NHS Scotland MRSA Screening Pathfinder Programme

Final Report Volume 3: Staff Patient Acceptability

Prepared for the Scottish Government HAI Task Force
by Health Protection Scotland

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1 Executive summary

A study of staff and patient acceptability of MRSA screening was undertaken during the pathfinder study. A mixed methods triangulation design was used to enable merging of qualitative and quantitative data sets, incorporating the following data collection strategies:

- Post-discharge qualitative telephone interviews with patients (n=10) and a nominated visitor (n=2)

- Post-discharge paper-based survey of patients (n=51) and a nominated visitor (n=26)

- Electronic survey of NHS staff using Survey Monkey (n=216)

- Structured discussions with NHS staff, using the Nominal Group Technique (six groups involving 34 staff)

- Postal survey of the wider community (n=352).

MRSA screening was found to be highly acceptable to patients, visitors, the wider community and (to a lesser extent) NHS staff. A significant minority of NHS staff tended to have more negative attitudes and did not believe MRSA screening to be acceptable; lack of isolation facilities, increased workload, inconsistencies in screening and decolonisation protocols within and between NHS boards, and uncertainty around future funding were concerns expressed by staff.
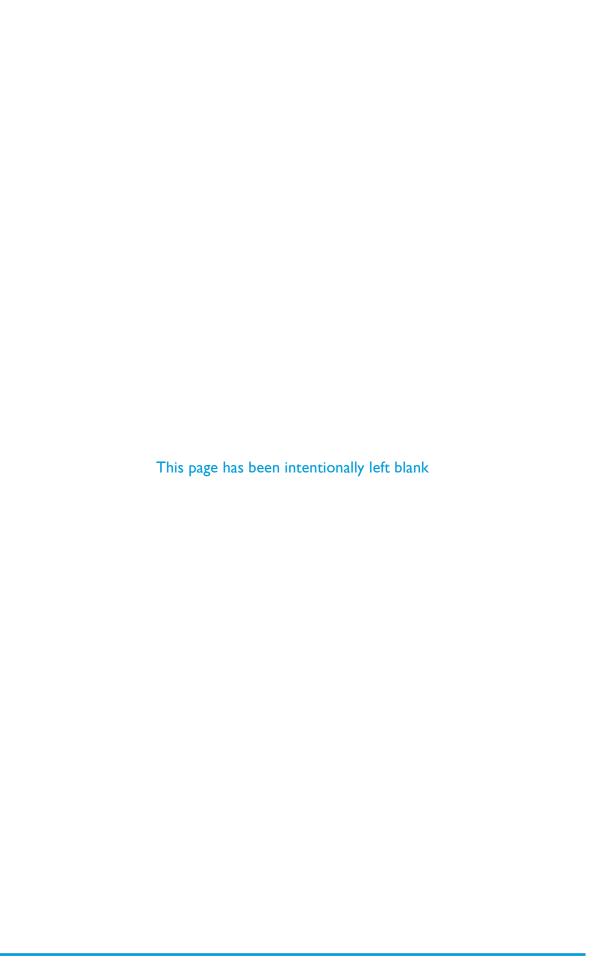
All participant groups tended to disagree that there were any other physical, psychological or social barriers to screening apart from a perceived lack of facilities.

The findings indicated that communication with patients about MRSA screening could usefully be strengthened to encompass suitably informed consent for screening (including making patients aware of the consequences of being found positive for MRSA), and ensuring patients are informed of their results.

There was strong support for the screening of NHS staff from all participant groups; there are a number of well-rehearsed arguments against this, however, which it was not appropriate to put forward during this study. Evidence for staff screening and public concern re staff carriage of MRSA needs to be examined more fully.

Patients, visitors and the wider community all expressed a preference for people (including themselves) who are found to be positive for MRSA to be nursed in isolation rather than in a room with other colonised patients.

Overall the patient acceptability was good. The number of patients with a MRSA positive test included (although proportional to the 3.9% prevalence) was too small to make any meaningful judgement of acceptability of interventions or of screening as a whole for patients who screen positive. Further research is require with respect to this.

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5 Introduction

In response to the Scottish Government's commitment to patient safety, in a climate of increasing public concern around health care associated infection, NHS Health Protection Scotland has conducted a pilot project within three Pathfinder NHS Boards to investigate the feasibility of implementing MRSA screening for all in-patient admissions to acute hospital settings. As well as conducting a robust outcomes evaluation study, testing the effectiveness of MRSA screening in reducing MRSA infections, the pilot project seeks to explore the acceptability of such screening to NHS staff groups, patients, their visitors and the wider community who are involved in the process. It is the question of the "acceptability" of MRSA screening which is the focus of this report.

To inform the design of this study, an electronic literature search was conducted to ascertain the current state of knowledge in relation to perceptions of MRSA screening and to guide the selection of appropriate methodology. CINAHL and Medline databases were utilised, and initially specific literature on MRSA was sought and then combined using the following keywords: screening, acceptability, questionnaire, survey, validated tool, views, experiences, attitudes, perceptions and opinions. The search was then broadened to combine the same keywords with *Staphylococcus aureus* and then infection.

Most of the articles identified by this search referred to different disorders; while many referred to cancer, some were related to screening for sexually-transmitted infections [6-10]. No studies were found that related specifically to the acceptability of MRSA screening. A number of studies were found to have explored the factors influencing compliance with screening from varying perspectives (although again none referred specifically to MRSA): for example, Joshi and Dixon [11] ; Forrest et al. [12] ; Ma et al. [13], and Goldsmith et al. [14]. Most of these studies relied upon questionnaires constructed specifically for the study, with participants asked to indicate their views by using Likert-type scales attached to a series of statements; some authors also used focus groups or interviews to add depth to data collection. However, no validated data collection instrument was found in the literature that could be adopted for the current study, and no single theoretical framework was identified with which to guide the research.

Within the field of psychology, the definition of acceptability would typically centre on the attitude towards the issue in question (e.g. Scheel et al. [15]). However, other allied constructs are also relevant to the definition: social validity (or the desirability, value, utility or perceived importance of an issue –see Wolf [16]; Eckert & Hinze [17]); judgements about the issue; and personal opinion or "satisfaction" [18]. Wolf [16] (see also Eckert & Hinze [17]) suggested that the social validity of a treatment or intervention had three components or levels, encompassing the significance of the goals (e.g. to reduce MRSA infection rates); the appropriateness of the procedures (e.g. the efficacy of MRSA screening in achieving reduction in infection rates); and the importance of the effects. While these three components are central to the construct of acceptability as applied in the current study, it is also appropriate to consider a behavioural component, or a willingness or readiness to act; in this case, the relevant behaviour was taken to be willingness to be screened or to recommend screening to others. Two facets of acceptability were therefore identified: personal acceptability, or

the willingness to undertake screening, the willingness to recommend screening to a loved one, and a personal indication of support for screening; and either professional (for staff) or general (for other respondents) acceptability, which centred on the perceived acceptability of screening within the hospital or within the wider community.

A number of issues were taken into account in considering the most appropriate theoretical frameworks to use in the development of the current study. The relationships between and among knowledge, attitudes and behaviours are known to be complex; health-related behaviour is rarely influenced only by knowledge (e.g. Giocos et al. [19]; Pilling et al. [20]). It would therefore be naive to assume that if individuals (patients or staff) are given adequate information about a screening programme, which is thought by scientists to have clinical benefit, they will then comply and accept the procedures and consequences. Equally, professional attitudes and behaviours are multifaceted; sociological perspectives highlight the influence of interactions between people in any given context in determining the way individuals interpret and respond to their circumstances [21;22].

A similar issue arises when the relationship between perception of risk and acceptability is considered. According to the classic positivistic perspective an individual's perception of the probability and severity of an adverse event, such as acquiring an MRSA infection, would be considered in deciding how to respond to the risk. However, it cannot be assumed that if the risk is perceived to be high, the individual will then accept screening; the theory of "optimistic bias" [23;24] states an individual may judge a particular risk to be high for others, but is far less likely to rate their personal risk as high. Thus individuals may see screening as acceptable for others but not for themselves. While perception of personal susceptibility is likely to influence decision-making or health-related behaviour [25], the relationship is unlikely to be a simple one: risk relative to others is likely to play a more important role than absolute risk (e.g. Mason et al. [26]), and it is also possible that the various components of risk perception interact with, or are mediated by, other factors in the explanation of behaviour [25]; or, indeed, in the explanation of acceptability.

With these points in mind, the theoretical frameworks deemed relevant to the current investigation included the Health Belief Model [1] (HBM) , the Theory of Planned Behaviour [2;3] (TPB), and Normalisation Process Theory [4]. According to the Health Belief Model, health-related behaviour or action (e.g. uptake of screening) can be explained by perceived susceptibility or risk; perceived severity / consequences of the condition; perceived barriers; and perceived benefits. Other factors incorporated within the model include perceived self-efficacy, cues to action, motivation, perceived control and perceived threat. The Theory of Planned Behaviour is more broad in scope; briefly, intention to perform an action (e.g. screening) is thought to be predicted by three factors: the attitude toward the behaviour, the subjective norm and perceived behavioural control. The attitude reflects the evaluation of the behaviour and its outcome, the subjective norm reflects the extent to which people important to the individual are perceived to support the behaviour (and the extent to which the individual is motivated to comply), and perceived behavioural control reflects the extent to which the individual feels able to perform the behaviour. We therefore incorporated the following constructs into the current study as core potential "predictors" of acceptability:

perceived risk of contracting MRSA (for the self, and relative to others: Weinstein & Klein [27]) ; perceived severity/consequences of MRSA infection (for the self, and relative to others); perceived barriers to screening; perceived benefits of screening; attitude towards screening; and subjective norms in relation to screening.

Given the range of factors identified above which could potentially influence the acceptability of MRSA screening, it was deemed useful to consider a variety of approaches to the data collection, in order to provide a broader evidence base. In summary, the opportunity to investigate factors which influence the acceptability of MRSA screening for patients, visitors, the wider community and NHS staff is timely, both in the context of this specific pilot project and also in the wider context of contributing knowledge to this increasingly important field of practice. A mixed methods study, incorporating concepts drawn from the fields of psychology and sociology, seemed an appropriate design with which to investigate this area.

6 Purpose of the study

The aim of this study was to investigate the acceptability of MRSA screening from the perspectives of patients, their visitors, NHS staff and the wider community associated with a pilot screening programme in three Pathfinder Boards within NHS Scotland. The ultimate goal of this work was to make evidence based recommendations for refinements prior to national rollout of the MRSA screening programme to maximise the acceptability of the process.

NHS Health Protection Scotland indicated the following objectives for the study:

Patient experience:

1. To evaluate the acceptability of isolation resultant from MRSA colonisation from the patient, family and wider population perspective

2. To assess patient perceptions of the physical and psychological effects of MRSA screening

3. To assess patient perceptions of the clinical, social and ethical acceptability of MRSA screening

4. To describe patient perceptions of the impact on patient experience

5. To describe patient perceptions of the impact on the patient pathway

6. To assess the effectiveness of the communications used to inform patients of the MRSA screening programme

7. To assess the patient perceptions of the benefit of MRSA Screening.

Staff acceptability:

1. To assess staff perceptions of the physical and psychological effects on patients of MRSA screening

2. To assess staff perceptions of the clinical, social and ethical acceptability of MRSA screening

3. To describe staff perceptions of the impact on patient experience

4. To describe staff perceptions of the impact on the patient pathway

5. To assess staff knowledge and understanding of the MRSA screening programme

6. To assess the effectiveness of the communications used to inform staff of the MRSA screening programme

7. To assess the staff perceptions of the benefit of MRSA screening.

Those objectives were reformulated to produce the following key goals which guided the research design:

1. To explore patient and visitor experiences and opinions of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon relative to their perception of risk of MRSA infection

2. To determine staff attitudes towards and acceptability of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon, relative to their perception of risk of MRSA infection

3. To evaluate the effectiveness of the communications used to inform patients and staff of the MRSA Screening programme

4. To explore the acceptability of MRSA screening from a wider community perspective within the Pathfinder Board areas.

7 Methods

7.1 Research design

A mixed methods triangulation design was used to enable merging of qualitative and quantitative data sets. In this study, qualitative telephone interviews with recently discharged patients and a nominated visitor were used to explore those individuals' experiences and views around the acceptability of MRSA screening. To avoid placing excessive demands on the patient group by being involved in more than one form of data collection, following recruitment of interview participants, survey tools were used to investigate the acceptability of MRSA screening at the pilot sites from the perspectives of patients, visitors, staff and the wider community. Patients were asked additional questions on their experience of screening, while staff were asked additional questions on the conduct of screening. In addition, the nominal group technique was applied during structured discussions with NHS staff groups working at the MRSA screening pilot sites to identify issues and concerns and generate recommendations for future screening. An online discussion board was made available to Pathfinder Board staff, via a dedicated website for the study, to encourage anonymised posting of views and experiences of MRSA screening; however, this potential source of data was not productive as no entries were made by staff.

