Full Title: Patient perceptions of surveillance of small abdominal aortic aneurysms in the over 85s

Running title: AAA patients' perception of surveillance

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Abstract

Objective: Recently instigated local practice for patients with small abdominal aortic aneurysms (AAAs) involves contacting all patients, aged ≥85 years, to discuss with them the advantages and disadvantages of removal from surveillance. However, reasons why patients opt to remain on, or come off, surveillance, are currently unknown. The current study's objective is to explore patient perception of surveillance decision-making.

Methods: A mixed-methods exploratory evaluation was undertaken using patient feedback obtained from a telephone survey. All patients aged ≥85 years, who had a consultation regarding ongoing surveillance of small AAAs (30-49mm), and consented, were contacted by researchers, who conducted semi-structured interviews concerning factors influencing decision-making.

Results: A total of 24 patients (20 male; mean age = 86.9 years) were interviewed; 16/24 (66%) had opted to remain on surveillance, with no age difference between those opting-in or out. Most felt surveillance was important (91%), and that it made them feel safer (73%). The majority (73%) thought they knew what happened when their AAA reached threshold (5.5cm), what happened when a threshold AAA is not fixed (64%), and how major AAA surgery is (59%). However, actual knowledge was poor: most (91%) correctly understood surgery was major; but 56% thought that threshold AAA meant certain death or rupture; and 38% thought immediate surgery was required. Thematic analysis expounded patients' beliefs regarding surveillance, which were summarised in three distinct sub-groups: reliance on professionals' opinions; needing peace of mind; and poor understanding.

Conclusion: Whilst most patients find surveillance reassuring, patient knowledge of AAA management at threshold is poor, potentially impacting surveillance decision-making. Elderly patients, with small AAAs contemplating ongoing surveillance, need to be better informed about AAA management at threshold to support shared decision-making.

Key Words: *abdominal aortic aneurysm, surveillance, decision-making*

1. Introduction

Recent findings suggest that patients, aged over 80 years, with a small abdominal aortic aneurysm (AAA; < 55mm) are unlikely to come for treatment; either they will die before reaching AAA threshold (55mm), or they will reach AAA threshold but not be offered surgery due to their age and/or comorbidities[1 2 3 4]. Approximately 50% of patients dying with an AAA have major medical comorbidities that make them unsuitable for surgical repair[5], and patients aged over 80 years have a slower rate of AAA growth than younger patients[4]. These patients may experience anxiety over attending their screening[6], or find it difficult and stressful to attend appointments. Surveillance in this cohort of patients may well, therefore, not be cost-effective, or in the patients' best interests.

No guidelines exist detailing whether, and which, patients should be considered for removal from surveillance. The National Institute for Health and Care Research has recently funded work on developing an 'exit-strategy' for patients in national screening[7], although, at present, such a strategy is almost completely absent. Since 2021, the local policy has been to contact all patients aged 85 years or older, who have a small AAA (30-49mm), and who are under local surveillance, to undertake consultations regarding continuing or stopping further surveillance. The consultation involves discussion with the patient as to the benefits of ongoing surveillance, and the likelihood of treatment being offered should the AAA threshold be reached. The consultation is concluded when a shared decision regarding ongoing surveillance is reached. If no agreement is reached, further consultation is organised. Approximately 40% of patients come off local surveillance because of this intervention[8].

The reasons why patients choose to either stay on, or opt-out of, further surveillance, have not been previously examined. Understanding the reasons behind

patients' choices may impact subsequent consultations, and may inform and support the development of guidelines regarding removal of patients from surveillance. Thus, the aim of this study was to use service-user feedback to better understand how, and why, patients decide to opt-in or opt-out of ongoing AAA surveillance.

