the other things I've*  
23 *ranked highly, but it would be more important. PTP20 – ranked in column 5.*  
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### 32 **Items exhibiting variability on rank order between groups**

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34 Figure 1 illustrates the differences between stakeholder groups with regard to median  
35 ranking values of informational items ranging from most to least importance. As stated  
36 previously, items with a median difference greater than or equal to 2 rank points were  
37 considered to have significant variability between the individual groups. Table 4 lists each of  
38 the items that exhibited variability in median rank order between the stakeholder groups.  
39 Overall, ten of the 32 items exhibited variability (predefined at  $\geq 2$  median scores difference)  
40 between the two stakeholder groups on rank order scores. The item with the largest  
41 median score rank ordered difference between the PTP and RN group was 'Has the scientific  
42 quality of study been checked?'. As mentioned previously there was a 3.5 median score  
43 difference between the groups (PTP = 4.5 vs RN = 8) with PTP ranking it at number 11 and  
44 RNs at position 32. One RN provided the following feedback on the exercise, which may  
45 provide some explanation as to why differences between the two groups were evident.  
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3 *“What I probably found hard is putting myself maybe say in the patients’ shoes,*  
4 *because you can think of it from, you know, very much like, you know, your role as*  
5 *from a nursing perspective, so yeah, always thinking about the patient.” RN4*  
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### 10 **Missing information**

11 On completion of the Q-sort interview the potential trial participant group were asked  
12 whether they felt any information items were missing from the card-sort set. The general  
13 consensus was that no additional information items were required, although three  
14 participants made suggestions as to additional information they might like to see in a PIL,  
15 namely: contact with other patients taking part in the trial; childcare arrangements; and  
16 side-by-side comparison between standard care and trial interventions.  
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#### 23 ***Contact with other patients taking part in the trial***

24 *It would be more likely, I think, in some ways, that I would like to have contact*  
25 *because I would.... You know, I think I would appreciate sharing experiences, and I*  
26 *don’t know... just thinking about it that might be something that would be useful for*  
27 *the study as well. PTP10*  
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#### 33 ***Childcare arrangements.***

34 *So a logistical question I think is something that I would probably think... it would*  
35 *make me more positive towards something if it said there are facilities for childcare*  
36 *here or there’s a crèche or something like that, then it would make me think, “Oh,*  
37 *well, I can definitely do that then”. PTP2*  
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#### 43 ***Side-by-side comparison between standard care and trial interventions.***

44 *Maybe exactly what it would entail weighed up against...you know, showing the two*  
45 *side-by-side. “This will entail having to come to hospital every week to get bloods,*  
46 *whereas normally you would never have to go and get... how time consuming it*  
47 *would be would probably be quite an important one. PTP7*  
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### 54 **Minimum information requirement for decision making**

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3 On completion of the Q-sort, we asked each of the potential trial participant group if they  
4 could indicate at which point they felt they would have enough information to make a  
5 decision about taking part in the hypothetical RCT. The median number of cards required by  
6 the PTP group to make a decision was 14 with a range of 5 to 32. For the majority of the PTP  
7 group (60% of PTPs) a decision would be made that they had enough information using  
8 between 8-15 cards (25% - 47% of the 32 statements).  
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### 13 14 15 **Interpretation of context**

16 An additional finding from the “think aloud” interview data relates to participants  
17 interpretation of the specific context of the Phase III trial described in the vignette. Although  
18 no reference to specific interventions was given apart from ‘treatment’, the majority of  
19 participants interpreted the setting to be a drug trial. Examples of this belief were  
20 evidenced across both groups.  
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27 *My reason is that I just think if you were going to take something*  
28 *that was... if it was going to be taking medication or if it was going to*  
29 *be some other sort of new treatment, it would be important to know*  
30 *as much as you could about what possibly might go wrong with it.*  
31  
32 *PTP20.*  
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36 *...So if people getting drug A are clinically much better than the*  
37 *people getting drug B and that's evident quite early on when people*  
38 *would be expected to stop and move on to... RN2.*  
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### 46 **Discussion**

#### 47 *Principal Findings*

48 We believe this study to be one of the first to provide evidence in relation to how important  
49 potential trial participants and research nurses perceive the informational items prescribed  
50 in the regulatory guidance to be with regard to making an informed choice about RCT  
51 participation. Our study used a novel methodology in this context (trials methodology) to  
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3 obtain rankings of informational items for PILs from different trial stakeholder groups,  
4 namely potential trial participants and research nurses. Previous research evidencing the  
5 relative importance of items included in trial PILs across different stakeholder groups is  
6 limited. Existing research on trial PILs has largely assumed the regulatory guidance reflects  
7 what potential participants actually want to know and has focussed on areas such as  
8 structure, content, or mode of delivery (8, 9, 10). Our study shows that more work is  
9 required to first define *what* information potential trial participants need (and/or want) to  
10 support an informed choice about participation.  
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18 Several of the statements identified as being most important relate to information about  
19 consequences of participation, namely disadvantages or advantages. Our results are,  
20 perhaps, not surprising given various decision making theories and frameworks suggest that  
21 weighing up the pros and cons of a situation is a key component of decision making (15). In  
22 addition, several reports in the literature from qualitative studies that have explored  
23 participants reasons for participation (or not) in randomised controlled trials cite potential  
24 advantages or disadvantages of the trial as being influential (16, 17). However, it may be  
25 important to further consider the context of the trial with regard to relative importance of  
26 items. The use of the vignette revealed that although not specified, participants in our study  
27 believed the trial to be a drug trial, which may have influenced how they rated the relative  
28 importance of items.  
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39 Our results highlight that stakeholder groups were more similar when considering the most  
40 important items and that much more variability was exhibited between the groups with  
41 regard to the statements considered to be least important. Similar work exploring the  
42 importance of informational items included in a decision support intervention for trial  
43 participation also identified differences between stakeholder groups on key items (18). In  
44 particular, items describing the advantages or disadvantages of non-participation (e.g.  
45 forgoing access to trial intervention) in a trial showed more variation than others (18). An  
46 additional study has also evidenced variability amongst stakeholder groups with regard to  
47 content and mode of delivery of information provided to participants to support decisions  
48 about trial participation (19). The differences between stakeholders in perceived  
49 importance of information for trial participation decisions is worrying given much of the  
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3 decision about participation is supported through conversations, which may or may not talk  
4 to a potential trial participant's main concerns, depending on who leads that conversation.  
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6 The coverage of trial topics depending on who leads the conversation has been observed in  
7  
8 recruitment consultations for a prostate cancer trial and had implications for recruitment  
9  
10 and acceptance of allocation (20). Therefore, further research to unpack why differences  
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12 between stakeholder groups exist and efforts to reduce these differences are important.  
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15 The majority of potential participants in our study revealed they would have made a  
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17 decision about trial participation based on the information items they placed within the first  
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19 3-4 most important columns (around 8-15 cards out of 32 and equal to around 47% of the  
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21 information specified in the HRA guidance). This suggests that all of the information that is  
22  
23 included in a PIL may not be necessary for potential participants to make a decision about  
24  
25 taking part in the trial. In further support of this, a study that explored the preferred length  
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27 of the participant information sheet for research showed that 77% of participants chose to  
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29 access only the first level of information (less than that which may be contained on a  
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31 standard PIL ) before making a decision about participation (22). In terms of the content of  
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33 the minimum information set that potential participants deemed sufficient for decision  
34  
35 making, our study showed they focussed on statements related to the interventions (and  
36  
37 any associated consequences) rather than the formalities of the research. These findings are  
38  
39 similar to Sand *et al* who showed that the statements participants valued most were largely  
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41 related to the study treatment and study related activities rather than information on  
42  
43 storage of data (21). Whether these key decision statements should be ordered such that  
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45 they are represented first in PILs requires further research.  
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48 As mentioned previously, a systematic review identified little evidence of what information  
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50 potential participants want to know when making a decision about research participation  
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52 (6). Of the studies that were identified, evidence could only be identified for less than half of  
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54 the items the HRA recommend should be included in PILs for research (6). Whilst this review  
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56 focused more broadly on research studies, not just trials, it further illustrates the point that  
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58 the information provided in PILs falls short of being actually grounded in the informational  
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60 needs and desires of those for whom it should be designed. This begs the question of who  
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62 these patient-facing documents are actually written for. Armstrong *et al* conducted a study

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3 to explore the function of PILs in which they concluded 'PILs are the outcome of a process of  
4 institutional scripting that is strongly shaped by the accountability demands inherent in the  
5 ethical review process.' (7) They go on to suggest that the content and text of a PIL is agreed  
6 between the trialist (the author of the PIL) and the REC (7). This lack of recognition of the  
7 audience of PILs is further evidenced when comparing PILs for randomised controlled trials  
8 to other information resources shown to support decision making for treatment and  
9 screening decisions (so called decision aids) (23). PILs were shown to lack information  
10 deemed necessary to support good quality decision making (23). Interestingly in our study  
11 the PTP group raised 'contact with other participants' and a 'side-by-side comparison of trial  
12 treatment and standard care' as being missing from the current information set. Both of  
13 these items are suggested as components of decision aids and to be useful for potential trial  
14 participants decision making (23). Perhaps it is time to review the guidance documents  
15 available to researchers to ensure that PILs are written specifically with the needs/wishes of  
16 the target audience, the potential trial participant, in mind and that the information more  
17 supports informed choices about trial participation with less focussing on institutional  
18 accountability.

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32 When patients get involved in the design of research studies they are frequently asked to  
33 help to improve the participant information. There is evidence to show that as potential  
34 participants they can help to make the language clearer and easier to understand and not  
35 discriminatory or stigmatising (24). They can also help to present and deliver the  
36 information in ways that reflect the needs of participants and are culturally appropriate and  
37 sensitive (25). There is evidence that involving patients can also help to ensure that the  
38 content covers some important aspects of what potential participants want to know but not  
39 by systematically examining the information prescribed in national guidance as in the study  
40 reported here (26). In this study both the PTPs and RNs gave a low ranking to the statement  
41 about the involvement of patients and the public in the design of the study. This is not  
42 surprising because the statement did not give any indication how the involvement might  
43 have helped PTPs make an informed decision whether to participate.