By applying this range of data collection strategies, different yet complementary data were sought, with quantitative and qualitative strands being collected concurrently, analysed separately (see results chapters) and then mixed by converging during the final interpretation of findings (see discussion chapter). Combining the strengths of these varied approaches enabled a better understanding of the issues to be generated than either approach would have achieved on its own [5].

7.2 Population and sample recruitment

There are four distinct population groups within the pilot screening project;

- Patients who screened positive as a result of MRSA screening, and their associated visitors

- Patients who screened negative as a consequence of screening, and their associated visitors

- NHS staff involved in or affected by the screening programme (including medical staff, infection control teams, laboratory staff, nursing staff, allied health professionals, ward managers, hospital administration staff, domestic staff and ancillary workers)

- The wider community within the Pathfinder Boards.

A range of recruitment strategies were adopted to maximise potential response rates to each of the data collection methods. The research team liaised closely with the Project Managers at each of the Pathfinder sites to support communication with the local population groups and to facilitate access to the participants.

7.2.1   Staff recruitment

In order to calculate desirable sample sizes and response rates, the research team requested information about the numbers and distribution of staff across the three Pathfinder Boards from NHS Human Resource departments. Unfortunately, staffing information could not be disaggregated to an individual hospital level at all three pilot sites and therefore target sample sizes could not be determined with any degree of accuracy. Whilst a stratified sampling strategy would have provided the most robust approach to maximising the representativeness of the staff response, this was deemed to be impractical. Instead, staff recruitment was based on widespread communication about the study within each of the Pathfinder Board sites, with the aim of creating sufficient interest to generate a self-selecting convenience sample. It was recognised that this has the potential disadvantage of producing sampling bias, as those who volunteer may not be representative of the population [28].

An "advanced notice" information bulletin was distributed to service managers and all staff via normal management communication channels as well as by email to those with NHS email access. This process notified employees of the forthcoming staff acceptability study and outlined the different ways in which staff could become involved (survey, group discussion, online discussion board).

A dedicated study website was developed to act as the primary communication channel with Pathfinder Board staff. The website provided participant information and enabled direct linkage to the staff survey questionnaire. This went live on 3 August 2009 and closed 5 October 2009; thus the staff survey was available to respondents for nine weeks.

A variety of recruitment tactics were employed. Eye-catching "Have your say" posters were displayed in all clinical areas, directing staff to the dedicated website. Mid-way into the data collection period, reminder notices were attached to all staff wage slips, providing further advertisement of the study. Finally, towards the end of the data collection period, specially designed pens with the study website address printed on the barrel were widely distributed throughout all the clinical areas.

7.2.2 Patient and visitor recruitment

Inclusion criteria

All adult patients (over 16 years of age) who were judged by clinical staff to have the capacity to give informed consent and were discharged from the hospitals involved in the MRSA Screening Programme Pilot during the data collection periods and one of their visitors were invited to participate in the study.

Exclusion criteria

Patients who were deemed by clinical staff not to have capacity to consent were excluded on ethical grounds. Only those patients and visitors who did not have access to a functioning telephone within their home would have been excluded from the telephone interview. However it was appreciated that patients or visitors may have excluded themselves, from either the telephone interviews or survey, if they did not have the physical, emotional or cognitive capacity to participate.

Sample selection strategy

The population comprised all patients who had been screened for MRSA in the three NHS Pathfinder Boards and the sample was drawn from all patients matching the inclusion criteria discharged over a six week period (mid August to end of September 2009). In the initial two weeks patients were recruited for the telephone interviews and the latter four weeks for the survey. A snowballing selection strategy was used to select visitors, such that patients were asked to recruit one of their visitors.

A total of 500 recruitment packs were given to the Pathfinder Boards for distribution to patients for the telephone interviews. It was anticipated that a maximum of 30 patients and 30 visitors would be interviewed, permitting data saturation. For the survey, information from the Pathfinder Boards indicated that approximately 1,500 patients were discharged per month. A power calculation, based around a multiple regression model with up to 15 predictors, indicated a target sample of 200 participants for power of .95 (alpha = .05, f2 = .15) [29]. Based on these figures, 1,000 survey recruitment packs were distributed to Pathfinder Boards with a target response rate of 20% (i.e. 200 participants).

The same recruitment method was used to recruit patients and visitors to both the telephone interviews and survey. During the data collection periods, hospital staff gave patients an envelope which contained a recruitment pack for themselves and one for one of their visitors. The telephone interview recruitment packs included a letter of introduction, an information sheet and a consent form to return to the research team in the pre-addressed stamped envelope provided, if they were willing to participate. The survey recruitment packs contained a letter of introduction, a study information sheet, an information booklet about the MRSA screening programme, a pen, the questionnaire and a pre-addressed stamped envelope. In the letter of invitation patients was asked to give the visitor recruitment pack to someone who had visited them during their hospital stay. Patients who did not wish to nominate a visitor were still able to participate in the interview or survey. Staff asked patients to open the pack following their discharge from hospital, when it was hoped that they would not feel under any undue pressure to participate. If they were willing to be

interviewed they were asked to complete and return the consent form to the researchers who would contact them to arrange a mutually convenient time to conduct the interview. If they were willing to complete the questionnaire they were asked to return the completed questionnaire to the researchers in the pre-addressed and stamped envelope provided.

7.2.3   Wider community recruitment

The population comprised all residents within the postcode areas covered by the three NHS Pathfinder Boards. The randomised sample was drawn from the edited versions of the electoral rolls covering these areas (i.e. Grampian, Ayrshire, Western Isles).

The sampling procedure was based on that described by Adams and White [30], who achieved a response rate of around 40% after sending out reminder letters. Given that we were not able to send out reminder letters, a response rate of between 20% and 30% was anticipated. The target number of respondents was 400, and therefore a sample of 2,000 was drawn up. Those who were under the age of 18 years were identified on each register, and were excluded from the lists (although it was noted that some of those excluded in this way would have been 18 years at the time of data collection). Using the target of 2,000, names were drawn randomly from each database using the SPSS Selection of Cases (Random) command. The number of names to be drawn from each database was determined by calculating the proportion of all available names derived from each of the databases. See Table 7.1 for details.

Table 7.1: Details of random selection of public sample from edited electoral registers

Register area	Number on edited register	% of full register represented by edited register*	Number of <18 year olds excluded (% of edited register)	Number included for random sampling	Number randomly selected	% of total of number randomly selected
Ayrshire	193,579	66	2,058 (1.1%)	191,521	712	35.6
Grampian	331,903	81.6	3,995 (1.2%)	327,908	1,218	60.9
Western Isles	19,352	86.6	526 (2.7%)	18,826	70	3.5
Total	**544,834**		**6,579 (1.2%)**	**538,255**	**2,000**	**100**

* figures provided by Valuation Joint Boards

This randomisation procedure was completed on 14 August 2009. The lists were then saved in encrypted Excel files, to permit the printing of address labels. These lists were destroyed on 1 September 2009 following dispatch of the questionnaires.

7.3   Ethical considerations and access

7.3.1   Ethics Committee Approval

The study underwent ethical and research and development approval prior to data collection. Ethical approval for the study was obtained from two sources. The patient, visitor and staff elements of the study were ethically approved by the West of Scotland Research Ethics Service (Appendix 1). The public element was approved by Glasgow Caledonian University Ethics Committee (Appendix 2). As the research was conducted in three NHS Boards, research and development approval was obtained from the NHS Research and Development Offices of these boards with the process being coordinated by the NHS Research Scotland Coordinating Centre (Appendix 3).

7.3.1.1   Critical review

Design of the study was informed by consultation with infection control experts and a patient group representative at the Technical Group of the MRSA Screening Programme, and by an internal peer review process at Glasgow Caledonian University.

7.3.2   Informed consent

In order to uphold the ethical principles of autonomy, beneficence and non-malificence only adults able to consent for themselves were included in the study and informed consent was obtained from all participants. To facilitate informed consent, written information was provided in advance of each episode of data collection to enable staff, patients, and visitors to decide whether or not to participate in the study. Participants were given at least two weeks to consider the information and were encouraged to speak to other people about the study and to contact the research team if they required any further information. Patients, visitors and the wider community were also given the contact details of an independent advisor. If the participants decided to take part in the study informed consent was documented by completion of consent forms prior to all data collection with the exception of the online discussion board for staff where implied consent was assumed by their participation.

7.3.3   Benefits of participating in the study

The information sheets explained to participants why the research was being conducted, why they had been asked to consider taking part, what would be required of them if they took part, the ways in which the information given would be kept confidential, the risks and benefits of taking part in the study, who had reviewed the research and which organisations were conducting and funding the research. It was acknowledged that there might not be any direct benefit to participants personally; however, it was indicated that the results of the study would be considered when planning future MRSA screening and treatment in order to improve the experience for patients and their visitors where possible in NHS Scotland.

7.3.4 Risks of participating in the study

The information sheets also informed participants of the risks involved in taking part in the research. Patients were told that the telephone discussion could take up to one hour of their time and that the researchers realised that they might find this tiring, and that it would be acceptable if they needed to stop the conversation early; they could then decide whether or not they were willing to speak to the researchers on another occasion. To conduct the interview the researcher telephoned the patients and visitors so that they were not charged for the cost of the telephone discussion. For the survey, it was not anticipated that there would be any risks to participants, as the exploration of their experiences and views was not to the same depth as that involved in the telephone interview; they were completing the questionnaire at a time of their choosing and the extent of their contribution was within their own control.

Little risk to staff participants was anticipated as all measures to preserve confidentiality and their anonymity were taken. For the small group discussions the main burden anticipated for staff was the time commitment. To minimise the effect of this the small group discussion took place in a workplace setting during work time. However it was recognised that it was possible for material to be posted on the discussion board that could be considered to be undesirable by an individual or organisation. To minimise this possibility participants were asked to agree to comply with specific rules.

The researchers themselves were considered to be at low risk as there was limited direct contact with potential participants. Interviews were conducted from the researchers' workplace telephones and surveys were conducted online or by post so there was little requirement to travel or to meet participants face–to–face. The only exception to this was for the staff small group discussions which were held within NHS premises, with two researchers present.

7.3.5 Data handling and storage

To maintain the confidentiality of the participants' data and to maintain anonymity all data were handled, stored, analysed and destroyed (as appropriate) in accordance with the Data Protection Act and University policies. Identification numbers have been used in the study report to identify participants and will be used in any associated papers or presentations. All documentation associated with the study has been stored in a locked filing cabinet in an office that is locked when unoccupied. Similarly, all electronic data have been stored on a password protected computer in an office that is locked when unoccupied. All members of the research team at Glasgow Caledonian University, with access to data, have confidentiality clauses within their contracts of employment and for staff participating in the small group discussions ground rules on confidentiality were established at the beginning of each small group discussion.

7.3.6   Participants' identifiable data

To further protect the identity of the participants only essential personal data were collected. For staff, patients and visitors we did not require the NHS to disclose any personal identifiable information to the research team. The participants of the study gave any personal identifiable information to the research team. Patients and visitors taking part in the telephone interview were asked for their name, telephone number and email address. This information was used to arrange and conduct the interview and formed part of the documentation of their informed consent. For all participants taking part in the survey we asked for only their age, gender and occupation; in addition, patients and staff were asked to identify the screening hospital or hospital of employment; staff were asked to indicate the length of time working in health care; and the public were asked to provide the first part of their postcode. Staff taking part in the small group discussion were asked to tell the researchers their name, telephone number and email address to allow arrangements to be made for attendance at a group. Finally for staff taking part in the online discussion board, we only required an email address with which to "log in" to the discussion board.

7.3.7   Indemnity insurance

Should any participants have been harmed from the management of the research, any potential legal liability incurred was covered by the NHS Indemnity Scheme and Glasgow Caledonian University Indemnity Policy.

7.3.8   Funding and declaration of conflicts of interest

The study was funded by Health Protection Scotland via NHS National Services Scotland. The authors declare that they have no personal, commercial, political, academic or financial conflicts of interest, that they have not published the content elsewhere and have contributed significantly to the design and analysis of the study, the interpretation of the results, and the drafting and revision of this report.

7.4   Survey design

7.4.1   Staff survey

A cross-sectional survey design was employed. The primary presentation was online (using SurveyMonkey; http://www.surveymonkey.com/home.asp), although a number of paper versions were distributed (see below).

The main or primary outcome variables were professional acceptability of MRSA screening, and personal acceptability of MRSA screening. Professional acceptability of MRSA screening was assessed with two items: "Overall, I believe that the MRSA Screening Programme is

acceptable to patients"; and "Overall, I believe that the MRSA Screening Programme is acceptable to staff in this hospital." For each, responses were made on a 10-point Likert-type scale, from "strongly disagree" to "strongly agree", with a separate "don't know" option. Items were scored such that a higher score indicated greater acceptability. A scale was constructed by taking the mean of contributing items.

Personal acceptability of MRSA screening was assessed with three items: "I support the MRSA Screening Programme in this hospital"; "I would advise a relative or loved one to accept the offer of MRSA screening prior to hospital admission"; and "If I were to be admitted to hospital as a patient, I would accept the offer of MRSA screening." For each, responses were made on a 10-point Likert-type scale, from "strongly disagree" to "strongly agree", with a separate "don't know" option. Items were scored such that a higher score indicated greater acceptability. A mean was taken of contributing items.