2. Materials/Patients & Methods

2.1 Design

This study reports a mixed-methods survey, comprising closed 'yes'/'no' questions, and open questions, collected using a pre-designed questionnaire. The study is reported in line with Journal Article Reporting Standards-Mixed (JARS-Mixed) reporting standards[20]

2.2 Participants

Patients were purposively recruited from AAA clinics in Aneurin Bevan University Health Board (ABUHB). All individuals with small AAAs aged 85 years or over, enrolled under the local AAA surveillance (*N* = 42), were invited to telephone consultations with one of four Vascular Consultants. No patients undergoing surveillance on the national screening programme were included. At the end of the consultation, patients were asked whether they consented to being contacted subsequently for an in-depth interview. Contact was only attempted with those giving preliminary consent.

2.3 Questionnaire

A questionnaire was developed collaboratively between the authors (including a Vascular Consultant and Psychology experts). The questionnaire provided the structure for each of the interviews and was designed to facilitate the collection of both quantitative and

qualitative data. A within-method triangulation design[9] was used to structure the questions. The questionnaire contained 8 questions and 10 sub-questions. For certain questions, participant answers to the main question determined which sub-question they were subsequently asked (see Table 1).

2.4 Interviews

For each interview, a minimum of two researchers (out of three; SJW, MD, SW) were present, one to conduct the interview, and the second to record data. Interviews were not recorded due to local ethical constraints. Upon contact, the researcher explained the reason for the call, and verbal consent was sought. If a service-user did not consent, or was unable, to participate, contact was politely terminated without interview.

2.4.1 Pilot sub-sample interviews: The initially developed questionnaire was trialled on a pilot sample (N = 5), not included in the final analyses, to assess its face validity, and to improve interrater reliability. All three interviewers were present for these interviews. A comparison of data collected by each interviewer was conducted following each interview, and the questionnaire was adapted and finalised following this process.

2.4.2 Main interviews: Participants were asked a series of 8 questions, and the subsequent sub-questions. These questions fell into three groups:

1. Recollection of their consultation, and external factors involved in deciding about future surveillance.
2. Questions about how surveillance made the patient feel.
3. Questions regarding their knowledge of their AAA, what happens on reaching AAA threshold, the severity of surgery, and what happens if a large aneurysm is not repaired.

For certain questions, researchers prompted patients for further qualitative information, if appropriate. Following completion of the questionnaire, participants were offered the opportunity to provide further comments.

2.5 Data analysis

Quantitative data were analysed using SPSS 28.0.0.1. Qualitative data were analysed using thematic analysis (TA)[10]. Convergent integration of quantitative and qualitative data allowed both types of data to be analysed in parallel (Figure 2). Integrative analysis of descriptive statistics and themes generated a meta-inference (narrative summary) of how, and why, patients decided to opt-in or opt-out of AAA surveillance.

2.6 Ethical approval

Local Research and Development approval was obtained in ABUHB (Reference: SA/1319/21), and ethical approval was provided by the Swansea University Department of Psychology Ethics Committee (Ref: 5456).

3. Results

3.1 Sample

Contact was attempted with 42 patients, of whom 17 did not participate in the interview (9 were uncontactable, 3 did not agree to participate, and 5 were unable to participate due to hearing difficulties, disclosed dementia, or having recently deceased). There was no significant difference in the age or gender of patients who agreed to participate in interviews comparted with those who didn't ($p=0.18$ and $p=0.58$ respectively).

A total of 24 patients (mean age = 86.9±1.4 years; range 85-90 years) were included, of whom 20/24 (83%) were male. Of the 24 patients, the mean size of their AAA at the time of the decision was 40.17mm (+ 4.68; range 30-49mm). There was no significant difference in the sizes of the aneurysms of the patients in the opt in or opt out groups (p=0.38).

Sixteen patients had opted to remain in AAA surveillance, and 8 had opted-out. Twenty-one participants completed the full interview, whilst 3 participants provided only partial interviews. There was no significant difference between age or gender (p=0.36 and p=0.13 respectively) when it came to choosing to leave or remain on surveillance. The Clinical Frailty Score (CFS) of patients was also recorded (mean CFS 3.60 ± 0.56; range 1-7), and again there was no significant difference between the CFS of patients leaving or staying on surveillance (p=0.22), or of those consenting to interviews or not (p=0.19)

3.2 Consultation and external influences

Eighteen patients (75%) remembered their most recent consultation with their consultant, of whom 12/18 opted-in for surveillance and 6/18 opted-out. Of the 18 patients who answered these questions, 6 (33%; 4/12 opted-in, 2/6 opted-out) stated that 'external influences' had played a role in their decision to opt-in/opt-out. These influences included: a variety of personal values (exact reasons were not collected); COVID-19; and lack of contact with medical professionals.