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54 Evidence from research on information to support the informed consent process is needed  
55 by the trials community. A recent prioritisation exercise to identify the top 10 research



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3 priorities for recruitment in trials identified three priorities in the top 10 that could consider  
4 aspects of information provision in their scope (27). Specifically: Priority 2. What  
5 information should trialists communicate to members of the public who are being invited to  
6 take part in a randomised trial in order to improve recruitment to the trial?; Priority 4. What  
7 are the best approaches for designing and delivering information to members of the public  
8 who are invited to take part in a randomised trial?; and Priority 9. What are the best  
9 approaches to optimise the informed consent process when recruiting participants to  
10 randomised trials? (27). This prioritisation (by a range of stakeholders including patients) of  
11 multiple questions around information to support the informed consent process to trials  
12 further highlights the need for additional research to identify models of best practice.  
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### 22 **Strengths and limitations**

23 The sample included in this work is relatively small (n=20) and limited by geographic  
24 location. Identifying potential trial participants through the SHARE database was a  
25 straightforward, cost effective and time saving method however it is worth giving  
26 consideration to the type of people who have signed up to this database. Those who sign up  
27 to the SHARE register are likely to have an interest in research, perhaps making the sample  
28 somewhat dissimilar from the general public. Whilst we have no reason to believe the  
29 locality would influence the results, it would be important to extend both the sample size,  
30 geographic spread, and representation from other stakeholder groups.  
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39 Although the vignette was worded slightly differently for each stakeholder group it was used  
40 to try and ensure that the study was interpreted in the same way for all participants.  
41 Potential trial participants appeared to have no problems with the vignette as they were  
42 being asked to think about a decision from their own point of view. For the research nurse  
43 group, we were asking them to think about what potential participants thought, and this  
44 proved more challenging for the research nurses. Although the vignette talked about  
45 treatments – treatment ‘a’ and treatment ‘b’ – for a chronic condition, many participants  
46 interpreted this as two drug treatments. It is worth considering the possibility that this may  
47 have had an impact on how the statements were ranked. Another potential limitation with  
48 regard to interpretation relates to the Q-sort statements. Although prompts were  
49 developed if participants struggled with interpretation, the statements for the Q-Sort were  
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3 all quite short and therefore their meaning was open to a certain amount of interpretation.  
4 The meaning of each statement and how clear it is may have had a bearing on what the  
5 participants understand by it and how important they think it is.  
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10 A significant strength of this study was the use of the Q-methodology providing both  
11 qualitative and quantitative data to investigate how important different stakeholder groups  
12 perceived the informational items to be. The use of Q-methodology in trials methodology  
13 research is not common but the data it produces yields novel insights not easily produced by  
14 other methods (28).  
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### 19 20 **Conclusion**

21 In conclusion, this study has provided a unique insight into how and why different trial  
22 stakeholder groups rank informational items contained within PILs for randomised  
23 controlled trials. This study has shown that both potential trial participants and research  
24 nurses ranked similar statements as being most important, yet clear differences exist in the  
25 ranking of the least important statements. These results have implications for researchers  
26 developing PILs for RCTs. Patient information leaflets are directed at potential trial  
27 participants and should therefore, by default, include information that potential trial  
28 participants want and need to make an informed choice about participation in a trial.  
29 Additional efforts to work in parallel with potential trial participants to identify the  
30 information considered critical to support informed choices about trial participation is  
31 needed.  
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### 42 **Competing interests**

43 The authors declare that they have no competing interests.  
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### 47 **Authors' contributions**

48 KG was responsible for conceiving the study. KI, SC, MC, and KG designed the study. KI  
49 conducted the data collection and statistical analysis. KG and KI conducted the qualitative  
50 analysis. KG and KI led the writing of the manuscript. SC, MC and JE contributed to further  
51 drafts of the manuscript. All authors read and approved the final manuscript.  
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**Acknowledgements**

The authors would like to thank the stakeholders who participated in the study for their time.

**Funding statement**

This work was supported by personal fellowship award (to KG) from the Medical Research Council Strategic Skills Methodology Fellowship [MRC MR/L01193X/1]. KI and SC were supported by awards from the National Institute for Health Research Health Technology Assessment Programme [HTA ref 14/192/71, HTA ref 11/58/15]. The Health Services Research Unit is supported by a core grant from the Chief Scientist Office of the Scottish Government Health and Social Care Directorates.

**Data Sharing**

No database available.

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Table 1 – Summary participant characteristics

	Potential trial participants		Research Nurses	
Age (median; range)	49.4 years (range 34 -73)		40.4 years (range 28 – 59)	
Gender (% female)	5 (50%)		10 (100%)	
Education (%)	Secondary	30%	Secondary	
	Apprenticeship	10%	Apprenticeship	
	Higher	60%	Higher	100%
Involvement in research	3 previously participated in research		CTIMPS	
			Interventional non-CTIMPS	
			Observational	
Q-sort interview (median min:sec)	38.7 minutes (range 23.6 - 62.3)		42.2 minutes (range 24.1 – 62.2)	

CTIMP – Clinical Trial of an Investigational Medicinal Product

Table 2 –Potential Trial Participants– ranking of statements (from most to least important)

Statement	Rank	Median	IQR	Range
What are the possible side effects of trial treatment?	<b>1 (most important)</b>	2	1.5, 3.5	1, 5
What are the possible disadvantages and risks of taking part?	<b>2</b>	2	2, 3	1, 4
What will I have to do?	<b>3</b>	2.5	2, 4	2, 5
What are the possible advantages of taking part?	<b>4</b>	3	2, 4	2, 5
What is the treatment that is being tested?	<b>5</b>	3	2, 4	1, 7
What will happen to my treatment when the research study stops?	<b>6</b>	3	2.5, 4	2, 4
How will my treatment be decided?	<b>7</b>	3.5	3, 5.5	2, 7
What will happen to me if I take part?	<b>8</b>	4	1, 5.5	1, 7
What is the purpose of this study?	<b>9</b>	4	2, 4	1, 7
Will I know what treatment I am on?	<b>10</b>	4	3, 7.5	3, 9
Has the scientific quality of study been checked?	<b>11</b>	4.5	3, 5.5	2, 8
What are the alternatives for treatment?	<b>12</b>	4.5	3, 6	3, 7
What happens if relevant new information becomes available?	<b>13</b>	5	3, 6	1, 7
Will my GP be told?	<b>14</b>	5	4, 6.5	4, 4
What will happen to the results of the study?	<b>15</b>	5	4, 6.5	3, 7
Who has overall responsibility for the study?	<b>16</b>	5	4.5, 5	4, 7
Who has approved the study?	<b>17</b>	5	5, 6	2, 7
Do I have to take part?	<b>18</b>	5.5	3.5, 8	2, 9
Who could I contact for further information?	<b>19</b>	5.5	4, 6	4, 7
Who will have access to my data?	<b>20</b>	5.5	4.5, 7	3, 7
What if I have a complaint?	<b>21</b>	5.5	5, 7.5	4, 9
Why have I been invited?	<b>22</b>	6	3.5, 7.5	2, 8
Will my taking part in the study be kept confidential?	<b>23</b>	6	4.5, 7	3, 8
Will information from my existing medical records be accessed?	<b>24</b>	6	4.5, 7	2, 8
What will happen if I don't want to carry on with the study?	<b>25</b>	6	5, 6.5	4, 7
How have patients and the public been involved in the design of the study?	<b>26</b>	6	5, 7	4, 7
How will data be stored and disposed of?	<b>27</b>	6	5.5, 7	4, 8
What is involved in the consent process?	<b>28</b>	7	5, 8	4, 9
Who is funding the research?	<b>29</b>	7	5.5, 8	3, 9
Will expenses be reimbursed?	<b>30</b>	8	5.5, 8	5, 8
Will there be any impact on any insurance policies?	<b>31</b>	8	5.5, 8.5	3, 9
Will I receive any payments for taking part?	<b>32 (least important)</b>	8	6.5, 8.5	6, 9

Table 3 – Research nurse s – ranking of statements (from most to least important)

Statement	Rank	Median	IQR	Range
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4	What are the possible disadvantages and risks of taking part?	<b>1 (most important)</b>	2	2, 4
5	What is the purpose of this study?	<b>2</b>	2	2.5, 4
6	What are the possible advantages of taking part?	<b>3</b>	2.5	2, 3.5
7	What are the possible side effects of trial treatment?	<b>4</b>	2.5	2, 4
8	What is the treatment that is being tested?	<b>5</b>	3	1.5, 4
9	What will I have to do?	<b>6</b>	3	2.5, 4
10	Do I have to take part?	<b>7</b>	3	2.5, 4.5
11	What will happen to me if I take part?	<b>8</b>	3	3, 3.5
12	How will my treatment be decided?	<b>9</b>	3	3, 4.5
13	Why have I been invited?	<b>10</b>	3.5	1, 4
14	What are the alternatives for treatment?	<b>11</b>	4	3, 4
15	Will I know what treatment I am on?	<b>12</b>	4	3, 5
16	What will happen to my treatment when the research study stops?	<b>13</b>	4.5	4, 5
17	What happens if relevant new information becomes available?	<b>14</b>	5	4, 6.5
18	What will happen if I don't want to carry on with the study?	<b>15</b>	5	4.5, 5
19	Will information from my existing medical records be accessed?	<b>16</b>	5	5, 6
20	Will there be any impact on any insurance policies?	<b>17</b>	5	5, 6
21	Will expenses be reimbursed?	<b>18</b>	5	5, 6.5
22	Will my taking part in the study be kept confidential?	<b>19</b>	5.5	4, 6
23	Will my GP be told?	<b>20</b>	5.5	4, 6.5
24	What is involved in the consent process?	<b>21</b>	6	4.5, 6
25	Who will have access to my data?	<b>22</b>	6	5, 6.5
26	Will I receive any payments for taking part?	<b>23</b>	6	5, 6.5
27	Who could I contact for further information?	<b>24</b>	6	5, 7
28	What will happen to the results of the study?	<b>25</b>	6	5.5, 7
29	What if I have a complaint?	<b>26</b>	6.5	5.5, 7
30	Who has overall responsibility for the study?	<b>27</b>	7	5.5, 7
31	How will data be stored and disposed of?	<b>28</b>	7	5.5, 8
32	Who is funding the research?	<b>29</b>	8	7.5, 9
33	Has the scientific quality of study been checked?	<b>30</b>	8	8, 8.5
34	How have patients and the public been involved in the design of the study?	<b>31</b>	8	8, 8.5
35	Who has approved the study?	<b>32 (least important)</b>	8	8, 9
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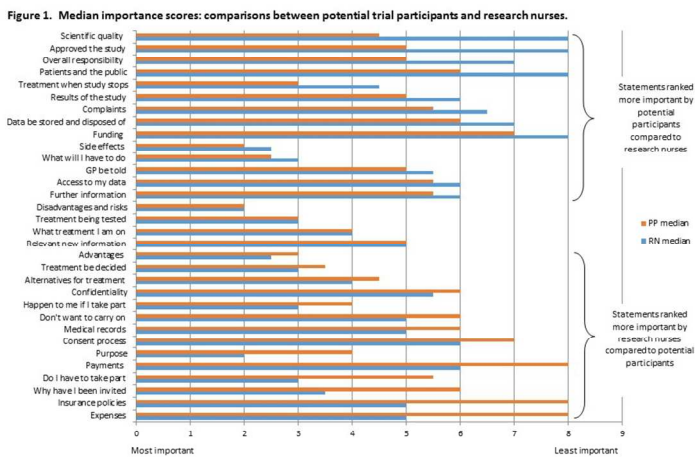


Table 4. Items exhibiting significant variability on median rank order between stakeholder groups

	Statement	Median difference	Median score		Item rank position	
			PTP	RN	PTP	RN
1	Has the scientific quality of study been checked?	3.5	4.5	8	11	32
2	Will expenses be reimbursed?	3	8	5	30	18
3	Will there be any impact on any insurance policies?	3	8	5	31	17
4	Who has approved the study?	3	5	8	17	32
5	Why have I been invited?	2.5	6	3.5	22	10
6	Do I have to take part?	2.5	5.5	3	18	7
7	What is the purpose of this study?	2	4	2	9	2
8	Will I receive any payments for taking part?	2	8	6	32	23
9	How have patients and the public been involved in the design of the study?	2	6	8	26	31
10	Who has overall responsibility for the study?	2	5	7	16	27

PTP – Potential Trial Participant

RN- Research Nurse



338x190mm (96 x 96 DPI)

Review only

**Additional File 1. The vignette used in the Q-sort**Potential trial participants

Imagine you are in a consultation with your doctor. The doctor is discussing with you what treatment you could have for your chronic condition. You are suitable to take part in a clinical trial run by the NHS. If you decide to take part, you will be randomly allocated to either treatment A or B.