The main predictor variables were as follows:

- Demographic / descriptive (age, gender, occupational category, years of working in health care)

- involvement in MRSA screening

- contact with patients colonised and infected with MRSA

- information/training relating to the MRSA Screening Programme Pilot (sources of information, number of sources of information, and perceived adequacy of information/ training)

- attitudes toward and beliefs about screening (including screening staff for MRSA)

- barriers to screening (perceived problems or barriers relating to the patient; perceived problems or barriers relating to staff; perceived clinical barriers)

- subjective norms of screening acceptability (staff and wider community)

- perceived control or influence over MRSA screening

- saliency of MRSA screening.

Measures of perceived risk (perceived severity of MRSA for patients in own hospital/ward and in general; perceived likelihood of patients contracting MRSA infection in own hospital/ward and in general; perceived benefit of MRSA screening for planned admission and emergency admission patients, and for other patients) were also included, and their relationships with the acceptability and attitudinal variables were considered.

7.4.2   Patient survey

A cross-sectional survey design was employed, with paper presentation. The main or primary outcome variables were general acceptability of MRSA screening, and personal acceptability of MRSA screening, although emphasis was also placed on the experience of the screening process itself.

The main predictor variables were as follows:

- Demographic / descriptive (age, gender, occupation, hospital, living arrangements)

- Screening offer (approximate date of screening offer/ date of survey completion, type of hospital admission - planned or emergency)

- Timing of offer in relation to hospital admission, accept/reject offer of screening, regret over decision, reason(s) for decision

- Prior information about screening (timing of information provision, source of information, adequacy of information, desire for further information)

- Negative experience of screening

- Results of screening (length of time, type of information, adequacy of information, result itself)

- Treating oneself at home for MRSA (preference, advice, adherence to advice, ease of following advice, adequacy of advice)

- Treatment in hospital for MRSA (ward arrangements, preference)

- Attitude towards and beliefs about screening (including screening staff for MRSA)

- Perceived problems or barriers relating to the patient

- Subjective norms (family and wider community)

- Saliency of MRSA screening

- Treatment of patients with MRSA.

Measures of perceived risk (perceived severity of consequences of MRSA for self and patients in general; perceived likelihood of MRSA infection for self and patients in general; perceived benefit of MRSA screening for self and patients in general) were also included, and their relationships with other variables were considered.

7.4.3   Visitor and wider community surveys

A cross-sectional survey design was employed, with paper presentation. The main or primary outcome variables were general and personal acceptability of MRSA screening.

The main predictor variables were as follows:

- Demographic / descriptive (age, gender, occupation, area of residence - wider community only)

- Relationship with patient (visitor only)

- Personal experience of MRSA and MRSA screening (personal experience of screening, personal experience of infection/colonisation, friend or relative screened)

- Attitude towards and beliefs about screening (including screening staff for MRSA)

- Perceived problems or barriers relating to the patient

- Subjective norms (family and wider community)

- Saliency of MRSA screening

- Treatment of patients with MRSA.

Measures of perceived risk (perceived severity of consequences of MRSA for self and patients in general; perceived likelihood of MRSA infection for self and patients in general; perceived benefit of MRSA screening for self and patients in general) were also included, and their relationships with other variables were considered.

7.4.4   Comparison of staff, patient, visitor and wider community measures

The following items were common to all four surveys, permitting comparisons to be made among the four groups of respondents:

- Personal acceptability of MRSA screening

- Attitude toward screening (including screening staff for MRSA)

- Perceived problems or barriers relating to the patient

- Wider community subjective norm

- Two items relating to perceived risk (severity of consequences of MRSA for patients in general and likelihood of MRSA infection for patients in general).

Further comparisons were possible among patients, visitors and the wider community on the following measures:

- General acceptability of MRSA screening

- Family subjective norm

- Saliency of MRSA screening

- Treatment of patients with MRSA

- Risk (severity and likelihood) and benefit to patients of screening.

7.4.5   Pilot work

The questionnaires were subject to pilot testing to assess the content validity and reliability [31]. The staff questionnaire was piloted by asking a cohort of pre- and post-registration nursing students to complete the online survey and provide feedback to the research team. Particular emphasis was placed on participants' understanding of the questions and the clarity of instructions.

Content and face validity of both the staff and patient questionnaires was considered by asking members of the Programme Technical Group to comment on the adequacy and relevance of the content in relation to the extent to which they addressed the objectives of the study. The group included both infection control experts, who could comment on content validity, and a patient representative member, who could comment on face validity [31]. This group was also able to assess the wording of the questions, question order and length of questionnaire.

The visitor and public questionnaires were composed of questions taken from the patient questionnaires and therefore it was not considered necessary to pilot these separately.

7.5   Patient and visitor interviews

Qualitative research methods adopt an "emic" or insider perspective, attempting to understand the issues and concerns as they affect those involved; in this case to capture the experiences and opinions of patients and a nominated visitor, the "service users" of MRSA screening. The principles outlined by Flick [32] and Creswell [33] were adopted to guide qualitative data collection in this study.

Data were collected via semi-structured telephone interviews, which were conducted with recently discharged patients and one of their visitors (nominated by the patient). Interviews were carried out with the patient or visitor in their own home and at a time of their choosing.

There are a number of distinct advantages to telephone interviewing in qualitative research. Most notably, it is cost effective, in relation to time and human resources [34]; this means that researchers can logistically access and include participants over a wide geographical

area [35]. Telephone interviewing is also ecologically friendly because the expenses, both financial and ecological, associated with travel are not incurred [31;36]. Greenfield et al. [37] further suggest that telephone interviewing increases respondents' sense of anonymity, which has added value when interviewing participants about personal issues, such as those in this study. From the researcher's perspective, Sturges and Hanrahan [38] also suggested that there is greater safety for the researcher where there is no direct contact with the respondents.

Whilst there are advantages to telephone interviewing, there are also limitations which need to be considered. Garbett and McCormack [39] acknowledged the potential for compromising data quality and depth. Miller [40] identified that potentially important visual cues will not be present during telephone interviews and this may impinge on data quality. However Sturges and Hanrahan [38] stated that although visual cues may be absent, respondents provide verbal cues through hesitation and sighs which give opportunity for deeper, more probing questions. In acknowledging non visual cues the researcher can clarify the question asked, if it seems appropriate.

Telephone interviews are only accessible to people with a telephone [31]. In the General Household Survey of 2007 [41], it was estimated that 99% of UK households had access to a telephone (either landline or mobile), and that in 81% of households, at least one member had a mobile phone. As a small proportion of the population do not have telephone access at home, this limitation has to be acknowledged. With all recorded interviews Whyte and Watson [42] highlight the importance of checking equipment prior to use because ineffective equipment may compromise data collection and analysis.

The research evidence supports the use of telephone interviewing in qualitative data collection and more significantly this study. There are obvious benefits with regard to cost, time, geographical spread and logistics [36] and the process is more eco-friendly. The researchers were aware of potential limitations and took action to minimise these throughout.

A variety of measures were used to enhance the quality of interview data collection. Three researchers with qualitative research and interviewing experience conducted the interviews and a topic guide was used to maintain consistency in questioning. This guide was developed collaboratively by the research team, taking account of the specified objectives, and it was reviewed by the pilot programme Technical Steering Group (which included a patient representative). Interviews were audio recorded and transcribed, which ensured full capture of the conversation and provided an auditable record for future reference [43]. To promote trustworthiness of the findings all transcriptions were read by a second researcher to confirm accuracy [43] and peer review and debriefing after each interview and during analysis added to the rigour of the data collection and analysis process [32].

Initially, and in keeping with the subjective nature of qualitative enquiry, broad open questions were posed, providing patient and visitor participants with an opportunity to describe their experience in their own words, thus avoiding over-direction of questioning by the researcher. The opening question was, "We have been asked to find out what patients think about being screened and possibly treated for MRSA infection during their admission to hospital; can

you tell me what your experience of MRSA screening was like?" Researchers were trained to encourage an open flow of each participant's account by using encouraging phrases such as, "That's interesting, can you tell me a bit more about that?"

Following on from the opening question, the researcher explored further by probing aspects of the patient's experience linked to the research objectives. For example;

- Before you were admitted, did you think about the possibility of getting an infection during your admission to hospital – if yes, what were your concerns about that (*how likely, how dangerous*)?

- What aspect of being screened for MRSA was most difficult or worrying for you?

- What do you think is the best thing or benefit about introducing MRSA screening in hospitals, if anything?

- Based on your experience, if MRSA screening was introduced into all NHS hospitals, what could be improved about the process to make it more acceptable to patients?

Whilst the original open exploratory question continued to be asked of all participants, by applying the principles of emergent qualitative design outlined by Creswell [33], a more selective questioning was adopted subsequently, seeking further information about themes and categories which seemed to be emerging from analysis. Therefore the topic guide was modified slightly over time.

7.6 Staff discussions using the nominal group technique

The nominal group technique (NGT) is a method of generating, recording, discussing and voting on ideas. The technique originates from the work of Delbecq and Van de Ven [44] and Van de Ven and Delbecq [45], who explored a group process approach to problem identification, to form the basis of problem solving. As the name suggests, the group is nominal - in name only - and the NGT approach provides an ordered process that facilitates disparate groups of people with a common interest in issues, but who may have competing perspectives and priorities. Based on the premise of inclusion and engagement of wider groups, it provides scope for seldom heard groups such as consumers or clients who, in other group methods, may have limited participation [46]. Equally, engagement with professional groups may pose challenges, not least with disparate professional groups who may have competing professional power and identity issues, either real or perceived; NGT provides all group participants with an opportunity for their views to be expressed openly with equal voice.

Delbecq and Van de Ven [44] describe nominal group technique as "a socio-logical model suggesting a planning sequence which seeks to provide an orderly process of structuring the decision making at different phases of planning" (p. 467). Although the roots of NGT are in community planning, the technique is transferable to many situations where multiple stakeholder involvement is required, typically a feature of the NHS. Nominal group technique can be used to harness the ideas of individual participants as well as generating high numbers of ideas through minimising group dynamics [44;47;48]. One of the strengths of NGT is that with minimal group interaction, some of the disadvantages of other group methods do not emerge [46]. Fear of being criticised by more vocal, articulate or assertive members is minimised and so there is the potential for quieter, less confident members to participate without fear of being overruled or criticised, potentially a real barrier when using mixed groups of professional and/ or lay people [49].

In an examination of the effectiveness of nominal, Delphi and interacting groups to determine the most effective method of generating high numbers of ideas for problem identification, Delbecq and Van de Ven [44] found that NGT generated higher volumes of ideas than discussion groups, and it is therefore recommended when people can be brought together. Flaherty and Glasper [47] and Gaskin [48] suggest that the frequently used focus group methodology may fail to capture the individual views of participants and Delphi technique may take too long to complete. Another feature of NGT is the ability to reach consensus, a benefit not available in other group methods such as focus groups [47;48].

Valuing the perspective of all stakeholders and facilitating involvement, NGT can form a basis for solutions to complex problems that require significant organisational change and development. Examples of the range of situations where NGT has been used successfully are in the contexts of curriculum development [50;51], evaluation of education programmes [52-54], NHS healthcare research [51;55-57] and development of clinical guidelines and interventions [58]. In particular, consensus development has been achieved through the use of NGT in relation to policy formation and strategic direction setting [58;59]. Limitations of the technique are the time involved in preparing for the group and potential participant bias emanating from participant selection; however that can be offset by the advantages of high levels of participant involvement, generation of creative ideas and consensus development that may inform future research or policy.

Thus from the original work in community planning to more recent applications in a range of health service research, NGT lends itself to meet the needs of many complex groups at an early stage of development processes; it is therefore an appropriate method to identify perceptions of issues or challenges about MRSA screening which concern multiple NHS staff groups and to generate recommendations for the future development of the screening programme.

7.6.1   Data collection via the nominal group technique

A facilitator was used to conduct the group and manage proceedings in a structured way and an assistant acted as a scribe, recording ideas [60]. Ground-rules relating to confidentiality were agreed and a consent form signed by all participants.

Two pre - determined questions were posed to the group;

- *What issues or challenges concern you about the MRSA screening pilot programme?*

And, secondly;

- *If this pilot were to be rolled out nationally to all NHS hospitals, what recommendations would you make to improve the acceptability of the process for staff and patients?*

The following five phases encompassed the data collection strategy (Campbell *et al*.) [58];

1. **Silent generation of ideas.** Individuals were asked to consider the first question and write down their own ideas in a few words. The aim of this phase was to maximise ideas generated by individuals, without the influence of others.

2. **Round robin recording of ideas.** Each group member presented, without discussion, one of the ideas on their list. The ideas were recorded by the scribe for everyone to see. The facilitator then asked each person for a second idea, and so on, until all ideas were recorded as presented.

3. **Clarification of ideas.** At this stage anyone could seek clarification of the points listed. If duplication had occurred then ideas were combined with the agreement of the group.