3.3 Feelings regarding surveillance

Patients were asked questions regarding how regular surveillance made them feel. Two patients (both of whom opted-out of surveillance), were unable to answer these questions in a coherent manner, so were excluded. Of the 22 who were able to answer

these questions, 16 patients (73%; 12/16 opted-in, 4/16 opted-out) stated that regular surveillance made them feel safer. Twenty patients (91%; 15/20 opted-in, 5/20 opted-out) felt that regular surveillance was important. Seventeen patients (77%; 14/17 opted-in, 3/17 opted-out) reported that surveillance improved their sense of confidence/control.

3.4 Accuracy of AAA knowledge

Patients were asked a set of questions regarding their knowledge of their AAA. Of the 24 patients, 22 provided answers to these questions. The majority (73%) thought that they knew what happened when their aneurysm reached threshold (5.5cm), what happened when a threshold AAA is not fixed (64%), and how major AAA the surgery is (59%). However, actual knowledge was poor. Most correctly understood surgery was major, but 56% thought that a threshold AAA equated to certain death or rupture, and 38% thought immediate surgery was required.

3.5 Qualitative themes

The research question used to conduct the current TA was: "*How* and *why* do *patients make the decision to opt-in or opt-out of AAA surveillance?*" Three themes (with sub-themes) were identified: (1) reliance on professionals' opinions; (2) needing peace of mind; and (3) misinformed beliefs.

3.5.1 Theme 1 - Reliance on professionals' opinion: Patients expressed that their choices were made in line with what the consultant recommended. Patients showed a clear indication of following the consultants' advice, as their primary reasoning for their choice to opt in/out of surveillance. They believed that they were not able to disagree with the expert opinion, and that doing what the doctor suggests is the "*right thing to do*". Any outside

influence, or personal opinion, was generally discounted in favour of the consultant's opinions.

3.5.2 Theme 2 - Needing "peace of mind": Patients' perceived an AAA as a threat to their health, and typically perceived the threat to be greater than the true threat posed by the AAA. To increase feelings of safety, patients actively sought "*peace of mind*" through surveillance. Two sub-themes were identified: '***Scans used as proof***'; and '***Medical superintendence***'. Patients described gaining peace of mind through scanning (***Scans used as proof***). In contrast to Theme 1 (*Reliance on professionals' opinions*), the comments falling under this theme suggested that the information provided by consultants was not considered as sufficient, and patients suggested that scans provided an absolute measure of aneurysm growth, which they appreciated. Scans are used to ensure that the aneurysm has not expanded without a service-user's knowledge, suggesting a dissonance between the asymptomatic nature of the illness and the service-user's sense of confidence/control. Also, patients described feeling like they needed to be looked after, and that someone was watching over them (***Medical superintendence***). Providing them with a sense of security and assurance that, if anything changed, they would have access to medical help quickly. The combination of surveillance and being under medical superintendence provided patients with a sense of relief, control, and safety from the burden of AAA.

3.5.3 Theme 3 – Misinformed beliefs: Patients had poor understanding of AAA and potential treatment options or outcomes, particularly AAA management once threshold (>55mm) is reached. Patients often believed that reaching threshold would result in immediate rupture, immediate surgical intervention, or immediate death. They appeared inflexible in these beliefs, believing that one of these three options was guaranteed or

certain. Despite clearly misinformed beliefs regarding AAAs and potential treatment options or outcomes, patients believed that they were generally quite well-informed.

3.6 Integrative

The quantitative and qualitative results were narratively integrated to expand understanding of how and why each factor had an impact on service user decisions to opt-in/opt-out of surveillance. This integration was conducted in two steps. Firstly, descriptive statistics of each factor were collated and analysed in parallel to the specific pattern of qualitative themes linked to each factor. Secondly, a narrative summary of how and why each factor impacted the decision to opt-in/opt-out was constructed by layering the descriptive statistics with the underpinnings of each linked theme.