What information would be important to you when making the decision to take part?

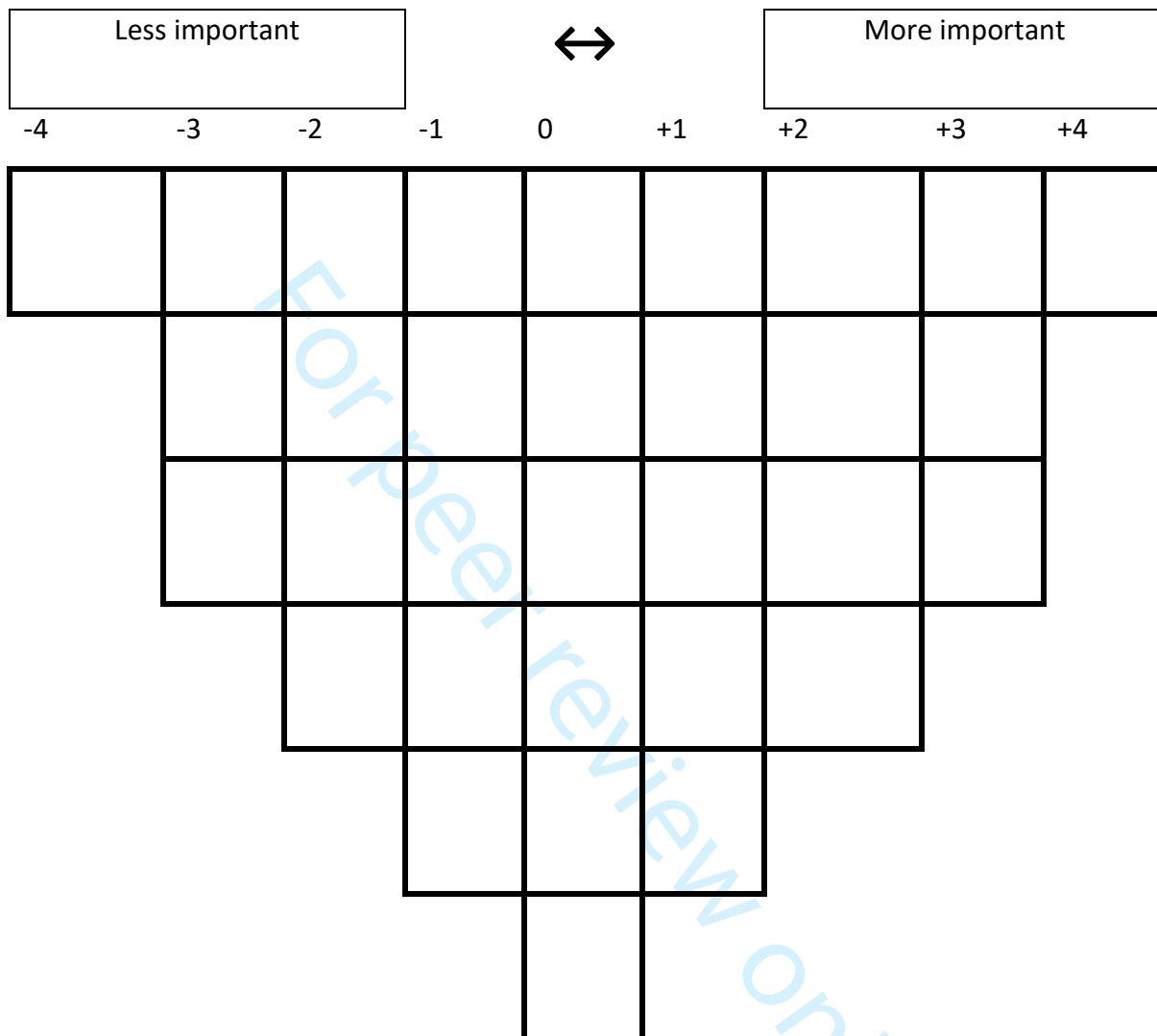
Research nurses

Imagine you are recruiting patients to a clinical trial, run by the NHS. The trial is comparing treatment A and treatment B for a chronic condition, and those who agree to take part are randomly allocated to either treatment A or treatment B.

What information would be important to potential participants when making the decision to take part?

**Additional File 2. The 32-item Q-grid used for the Q-sort**

Q grid



# BMJ Open

## Relative importance of informational items in Participant Information Leaflets for trials: a Q-Methodology approach.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2018-023303.R1
Article Type:	Research
Date Submitted by the Author:	07-Jul-2018
Complete List of Authors:	Innes, Karen; University of Aberdeen, Health Services Research Unit Cotton, Seonaidh; University of Aberdeen, Health Services Research Unit Campbell, Marion; University of Aberdeen, Health Services Research Unit Elliott, Jim; University of Aberdeen, Health Services Research Unit Gillies, Katie; University of Aberdeen, Health Services Research Unit
<b>Primary Subject Heading</b>:	Research methods
Secondary Subject Heading:	Health services research
Keywords:	Q-methodology, Participant Information Leaflet, Informed Consent, Randomised Controlled Trial

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1 **Relative importance of informational items in Participant Information Leaflets for trials: a**  
2 **Q-Methodology approach.**

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4 Karen Innes<sup>1</sup>

5 Seonaidh Cotton<sup>1</sup>

6 Marion K Campbell<sup>1</sup>

7 Jim Elliott<sup>1</sup>

8 Katie Gillies<sup>1\*</sup>

9 1. Health Services Research Unit, 3rd Floor Health Sciences Building, Institute of  
10 Applied Health Sciences, School of Medicine, Medical Sciences and Nutrition,  
11 University of Aberdeen, Foresterhill, Aberdeen AB25 2ZD, UK

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13 \* Corresponding author – k.gillies@abdn.ac.uk

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3 15 **ABSTRACT (267 words)**  
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5  
6 17 **Objectives:** To identify which information items potential participants and research nurses  
7 18 rank as the most important, and the reasons for this, when considering participation in a  
8 19 randomised controlled trial.  
9 20

10  
11 21 **Design:** Q-methodology approach alongside a think-aloud process. Using a vignette  
12 22 outlining a hypothetical trial, participants were asked to rank statements about  
13 23 informational items usually included in a participant information leaflet (PIL) on a Q-grid,  
14 24 whilst undertaking a real-time think-aloud process to elicit the underpinning decision  
15 25 processes. Analysis of quantitative data was conducted using descriptive statistics and  
16 26 qualitative data was coded using content analysis.  
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21 28 **Participants:** 20 participants (10 potential trial participants and 10 research nurses)  
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23 30 **Setting:** UK-based participants.  
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26 32 **Results:** Ten research nurses and ten potential trial participants provided data for the study.  
27 33 Both stakeholder groups ranked similar statements in their top three most important  
28 34 statements, with 'What are the possible disadvantages and risks of taking part?' featuring in  
29 35 both. However, considerable variability existed between the groups with regard to their  
30 36 ranking of statements of least importance. Participants identified that sufficient information  
31 37 to make a decision was secured using around 14 items. Participants also identified other  
32 38 items of importance not routinely included in PILs.  
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37 40 **Conclusions:** This study has provided a unique insight into how and why different trial  
38 41 stakeholder groups rank informational items currently contained within PILs. These results  
39 42 have implications for those developing future PILs and those who develop guidance on their  
40 43 content – PILs should focus most on the information items that potential trial participants  
41 44 want and need to make an informed choice about trial participation.  
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45 46 **Keywords:**

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47 47 Q-methodology, Participant Information Leaflets, informed consent, randomised controlled  
48 48 trials  
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3 50 **Strengths and Limitations**  
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- 5 51 • This study is one of the first to provide evidence on the importance of informational  
6 52 items prescribed in the regulatory guidance with regard to making an informed choice  
7 53 about RCT participation to potential trial participants and research nurses.  
8 54 • Our study used a novel methodology (Q methodology) to obtain rankings of  
9 55 informational items for PILs from different trial stakeholder groups, namely potential  
10 56 trial participants and research nurses.  
11 57 • The solely UK based self-selecting sample may hold different views to those in other  
12 58 countries with different social norms and cultures.  
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For peer review only



## 60 BACKGROUND

61 Research is an important part of the development of medicine, including the development  
62 of new treatments, services and technologies. In particular, Randomised Controlled Trials  
63 (RCTs) are considered the gold standard for evaluating the efficacy and safety of new  
64 treatments and effectiveness of existing interventions (1,2). Central to the successful  
65 delivery of RCTs are the participants who agree to take part. Strict regulations and  
66 legislation are in place governing the process of approaching and consenting potential  
67 participants to take part in order to ensure that their rights and interests are protected  
68 (3,4).

69  
70 Seeking informed consent (usually prospectively) from potential participants is a pre-  
71 requisite for their inclusion within almost all RCTs. A printed participant information leaflet  
72 (PIL) is a key document that aims to support the informed consent process. A PIL should  
73 provide the reader with clear and easy to understand information (3,4). Regulatory bodies  
74 have provided guidance on the inclusion of content which they deem to be required to  
75 ensure that the consent given is 'informed' (3,4). In addition to providing information about  
76 the proposed research, a PIL often provides a mechanism to support conversations about  
77 the trial between the potential participant and the researcher and/ or health professional,  
78 allowing the participant the opportunity to ask any questions important to their decision  
79 and discuss the research in more detail (5). However the recruitment and consent process  
80 for some trials is such that a conversation between a researcher and potential participants is  
81 less likely (e.g. postal or online recruitment) and here the written information may have  
82 more influence. Ideally, the aim of the PIL should be to provide information to assist the  
83 participant in making a decision as to whether to take part in a trial or not (5).

84  
85 In the UK, current guidelines for PILs are set out by the Health Research Authority (HRA) –  
86 the body established to ensure that the interests of patients who take part in research are  
87 protected and also to promote good quality research in the UK. The HRA's guidance list 36  
88 topic areas for suggested inclusion in PILs for research (5). These 36 items were informed by  
89 legislation on informed consent for research and cover aspects such as: the purpose of the  
90 research; potential benefits and risks; the right to refuse or withdraw; treatment  
91 alternatives (3, 4).

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At present there is a lack of evidence about whether the topic areas identified in the HRA guidelines are perceived as important, or useful for decision making, from the participants' perspective. A systematic review by Kirkby *et al*, emphasised the lack of empirical evidence to support the items included in the HRA guidance with regard to what topics participants want to know about when considering taking part in research (not just trials) (6). Furthermore Armstrong *et al* (7) suggest that PILs are written with the primary focus being regulatory review as opposed to a principal role in supporting participants' decision making.

100

Existing research also suggests that PILs may not be fit for purpose and that trial participants have a lack of understanding about key aspects of the trial (8,9). This includes those participants who have consented and been recruited to trials and those who are considering participating in trials (10). To date, existing research on PILs for trials has tended to focus on structure – redesigning and rewriting to improve readability and understanding, exploring easy to read consent statements versus standard consent statements or short vs long PILs (8, 9, 10). The majority of this existing research has not questioned the information content (specified by the regulatory guidelines) that should be contained in PILs from the perspectives of potential participants and/or other stakeholders engaged in the trial consent process.