4. **Scoring.** Each member of the group was given the same number of sticky dots to act as votes to be awarded. They could have awarded all their votes to the idea they believed was central, or allocated their marks across several of the responses. The facilitator totalled the marks awarded to identify the rank order of items listed.

5. **Discussion.** The results were then discussed in the group and recorded by the scribe, with the rank order of issues and recommendations identified.

Identifying ranked priorities has a distinct advantage in creating immediately available results.

Nominal group data are not commonly combined across participant groups; however, it was decided for this study to compare the views expressed by the different staff groups from each Pathfinder Board site and to combine these for analytical purposes.

Due to the considerable variation in numbers attending groups at the various sites (i.e. 7-10 participants in each of the three Western Isles groups compared to 2-4 participants in each Grampian or Ayrshire group), it was decided to give twice the number of votes to the smaller groups to counter balance undue influence from the larger groups during combined analysis; the Western Isles groups were given 5 votes per person, Grampian and Ayrshire groups were given 10 votes per person. The researchers acknowledge that this may be unusual; however, by explaining precisely how votes were attributed and data collated, the reader is able to judge the strength of concern around each issue or recommendation expressed by the combined groups across and between the Pathfinder Boards.

7.6.2　Talking wall comments

Issues and challenges experienced during the process may affect the staff perception of the acceptability of MRSA screening. To offer an opportunity for staff to express a summary of their attitude towards screening a "talking wall" was made available at the end of each nominal group discussion. In the conduct of this informal process each participant was invited to write a single comment on a post-it note pad which summed up a message they would like to give the Health Minister in relation to MRSA screening. These messages were then stuck onto a poster for group perusal and later categorised according to the broad theme of the content.

8   Analyses

8.1   Survey analysis

All quantitative analyses were conducted using SPSS (16.0 for Mac). The staff survey was administered online, using SurveyMonkey, with one respondent completing a paper version. Responses were taken from the SurveyMonkey website in the form of an Excel database, and then transferred into an SPSS database. In the construction of the staff database, checks were made on the distributions of each variable against both the Excel file and the original SurveyMonkey record.

Responses to the patient, visitor and wider community surveys were then entered into the existing database, to permit comparisons to be drawn across the four groups of respondents. Missing data were not reconstructed. All of the patient and visitor data were subjected to full double-entry. Twenty percent of the wider community surveys were also subjected to double-entry; no errors were found and it was therefore deemed unnecessary to re-enter the remaining data. (It should be noted that the questionnaires completed by patients were longer and more complicated to code and enter than those of visitors and the public.)

Variables with Likert-type response scales (typically, in this study, scales of 1 to 10) were treated as continuous or quasi-interval. Although this treatment is not strictly warranted, it is a common practice within the social sciences, and the forms of analysis used in this study are generally tolerant of this violation [61]. Skewness was not corrected for, because this would have made it more difficult to interpret scores and to make comparisons across groups. However, if warranted, highly skewed variables or scales were dichotomised.

The first stage of analysis involved checking distributions and frequencies of variables and factors. These are reported in terms of the mean (M), and standard deviation of the mean (SD) (for continuous or quasi-interval measures), and numbers and percentages (for nominal measures). Following this, scales were constructed for continuous/quasi-interval variables, typically by taking a mean of contributing items, allowing for one or two missing responses. Coefficients of internal consistency (Cronbach's alpha) were calculated for each. For categorical variables or factors, categories were collapsed, if appropriate, if fewer than 10% of respondents fell within a single category.

Chi-squared analysis was used to investigate differences in the distributions of categorical variables (e.g. gender and staff job category); t-tests were used to investigate differences between two groups on continuous measures (e.g. gender and attitude) and between two repeated measures; ANOVA was used to investigate differences between one or more sets of categories on continuous variables; and correlation (Pearson's) was used to examine the relationships between continuous variables. Multiple regression analysis was used to determine the best fitting "predictors" of the main outcome variables, taking the relationships among predictors into account; typically, this was achieved by examining measures of collinearity and multicollinearity, such as the variance inflation factor (VIF): a conservative value of 2 was determined as an acceptable cut-off level [62]. Two-tailed tests were used throughout (unless otherwise stated), and the significance level (alpha) was set at 0.05.

8.2   Patient and visitor interview analysis

As Creswell [33] comments, qualitative enquiry draws on diverse perspectives and applies equally diverse strategies for data analysis. In this study, principles of thematic analysis described by Braun and Clarke [63] and Creswell [33] were applied.

For a variety of reasons, outlined in Section 4.5, telephone interviews were deemed to be the most appropriate means of gathering qualitative data on the patient and visitor perspective. Whilst this held practical advantages, it did mean that additional benefits of face to face conversation were lost in terms of picking up non verbal cues. Similarly, as the interviews were held at a distance, the common qualitative technique of incorporating an analysis of context was not attempted.

Throughout the interviews, the interviewer sought to maintain focus on the participants' meanings [33], or to learn about what the participants thought about MRSA screening, without any undue influence from the researchers themselves.

Analysis followed an inductive process, building the findings up from the bottom, incorporating the steps indicated by Braun and Clarke (p. 87) [63] and Creswell (p. 186) [33];

- Familiarisation: interviews were transcribed and read over to familiarise the researcher with the data

- Generation of initial codes relative to specific data extracts and collating data relative to each code

- Searching for themes: collating codes into potential themes

- Reviewing themes; checking if themes work in relation to coded extracts (level 1) and the entire data set (level 2), generating a thematic map of the data set

- Defining and naming themes; refining themes and the overall story the themes tell

- Producing the report; selection of extracts to illustrate themes, relating these back to the research objectives.

Creswell [33] comments that qualitative data analysis involves "moving deeper and deeper into understanding the data … like peeling back the layers of an onion" (p. 183). Data are broken down by coding and then built up into themes or categories, represented by extracts from the participants, before the researcher makes an interpretation of the larger meaning of this data. Qualitative analysis makes no claims to being able to "prove" or generalise findings, rather the trustworthiness of the interpretation is based on the rigour with which data collection and analysis is explained to the reader. Thematic analysis as described by Braun and Clarke [63] might be considered to be "basic qualitative analysis", and Creswell [33] advocates more complex analysis by moving on from theme generation to, for example, producing a theoretical model by applying principles of grounded theory [64]. This would involve interrogating the data to identify relationships between the themes or categories, which might enable some explanation of the processes or core categories operating in the area.

8.3   Nominal group discussion analysis

First level data analysis was conducted during the group session, as participants identified, listed and voted on issues under discussion; the resultant ranked order lists formed the initial results. However, as parallels could readily be identified in the issues and challenges expressed by staff at different sites and between staff groups, as well as similarities in the recommendations proposed, a second level of data analysis was completed as described below.

Appendix 5 presents the raw data from each individual Pathfinder NHS Board site, collated into two groups; i) clinical and administrative staff (as two administrative staff attended a group discussion with clinical staff their views were incorporated within the clinical group), ii) domestic staff. Further consideration of the data enabled the site specific results to be sorted into broader categories of issues and recommendations, with detailed topics identified within these categories (Appendix 5). Categorisation was cross-checked by a second researcher to confirm suitability of the category allocation.

8.4   Convergence of data sets

Whilst the methods of data collection were varied, incorporating both qualitative and quantitative sources, the topics of interest explored by these various approaches were broadly similar, encompassing the following aspects from the perspectives of staff, patients, visitors and the wider community:

- Perception of risk of MRSA infection in hospitals

- Attitudes towards MRSA screening, including perceived benefits or advantages of MRSA screening and barriers to screening

- Information or communication about MRSA screening

- Aspects of MRSA screening that could be improved upon in future

- Overall acceptability of MRSA screening.

Therefore, it was possible to consider both qualitative and quantitative data sets related to each of these aspects side by side, allowing for comparisons to be made and contrasts to be sought. In this way, quantitative data provided more specific information and enabled statistical manipulation of variables whilst qualitative data provided a broader understanding of key issues, presented in the language of the participants. No attempt was made to quantify the qualitative data, or to force qualitative themes on the numerical findings. By integrating the data in this way, the value of mixed methods approaches could be realised, providing a greater understanding of the issues under investigation than either survey or interview could on their own [5].

9 Results

9.1 Staff results

Data were provided by staff completing a structured survey instrument and volunteering to take part in nominal group discussions at each pilot Pathfinder Board site. Results for each element are presented below.

9.1.1 Staff survey

The online version of the staff survey opened 3 August 2009 and was closed to further responses on 5 October 2009, and the responses were taken from the SurveyMonkey website on that day. Although 241 cases (i.e. with all five consent items endorsed) were extracted from the SurveyMonkey website, 26 respondents were excluded from the analysis: nine respondents had failed to answer any questions other than those relating to consent; one respondent had answered only one further question; and 16 respondents had answered only the demographic questions (i.e. age, gender, hospital, occupation). One completed paper version of the questionnaire was returned, and added to the database. The sample therefore consisted of 216 respondents.

9.1.1.1 Description of sample

Most respondents (n = 184, 85.2%) were female, with 28 (13.0%) male respondents (4 missing responses, 1.9%). The age distribution is shown in Table 9.1. Given the small numbers aged up to 25 years, and over 55 years, the responses were collapsed as follows for further analysis: up to 35 years, 36 to 45 years, and 46 years or older.

Table 9.1: Distribution of age groups

Age group	n	% of total sample
Under 25	13	6.0
26-35	63	29.2
36-45	63	29.2
46-55	59	27.3
Over 55	17	7.9
Missing	1	0.5

Respondents were asked to indicate which hospital they worked for (see Table 9.2). The majority of respondents (62.5%) worked at either Crosshouse Hospital or Western Isles Hospital. No respondents worked at Woodend Hospital. A small number (n = 6, 2.8%) indicated that they worked at more than one hospital. Given the disparities in the distribution, hospital of employment was not generally used in further analysis, although checks were made as appropriate.

Table 9.2: Distribution of hospital(s) of employment

Hospital	n	% of total sample
Ayr Hospital	40	18.5
Crosshouse Hospital	73	33.8
Aberdeen Royal Infirmary	13	6.0
Woodend Hospital	0	0
Western Isles Hospital	62	28.7
Uist and Barra Hospital	17	7.9
More than one hospital	6	2.8
Missing	5	2.3

Respondents were asked to select the type of job that they had from a list (or to write in their job title, if not represented in the list). Fifty percent (n = 108) of respondents selected nursing/midwifery, with all other job categories attracting much smaller numbers of responses (see Table 9.3). For further analysis, those with high involvement with patients, or with their care (nursing/midwifery, medical, health care assistant, allied health professional), were compared with those with lesser or indirect involvement (administrative/clerical, ancillary/support, technical/laboratory, other).

Table 9.3: Distribution of job categories

Job category	n	%
High patient involvement	167	77.3
Nursing/midwifery	108	50.0
Health care assistant	36	16.7
Medical	7	3.2
Allied health professional	16	7.4
Lesser patient involvement	45	20.8
Administrative/clerical	27	12.5
Ancillary/support	5	2.3
Technical/laboratory	9	4.2
Other	4	1.9
Missing	4	1.9

Respondents were asked to indicate for how many years they had worked in health care settings. Over 50% indicated that they had worked in health care settings for more than 10 years (see Table 9.4). For further analysis, the first two categories were combined (i.e. up to 5 years, 5 to 10 years, and more than 10 years).

Table 9.4: Distribution of years of work in health care settings

Years of work in health care	n	% of total sample
Under 2 years	13	6.0
3-5 years	32	14.8
5-10 years	44	20.4
More than 10 years	125	57.9
Missing	2	0.9

No relationship was noted between age group and gender of respondents. A number of trends in the data were noted with regard to the relationships among age, gender, job category, years of experience, and hospital of employment. In particular, a significant difference was found between the distributions of job categories according to hospital of employment (excluding those working at more than one hospital). While these differences are not elaborated upon here (to avoid compromising the anonymity of respondents) they should be taken into account in the interpretation of further analysis.

9.1.1.2   Involvement in MRSA screening and contact with MRSA

Respondents were asked the following question: "To what extent are you currently involved in screening patients for MRSA? (Please tick as many options as apply.)" The options provided are shown in Table 9.5, with the numbers and percentages of endorsement. The degree of overlap among the options relating to the process of screening itself was high, such that almost all of those who indicated that they offered screening, took consent and discussed issues relating to screening also indicated that they took samples/swabs from patients.

Table 9.5: Endorsement of options relating to involvement in MRSA screening

Screening involvement	n	% endorsement
I offer the screening to patients	75	34.7
I take consent from patients for screening	76	35.2
I discuss issues relating to screening with patients	82	38.0
I take the samples/swabs from patients who consent to MRSA screening	102	47.2
I speak to patients after the screening process to discuss the results	78	36.1
I make decisions regarding the patient's management if the result is positive	69	31.9
I provide care or advice for patients who are found to be colonised with MRSA	94	43.5
I am involved in the analysis of samples/swabs, but do not have routine contact with the patients	12	5.6
I am involved with the organisation of MRSA screening, but do not have routine contact with the patients	12	5.6
I chat informally to patients who are being screened for MRSA	70	32.4
I have no direct involvement in screening patients for MRSA	64	29.6

Participants were classified according to the level of involvement with screening using their responses to these options and, in three cases, their comments on their involvement. See Table 9.6. For further analysis, those in the second group (directly involved in screening but not taking swabs/samples, n = 15) were combined with those in the first group.