Table 2 provides an integration of the quantitative and qualitative data, including narrative summaries.

4. Discussion

This study has found that elderly patients with small AAAs typically find surveillance reassuring, especially alongside the medial superintendence provided by the programme. They strongly rely on information provided by medical professionals to support decision making about surveillance, as patient knowledge of AAA management both during surveillance, and at threshold, was poor. These factors will invariably influence the decisions of patients to opt-in or opt-out of ongoing surveillance. Thus, the current study provides a starting point for considering how external influences, feelings regarding surveillance, and accuracy of AAA knowledge, can impact AAA surveillance shared decision-making (SDM), allowing vascular professionals to consider further their role within the SDM process.

Improved understanding of how these factors play a role in the SDM process may enable both vascular professionals, and patients, to foster a more informed and collaborative relationship, improving the quality of the SDM process and, potentially improving outcome quality, patient satisfaction and patient autonomy.

Removing elderly patients with small AAAs, who are very unlikely to be offered AAA surgery, from surveillance is almost invariably going to be cost-effective. Patients can experience significant anxiety when attending surveillance investigations, causing not only personal distress, but impacting family/friends, and their wider healthcare engagement[11]. People who reach AAA threshold, and are not offered surgery, may experience significant psychological distress. Furthermore, recent observational data highlight the small numbers of elderly patients who are actually offered surgery at threshold[1 2 3 4]. Singh et al.[13] argue in a commentary that: "*…an earlier determination of fitness for surgery should be made to prevent unnecessary surveillance of [AAA] patients who are unlikely ever to be candidates for intervention*." However, guidelines provide Vascular Surgeons little clarity regarding this issue, with the 2019 update of the ESVS AAA only recommending against starting surveillance in incidentally discovered small aneurysms for those with "very limited life expectancy"[13].

The three themes identified by this study: 'reliance on professionals' opinions', 'needing peace of mind', and 'poor understanding', provide a structure for helping to explain why individuals may opt-in, or opt-out, of ongoing surveillance when given these options. Addressing patients' knowledge would appear to be a relatively simple intervention, which is both linked with better healthcare outcomes[14 15], and empowers patients' active participation in SDM[16]. Vascular professionals must consider how to better promote service-user knowledge and, therefore, autonomy. Assessment of AAA health

literacy could help Vascular Surgeons evaluate whether they have effectively transferred AAA knowledge to their patients. The current results suggest that most patients view threshold AAA as a much greater risk than it truly is, which will obviously impact their desire for treatment. Improved knowledge may also impact how reliant patients are on their imaging for peace of mind. It's also possible that clients are influenced by the opinions of their peers (other older adults with AAA's). Further research would be needed to ascertain the effects of peer communication in AAA, although peers were not a factor listed by the current sample when exploring external influences impacting their decision.

The qualitative analysis suggested that patients are typically content to be guided and informed by healthcare professionals. This shows the high level of trust that patients have in clinicians, and that some may be content to have a senior clinician 'decide for them' regarding issues, such as ongoing surveillance. Although SDM is generally considered the gold standard, not all patients wish to engage in SDM[17]. Regardless, it is important to try and empower all patients to participate in the SDM process to promote autonomy, satisfaction, and co-production. Some still may not wish to take an active role, however, instead preferring to defer to the professional, and this decision must also be respected. This study evaluated the process of individual consultations with elderly patients, who have small AAAs. However, consultation is not the only means by which patients could be removed from surveillance programmes.

In terms of the current study, knowledge regarding AAA was poor despite contact with a vascular consultant, and therefore it appears this contact improved sense of security but not health literacy. In addition to contact with a vascular professional, patients could be provided with written or video information regarding surveillance. This may help improve patients AAA health literacy thereby enabling them a more informed and active role in the

SDM process. This may include the presence of specific medical occurrences, such as a terminal diagnosis, or significant frailty. It could also be based on simpler parameters, such as age and AAA size. Whatever the means by which a decision is made, SDM processes may be enhanced by further patient education in these areas. Focus groups may also allow vascular professionals to target some of patients misinformed beliefs, allowing them to make more informed decisions regarding their care and potentially reduce anxieties relating to the prognosis.