111

Aside from the participants themselves, research nurses (RN) play a vital role in clinical trial delivery (certainly in the UK), particularly during the informed consent process. The role of an RN is that of the patient advocate, supporting any potential research participant throughout the research process. As RNs are routinely involved in seeking informed consent from potential research participants they also have a unique insight into the topic areas and questions that may arise during the informed consent conversation. However, whether the informational items RNs perceive as being important to support decision making when discussing trials aligns with desires of potential participants is not known. Understanding whether these groups are similar or differ in their perspectives could provide important insights to improve the informed consent process for RCTs.

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3 123 The aim of this study is to identify and assess which of the prescribed information items  
4 124 potential participants and research nurses rank as the most important, and the reasons for  
5 125 this, when considering participation in a Phase III RCT. A related objective was to explore  
6 126 whether there were any differences in how the information is ranked between the different  
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8 127 groups.  
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## 15 130 **METHODS**

16  
17 131 This research study used a Q-methodology approach to determine the relative importance  
18 132 of informational items presented in PILs to potential trial participants during the informed  
19 133 consent process. Q-methodology uses a mixed-methods approach that aims to identify  
20 134 shared views, opinions, beliefs and attitudes across a population, forcing people to trade off  
21 135 different dimensions and rank items in order of importance (11). The Q-sort technique  
22 136 provides participants with a question/topic of interest and a set of associated relevant  
23 137 statements linked to the topic (the Q-set) which are then ranked by the participant  
24 138 according to what they feel are most and least important from their perspective in relation  
25 139 to the question posed by the researcher. The participant places statements onto a  
26 140 specialised grid (known as a response grid) and is asked to provide justification for  
27 141 placement through a 'think-aloud' process. Here, participants verbalise in real-time the  
28 142 thought processes underlying their choice of where to place each statement on the  
29 143 response grid.  
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41 145 In full Q-methodology, one is usually concerned with trying to identify how viewpoints  
42 146 cluster together – this is usually undertaken through the use of formal statistical Q-factor  
43 147 analysis (11). In this study, however, we were more interested in the differences/similarities  
44 148 within and across the two stakeholder groups and the reasons why, so we did not proceed  
45 149 with the full factor analysis stage. We rather used descriptive statistics to summarise the  
46 150 perceived importance of items within stakeholder groups and further between stakeholder  
47 151 groups. As we did not use the full Q-methodology, we have described our study as using a  
48 152 Q-methodology approach.  
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3 154 **Scope of study**

4 155 A vignette (see Additional File 1) was developed, which described a hypothetical Phase III  
5  
6 156 RCT of two treatments for a chronic condition, to help participants contextualise the Q-sort  
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8 157 statements and enable them to provide their subjective opinions and points of view. Two  
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10 158 vignettes were prepared (based on the same trial example but framed to the perspectives of  
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12 159 the two stakeholder groups). The potential trial participant group were asked to consider  
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14 160 ‘*What information would be important to you when making a decision to take part?*’ The  
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16 161 research nurse group were asked ‘*What information would be important to potential*  
17  
18 162 *participants when making the decision to take part?*’  
19

20 164 **Development of the Q-set**

21  
22 165 The Q-set of statements were developed using three sources of information: 1. the HRA  
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24 166 guidance on ‘Consent and Participation Information Sheets’ (5); 2. a published systematic  
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26 167 review that identified empirical evidence to support what potential research participants  
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28 168 want to know about research when considering participation (6); and 3. a published scoping  
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30 169 exercise which had identified desirable features for a centralised public information  
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32 170 resource about clinical trials (12). To avoid duplication of concepts, the development of the  
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34 171 Q-set statements started with a mapping exercise where the individual informational items  
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36 172 identified by Kirkby (6) and Langston (12) were mapped onto the list specified in the HRA  
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38 173 guidance (5). Given the generic focus of our vignette, a number of the more specialised HRA  
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40 174 items (those which cover the particular circumstances of: Radiation, Pregnancy and breast  
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42 175 feeding, Young people and pregnancy, Genetic research, Screening and Exclusion, Adults not  
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44 176 able to consent for themselves and Commercial Exploitation) were excluded from  
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46 177 consideration. This resulted in a final total of 32 statements– these formed the Q-set.  
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49 179 A list of scripted prompts (related to each statement) were also developed to ensure  
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51 180 consistency in response where further information or clarification was required by  
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53 181 participants regarding what was meant by a particular statement allowing explanations to  
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55 182 be standardised across interviews.  
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58 184 A 32-element Q-grid was then developed following a quasi-normal distribution as per Q-  
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60 185 methodology standards (see Additional File 2). The grid was split into three areas: columns

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3 186 1-3 of the Q-grid represent the 'more important' items; columns 4-6 of the Q-grid represent  
4 187 'neutral' items; and columns 7-9 of the Q-grid the 'less important' items. Statements were  
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6 188 given a reference number and laminated. Three pilot Q-sorts and interviews were  
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8 189 conducted to ensure comprehensiveness of the statements and prompts and ensure no  
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10 190 overlap or duplication between statements.

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### 13 192 **Sample size**

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15 193 For the purpose of this project a sample size of 20 participants, 10 from each trial  
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17 194 stakeholder group, was deemed appropriate. Typically, Q methodology uses relatively small  
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19 195 samples of participants and the literature suggests that a 2:1 ratio of statements to  
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21 196 participants (irrespective of stakeholder group) is favoured as a minimum. For example, a  
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23 197 study with 40 statements would have 20 participants as a minimum. As this study has 32  
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25 198 statements, following the principle above, we would require an overall sample of  
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27 199 approximately 16 participants in total as a minimum (11).

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### 32 202 **Participants**

33 203 Potential trial participants

34 204 Potential trial participants (PTPs) were identified from the SHARE register. SHARE is a  
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36 205 register of people who have an interest in taking part in research, developed by NHS  
37  
38 206 Research Scotland (13). For the purposes of this project, people who lived within the NHS  
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40 207 Grampian (NHSG) area (the health board area of the lead researcher to allow face-to-face Q-  
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42 208 sorts to be undertaken) were identified and invited in line with the current SHARE  
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44 209 application process. The details of 17 potentially interested participants were provided to  
45  
46 210 the research team by SHARE. All 17 potential participants were contacted by the  
47  
48 211 researcher by telephone to arrange a convenient time for a Q-sort interview. Following this  
49  
50 212 conversation, ten participants expressed interest (seven declined further information) and  
51  
52 213 were sent postal confirmation of the appointment time and a PIL for the Q-methodology  
53  
54 214 study (available from the researchers on request). At the Q-sort interview participants were  
55  
56 215 provided with an opportunity to discuss the research and have any questions answered  
57  
58 216 before completing a consent form and taking part in the card sort interview. All participants  
59  
60 217 included in the study provided written consent.

218

219 Research Nurses

220 Research Nurses were sought from the NHSG research nurse pool. Study information was  
221 provided to the NHSG Research Nurse Manager who disseminated an invitation and the PIL  
222 relating to the study to the NHSG research nurses email distribution list (n=100). Details of  
223 12 interested nurses were received. Interested participants were asked to contact the  
224 researcher by email or telephone to arrange an appointment for a Q-sort interview.  
225 Following this participants were sent an email with confirmation of the appointment time.  
226 At the Q-sort interview research nurses were provided with an opportunity to discuss the  
227 research project and have any questions answered before completing a study consent form  
228 and taking part in the Q-sort interview. All provided written consent.

229

### 230 Data collection

231 One author (KI) conducted the Q-sort interviews between August 2015 and March 2016. All  
232 interviews were face-to-face and conducted at the University of Aberdeen. Q-sort  
233 interviews were audio recorded. At the start of the interview participants were presented  
234 with the trial vignette and the 32 statements (in random order each time) and asked to sort  
235 the statements into three initial piles: 1. those that they thought were important when  
236 considering whether or not to take part in the hypothetical Phase III RCT; 2. those which  
237 they thought were less important; and 3. those which they had a neutral view about. Once  
238 the cards had been sorted into three piles, the participant was shown the Q-grid, given an  
239 explanation of how to place the cards onto the grid and asked to start placing them (i.e.  
240 ranking in order of priority) whilst at the same time providing verbal explanation ('think  
241 aloud') as to why they were placing statements in a particular square of the grid. If  
242 participants were unsure of the meaning of any of the statements in the Q-set, the  
243 researcher used standardised prompts, described earlier, to aid understanding. On  
244 completion of the grid, the potential trial participant group were asked if they felt any  
245 information was missing from the statements and also to indicate at which point on the grid  
246 they would be able to make a decision about participation in the hypothetical RCT.

247

248 At the end of the task, participants were asked to complete a demographic details form and  
249 thanked for their participation. A photograph was taken of the completed response grid and

1  
2  
3 250 a paper copy of the response grid completed by the researcher. Audio files were  
4  
5 251 transcribed verbatim and anonymised accordingly.

6  
7 252

### 8 253 **Data analysis**

#### 9 10 254 Descriptive statistics

11 255 Data was collated across individual participants within each stakeholder group and used to  
12  
13 256 calculate the following for each of the 32 items: 1. the median importance score (i.e. the  
14  
15 257 median position given by participants for that statement which could range from 1 -9 (the  
16  
17 258 higher the median importance score the less important the statement is i.e. 1 most  
18  
19 259 important, 9 least important); 2. The Inter Quartile Range (IQR) around the median  
20  
21 260 importance score; and 3. The range of scores for each item by group. These summary  
22  
23 261 statistics allowed the statements to be ordered from most to least important for each of the  
24  
25 262 trial stakeholder groups. The overall ranking of the statements was based on the median  
26  
27 263 value, however in the case where the median value was the same for more than one  
28  
29 264 statement the interquartile range was considered (and if necessary the range) in order to  
30  
31 265 determine order. Differing views on individual items between the potential trial participant  
32  
33 266 and research nurse group were defined as “discordant” if they exhibited a difference in the  
34  
35 267 median rankings of  $\geq 2$  points between the groups. The PTP group were asked how many  
36  
37 268 information cards they would require to make a decision about trial participation. This data  
38  
39 269 was collated and medians and a range calculated.

40  
41 270

#### 42 271 Qualitative analysis

43 272 Transcripts were read and re-read to ensure complete familiarity with the transcripts. Text  
44  
45 273 within the transcripts was coded by Q-set statement number using a content analysis  
46  
47 274 approach (14). Quotes were selected that illustrated reasons for ranking for the overall  
48  
49 275 group majority, or any outliers. Transcripts from the research nurses and potential  
50  
51 276 participants were initially considered separately but were then systematically compared for  
52  
53 277 areas of agreement or disagreement.

54  
55 278

### 56 279 **Patient Involvement**

57 280 Patients were not involved as research partners in the design, data collection or data  
58  
59 281 analysis phases of this research. A patient research partner (JE) was involved in the drafting

282 of the manuscript for publication. Participants in the research will be offered a summary of  
283 the results of the study.

284

### 285 **Approvals**

286 The study was approved by NRES Committee London – Bromley (Rec ref: 15/LO/1221) and  
287 NHS Grampian Research and Development department (R&D ref: 2015UA013). All interview  
288 participants provided their signed consent, which included consent for anonymised quotes  
289 from their interviews to be published.