Table 9.6: Categories of involvement in MRSA screening

Screening involvement	n	%
High involvement with screening	117	54.2
Takes samples/swabs from patients who consent to MRSA screening	102	47.2
Does NOT take samples/swabs, but does at least one of the following: Offers screening, takes consent, discusses screening issues, speaks to patients to discuss results	15	6.9
Indirect involvement – Makes decisions regarding patients' management if positive, or provides care for those colonised with MRSA, or involved in analysis of samples/swabs, or involved in organisation of MRSA screening	34	15.7
No direct involvement in MRSA screening, or ONLY chats informally to patients who are being screened for MRSA	65	30.1

As would be expected, level of screening involvement varied significantly according to job category, but not by age group, years of experience, or gender. Level of screening involvement varied according to hospital of employment (probably because of the differences in job categories found among the hospitals), but again the details of this are not reported here to preserve anonymity of respondents.

Respondents were asked whether they had contact with patients who were colonised with MRSA and, separately, whether they had contact with patients infected with MRSA. A summary of responses to both questions is provided in Table 9.7. Some of the comments provided by respondents on these questions indicated that it was sometimes difficult to be precise about level of contact – for example, that there might be no cases for weeks or months, and then a number of cases at any one time. This suggested that, for many respondents, it may have been difficult to decide which of the middle range of options to use. For further analysis, therefore, three categories of response were created for each variable: all the time or frequently; sometimes (all responses within the categories encompassed by "at least once a week" and "less than once every six months"); and never or "don't know".

Table 9.7: Distributions of responses relating to contact with patients colonised with MRSA and infected with MRSA

Contact with MRSA colonised or infected patients	Colonised with MRSA		Infected with MRSA	
	n	%	n	%
High	82	38.0	70	32.4
Yes, all the time: this is central to my work	19	8.8	24	11.1
Yes, frequently (most days)	63	29.2	46	21.3
Some	75	34.7	92	42.6
At least once a week	19	8.8	19	8.8
At least 2 or 3 times a month	28	13.0	24	11.1
Less than once a month	16	7.4	33	15.3
Less than once every six months	12	5.6	16	7.4
None	53	24.5	50	23.1
Never	32	14.8	34	15.7
Don't know	21	9.7	16	7.4
Missing	6	2.8	4	1.9

As might be expected, the categories relating to contact with MRSA colonised and infected patients overlapped significantly, as did both with job category and involvement with screening: those who had a high degree of involvement with screening were all in posts involving a high degree of patient care (i.e. nursing, medical, health care assistant, allied health professional), and also indicated that they had more contact with MRSA colonised and infected patients. This was taken into account in further analysis; while all of these variables were considered individually in relation to other variables, it was not possible to include all of the variables associated with involvement with screening, job category, and involvement with MRSA colonised and infected patients in any single analysis.

9.1.1.3   Information and training related to the MRSA Screening Programme Pilot

Respondents were asked to indicate, from a list of options, the ways in which information about the MRSA Screening Programme Pilot had been conveyed to them (see Table 9.8).

Table 9.8: Responses to options reflecting sources of information about the MRSA Screening Programme Pilot

Source of information	n	%
No information has been given to me	18	8.3
A leaflet	114	52.8
A workshop or training session	36	16.7
A formal meeting	28	13.0
Verbally, by managers	107	49.5
In casual conversation	55	25.5
A website	50	23.1
Radio	5	2.3
Video/DVD	4	1.9
Other*	11	5.1

* coded from comments provided by respondents; counted only if source not covered by existing options.

The main sources of information on the MRSA Screening Programme Pilot were leaflets (n = 114, 52.8%) and verbal communication by managers (n = 107, 49.5%). Only 36 respondents (16.7%) indicated that they had been given a workshop or training session. Other sources mentioned by respondents included email, posters and pens (presumably, the pens provided by the current team of researchers). Eighteen respondents (8.3%) indicated that they had been given no information on the Pilot. One of these respondents also indicated that they had been given a leaflet, and one that they had received information verbally, from managers; however, these two respondents perceived that they had not received information and the categorisation was not altered. Of the 18 staff who reported receiving no information or training, 14 had no direct involvement in screening; however, four were directly or indirectly involved with screening and 13 were in occupations with a high level of patient care. It may be of concern therefore that some staff with direct patient care or responsibility, or direct involvement in screening, report receiving no information or training about MRSA screening.

A count was made of the sources of information, ranging from 0 (no information) to 6 (M = 2.02, SD = 1.33). This was then categorised as follows: no information given; one source; two sources; and three or more sources (see Table 9.9).

Table 9.9: Number of sources of information about the MRSA Screening Programme Pilot

Number of sources of information	n	%
No information given	18	8.3
1 source	68	31.5
2 sources	50	23.1
3 or more sources	66	30.6
Missing	14	6.5

Sixty-eight respondents had received information through one channel only: for 27 (40% of this group) this had been verbal information, from managers; for 18 (26%) it had been a leaflet; for 6 (9%) it had been a formal meeting; for a further 6 (9%) it had been another source (email, posters and pens); for 5 (7%) it had been a website; for 3 (4%) it had been a workshop and for a further 3 (4%) it had been casual conversation.

There were some indications that the number and forms of communication about the MRSA Screening Programme Pilot varied according to hospital and/or health authority. However, it was not possible to conduct a reliable analysis on these data, due to the low numbers of respondents from certain hospitals, and the differences noted in the occupational groups among the respondents from each hospital.

The number of sources varied according to involvement with MRSA screening, with those with high involvement in the screening programme reporting a higher number of sources of information: χ^2 (6, n = 202) = 22.96, p < 0.001. Comparable significant patterns were also noted with regard to contact with MRSA colonised and infected patients, such that those with more involvement reported a higher number of sources of information. However, four respondents who reported involvement in screening also reported that they had not been given any sources of information.

Respondents were then asked to respond to four items (one question and three statements) relating to adequacy of training. For each, a 10-point response scale was provided, from 1 (strongly disagree) to 10 (strongly agree). A "not applicable" response category was provided for the first of these (the question): eight respondents used this category, which was given a score of 0. Descriptive statistics are provided in Table 9.10.

Table 9.10: Descriptive statistics for items on adequacy of information and training on the MRSA Screening Programme Pilot

Items on adequacy of information/training	Mean	SD	Alpha	n
Adequacy of Information Scale	6.51	2.32	0.80	204
Do you believe that you have enough information about MRSA to be able to perform your work to the best of your ability?	7.79	2.67	-	206
The hospital has provided me with sufficient information about the MRSA Screening Programme Pilot	6.74	2.99	-	200
The hospital has provided me with sufficient training or educational support relating to the MRSA Screening Programme Pilot	6.17	3.04	-	199
More could be done by the hospital to give information or training to staff involved in the MRSA Screening Programme Pilot (R)	5.69	3.01	-	198

N.B. A higher score represents a more positive response, except where reverse scoring indicated (R)

The coding of responses to the last item in Table 9.10 was reversed, to bring scoring in line with the other three items. Following this, a scale was computed, by taking the means of responses to all four questions/items, allowing up to two missing responses: a higher score represented greater perceived adequacy of training or information on the MRSA Screening Pilot Programme. The coefficient of internal consistency was acceptable.

Further analysis was conducted to determine whether ratings of perceived adequacy of information varied according to respondent descriptors and number of sources of information. Ratings did not vary according to gender, age group, years of experience, job category, or involvement with MRSA colonised or infected patients. However, significant differences in perceived adequacy of information were found according to both the number of sources of information ($F_{(3, 195)} = 22.05$, $p < 0.001$) and, to a lesser extent, involvement with MRSA screening ($F_{(2, 201)} = 3.59$, $p < 0.05$): those reporting more sources of information, and those with more involvement in screening (either direct or indirect), perceived the information to be more adequate. Given that these two variables were in themselves significantly related, further analysis was conducted. A 3 (involvement with screening) X 4 (number of sources of information) ANOVA revealed that involvement with screening was no longer a significant factor when the number of sources was taken into account: for involvement with screening, $F_{(2, 187)} = 0.02$, ns; and for the number of sources, $F_{(3, 187)} = 12.34$, $p < 0.001$. Table 9.11 displays the descriptive statistics for perceived adequacy of information at each level of number of sources.

Table 9.11: Descriptive statistics for perceived adequacy of information and training relating to the MRSA Screening Programme Pilot according to number of sources of information

Number of sources of information	Adequacy of information/ training	Mean	SD
	n		
No information given	17	3.47	1.35
1 source	66	6.01	2.24
2 sources	50	6.68	2.33
3 or more sources	66	7.72	1.67

In summary, when the number of sources of information and training was taken into account, there were no significant differences between those with different levels of involvement in MRSA screening on the extent to which they perceived their training in MRSA screening to be adequate. This held true whether involvement was considered at three levels (direct; indirect; or none), or at two levels (any involvement; or none). However, the perceived adequacy of information/training varied significantly according to the number of sources of information/training, such that those who reported more sources also perceived the information to be more adequate. This was irrespective of the extent to which the individual was involved in MRSA screening.

9.1.1.4   Acceptability and attitudinal variables

In this section, the responses to the final part of the questionnaire are examined. This part of the questionnaire contained 34 statements, all of which employed 10-point response scales from 1 (strongly disagree) to 10 (strongly agree), with a separate response for "don't know". As detailed in Section 9.1.1, a number of scales were derived according to the following constructs: the acceptability of MRSA screening; attitudes toward screening; barriers to screening; norms; perceived control; and saliency. The scales were constructed to allow direct comparisons to be made between the responses of staff and those of patients, visitors and the wider community wherever possible. Responses to single items are also considered.

In each of the following sub-sections, the responses to the individual items are displayed, along with the descriptive statistics for the scales. In Section 9.1.1.2, a summary is provided of the key relationships noted between the attitudinal items and the respondent descriptors (including information/training on MRSA screening), and the relationships among the scales presented here are considered.

9.1.1.5   Acceptability of MRSA Screening

Acceptability of screening represented the main outcome variable of this aspect of the study. Two separate facets of acceptability of MRSA screening were identified: professional acceptability (relating to the respondent's profession or job, and for staff only), and personal acceptability (for all respondents). The descriptive statistics for each scale and for the contributing items are shown in Table 9.12.

Table 9.12: Descriptive statistics relating to the professional and personal acceptability of MRSA screening

Acceptability Items	Mean	SD	Alpha	n	Don't know	Omitted response
Professional Acceptability Scale	8.18	1.98	0.88	187	-	29 (total)
Overall, I believe that the MRSA Screening Programme is acceptable to patients	8.24	1.99	-	182	13	21
Overall, I believe that the MRSA Screening Programme is acceptable to staff in this hospital	8.14	2.15	-	176	20	20
Personal Acceptability Scale	8.54	2.06	0.88	204	-	12 (total)
I would advise a relative or loved one to accept the offer of MRSA screening prior to hospital admission	8.58	2.22	-	183	12	21
If I were to be admitted to hospital as a patient, I would accept the offer of MRSA screening	8.89	2.17	-	187	5	24
I support the MRSA Screening Programme in this hospital	8.32	2.26	-	197	6	13

N.B. A higher score represents greater acceptability

As can be seen from Table 9.12, acceptability of MRSA screening was generally high (with a higher score representing greater acceptability). This was particularly true of the personal acceptability items, with 57% (n = 123) of the sample endorsing the highest point on the scale to the item on accepting the offer of screening themselves. The numbers of "don't know" responses were relatively low, as were the numbers of missing responses. However, more "don't know" responses were obtained for the professional items than for the personal items. Here, and throughout the sections reporting on the survey results, the problems associated with skewed distributions are acknowledged, and the implications are considered in Section 10 (Discussion). However, as noted in Section 8.1, transformations were not applied, in order to avoid confusion in the interpretation of scores.

The two scales were constructed by taking the mean of the contributing items, allowing for one or two missing or "don't know" responses. The same strategy was used in the construction of all of the scales from this section of the questionnaire. Both coefficients of internal consistency were acceptable. Scores on the acceptability scales were highly correlated with one another: r = 0.72, p < 0.001. However, separate scales were maintained in order to allow comparisons to be made across samples.

9.1.1.6   Attitudes and Barriers

In this section, responses to a range of items are considered. While all of the items reflect attitude to a greater or lesser extent, some were more clearly related to points or issues that were specific to the conduct of screening. These items were therefore considered to reflect potential barriers to screening, and were considered separately. As with other aspects of this analysis, items that were common to all groups of respondents were treated separately, to allow for direct comparisons to be made among staff, patients, visitors and the public.