Alternatively, pre-defined criteria could be developed, whereby patients meeting these criteria would be automatically removed from surveillance. For example, the UK National AAA Screening Programme, which also undertakes surveillance on small AAAs identified at screening, removes patients who "after 15 scans at one-year intervals the AAA remains below 4.5cm"[18]. Various options for this are being investigated by a research team from the UK, who are aiming to develop a patient-facing exit strategy for patients in national screening[7].

The current study has some limitations. A relatively small number of patients, from a single Health Board, were sampled, so it is unknown how generalisable these findings are to other centres. Furthermore, this small sample size invariably resulted in an underpowered sub-analysis. Individuals were only recruited from local AAA surveillance, and individuals with AAAs identified through national screening programmes (which, for example, only includes male patients) may make different decisions. Only individuals willing to consent, and able to engage in the survey were included. Audio recordings were not made, and, whilst data were captured in 'real-time', the inability to re-listen to the interviews may mean that subtle results and caveats were missed[10].

Despite these limitations, this study represents important data in an otherwise under-researched area of vascular practice and provides the starting point for future work to better inform patients under AAA surveillance, and to support better utilisation of resources.

5. Conclusion

This study has highlighted patients' reliance on professionals and scan results for reassurance and peace of mind. That being said, this reliance may be misplaced due to a demonstratable lack of knowledge with regards to AAAs, particularly what happens when threshold is reached. Better information provision is needed for elderly patients on surveillance for small AAAs to help SDM with regards to ongoing surveillance. This has implications for patient anxiety and healthcare resource allocation, as poor patient understanding could lead to a heavier reliance on clinicians and scans for reassurance, resulting in higher healthcare utilisation.

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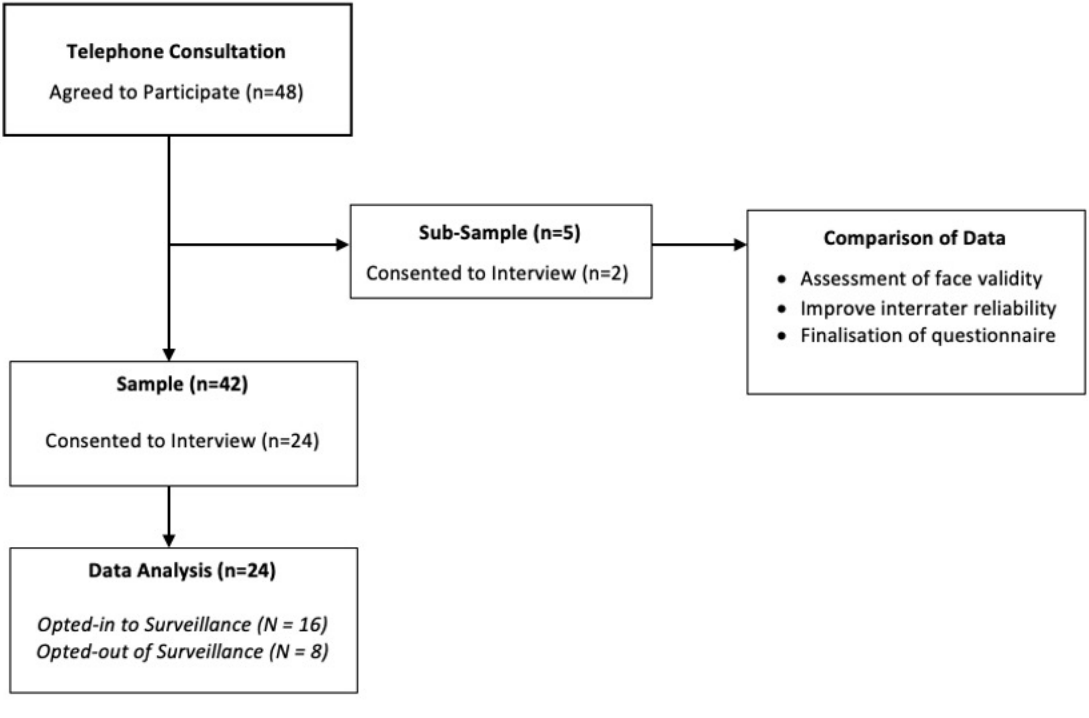
Figures