290

## 291 **RESULTS**

292

### 293 **Participant characteristics – Potential Trial Participants**

294 Seventeen potential trial participants (PTPs) were approached through the SHARE database  
295 and ten consented to take part in this research project. The ten PTPs had a mean age of 49.4  
296 years (range 34 -73). Five men and five women were interviewed, men had a mean age of  
297 59.2 years and women a mean age of 39.6 years. Education levels varied between this group  
298 - four participants had secondary education (e.g. O level, GCSE, Highers), one of these four  
299 had also completed an apprenticeship. The remaining six had completed higher education  
300 (e.g. a degree). Seven PTPs had no previous experience of research. Q-sort interviews took  
301 an average of 38.7 minutes (range 23.6 - 62.3).

302

### 303 **Participant characteristics – Research nurses**

304 One hundred NHS Research Nurses (RN) were invited through the Research Nurse  
305 Manager email distribution list and twelve consented and took part in this research project.  
306 Data from ten of the twelve RNs is presented in the analysis due to an early change in the  
307 study documentation affecting the data from two of the participants. The ten RNs whose  
308 data was included in the analysis were all female and had a mean age of 40.4 years (range  
309 28 – 59). All had at least Higher Education (e.g. a degree) and the range of research they had  
310 worked on varied from observational studies to CTIMPs (Clinical Trial on an Investigational  
311 Medicinal Product). Q-sort interviews took an average of 42.2 minutes (range 24.1 – 62.2).  
312 Summary characteristics of study participants are presented in Table 1.



1  
2  
3 313

4 314 **Ranking of statements**

5  
6 315 Overall ranking summaries are presented for the potential participant group (Table 2) and  
7  
8 316 research nurse group (Table 3).

9  
10 317

11 318 **Top ranking items – the most important information**

12  
13 319 There were several similarities between the RN and PTP groups in terms of the statements  
14  
15 320 that they ranked as most important. PTPs ranked ‘What are the possible side effects of trial  
16  
17 321 treatment?’ as their most important item, with RNs ranking it as fourth. Some of the  
18  
19 322 reasons cited by PTPs for this being the most important related to their own personal safety,  
20  
21 323 not being hurt and knowing the types of events they should report to the trial team

22 324 *..if it was going to be taking medication or if it was going to be some other*  
23  
24 325 *sort of new treatment, it would be important to know as much as you*  
25  
26 326 *could about what possibly might go wrong with it, so that you can protect*  
27  
28 327 *yourself.* PTP20 – ranked in column 1.

29 328

30 329 RNs also reported trial participants want to know about side effects but that, in their  
31  
32 330 perspective, this only mattered to a small number they ranked it lower.

33  
34 331

35 332 *There has been a very few handful who have asked me for some data of*  
36  
37 333 *how many percent have had side-effects or how many in the overall study*  
38  
39 334 *how many -- I have had questions but it's just that it's such a small rare*  
40  
41 335 *quantity of people.* RN5 – ranked in column 4.

42  
43 336

44 337 With regard to the second most important item, PTPs ranked ‘What are the  
45  
46 338 possible disadvantages and risks of taking part?’ with RNs ranking it in first place.  
47  
48 339 Although the position of the ranking is different between the groups the reasons  
49  
50 340 provided were similar and related to benefits for self, whilst weighing up any  
51  
52 341 potential negative consequences.

53 342 *Well, I think I'd have to hear them both and then decide, you know? So,*  
54  
55 343 *say, for example, you said with the advantages, it could improve your*  
56  
57 344 *condition and the disadvantages were... you might get headaches with it*

1  
2  
3 345 *or something, so it depends on the strengths of both.* PTP18 – ranked in  
4 346 column 2.

5 347  
6  
7 348 *I think it's kind of almost maybe a sort of selfish kind of individual kind of*  
8 349 *thought of what does this mean for me rather than looking at the bigger*  
9 350 *picture of what the study is actually about.* RN1 – ranked in column 2.

10 351  
11  
12 352 PTPs ranked 'What will I have to do?' as the third most important statement highlighting the  
13 353 importance of knowing what would be expected of them, whereas RNs ranked this item in  
14 354 position 6 but with similar reasoning regarding expectations.

15 355 *...just to make sure it wasn't going to involve too much from what would*  
16 356 *be the normal sort of scenario, make sure that I wasn't committing to*  
17 357 *something that maybe...on top of something that might already be quite*  
18 358 *stressful or is going to add a lot of work or time...* PTP7 – ranked in  
19 359 column 3.

20 360  
21 361 *...with a chronic condition that patient's not that concerned about the*  
22 362 *end point of the study, just about getting an option for treatment. So I*  
23 363 *think they would actually want to know 'what will I have to come in and*  
24 364 *contribute, how much work will it be?* RN7 – ranked in column 4.

25 365  
26  
27 366 The second and third most important items ranked by RNs did not feature in the  
28 367 PTPs top three. Research nurses ranked 'What is the purpose of this study?' in  
29 368 position number 2, stating the importance of highlighting to potential  
30 369 participants how the trial is relevant to them. However PTPs ranked this  
31 370 statement in position number 9 the rationale being this statement has less to do  
32 371 with them as individuals. This items exhibited the biggest difference between  
33 372 groups in terms of items in each groups' top 3, which is not surprising when  
34 373 considering the individual groups interpretations.

35 374 *I feel this is the most important to let the patients know what we are*  
36 375 *trying to do, what's the purpose of doing the study to begin with. A bit of*

1  
2  
3 376 *explanation as to why we're doing it in the first place.* RN3 – ranked in  
4 377 column 1.

5 378  
6  
7 379 *“What the purpose is?” probably just to know whether it was something*  
8 380 *they were going to continue doing, or if it was just a trial and a kind of...*  
9 381 *guinea pig situation, just to see what happened. I suppose, knowing that*  
10 382 *if you could help other people with a similar condition, it might sort of*  
11 383 *give you the incentive to help or be part of it.* PTP17 – ranked in column  
12 384 4.

13 385  
14  
15 386 In third place RNs ranked ‘What are the possible advantages of taking part?’ as important,  
16 387 while PTPs ranked this statement as their fourth most important statement. Although in  
17 388 slightly different overall position, both RN and PTP gave similar reasons for their ranking,  
18 389 linked to balancing and weighing up of consequences.

19 390 *So it may be that this drug won't be available to them, it's not going to be*  
20 391 *available to them if they don't take part so it's important that they know*  
21 392 *that, that there may be an advantage in the sense that they won't have*  
22 393 *access to this drug.* RN4- ranked in column 4.

23 394  
24 395 *I would want to know the worst case scenario and then I'd probably ask*  
25 396 *after that what would be the benefits, because I would assume that there*  
26 397 *were going to be benefits, I guess.* PTP7 – ranked in column 3.

27 398  
28 399 **Lowest ranking items – the least important information**

29 400 Potential trial participants ranked ‘Will I receive any payments for taking part?’ as the least  
30 401 important statement in position 32 with reasoning related to expectations of volunteering  
31 402 not requiring payment and opportunities for treatment outweighing remuneration. In  
32 403 comparison RNs ranked this in position 23 with some highlighting this as a potential  
33 404 incentive for patients to participate or provide outcome data.

34 405 *Well, I volunteered so I don't expect to get paid for volunteering to do*  
35 406 *something. That's why I say that's the least important.* PTP13 – ranked in  
36 407 column 9.

408

409 *I don't think patients are also that concerned about being reimbursed for*  
410 *taking part in the study. I think the benefits that they may get from the*  
411 *study, I would say outweigh ... especially if it's a chronic condition that*  
412 *they've got, that they've lived with for a long time, that I think that if they*  
413 *see a glimmer of hope that that's more important than maybe getting*  
414 *payment. If, though, the study was very ... sorry, had a number of visits, I*  
415 *think then that would be where the payments would then move for me.*

416 RN4 - ranked in column 5.

417

418 From the ranking summary PTPs ranked 'Will there be any impact on any insurance  
419 policies?' as the second least important statement in position 31 and most did not see the  
420 relevance of this item for the decision. Research nurses ranked this in position 17 with  
421 some citing reasons for particular cohorts as influencing their placement.

422 *...I don't know, maybe I'm a bit blasé about that as well. That just didn't*  
423 *come into my head at all. Even at the moment I'm thinking...no just*  
424 *wouldn't affect me one little bit...I think even if I was given an*  
425 *information leaflet on the impact on insurance policies I probably*  
426 *wouldn't even read it, to be honest. PTP7 – ranked in column 9.*

427

428 *And insurance policies, I think that's important because not all of the*  
429 *patients you have will be in their eighties and not having holidays*  
430 *anymore. So insurance is important for the younger ones, maybe in their*  
431 *fifties or younger, looking to go on holiday. RN3 – ranked in column 5.*

432

433 The third least important items ranked in position 30 by potential trial participants was 'Will  
434 expenses be reimbursed?' and again referenced their health as taking precedent over  
435 expenses but it may be important dependent on contribution. However, RNs ranked this  
436 statement in position 18 based on real examples of patients being out of pocket and this  
437 impacting on recruitment.

438 *That's less important for me, mostly because I wouldn't perceive much in*  
439 *the way of expenses for myself for anything, because I live near the city*

1  
2  
3 440 *centre and walk most places...I wouldn't have thought – unless the study*  
4 441 *happened to be in another city or anything like that – that I would have*  
5  
6 442 *far to go. PTP10 – ranked in column 8.*  
7

8 443  
9  
10 444 *But they [patients] are thinking, and I know the study I'm involved at the*  
11 445 *moment is involving extra visits for the patients, and I'm expecting that to*  
12 446 *be a bit of a hurdle if there's not a budget for these extra visits and*  
13 447 *parking outside the hospital and things like that. RN7 – ranked in column*  
14  
15  
16 448 *5.*  
17

18 449  
19  
20 450 RNs ranked 'Who has approved the study?' as the least important statement in position 32  
21 451 and in comparison PTPs ranked this statement in position 17. Collectively RNs seemed to  
22 452 think this was important information for professionals but not for potential trial participants  
23 453 yet the PTP group placed this higher suggesting it is of value.  
24

25  
26  
27 454 *...whenever I have been consenting somebody and said where the*  
28 455 *approvals are from or anything, there's not really any interest at all. RN1*  
29 456 *– ranked in column 9.*  
30

31  
32 457  
33  
34 458 *I know there's a whole process involved for these things so I wouldn't*  
35 459 *want to see and I wouldn't really need to know. I would assume it had*  
36 460 *been properly approved. PTP1 – ranked in column 5.*  
37  
38

39 461  
40  
41 462 The second least important items ranked by RNs in position 31 was 'How have patients and  
42 463 the public been involved in the design of the study?' with PTPs ranking this items at position  
43 464 26. Both groups recognised the importance of the contribution of patients and the public  
44 465 (although it was not clear if the PTP group fully understood what this item meant) but  
45 466 thought other aspects were more important.  
46

47  
48  
49 467 *...I don't think patients think about that...I don't think it's of any relevance*  
50 468 *to them...its obviously important because for a study to work then it has*  
51 469 *to be in research for a reason and if you have patients involved in the*  
52 470 *design of it then compliance rates are going to be better. RN2 – ranked in*  
53 471 *column 9.*  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 472 *Yeah, I'd be interested in knowing that but I don't think I would*  
4 473 *immediately want to know how the study had been put together. PTP9 –*  
5  
6 474 *ranked in column 7.*  
7

8 475

9  
10 476 The RNs ranked 'Has the scientific quality of study been checked?' as the third least  
11 477 important statement in position 30 largely because in their experience this is not raised as a  
12  
13 478 concern by patients. Interestingly, PTPs ranked this in position 11 stating that these quality  
14  
15 479 checks on research were important. With a difference of 19 ranked position (median score  
16  
17 480 difference of 3.5 (PTP = 4.5 vs RN = 8) this items has one of the largest variations in ranking  
18  
19 481 between the groups and the largest difference between the groups across the top and  
20  
21 482 bottom three.