Table 9.13: Descriptive statistics for MRSA screening attitude items

Attitudinal Items	Mean	SD	Alpha	n	Don't know	Omitted response
Attitude Scale	7.63	2.23	0.87	199	-	17 (total)
Routine screening of patients will help to reduce the rates of MRSA infection in this hospital	7.95	2.62	-	187	15	14
Routine screening of patients for MRSA will be beneficial to everyone	7.70	2.70	-	194	8	14
Routine screening of patients for MRSA is largely unnecessary (R)	2.90	2.49	-	191	8	17
The benefits to other patients and the wider community of screening patients for MRSA outweigh the costs	7.13	2.88	-	176	24	16
Routine screening of patients for MRSA is just 'window-dressing' (R)	3.56	3.06	-	181	18	17
Additional items						
The costs of administering routine MRSA screening for patients will outweigh any benefits (R)	5.70	3.44	-	174	28	14
Routine MRSA screening of patients will make little difference to the rates of MRSA infection in this hospital (R)	4.05	3.11	-	184	20	12

N.B. A higher score represents a more positive attitude, except where reverse scoring indicated (R)

Seven items were identified as attitudinal, and the first five of these items (shown under Attitude Scale in Table 9.13) were also presented to the patients, visitors and wider community samples. As can be seen, responses to the first five items were generally positive: mean scores were above the midpoint on all items bar those to be reversed in scoring (R). However, responses to the additional two items (presented only to staff) were more varied, and the first attracted a high number of "don't know" responses. A substantial minority (23.6% of those who gave a rating) used point 10 on the scale (i.e. strongly agreed) in response to the item on the costs outweighing the benefits; further investigation suggested that these respondents were rather more likely than others to be directly involved in screening (although this was not a significant difference).

After reversing the scoring on the two items requiring this transformation, the attitude scale was constructed by taking a mean of contributing responses (allowing for up to three missing or "don't know" responses). The coefficient of internal consistency was acceptable. However, the coefficient of internal consistency on the remaining two items was 0.35, indicating that these two items did not constitute a separate scale. This is considered in more detail below: the first item was not used in further analysis, while the second was included in the clinical barriers scale.

9.1.1.7   Screening of staff

Agreement with the statement that hospital staff should be screened for MRSA was generally high, with a mean score above the midpoint (see Table 9.14). Eighty participants (37% of the sample, 41.5% of those who responded) used point 10 on the scale (i.e. strongly agreed), and 119 participants used points 8 to 10 (55.1% of the sample, 61.8% of those who responded). Conversely, 35 people (16.2% of the sample) gave a rating of between 1 and 4, indicating disagreement with the statement that staff should be screened; a higher proportion of these respondents than would be expected were indirectly involved in screening ($p < 0.05$).

Table 9.14: Descriptive statistics for the item on screening hospital staff for MRSA

Screening of Staff	Mean	SD	n	Don't know	Omitted response
Hospital staff should be screened for MRSA	7.43	2.95	193	9	14

N.B. A higher score represents greater agreement

9.1.1.8 Barriers to screening

Four items were identified as reflecting barriers for patients to screening, and these items were also presented to the other three samples of respondents (see Table 9.15). A higher score represented a greater perceived barrier (apart from one item which required reversal of scoring). Overall, respondents tended to disagree with these potential barriers.

Also shown in Table 9.15 are responses to five items that reflected barriers specific to staff. Responses to three of these items were around the midpoint, and two items (about the facilities available in the hospital) attracted substantial numbers of "don't know" responses. However, substantial minorities used point 10 on the scale (i.e. strongly agreed) in response to the items on hospital facilities: 18% of those who provided a rating strongly agreed that facilities for screening were inadequate, and 25.7% of those who provided a rating strongly agreed that facilities for treating patients with MRSA infections were inadequate.

Finally, Table 9.15 displays descriptive statistics for items reflecting clinical barriers; once again, staff tended to disagree with these potential barriers. One item had originally been considered as reflective of attitude ("Routine MRSA screening of patients will make little difference to the rates of MRSA infection in this hospital"); however, it appeared to be consistent with the other items here. The additional item in Table 9.15 detracted from the reliability of the scale and was not used in further analysis: it attracted a very high number (n = 50) of "don't know" responses.

Overall, with the exception of the items relating to lack of isolation facilities, staff tended to disagree with items reflecting barriers to MRSA screening.

Table 9.15: Descriptive statistics for the items reflecting barriers to MRSA screening

Barrier Items	Mean	SD	Alpha	n	Don't know	Omitted response
Barriers for Patients Scale	3.70	1.98	0.66	180	-	36 (total)
Screening a patient for MRSA is physically unpleasant for that patient	3.37	2.56	-	171	25	20
Screening a patient for MRSA can be upsetting for that patient	4.27	2.88	-	172	22	22
A patient found to be colonised with MRSA can be stigmatised or discriminated against	3.95	3.01	-	173	19	24
Patients benefit from MRSA screening, even if they are found to be colonised or infected (R)	7.83	2.30	-	176	17	23
Barriers For Staff Scale	4.47	1.88	0.64	187	-	29 (total)
Staff in this hospital are mostly effective in caring for patients infected with MRSA (R)	7.91	2.04	-	175	28	13
Routine screening of patients for MRSA creates a lot of extra work for staff	5.16	3.20	-	180	19	17

Barrier Items	Mean	SD	Alpha	n	Don't know	Omitted response
The facilities (rooms or resources) that are available in this hospital for MRSA screening are inadequate	5.26	3.30	-	151	49	16
The facilities (rooms or resources) that are available in this hospital for treating patients with MRSA infections are inadequate	6.45	3.21	-	167	35	14
Screening a patient for MRSA is physically unpleasant for staff	2.48	2.21	-	167	26	23
Clinical Barriers Scale	3.94	2.05	0.76	186	-	30 (total)
Routine screening of patients for MRSA does not disrupt the treatment or care of those patients (R)	7.50	2.84	-	171	25	20
Screening a patient for MRSA has little clinical benefit in the long run	3.20	2.84	-	166	26	24
There are unresolved ethical issues related to screening patients for MRSA	4.20	2.98	-	139	54	23
Patients suffer when they find out that they are colonised with MRSA	4.71	2.92	-	172	23	21
Routine MRSA screening of patients will make little difference to the rates of MRSA infection in this hospital	4.05	3.11	-	184	20	12
Additional item						
The MRSA decolonisation procedure is too difficult for people to carry out effectively in their own homes	3.94	2.74	-	145	50	21

N.B. A higher score represents a higher degree of agreement with the barrier, except where reverse scoring indicated (R).

All three barrier scales were calculated as the mean of contributing items (allowing for up to two or three missing or "don't know" responses). The coefficients of internal consistency for the barriers for patients scale and the barriers for staff scale, at 0.66 and 0.64 respectively, were lower than those found with other scales, but still within an acceptable range. The coefficient of internal consistency for the clinical barriers scale was acceptable (0.76). All three scales were significantly related to one another, particularly barriers for patients and clinical barriers: $r = 0.78$, $p < 0.001$. However, despite the degree of overlap, the scales were kept separate to allow for comparisons to be made across the groups of respondents.

9.1.1.9 Norms

Two items were identified as reflecting the perceived norm among staff of support for MRSA screening, and one item was identified as reflecting the perceived norm of support within the wider community (an item also used in the questionnaires given to the other samples). As can be seen from Table 9.16, the perceived norms of support, for both staff and the wider community, were relatively strong (with a higher score representing a more positive or supporting norm for MRSA screening). However, the staff subjective norm items attracted high numbers of "don't know" responses. In addition, 21 respondents (9.7% of the sample) gave ratings of between 1 and 4 on one or both of these items, indicating disagreement with the statements.

Table 9.16: Descriptive statistics for items reflecting perceived norms of support for MRSA screening among staff and the wider community

Norm Items	Mean	SD	Alpha	n	Don't know	Omitted response
Staff Subjective Norm Scale	7.66	2.33	0.89	171	-	45 (total)
Most of my colleagues seem to believe that routine screening of patients for MRSA is beneficial	7.55	2.52	-	163	39	14
Most of my colleagues would support the MRSA Screening Programme	7.74	2.42	-	166	37	13
Wider Community Subjective Norm						
People in the wider community would probably approve of routine screening of patients for MRSA	8.17	2.14	-	168	29	19

N.B. A higher score represents a more positive or supporting norm

The Staff Subjective Norm scale was constructed by taking the mean of the two contributing items (allowing for one missing or "don't know" response). The coefficient of internal consistency was acceptable.

9.1.1.10 Perceived control

Respondents were presented with two items reflecting the degree to which they felt they could influence the policy or conduct of MRSA screening. Levels of agreement with these two items were generally low, suggesting that many respondents felt that they had little influence: 90 respondents (41.7% of the sample) responded using the first point of the scale (i.e. strongly disagreed) to the item on influence over policy, and 75 (34.7% of the sample) used that point with regard to influence over conduct of screening. Descriptive statistics are shown in Table 9.17. A scale was constructed using the mean of at least one item (excluding missing and "don't know" responses), with an acceptable coefficient of internal consistency.

Table 9.17: Descriptive statistics for items on perceived control over MRSA screening and conduct

Perceive Control Items	Mean	SD	Alpha	n	Don't know	Omitted response
Perceived Control	3.40	2.76	0.86	190	-	26 (total)
I feel I have some influence over hospital policy on MRSA screening	3.13	2.81	-	188	7	21
I feel I have some influence over the way in which patients are screened for MRSA in this hospital	3.65	3.04	-	187	6	23

N.B. A higher score represents greater perceived control or influence

9.1.1.11   Saliency of screening

Respondents were presented with two items reflecting the degree to which screening was discussed or viewed as important at work, or saliency of screening. Mean scores for both were around the midpoint; 30% of those who provided a rating used points 1 or 2 on the scale (i.e. strongly disagreed) with the statement that screening was a frequent topic of conversation, and 28% provided a similar rating for the statement that it was an important topic of conversation. A scale was constructed by taking the mean of at least one item, excluding missing and "don't know" responses, and the coefficient of internal consistency was acceptable.

Table 9.18: Descriptive statistics for the items on saliency of MRSA screening at work

Saliency of Screening Items	Mean	SD	Alpha	n	Don't know	Omitted response
Staff Saliency	4.98	2.81	0.87	191	-	25 (total)
Routine screening of patients for MRSA in an important topic of conversation at work	5.09	2.99	-	190	6	20
Routine screening of patients for MRSA in a frequent topic of conversation at work	4.88	2.99	-	191	5	20

N.B. A higher score represents greater saliency

9.1.1.12   Summary of findings in relation to acceptability and attitudinal items

With regard to respondent characteristics and descriptors, no differences in the acceptability and attitudinal items were found according to age group, years of experience or job category (high patient involvement vs. lesser patient involvement). Gender differences were found in the ratings relating to barriers for staff and those relating to staff and wider community subjective norms; males gave higher ratings of agreement to the barrier items, and lower ratings of agreement to the norm items. However, these results may not be reliable, given that very few of the respondents were male, and that the occupational characteristics of male respondents appeared to be somewhat different from those of female respondents.

Differences were found according to level of involvement with MRSA screening on three scales: attitude toward screening staff for MRSA, perceived control, and saliency. Those with indirect involvement in MRSA screening indicated significantly less agreement with the need to screen staff than did either those with a direct involvement or those with no involvement. As might be expected, those with no involvement in screening perceived significantly less control over screening than did those with direct or indirect involvement, and those with direct involvement indicated that MRSA screening was a more salient topic of conversation at work than did those with indirect or no involvement with screening.

Perceived adequacy of information/training relating to MRSA screening was significantly related to ratings on all scales or items except attitude toward screening staff for MRSA. In all cases, those who perceived the information/training to be more adequate gave more "positive" responses.

The relationships among the acceptability and attitudinal variables were then considered. An overview is presented in Table 9.19.

Table 9.19: Intercorrelations among acceptability and attitudinal scales/items

		1	2	3	4	5	6	7	8	9	10
1	Professional acceptability	-									
2	Personal acceptability	.72***									
3	Attitude	.62***	.72***								
4	Screening staff	.12	.24***	.06							
5	Barriers-patients	-.55***	-.53***	-.54***	.04						
6	Barriers-staff	-.48***	-.33***	-.43***	.15*	.57***					
7	Clinical barriers	-.59***	-.61***	-.70***	.04	.78***	.50***				
8	Staff norm	.71***	.77***	.74***	.18*	-.58***	-.49***	-.60***			
9	Wider Community norm	.62***	.53***	.40***	.19*	-.35***	-.20*	-.38***	.47***		
10	Perceived control	.30***	.21**	.20*	-.11	-.18*	-.20	-.14	.24**	.26***	
11	Saliency	.40***	.35***	.33***	-.07	-.38***	-.33***	-.31***	.48***	.40***	.45***

* p < 0.05; ** p < 0.01; *** p < 0.001

As can be seen from Table 9.19, most of the scales and items were significantly related to one another, in the expected directions. A number of these relationships were sufficiently strong as to raise concerns about multicollinearity, particularly those involving the two acceptability scales, attitude, and the staff subjective norm.

9.1.1.13 Multiple regression analysis of professional acceptability

The variables significantly associated with the professional acceptability scale were as follows: adequacy of the information/training provided by the hospital, and scores on the attitude scale, barriers for patients scale, barriers for staff and clinical barriers scales, the staff and wider community subjective norms, perceived control and saliency. Job category was included in the analysis as a control measure. Following further investigation, two variables were excluded from the multiple regression analysis due to multicollinearity: clinical barriers and staff subjective norm, both of which were highly correlated with attitude scores and, to a lesser extent, each other.