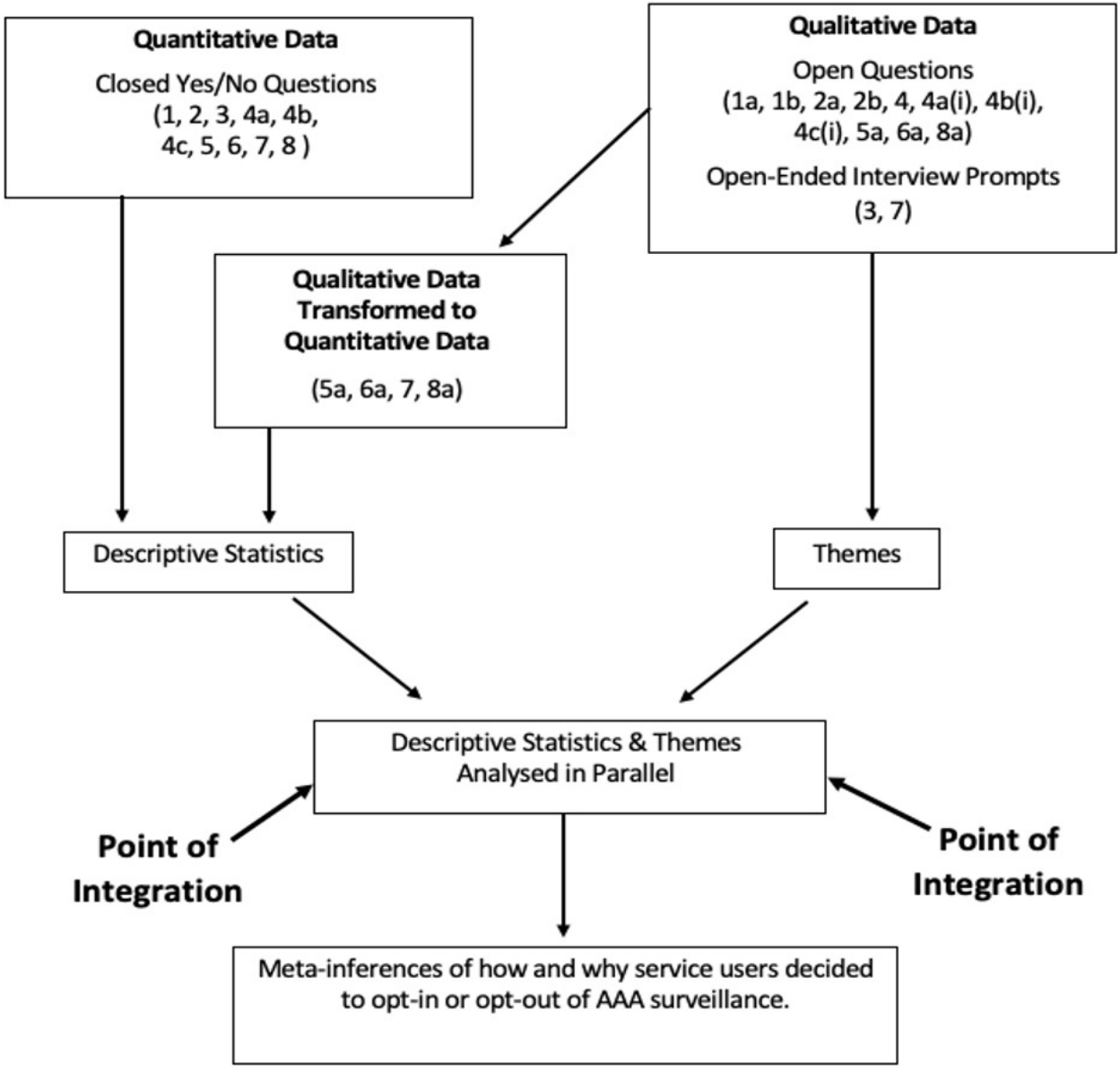
Figure 1. *Participant Flowchart*

A flowchart detailing the number of patients consenting to participate (n=48), a subsample of that group (n=5) used to test and refine the questionnaire, and the subsequent cohort (n=42). 24 of whom agreed to interview, and subsequentially the proportion of whom opted-in to surveillance (n=16) and opted out (n=8).

Figure 2. *Point of Integration*

A flow chart referring to the questionnaire and subsequent interview questions, detailing which sections yielded quantitative date (1, 2, 3, 4a, 4b, 4c, 5, 6, 7, 8), which yielded qualitative data (1a, 1b, 2a, 2b, 3, 4, 4a(i), 4b(i), 4c(i), 5a, 6a, 7, 8a) and which of the qualitative data was transformed to quantitative data (5a, 6a, 7, 8a). Descriptive statistics were derived from the quantitative data, whilst themes were derived from the qualitative data. These were analysed in parallel, and meta-inferences of how and why service users decided to opt-in or opt-out of surveillance were gathered.


Telephone Consultation
Agreed to Participate (n=48)
Sub-Sample (n=5)
Consented to Interview (n=2)
Comparison of Data
Assessment of face validity
Improve interrater reliability
Finalisation of questionnaire
Sample (n=42)
Consented to Interview (n=24)
Data Analysis (n=24)
Opted-in to Surveillance (N = 16)
Opted-out of Surveillance (N = 8)


Quantitative Data
Closed Yes/No Questions
(1, 2, 3, 4a, 4b,
4c, 5, 6, 7, 8)
Qualitative Data
Open Questions
(1a, 1b, 2a, 2b, 4, 4a(i), 4b(i),
4c(i), 5a, 6a, 8a)
Open-Ended Interview Prompts
(3, 7)
Qualitative Data
Transformed to
Quantitative Data
(5a, 6a, 7, 8a)
Descriptive Statistics
Themes
Descriptive Statistics & Themes
Analysed in Parallel
Point of
Integration
Point of
Integration
Meta-inferences of how and why service users decided