22 483 *Never had any questions about that. I have had patients or relatives who are well*  
23  
24 484 *educated, they would want to know the purpose of the study but they would*  
25  
26 485 *not...They don't want to know overall how many people you require, its more about*  
27  
28 486 *whether we have any experience doing this thing. RN5 – ranked in column 9.*  
29

30 487

31 488 *I think that would be very important to know. I know there's all sorts of rules about*  
32  
33 489 *what's a good sample size and things like that, you know, so I would like to be able to*  
34  
35 490 *access that information. It wouldn't be as important, I think, as the other things I've*  
36  
37 491 *ranked highly, but it would be more important. PTP20 – ranked in column 5.*  
38

39 492

### 39 493 **Items exhibiting variability on rank order between groups**

40  
41 494 Figure 1 illustrates the differences between stakeholder groups with regard to median  
42  
43 495 ranking values of informational items ranging from most to least importance. As stated  
44  
45 496 previously, items with a median difference greater than or equal to 2 rank points were  
46  
47 497 considered to have significant variability between the individual groups. Table 4 lists each of  
48  
49 498 the items that exhibited variability in median rank order between the stakeholder groups.  
50  
51 499 Overall, ten of the 32 items exhibited variability (predefined at  $\geq 2$  median scores difference)  
52  
53 500 between the two stakeholder groups on rank order scores. The item with the largest  
54  
55 501 median score rank ordered difference between the PTP and RN group was 'Has the scientific  
56  
57 502 quality of study been checked?' As mentioned previously there was a 3.5 median score  
58  
59 503 difference between the groups (PTP = 4.5 vs RN = 8) with PTP ranking it at number 11 and

1  
2  
3 504 RNs at position 32. One RN provided the following feedback on the exercise, which may  
4  
5 505 provide some explanation as to why differences between the two groups were evident.

6 506 *“What I probably found hard is putting myself maybe say in the patients’ shoes,*  
7  
8 507 *because you can think of it from, you know, very much like, you know, your role as*  
9  
10 508 *from a nursing perspective, so yeah, always thinking about the patient.” RN4*

11 509

### 13 510 **Missing information**

14  
15 511 On completion of the Q-sort interview the potential trial participant group were asked  
16  
17 512 whether they felt any information items were missing from the card-sort set. The general  
18  
19 513 consensus was that no additional information items were required, although three  
20  
21 514 participants made suggestions as to additional information they might like to see in a PIL,  
22  
23 515 namely: contact with other patients taking part in the trial; childcare arrangements; and  
24  
25 516 side-by-side comparison between standard care and trial interventions.

26 517

27 518 Contact with other patients taking part in the trial.

28  
29 519 *It would be more likely, I think, in some ways, that I would like to have contact*  
30  
31 520 *because I would.... You know, I think I would appreciate sharing experiences, and I*  
32  
33 521 *don’t know... just thinking about it that might be something that would be useful for*  
34  
35 522 *the study as well. PTP10*

36 523

37 524 Childcare arrangements.

38  
39 525 *So a logistical question I think is something that I would probably think... it would*  
40  
41 526 *make me more positive towards something if it said there are facilities for childcare*  
42  
43 527 *here or there’s a crèche or something like that, then it would make me think, “Oh,*  
44  
45 528 *well, I can definitely do that then”. PTP2*

46 529

47  
48 530 Side-by-side comparison between standard care and trial interventions.

49 531 *Maybe exactly what it would entail weighed up against...you know, showing the two*  
50  
51 532 *side-by-side. This will entail having to come to hospital every week to get bloods,*  
52  
53 533 *whereas normally you would never have to go and get... how time consuming it*  
54  
55 534 *would be would probably be quite an important one. PTP7*

56 535

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2  
3 536 **Minimum information requirement for decision making**

4 537 On completion of the Q-sort, we asked each of the potential trial participant group if they  
5 538 could indicate at which point they felt they would have enough information to make a  
6 539 decision about taking part in the hypothetical RCT. The median number of cards required by  
7 540 the PTP group to make a decision was 14 with a range of 5 to 32. For the majority of the PTP  
8 541 group (60% of PTPs) a decision would be made that they had enough information using  
9 542 between 8-15 cards (25% - 47% of the 32 statements).

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15 543

16 544 **Interpretation of context**

17  
18 545 An additional finding from the “think aloud” interview data relates to participants  
19 546 interpretation of the specific context of the Phase III trial described in the vignette. Although  
20 547 no reference to specific interventions was given apart from ‘treatment’, the majority of  
21 548 participants interpreted the setting to be a drug trial. Examples of this belief were  
22 549 evidenced across both groups.

23  
24  
25  
26  
27 550

28  
29 551 *My reason is that I just think if you were going to take something*  
30 552 *that was... if it was going to be taking medication or if it was going to*  
31 553 *be some other sort of new treatment, it would be important to know*  
32 554 *as much as you could about what possibly might go wrong with it.*  
33 555 *PTP20.*

34  
35  
36  
37  
38 556 *...So if people getting drug A are clinically much better than the*  
39 557 *people getting drug B and that's evident quite early on when people*  
40 558 *would be expected to stop and move on to... RN2.*

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48 561 **DISCUSSION**

49 562 **Principal Findings**

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51 563 We believe this study to be one of the first to provide evidence in relation to how important  
52 564 potential trial participants and research nurses perceive the informational items prescribed  
53 565 in the regulatory guidance to be with regard to making an informed choice about RCT



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3 566 participation. Our study used a novel methodology in this context (trials methodology) to  
4 567 obtain rankings of informational items for PILs from different trial stakeholder groups,  
5 568 namely potential trial participants and research nurses. Previous research evidencing the  
6 569 relative importance of items included in trial PILs across different stakeholder groups is  
7 570 limited. Existing research on trial PILs has largely assumed the regulatory guidance reflects  
8 571 what potential participants actually want to know and has focussed on areas such as  
9 572 structure, content, or mode of delivery (8, 9, 10). Our study shows that more work is  
10 573 required to first define *what* information potential trial participants need (and/or want) to  
11 574 support an informed choice about participation.  
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20 576 Several of the statements identified as being most important relate to information about  
21 577 consequences of participation, namely disadvantages or advantages. Our results are,  
22 578 perhaps, not surprising given various decision making theories and frameworks suggest that  
23 579 weighing up the pros and cons of a situation is a key component of decision making (15). In  
24 580 addition, several reports in the literature from qualitative studies that have explored  
25 581 participants reasons for participation (or not) in randomised controlled trials cite potential  
26 582 advantages or disadvantages of the trial as being influential (16, 17). However, it may be  
27 583 important to further consider the context of the trial with regard to relative importance of  
28 584 items. The use of the vignette revealed that although not specified, participants in our study  
29 585 believed the trial to be a drug trial, which may have influenced how they rated the relative  
30 586 importance of items.  
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40 587  
41 588 Our results highlight that stakeholder groups were more similar when considering the most  
42 589 important items and that much more variability was exhibited between the groups with  
43 590 regard to the statements considered to be least important. Similar work exploring the  
44 591 importance of informational items included in a decision support intervention for trial  
45 592 participation also identified differences between stakeholder groups on key items (18). In  
46 593 particular, items describing the advantages or disadvantages of non-participation (e.g.  
47 594 forgoing access to trial intervention) in a trial showed more variation than others (18). An  
48 595 additional study has also evidenced variability amongst stakeholder groups with regard to  
49 596 content and mode of delivery of information provided to participants to support decisions  
50 597 about trial participation (19). The differences between stakeholders in perceived  
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3 598 importance of information for trial participation decisions is of concern given much of the  
4  
5 599 decision about participation is supported through conversations, which may or may not talk  
6  
7 600 to a potential trial participant's main concerns, depending on who leads that conversation.  
8  
9 601 The coverage of trial topics depending on who leads the conversation has been observed in  
10  
11 602 recruitment consultations for a prostate cancer trial and had implications for recruitment  
12  
13 603 and acceptance of allocation (20). It is also possible that in practice some RNs adapt their  
14  
15 604 conversation to be responsive to the needs of individual patients and their concerns and  
16  
17 605 preferences for information. Therefore, further research to unpack why differences  
18  
19 606 between stakeholder groups exist and efforts to reduce these differences are important.  
20

21  
22 607  
23 608 The majority of potential participants in our study revealed they would have made a  
24  
25 609 decision about trial participation based on the information items they placed within the first  
26  
27 610 3-4 most important columns (around 8-15 cards out of 32 and equal to around 47% of the  
28  
29 611 information specified in the HRA guidance). This suggests that all of the information that is  
30  
31 612 included in a PIL may not be necessary for potential participants to make a decision about  
32  
33 613 taking part in the trial. In further support of this, a study that explored the preferred length  
34  
35 614 of the participant information sheet for research showed that 77% of participants chose to  
36  
37 615 access only the first level of information (less than that which may be contained on a  
38  
39 616 standard PIL ) before making a decision about participation (21). In terms of the content of  
40  
41 617 the minimum information set that potential participants deemed sufficient for decision  
42  
43 618 making, our study showed they focussed on statements related to the interventions (and  
44  
45 619 any associated consequences) rather than the formalities of the research. These findings are  
46  
47 620 similar to Sand *et al* who showed that the statements participants valued most were largely  
48  
49 621 related to the study treatment and study related activities rather than information on  
50  
51 622 storage of data (22). Whether these key decision statements should be ordered such that  
52  
53 623 they are represented first in PILs requires further research.  
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56  
57 625 As mentioned previously, a systematic review identified little evidence of what information  
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59 626 potential participants want to know when making a decision about research participation  
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61 627 (6). Of the studies that were identified, evidence could only be identified for less than half of  
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63 628 the items the HRA suggest should be consideration for inclusion in PILs for research (6).  
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65 629 Whilst this review focused more broadly on research studies, not just trials, it further

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3 630 illustrates the point that the information provided in PILs falls short of being actually  
4 631 grounded in the informational needs and desires of those for whom it should be designed.  
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6 632 This begs the question of who these patient-facing documents are actually written for.  
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8 633 Armstrong *et al* conducted a study to explore the function of PILs in which they concluded  
9  
10 634 'PILs are the outcome of a process of institutional scripting that is strongly shaped by the  
11 635 accountability demands inherent in the ethical review process.' (7) They go on to suggest  
12  
13 636 that the content and text of a PIL is agreed between the trialist (the author of the PIL) and  
14  
15 637 the REC (7). This lack of recognition of the audience of PILs is further evidenced when  
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17 638 comparing PILs for randomised controlled trials to other information resources shown to  
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19 639 support decision making for treatment and screening decisions (so called decision aids) (23).  
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21 640 PILs were shown to lack information deemed necessary to support good quality decision  
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23 641 making (23). Interestingly in our study the PTP group raised 'contact with other participants'  
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25 642 and a 'side-by-side comparison of trial treatment and standard care' as begin missing from  
26  
27 643 the current information set. Both of these items are suggested as components of decision  
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29 644 aids and to be useful for potential trial participants decision making (23). Perhaps it is time  
30  
31 645 to review the guidance documents available to researchers to ensure that PILs are written  
32  
33 646 specifically with the needs/wishes of the target audience , the potential trial participant, in  
34  
35 647 mind and that the information more supports informed choices about trial participation  
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37 648 with less focussing on institutional accountability.