For the regression analysis reported here, the independent variables were as follows: job category (high patient involvement or care vs. indirect/no patient involvement or care), adequacy of information/training, attitude, barriers for patients, barriers for staff, wider community subjective norm, perceived control, and saliency. An overview of the results is shown in Table 9.20. A significant proportion of the variance of professional acceptability was explained: $R^2 = 0.65$, adjusted $R^2 = 0.63$. Overall, $F (8, 137) = 31.44$, $p < 0.001$.

Table 9.20: Results of multiple regression analysis with professional acceptability as the dependent variable

Item	B	SE B	β	T	p
Constant	4.58	.87		5.30	<.001
Job category	-.58	.27	-.11	-2.11	.036
Adequacy of information	.06	.05	.08	1.34	.181
Attitude Scale	.31	.06	.35	5.19	<.001
Barriers for Patients	-.12	.07	-.12	-1.67	.097
Barriers for Staff	-.17	.07	-.16	-2.48	.014
Wider Community Subjective Norm	.31	.06	.34	5.66	<.001
Perceived Control	.02	.04	.03	0.57	.567
Saliency	.02	.04	.02	0.38	.704

Those with higher scores on the professional acceptability scale were more likely to have a high level of patient care or involvement (compared with indirect or no care/involvement), to have more positive attitudes towards screening, to see fewer barriers for staff, and to perceive a stronger norm for acceptability among the wider community. Adequacy of information/training provided by the hospital lost significance in the analysis, suggesting that the relationship between this variable and professional acceptability was mediated or accounted for by the attitudinal, barrier and normative variables.

9.1.1.14   Multiple regression analysis of personal acceptability

Personal acceptability scores were significantly related to adequacy of information/training, the attitude scale, the attitude toward screening staff for MRSA, all three barrier scales, staff and wider community subjective norms, perceived control, and saliency. However, job category was also included in the analysis as a control measure. Again, problems were noted with multicollinearity in relation to attitude, clinical barriers, and staff subjective norm, and the latter two were excluded.

Personal acceptability was therefore regressed on the following variables: job category, adequacy of information/training, attitude, attitude toward screening staff for MRSA, barriers for patients, barriers for staff, wider community subjective norm, perceived control, and saliency. Results are shown in Table 9.21. A significant proportion of the variance of personal acceptability scores was explained: $R^2 = 0.69$, adjusted $R^2 = 0.67$. Overall, F (9, 129) = 32.16, p < 0.001.

Table 9.21: Results of multiple regression analysis with personal acceptability as the dependent variable

Item	B	SE B	β	T	p
Constant	1.57	.95		1.66	.099
Job category	-.40	.30	-.07	-1.33	.187
Adequacy of information	.06	.05	.06	1.13	.259
Attitude Scale	.58	.07	.59	8.82	<.001
Attitude to screening staff	.13	.04	.18	3.25	.001
Barriers for Patients	-.12	.08	-.11	-1.55	.123
Barriers for Staff	.07	.07	.06	0.91	.365
Wider Community Subjective Norm	.19	.06	.19	3.17	.002
Perceived Control	-.01	.04	-.01	-0.15	.880
Saliency	.05	.05	.06	0.94	.350

Those with a greater personal acceptance of MRSA screening held more positive attitudes towards screening, believed more strongly that staff should be screened for MRSA, and perceived a stronger norm for MRSA screening among the wider community. Perceived adequacy of information/training, job category, perceived control and saliency were not significant in the final equation.

9.1.1.15 Benefit of screening for patients and perceived risk: severity of infection and likelihood of infection

Respondents were asked to answer eight questions on the perceived severity of the consequences of MRSA for patients, likelihood of patients contracting MRSA, and benefit of screening for patients. Scales of 1 to 10 were provided for each question, with a higher score indicating greater severity of consequences, greater likelihood of contracting MRSA, and greater benefit of screening. Although perceived benefit of screening was included in this section, it was not deemed a measure of risk per se in the end, and the treatment of the benefit items differed from those of the severity and likelihood items. This is described in more detail below. The distributions of responses are shown in Table 9.22.

Table 9.22: Descriptive statistics for questions relating to perceived severity of MRSA, likelihood of contracting MRSA, and benefit of screening

Risk and Benefit Items	Mean	SD	Alpha	N
Severity				
In your opinion, how severe do you think the consequences of MRSA infection could be for patients in your hospital or ward?	7.26	2.41	-	211
In your opinion, how severe do you think the consequences of MRSA infection could be for patients in general (while in any hospital)?	7.15	2.28	-	210
Comparative Severity	-0.12	1.79	-	208
Likelihood				
In your opinion, how likely is a patient to get an MRSA infection while in your hospital or ward?	4.11	2.27	-	208
In your opinion, how likely is a patient to get an MRSA infection in general (while in any hospital)?	5.50	2.26	-	208
Comparative Likelihood	1.36	2.07		204
Benefit Scale	7.98	2.51	0.94	212
How beneficial do you think it would be to other patients in your hospital to screen every 'planned admission' for MRSA on or before their admission?	8.22	2.59	-	207
How beneficial do you think it would be to the 'planned admission' patients themselves to be screened for MRSA on or before their admission?	8.08	2.65	-	211
How beneficial do you think it would be to other patients in your hospital to screen every 'emergency admission' for MRSA on their admission?	7.96	2.73	-	208
How beneficial do you think it would be to the 'emergency admission' patients themselves to be screened for MRSA on their admission?	7.67	2.89	-	212

9.1.1.16 Severity

Ratings of the perceived severity of MRSA for patients in the respondent's own ward/ hospital, and for patients in general, were above the midpoint in both cases (ranging from 1 to 10). As noted in Section 5, two variables were of interest with regard to risk: perceived risk at the personal level (in this case, rating of perceived severity in the respondent's own ward/hospital), and the comparative risk (in this case, the difference between the perceived severity for patients in general, and for patients in the respondent's own ward/hospital). The "personal" was subtracted from the "general" in this and all other similar calculations, such that the higher the number, the greater the difference between the two ratings (in favour of oneself).

A paired sample t-test was conducted to determine whether the two perceived severity ratings were significantly different; no significant difference was found, suggesting that the severity rating did not depend on whether the patient was in the respondent's own ward or hospital or not. However, the comparative severity score was calculated to allow for further investigation.

Personal and comparative severity ratings were examined according to respondent descriptors, sources of information about MRSA screening, and perceived adequacy of information/training relating to MRSA. No significant differences or relationships were found.

9.1.1.17 Likelihood

Both ratings of perceived likelihood of a patient getting MRSA while in hospital were around the midpoint. However, a paired sample t-test indicated that the perceived likelihood of a patient getting an MRSA infection while in the respondent's ward or hospital was significantly lower than that of a patient getting an MRSA infection in general or while in any hospital: $t(203) = -9.36$, $p < 0.001$.

Both likelihood scores – personal and comparative – were examined in the light of respondent descriptor variables. A significant difference on the personal rating (but not on the comparative rating) was found according to job category: $t(202) = -2.18$, $p < 0.05$. Those with a high level of patient involvement gave lower likelihood ratings in relation to their own ward/hospital than did those with less patient involvement. With regard to contact with patients infected with MRSA, those who were sometimes involved with such patients gave significantly lower likelihood ratings in relation to their own ward/hospital than did other respondents: $F(2, 201) = 3.63$, $p < 0.05$. See Table 9.23.

Those with a high, direct involvement with MRSA screening gave significantly lower ratings for likelihood within their own ward/hospital than did those with no direct involvement: $F(2, 205) = 3.67$, $p < 0.05$. However, the comparative likelihood score was significantly lower for those with indirect involvement than it was for those with either direct involvement or those with no involvement: $F(2, 201) = 4.14$, $p < 0.05$. Thus those with indirect involvement (mainly involvement in management of screening, in making decisions about patients with MRSA, or involved at a technical level) did not differentiate between patients in their own ward/hospital and patients in general in the way that other respondents did. See Table 9.23.

Table 9.23: Descriptive statistics for perceived likelihood ratings according to job category, involvement with MRSA infected patients and involvement with MRSA screening

Factor	Personal Likelihood			Comparative Likelihood		
	n	Mean	SD	n	Mean	SD
Job category						
High patient involvement	162	3.93	2.16			
Lesser patient involvement	42	4.76	2.44			
Involvement with MRSA infected patients						
All the time/frequently	70	4.30	2.40			
Sometimes	87	3.66	1.99			
Never	47	4.70	2.50			
Involvement in screening						
High involvement	115	3.73	2.18	114	1.52	2.17
Indirect involvement	34	4.47	2.43	33	0.42	1.56
No direct involvement	59	4.63	2.25	57	1.58	2.00

9.1.1.18 Benefit

The ratings of the benefit of MRSA screening to patients were all relatively high. No significant differences were found between perceived benefit to "planned admission" patients and to other patients with regard to screening "planned admission" patients on or before admission. However, a significant difference was found between perceived benefit of screening "emergency admission" patients to the patients themselves and to other patients, such that greater benefit was perceived for other patients than for the "emergency admission" patients themselves: t (207) = 3.54, p < 0.001. Similarly, greater benefit of screening was perceived for "planned admission" patients than was perceived for "emergency admission" patients: t (210) = 3.52, p = 0.001. These differences were not found to be moderated by level of involvement with MRSA screening.

A scale of perceived benefit was computed as the mean of the four contributing items, allowing up to two missing responses. The coefficient of internal consistency was acceptable. No differences were found in ratings of benefit in relation to age, years of experience, job category, or contact with MRSA colonised or infected patients. With regard to involvement in screening, those with direct involvement gave higher benefit ratings than did those with management or decision-making involvement or those with no involvement in MRSA testing: F (2, 209) = 4.82, p < 0.01. A gender difference was also found, such that male respondents gave lower benefit ratings than did females: t (206) = -3.33, p = 0.001. The relevant descriptive statistics are shown in Table 9.24. Once again, a minority of respondents (23, or 10.6% of the sample) had mean scores of less than 5, tending to indicate disagreement with perceived benefit of screening.

Table 9.24: Descriptive statistics for perceived benefit of screening for patients according to involvement with MRSA screening

Factor	Benefit		
	n	Mean	SD
Involvement in screening			
High involvement	116	8.43	2.38
Indirect involvement	33	7.08	2.96
No direct involvement	63	7.63	2.36
Gender			
Male	28	6.55	2.91
Female	180	8.21	2.39

9.1.1.19   Risk and acceptability and attitudinal variables

The correlations of each risk-related variable, benefit and the acceptability and attitudinal variables were examined.

Table 9.25: Correlations of risk-related variables and benefit with acceptability and attitudinal variables

	Personal Severity	Comparative Severity	Personal Likelihood	Comparative Likelihood	Benefit
Professional acceptability	.19*	.03	.01	.08	.59***
Personal acceptability	.22**	.03	-.02	.18**	.74***
Attitude	.29***	-.08	-.07	.15*	.68***
Screening staff	.09	-.03	.04	.03	.28***
Barriers for patients	-.06	-.07	.07	-.16*	-.46***
Barriers for staff	.03	-.07	.14	-.20**	-.28***
Clinical barriers	-.14	-.04	.09	-.18*	-.55***
Staff subjective norm	.20**	-.04	-.07	.21**	.71***
Wider Community subjective norm	.17*	.11	.04	-.04	.47***
Perceived control	.15*	-.05	-.07	-.08	.15*
Saliency	.19**	.05	-.03	.15*	.39***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

As can be seen from Table 9.25, scores on the perceived benefit of MRSA screening scale were highly correlated with all of the acceptability and attitudinal variables, particularly personal acceptability ($r = 0.74$) and the staff subjective norm ($r = 0.71$). Those who perceived more benefits of screening for patients also found MRSA screening more acceptable, had more positive attitudes, were more likely to agree with screening for staff, perceived fewer barriers,

perceived more supportive staff and public norms for screening, perceived more control over screening and rated screening as a more salient issue. This pattern of relationships suggested that it would be more appropriate to construe the perceived benefit scale as an attitudinal factor than as an aspect of risk.

With regard to severity, the greater the perceived severity for patients in one's own ward or hospital, the greater the acceptability, the more positive the attitude, the more supporting were the norms for screening, the greater the perceived control over screening, and the more salient the issue. However, comparative severity was not significantly related to any of the acceptability or attitudinal variables.

With regard to personal likelihood (i.e. the likelihood of patients in one's own ward or hospital of contracting MRSA), no significant relationships were found with any of the acceptability or attitudinal variables. However, comparative likelihood was significantly related to personal acceptability, attitude, the three barrier ratings, the staff subjective norm and saliency. Those who perceived a lesser likelihood for their own patients in comparison with patients in general were more positive generally with regard to acceptability and attitudinal factors.

At this stage, further analysis was conducted to determine whether the severity or likelihood items made significant contributions to the multiple regression analyses of the two acceptability ratings, and whether the overall patterns of results were altered by their inclusion.