to opt-in or opt-out of AAA surveillance.

Tables

Table 1. *Questionnaire: Breakdown of questions and sub-questions*

Question Number	Question	Answer to Question	Sub-Question
1	A member of the vascular team recently contacted you to discuss aortic abdominal aneurysm surveillance. Do you remember the conversation?	If yes	a. How was it/how did it go?
		If no	b. Okay, no problem. You've previously been under surveillance for your aortic abdominal aneurysm for some time – how was that?
2	Would you say that your consultations had a strong impact upon your decision to opt in/out of surveillance?	If yes	a. How did the consultation impact your decision?
		If no	b. Why not?
3	Other than your experiences in consultations, were there any other factors which impacted your decision to opt in/out of surveillance? For example: family, personal values, worry, religion etc.	*If possible, strike up a conversation regarding these factors and try to get more information.*	
4	How did/does regular surveillance of your aneurysm make you feel?	If appropriate	a. Does/did it make you feel safer? i. Why?
		If appropriate	b. Do you feel it is important? i. Why?
		If appropriate	c. Does/did it make you feel more in control? Or improve your confidence? i. Why?
5	Once your aneurysm grows to 5.5cm, it reaches what we would consider threshold for medical intervention. Do you know what happens when your aneurysm grows above 5.5cm?	If yes	a. Can you tell me what you believe would happen if it reaches 5.5cm?
6	Do you know what happens if an aneurysm stays below 5.5cm?	If yes	a. Can you tell me what happens please?
7	How major is the operation to fix an aneurysm which has reached threshold?		
8	Do you know what happens if a large aneurysm is not fixed?	If yes	a. What do you think happens?