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41 650 When patients get involved in the design of research studies they are frequently asked to  
42  
43 651 help to improve the participant information. There is evidence to show that as potential  
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45 652 participants they can help to make the language clearer and easier to understand and not  
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47 653 discriminatory or stigmatising (24). They can also help to present and deliver the  
48  
49 654 information in ways that reflect the needs of participants and are culturally appropriate and  
50  
51 655 sensitive (25). There is evidence that involving patients can also help to ensure that the  
52  
53 656 content covers some important aspects of what potential participants want to know but not  
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55 657 by systematically examining the information prescribed in national guidance as in the study  
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57 658 reported here (26). In this study both the PTPs and RNs gave a low ranking to the statement  
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59 659 about the involvement of patients and the public in the design of the study. This is not  
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61 660 surprising because the statement did not give any indication how the involvement might  
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63 661 have helped PTPs make an informed decision whether to participate.

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5 663 Evidence from research on information to support the informed consent process is needed  
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7 664 by the trials community. A recent prioritisation exercise to identify the top 10 research  
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9 665 priorities for recruitment in trials identified three priorities in the top 10 that could consider  
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11 666 aspects of information provision in their scope (27). Specifically: priority 2. What  
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13 667 information should trialists communicate to members of the public who are being invited to  
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15 668 take part in a randomised trial in order to improve recruitment to the trial?; priority 4. What  
16  
17 669 are the best approaches for designing and delivering information to members of the public  
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19 670 who are invited to take part in a randomised trial?; and priority 9. What are the best  
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21 671 approaches to optimise the informed consent process when recruiting participants to  
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23 672 randomised trials? (27). This prioritisation (by a range of stakeholders including patients) of  
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25 673 multiple questions around information to support the informed consent process to trials  
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27 674 further highlights the need for additional research to identify models of best practice.  
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### 676 **Strengths and limitations**

677 The sample included in this work is relatively small (n=20) and limited by geographic  
678 location. Identifying potential trial participants through the SHARE database was a  
679 straightforward, cost effective and time saving method however it is worth giving  
680 consideration to the type of people who have signed up to this database. Those who sign up  
681 to the SHARE register are likely to have an interest in research, perhaps making the sample  
682 somewhat dissimilar from the general public. The type of information these participants  
683 value (or do not value) may differ given their existing experience of research or a more  
684 general awareness of research participation. Whilst we have no reason to believe the  
685 locality would influence the results, it would be important to extend both the sample size,  
686 geographic spread, and representation from other stakeholder groups.

687

688 Although the vignette was worded slightly differently for each stakeholder group it was used  
689 to try and ensure that the study was interpreted in the same way for all participants.  
690 Potential trial participants appeared to have no problems with the vignette as they were  
691 being asked to think about a decision from their own point of view. For the research nurse  
692 group, we were asking them to think about what potential participants thought, and this  
693 proved more challenging for the research nurses. As such the vignettes between the two

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3 694 groups were slightly different, most notably in the RN group through the use of phrasing  
4 695 around comparing treatments which was lacking from the PP group. Therefore it must also  
5 696 be considered that this difference could have influenced preferences for information.  
6 697 Although the vignette talked about treatments – treatment ‘a’ and treatment ‘b’ – for a  
7 698 chronic condition, many participants interpreted this as two drug treatments. It is worth  
8 699 considering the possibility that this may have had an impact on how the statements were  
9 700 ranked. For example, information relating to side effects, and risks and disadvantages may  
10 701 be deemed more pertinent for people considering participation in a drug trial (especially if it  
11 702 were a new product) compared to a trial of non-drug interventions. Further exploration of  
12 703 different aspects of trial design (including different interventions) and how this influences  
13 704 preferences for information is needed. Indeed, the purposive exploration of a range of  
14 705 vignettes that describe different contextual aspects of the trial (e.g. uncertainty surrounding  
15 706 each intervention, the risk/benefit profiles for each, etc) would be important to further  
16 707 consider whether context plays a role. Another potential limitation with regard to  
17 708 interpretation relates to the Q-sort statements. Although prompts were developed if  
18 709 participants struggled with interpretation, the statements for the Q-Sort were all quite short  
19 710 and therefore their meaning was open to a certain amount of interpretation. The meaning  
20 711 of each statement and how clear it is may have had a bearing on what the participants  
21 712 understand by it and how important they think it is.  
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713  
714 A significant strength of this study was the use of the Q-methodology providing both  
715 qualitative and quantitative data to investigate how important different stakeholder groups  
716 perceived the informational items to be. The use of Q-methodology in trials methodology  
717 research is not common but the data it produces yields novel insights not easily produced by  
718 other methods (28).

719

## 720 **Conclusion**

721 In conclusion, this study has provided a unique insight into how and why different trial  
722 stakeholder groups rank informational items contained within PILs for randomised  
723 controlled trials. This study has shown that both potential trial participants and research  
724 nurses ranked similar statements as being most important, yet clear differences exists in the  
725 ranking of the least important statements. These results have implications for researchers

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3 726 developing PILs for RCTs. Patient information leaflets are directed at potential trial  
4 727 participants and should therefore, by default, include information that potential trial  
5 728 participants want and need to make an informed choice about participation in a trial.  
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7 729 Additional efforts to work in parallel with potential trial participants to identify the  
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9 730 information considered critical to support informed choices about trial participation is  
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11 731 needed.

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### 14 733 **Competing interests**

15 734 The authors declare that they have no competing interests.

16 735

### 17 736 **Authors' contributions**

18 737 KG was responsible for conceiving the study. KI, SC, MC, and KG designed the study. KI  
19 738 conducted the data collection and statistical analysis. KG and KI conducted the qualitative  
20 739 analysis. KG and KI led the writing of the manuscript. SC, MC and JE contributed to further  
21 740 drafts of the manuscript. All authors read and approved the final manuscript.

22 741

### 23 742 **Acknowledgements**

24 743 The authors would like to thank the stakeholders who participated in the study for their  
25 744 time.

26 745

### 27 746 **Funding statement**

28 747 This work was supported by personal fellowship award (to KG) from the Medical Research  
29 748 Council Strategic Skills Methodology Fellowship [MRC MR/L01193X/1]. KI and SC were  
30 749 supported by awards from the National Institute for Health Research Health Technology  
31 750 Assessment Programme [HTA ref 14/192/71, HTA ref 11/58/15]. The Health Services  
32 751 Research Unit is supported by a core grant from the Chief Scientist Office of the Scottish  
33 752 Government Health and Social Care Directorates.

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### 35 754 **Data Sharing**

36 755 No database available.

37 756

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Table 1 – Summary participant characteristics

	Potential trial participants		Research Nurses	
Age (median; range)	49.4 years (range 34 -73)		40.4 years (range 28 – 59)	
Gender (% female)	5 (50%)		10 (100%)	
Education (%)	Secondary	30%	Secondary	
	Apprenticeship	10%	Apprenticeship	
	Higher	60%	Higher	100%
Involvement in research	3 previously participated in research		CTIMPS	
			Interventional non-CTIMPS	
			Observational	
Q-sort interview (median min:sec)	38.7 minutes (range 23.6 - 62.3)		42.2 minutes (range 24.1 – 62.2)	

CTIMP – Clinical Trial of an Investigational Medicinal Product

Table 2 –Potential Trial Participants– ranking of statements (from most to least important)

Statement	Rank	Median	IQR	Range
What are the possible side effects of trial treatment?	<b>1 (most important)</b>	2	1.5, 3.5	1, 5
What are the possible disadvantages and risks of taking part?	<b>2</b>	2	2, 3	1, 4
What will I have to do?	<b>3</b>	2.5	2, 4	2, 5
What are the possible advantages of taking part?	<b>4</b>	3	2, 4	2, 5
What is the treatment that is being tested?	<b>5</b>	3	2, 4	1, 7
What will happen to my treatment when the research study stops?	<b>6</b>	3	2.5, 4	2, 4
How will my treatment be decided?	<b>7</b>	3.5	3, 5.5	2, 7
What will happen to me if I take part?	<b>8</b>	4	1, 5.5	1, 7
What is the purpose of this study?	<b>9</b>	4	2, 4	1, 7
Will I know what treatment I am on?	<b>10</b>	4	3, 7.5	3, 9
Has the scientific quality of study been checked?	<b>11</b>	4.5	3, 5.5	2, 8
What are the alternatives for treatment?	<b>12</b>	4.5	3, 6	3, 7
What happens if relevant new information becomes available?	<b>13</b>	5	3, 6	1, 7
Will my GP be told?	<b>14</b>	5	4, 6.5	4, 4
What will happen to the results of the study?	<b>15</b>	5	4, 6.5	3, 7
Who has overall responsibility for the study?	<b>16</b>	5	4.5, 5	4, 7
Who has approved the study?	<b>17</b>	5	5, 6	2, 7
Do I have to take part?	<b>18</b>	5.5	3.5, 8	2, 9
Who could I contact for further information?	<b>19</b>	5.5	4, 6	4, 7
Who will have access to my data?	<b>20</b>	5.5	4.5, 7	3, 7
What if I have a complaint?	<b>21</b>	5.5	5, 7.5	4, 9
Why have I been invited?	<b>22</b>	6	3.5, 7.5	2, 8
Will my taking part in the study be kept confidential?	<b>23</b>	6	4.5, 7	3, 8
Will information from my existing medical records be accessed?	<b>24</b>	6	4.5, 7	2, 8
What will happen if I don't want to carry on with the study?	<b>25</b>	6	5, 6.5	4, 7
How have patients and the public been involved in the design of the study?	<b>26</b>	6	5, 7	4, 7
How will data be stored and disposed of?	<b>27</b>	6	5.5, 7	4, 8
What is involved in the consent process?	<b>28</b>	7	5, 8	4, 9
Who is funding the research?	<b>29</b>	7	5.5, 8	3, 9
Will expenses be reimbursed?	<b>30</b>	8	5.5, 8	5, 8
Will there be any impact on any insurance policies?	<b>31</b>	8	5.5, 8.5	3, 9
Will I receive any payments for taking part?	<b>32 (least important)</b>	8	6.5, 8.5	6, 9

Table 3 – Research nurses – ranking of statements (from most to least important)

Statement	Rank	Median	IQR	Range
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4	What are the possible disadvantages and risks of taking part?	<b>1 (most important)</b>	2	2, 4
5	What is the purpose of this study?	<b>2</b>	2	2.5, 4
6	What are the possible advantages of taking part?	<b>3</b>	2.5	2, 3.5
7	What are the possible side effects of trial treatment?	<b>4</b>	2.5	2, 4
8	What is the treatment that is being tested?	<b>5</b>	3	1.5, 4
9	What will I have to do?	<b>6</b>	3	2.5, 4
10	Do I have to take part?	<b>7</b>	3	2.5, 4.5
11	What will happen to me if I take part?	<b>8</b>	3	3, 3.5
12	How will my treatment be decided?	<b>9</b>	3	3, 4.5
13	Why have I been invited?	<b>10</b>	3.5	1, 4
14	What are the alternatives for treatment?	<b>11</b>	4	3, 4
15	Will I know what treatment I am on?	<b>12</b>	4	3, 5
16	What will happen to my treatment when the research study stops?	<b>13</b>	4.5	4, 5
17	What happens if relevant new information becomes available?	<b>14</b>	5	4, 6.5
18	What will happen if I don't want to carry on with the study?	<b>15</b>	5	4.5, 5
19	Will information from my existing medical records be accessed?	<b>16</b>	5	5, 6
20	Will there be any impact on any insurance policies?	<b>17</b>	5	5, 6
21	Will expenses be reimbursed?	<b>18</b>	5	5, 6.5
22	Will my taking part in the study be kept confidential?	<b>19</b>	5.5	4, 6
23	Will my GP be told?	<b>20</b>	5.5	4, 6.5
24	What is involved in the consent process?	<b>21</b>	6	4.5, 6
25	Who will have access to my data?	<b>22</b>	6	5, 6.5
26	Will I receive any payments for taking part?	<b>23</b>	6	5, 6.5
27	Who could I contact for further information?	<b>24</b>	6	5, 7
28	What will happen to the results of the study?	<b>25</b>	6	5.5, 7
29	What if I have a complaint?	<b>26</b>	6.5	5.5, 7
30	Who has overall responsibility for the study?	<b>27</b>	7	5.5, 7
31	How will data be stored and disposed of?	<b>28</b>	7	5.5, 8
32	Who is funding the research?	<b>29</b>	8	7.5, 9
33	Has the scientific quality of study been checked?	<b>30</b>	8	8, 8.5
34	How have patients and the public been involved in the design of the study?	<b>31</b>	8	8, 8.5
35	Who has approved the study?	<b>32 (least important)</b>	8	8, 9
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**Table 4. Items exhibiting significant variability on median rank order between stakeholder groups**

	Statement	Median difference	Median score		Item rank position	
			<i>PTP</i>	<i>RN</i>	<i>PTP</i>	<i>RN</i>
1	Has the scientific quality of study been checked?	3.5	4.5	8	11	32
2	Will expenses be reimbursed?	3	8	5	30	18
3	Will there be any impact on any insurance policies?	3	8	5	31	17
4	Who has approved the study?	3	5	8	17	32
5	Why have I been invited?	2.5	6	3.5	22	10
6	Do I have to take part?	2.5	5.5	3	18	7
7	What is the purpose of this study?	2	4	2	9	2
8	Will I receive any payments for taking part?	2	8	6	32	23
9	How have patients and the public been involved in the design of the study?	2	6	8	26	31
10	Who has overall responsibility for the study?	2	5	7	16	27

PTP – Potential Trial Participant

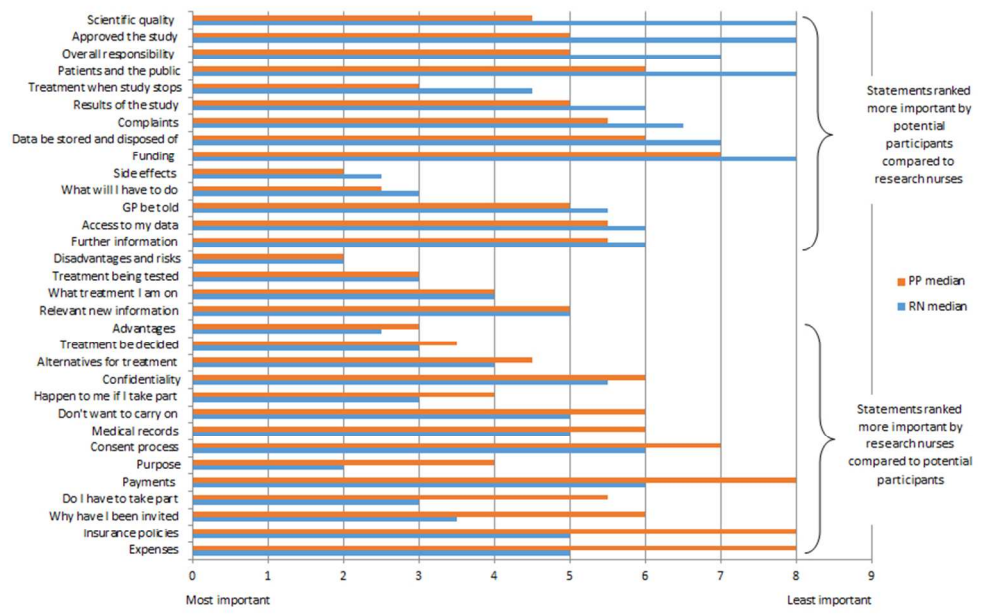
RN- Research Nurse

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3 **Figure 1. Median importance scores: comparisons between potential trial participants and research**  
4 **nurses.**  
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For peer review only

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Figure 1. Median importance scores: comparisons between potential trial participants and research nurses.



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Review only

## Additional File 1. The vignette used in the Q-sort

### Potential trial participants

Imagine you are in a consultation with your doctor. The doctor is discussing with you what treatment you could have for your chronic condition. You are suitable to take part in a clinical trial run by the NHS. If you decide to take part, you will be randomly allocated to either treatment A or B.

What information would be important to you when making the decision to take part?

### Research nurses

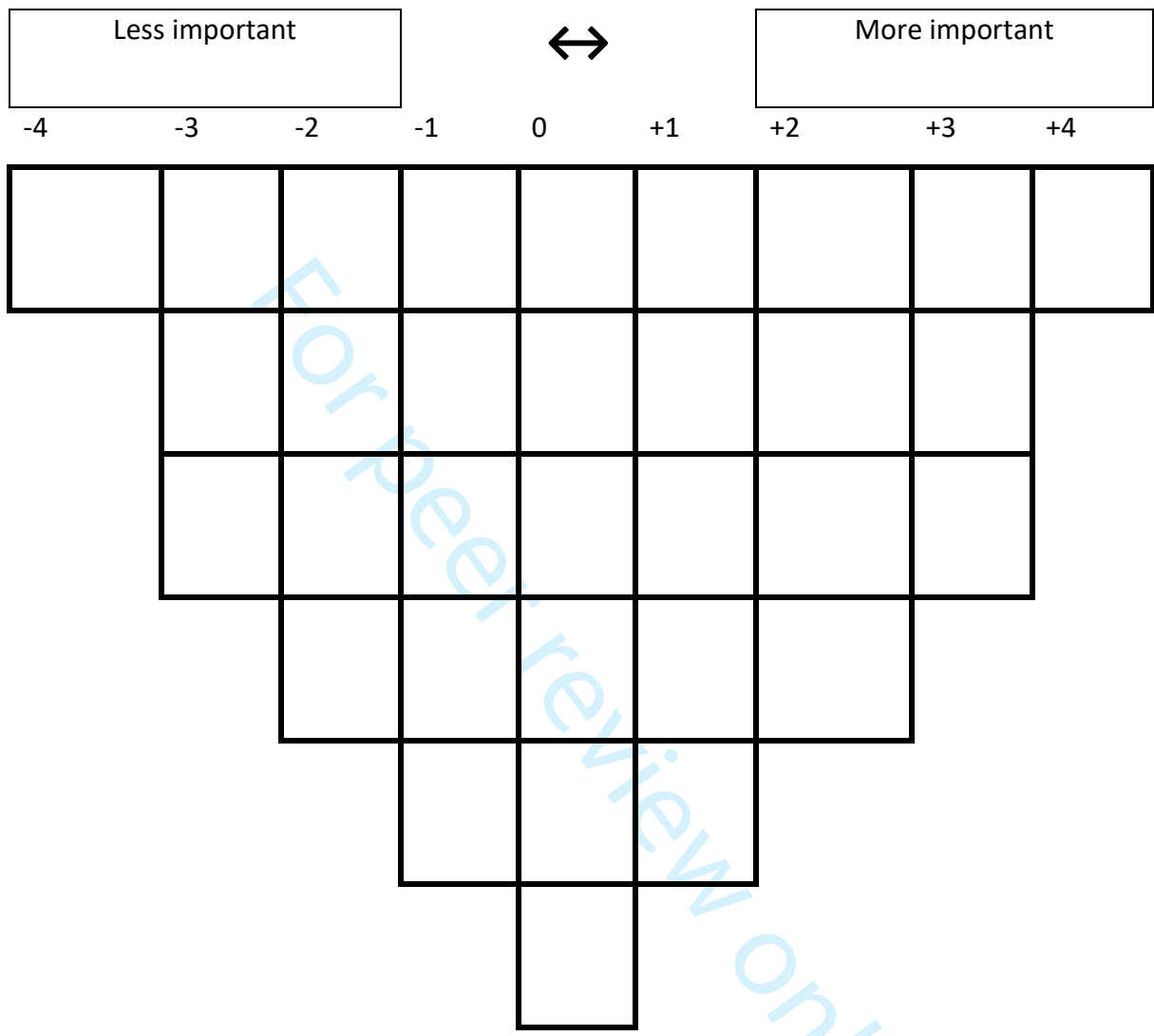
Imagine you are recruiting patients to a clinical trial, run by the NHS. The trial is comparing treatment A and treatment B for a chronic condition, and those who agree to take part are randomly allocated to either treatment A or treatment B.

What information would be important to potential participants when making the decision to take part?

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**Additional File 2. The 32-item Q-grid used for the Q-sort**

Q grid





## Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

### Title and abstract

<p><b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p>	<p>Page 1 lines 1-2</p>
<p><b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>	<p>Page 2 lines 15-48</p>

### Introduction

<p><b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p>	<p>Pages 4-5 lines 61-120</p>
<p><b>Purpose or research question</b> - Purpose of the study and specific objectives or questions</p>	<p>Page 5/6 ;lines 122-126</p>

### Methods

<p><b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>	<p>Not relevant as not a qualitative study</p>
<p><b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p>	<p>Not relevant as not a qualitative study</p>
<p><b>Context</b> - Setting/site and salient contextual factors; rationale**</p>	<p>Pages 6-7 lines 152-160 outline the scope of the study which would be similar to context in a pure qualitative study</p>
<p><b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>	<p>Pages 8-9 lines 200-226 outlines sampling strategy</p>
<p><b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>	<p>Page 11 lines 283-287</p>

1 2 3 4 5	<b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	Page 9 lines 228-244
6 7 8 9	<b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Page 9 lines 246-249
10 11 12 13	<b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Page 11 lines 291-310
14 15 16 17	<b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Page 9 lines 248-249
18 19 20 21 22 23 24 25 26	<b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Not all relevant due to mixed- methods study  Sections on Page 10 lines 251-275 cover Data Analysis
27 28 29 30	<b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Page 10 line 272

### Results/findings

31 32 33 34 35 36 37 38		Theme development not applicable as not qualitative
39 40 41 42	<b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Results on page 11-19 lines 290- 552
43 44 45	<b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Throughout pages 12-19

### Discussion

46 47 48 49 50 51 52 53	<b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Pages 19 -23 lines 555-668
54 55 56 57	<b>Limitations</b> - Trustworthiness and limitations of findings	Page 23-24 lines 670-712

## Other

<p><b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed</p>	Page 24 line 727
<p><b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting</p>	Page 24 lines 739-744

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
DOI: 10.1097/ACM.0000000000000388