Table 2. *Integrative Analysis*

Quantitative Sub-Sections	Descriptive Statistics	Linked Themes	Integrative Narrative
Consultation and External Influences	*n* = 24 18 patients (75%) remembered their most recent conversation with a member of the vascular team about surveillance. Of these patients, 12 opted-in for surveillance. 18 patients (75%) reported that consultation had a strong impact on their decision to opt-in/opt-out of surveillance. Of these patients, 13 opted-in for surveillance. 18 patients (75%) reported that external influences **did not** have an impact on their decision to opt-in/opt-out of surveillance. Of these patients, 12 opted-in for surveillance.	Reliance on professional opinion Needing "peace of mind": Scans used as proof	Patients tended to make their decision in line with consultant recommendations. They believed they were not in a position to disagree with the consultant, and/or compliance with expert opinion was the "right thing to do". Consultation was described as the primary tool patients used to make their decision and this is likely why the majority of patients reported consultation had a strong impact on their decision to opt-in/opt-out of AAA surveillance. In contrast to this, patients also required physical evidence (scans) of aneurysm size and growth to evaluate their health. Suggesting the decision to opt-in/opt-out of ongoing AAA surveillance may have depended on a service user's need for expert advice when evaluating the size of their aneurysm.

			The majority of patients reported that external influences did not impact their decision to opt-in/opt-out of ongoing AAA surveillance. Any outside influence or personal opinion was discounted, and their decision was made by evaluating the recommendations of their consultant and physical evidence (scans) of AAA size. Possibly because they did not consider any influences beyond consultation or physical evidence to meet their decision-making needs.
Feelings Regarding Surveillance	*n* = 22 16 patients (72.727%) reported that surveillance made them feel safer. Of these patients, 12 opted-in for surveillance. 20 patients (90.909%) reported that surveillance was important.	Needing "peace of mind": Scans used as proof Needing "peace of mind": Medical superintendence Misinformed beliefs	The majority of patients gained a sense of safety from surveillance, felt surveillance was important, and felt more in control/confident due to surveillance. The information they obtained from scans enabled them to evaluate the size of their aneurysm and feel more in control/confident. Regular scanning was described as a way to achieve "peace of mind", providing one potential reason

	Of these patients, 15 opted-in for surveillance. 17 patients (77.272%) reported that surveillance improved their sense of control/confidence. Of these patients, 14 opted-in for surveillance.		why patients may decide to opt-in for surveillance. Furthermore, patients were also keen to stay under medical superintendence as a way of controlling for their feelings of uncertainty regarding their AAA. By opting-in they were able to maintain their access to scans (physical evidence) and medical superintendence. Patients were split into three groups (belief of immediate death, belief of sudden intervention, and belief of normality), each with misinformed beliefs regarding what would happen once they reached threshold. Those who believed threshold would result in immediate death or sudden intervention may have overvalued the importance of AAA size when evaluating health and may utilise surveillance as a way to seek safety, confidence and control. Whereas those who believed that nothing would change if they reached threshold (belief

			of normality) may have undervalued the importance of AAA size. The decision to opt-in/opt-out of ongoing AAA surveillance may have, therefore, depended upon each service user's evaluation of scan importance, medical superintendence and need to control the uncertainty of AAA.
Accuracy of AAA Knowledge	*n* = 23 59.1% correctly understood surgery was major, 56.3% thought that a threshold AAA equated to certain death or rupture, 37.5% thought immediate surgery was required.	Needing "peace of mind": Scans used as proof Misinformed beliefs	Overall, AAA knowledge was poor and patients appeared to have misinformed beliefs regarding their AAA. Despite this, patients were aware that AAA size was important and reported that when deciding if they should opt-in/opt-out of surveillance they evaluated the size of their aneurysm. Should their aneurysm reach threshold, patients believed their fate was sealed in three outcomes: immediate death, sudden intervention or normality. These misinformed beliefs demonstrate a lack of knowledge and interpretation of AAA information which may

			result in an overvalued perception of surveillance and/or AAA size. Patients appear to be making misinformed decisions when deciding to opt-in/opt-out of surveillance. If empowered by the correct knowledge, however, their assessment of their potential outcomes may have been different.