First, personal and comparative severity were included separately as independent variables in the multiple regression analyses of the two acceptability scales. Neither severity rating was significant in the final equation of either analysis, and further investigation suggested that the relationships between personal severity and acceptability were mediated by attitude: those who perceived the consequences of MRSA to be more severe for their patients also had a more positive attitude towards screening, but it was attitude rather than the perception of severity that explained professional and personal acceptability of MRSA screening.

Second, personal and comparative likelihood were subjected to inclusion in the same analyses. Personal likelihood (i.e. the perceived likelihood of patients in one's own ward/ hospital contracting MRSA) made a significant contribution to the explanation of professional acceptability: $B = 0.10$, SE $B = 0.05$, $\beta = 0.12$, $t = 2.18$, $p < 0.05$. Thus, those who gave a higher rating of likelihood for patients in their own ward/hospital gained higher professional acceptability ratings. It would appear that the relationship between personal likelihood and professional acceptability had been suppressed by job category, and only when both were considered in relation to professional acceptability did the role of personal likelihood become apparent. The comparative likelihood score did not make a significant contribution to professional acceptability variance, and neither personal nor comparative likelihood made a contribution to personal acceptability.

9.1.2   Staff nominal group discussion results

Six group discussions involving a total of 34 staff (20 clinical staff including medical staff, nurses, infection control specialists, laboratory staff and ward assistants/auxiliaries; 2 administrators; 12 domestic staff) consented to take part in the nominal group discussions. Volunteers were drawn from each of the pilot Pathfinder Boards and management approval was granted to hold meetings at each site, during normal working hours.

Whilst the group discussions involved members from a wide range of staff groups, the findings presented below cannot necessarily be held to be representative of staff views, as this was a self-selected convenience sample with relatively small numbers from each Pathfinder Board site. However, the nominal group discussions did appear to permit the views of a range of staff stakeholders involved in the MRSA Screening Programme to be identified. Staff were asked to consider two questions;

- *What issues or challenges concern you about the MRSA screening pilot programme?*

- *If this pilot were to be rolled out nationally to all NHS hospitals, what recommendations would you make to improve the acceptability of the process for staff and patients?*

Table 9.26 below presents a collated summary of the rank ordered categories of issues identified by the two staff groups and Table 9.27 illustrates the summarised categories of staff recommendations. For further information, appendix 6 contains detailed items identified within each summarised category and appendix 7 identifies the raw data provided by each staff group from each Pathfinder Board site; however, the summarised results are considered adequate to inform the discussion. It should be noted that as the staff groups were of unequal sizes across the sites, the numbers of votes cast were likewise distributed unequally (145 votes by clinical and administrative staff, 70 votes from domestic staff; in addition one doctor was called out of the discussion prior to voting on recommendations and 4 other votes were missing from the final additions). Therefore, the rank order, rather than number of votes, is perhaps a better indicator of the relative importance of each issue for the respective staff group. However, data on the number of votes and percentage of total votes are included below for completeness.

9.1.2.1 Issues and challenges identified by staff

Table 9.26: Rank ordered categories of issues identified by clinical and domestic staff

Rank	Vote count	Issues for clinical & admin staff	Rank	Vote count	Issues for domestic staff
1	29	ward based screening issues	1	28	staffing demands / extra workload
2	25	ward facilities: lack of isolation rooms and equipment	2	23	increased cleaning required due to lack of isolation facilities
2	25	patient centred concerns	3	16	communication issues
4	23	workload /staffing issues			
5	19	lab facilities / technical issues re screening			
6	9	staff screening			
7	8	pilot study issues			
8	4	funding issues			
9	3	staff training			

Clinical & admin staff: (n = 22: votes = 145)   Domestic staff: (n = 12; votes = 67)

It can be seen from Table 9.26 that whilst the clinical and administrative staff identified a broader range of issues in comparison to domestic staff, common concerns did emerge.

A variety of issues or challenges were raised regarding procedural aspects of screening, including processes for communicating results, at both a ward and laboratory level [ranked 1st and 5th by clinical and administrative staff and 3rd by domestic staff; 64 out of 212 votes (30%)].

The additional workload generated by MRSA screening was highlighted particularly by laboratory and domestic staff [ranked 1st by domestic staff and 4th by clinical staff and administrative staff, accounting for 51 out of 212 votes (24%)].

All staff commented on the considerable challenges created by a lack of isolation facilities and equipment [ranked 2nd by both groups, generating 48 out of 212 votes (23%)]. These challenges appear to be relatively frequently occurring and present a source of frustration to staff as well as clinical risk to other patients.

Other significant issues identified by clinical and administrative staff related to a range of concerns about the patient experience [ranked joint 2nd with 25 votes out of 212 (12%)], such as decolonisation procedures, potential delays in surgery and procedures or responsibilities for patient follow up in the community. Queries about whether screening for MRSA actually reduces infection rates or whether decolonisation procedures might lead to increased resistance were also mentioned.

Interestingly, 9 votes (4%) were cast by clinical and administrative staff in favour of screening staff (ranked 6th); this issue was debated during several group discussions, with polarised views indicating the impracticality of decolonising staff at one end of the spectrum and scepticism over the value of screening patients but not staff at the other.

A few concerns (ranked 7th) related to the pilot nature of the screening programme were also identified [8 votes out of 212 (3%)], with issues of patient understanding and consent to participate in a research study and questions about the reliability of the MRSA surveillance data being raised.

Funding was highlighted by clinical and administration staff as an issue, ranked 8th with 4, or just under 2% of the votes; however, both groups returned to this point when considering recommendations.

One participant allocated 3 votes (ranked 9th) to the challenge of maintaining varied educational experiences for medical students when access to patients in isolation was constrained.

9.1.2.2   Recommendations generated by staff

Table 9.27: Rank ordered categories of recommendations identified by clinical and domestic staff

Rank	Vote count	Recommendations from Clinical & admin staff	Rank	Vote count	Recommendations from Domestic staff
1	46	screening / lab procedures	1	28	adequate funding / staffing levels
2	31	funding / staffing levels	2	19	more isolation facilities
3	28	education / information	2	19	information / education
4	24	patient management, including more isolation facilities	4	3	communication
5	5	staff screening			
5	5	pilot study results			

Clinical & admin staff: (n = 21; votes = 139, 1 vote missing)   Domestic staff: (n = 12; votes = 69, 1 vote missing)

Not surprisingly given the issues around workload, staffing and facilities identified previously, recommendations for the provision of sufficient funding to ensure adequate staffing levels were ranked highly by both staff groups [1st by domestic staff, 2nd by clinical and administrative staff]; these generated a total of 59 out of 208 votes (28%).

All staff groups highlighted the importance of providing adequate information about MRSA infection and the purpose of screening, as well as ongoing staff education about the screening procedures and infection control measures [ranked joint 2nd by domestic staff and 3rd by clinical and administrative staff, generating 47 out of 208 votes (22%)].

Whilst group discussion acknowledged the impracticality of the following recommendation for existing hospitals, the need for more isolation facilities was ranked highly by both groups [ranked joint 2nd for domestic staff, 4th for clinical and administrative staff], accounting for 16 out of 24 votes in this category from clinical and administrative staff and 19 votes by domestic staff giving a total of 35 out of 208 votes (17%).

A range of suggestions around technical aspects of screening were proposed [ranked 1st by clinical and administrative staff]. Clearly, consideration of the scientific merit of these suggestions is not within the scope of this study of staff acceptability; however, the most significant message emerging from within this category was the recommendation for a national approach to screening and decolonisation to remove inconsistencies within and between NHS Scotland Boards [30 out of the 46 votes in this category, or 14% of the total 208 votes].

Ranked joint 5th by clinical and administrative staff, a recommendation for occasional screening of staff in areas where MRSA remains a problem was suggested, linked again to concern about the efficacy of screening patients but not staff (10 votes together or 5% of the total).

9.1.2.3   Talking wall comments

To conclude the nominal group discussions with staff, participants were invited to sum up their views by posting a single comment on a "talking wall" at the end of the meeting. Appendix 8 notes all of the recorded comments; the following list highlights key messages:

- MRSA Screening is a Good Idea – Keep it going! (7 comments)

- MRSA Screening is a Good Thing…. Please continue to fund adequately! (14 comments)

- MRSA Screening is a Good Thing…. However, take note of issues! (7 comments)

- Is MRSA Screening Worth the Costs and Effort? (3 comments)

Numerically, the general view appeared to tend towards accepting MRSA screening, with 28 out of 31 comments viewing screening positively; however, 14 participants emphasised that adequate funding was needed to maintain or improve staffing levels and facilities, and a further 7 comments highlighted other issues. Only 3 comments specifically questioned the value of MRSA screening.

9.2   Patient and visitor results

Ten patients participated in a single telephone interview following discharge from hospital; none of these respondents had tested positive for MRSA, therefore no comparisons between "positive" and "negative" patients were possible and interview data may not represent the views or experiences of those who were treated for MRSA colonisation or infection. Findings from the main MRSA screening study indicate a prevalence rate of 3.9%; therefore, the failure to recruit participants who had tested positive for MRSA during the two week recruitment period is not entirely surprising and further research over a longer time frame may be warranted to enhance the findings presented below. Only two visitors were able to be interviewed, and as the visitor data held no contradictory evidence to that obtained from patients, visitors' views were integrated into the patient interview data for analysis. Notations beside each interview extract indicate whether the respondent was a *patient* or *visitor*, and an identifying numerical code has been applied to maintain participant confidentiality whilst enabling audit.

Following the two week period of recruitment for interview, a further four week period for survey recruitment generated 51 completed patient and 26 visitor questionnaires.

The following sections present integrated findings from the patient and visitor interviews, with results from the patient and visitor surveys presented separately.

9.2.1   Patient interviews

In general, researchers found it challenging to facilitate any depth of response from participants; participants really did not have a great deal to say about being screened for MRSA, and for most it appeared to be an incidental aspect of their hospital journey. Nonetheless, analysis does suggest that there is sufficient commonality between the responses generated to provide reasonable confidence that these data may be considered broadly reflective of these service users' perspective.

The following themes were identified during level one analysis:

- Perception of risk

- The experience of being screened; procedural aspects of screening

- Communication relating to screening, including information, consent, and results

- Advantages or benefits of screening

- Recommendations to improve screening in future.

More complex analysis was somewhat limited by both the number of respondents and the depth of information they were able to provide. There was, however, some evidence to suggest an emerging typology of patient response, although we cannot be confident that data saturation was reached.

9.2.1.1   Perception of risk

Patients were asked the following question: "Before you were admitted to hospital, did you think about the possibility of getting an infection during your admission to hospital? If yes, what were your concerns about that?" Follow up questions included an exploration of how serious the patient thought MRSA infection might be for them personally.

Whilst the majority of respondents seemed to be aware of the potential risk of MRSA infection, largely drawn from media portrayals or observations during previous hospital admissions, responses could be differentiated into two broad categories; those who were concerned about risk at a personal level and those who reported not being particularly concerned about potential risk, primarily due to being preoccupied by other worries caused by their illness or admission to hospital. These distinctions are illustrated in the comments below;

> *Researcher:* Can you tell me before you were admitted did you think about the possibility of getting an infection when you were in hospital, did it cross your mind at all?

> *Patient 3:* The first time I was admitted this year it didn't really, it was just one of those things you know, but when I was admitted in April then I was sent down to the skin ward where there were open sores and things, then I did think about it.

> *Researcher:* What were your concerns about that then?

> *Patient 3:* Simply catching MRSA…I thought it could be quite dangerous especially if you're in a weakened state.

Contrasted with;

> *Researcher:* When you were going into hospital did the threat of MRSA ever come into your mind?

> *Patient 4:* No. No I wasn't worried about anything at all at the time, the thought [of MRSA infection] never entered my head, quite honestly I had other things on my mind at the time… well, what had happened to me, I had passed out [...]and I was going away, why had I passed out was all I wanted to know!

And;

> *Patient 6:* Well I must admit it didn't bother me, I shouldn't say the word bothered, I mean I wasn't concerned about it at the time because I wasn't well in other ways, and what was wrong with me left me so tired that, no I, no I didn't … I just left it, I left it in the Lord's hand and that's the truth.

> *Patient 7:* You know being so full in my own head about this operation it blocks everything else out.

> *Researcher:* So really it's your operation that you are more concerned about than what was happening with MRSA screening?

Patient 7: Yes, Yes definitely. As you know I am very elderly and I'm going to have a general anaesthetic, at this age and any operation at any time is a big risk, but it gets bigger all the time.

One patient reported being very aware of risk but not being concerned because of his confidence in the staff at his local hospital;

Researcher: So you were aware of possible problems with infections in hospitals?

Patient 1: Yes, indeed.

Researcher: Did it worry you at all; did it concern you that you might get an infection during this admission?

Patient 1: Not in the slightest because I get excellent care in the hospital.

Conversely, other patients seemed concerned about infection risk in the hospital environment and staff actions in relation to infection control;

Patient 3: Well, I just believed that hospitals were breeding ground for these diseases and if you went into the hospital it was just a question of luck whether you got it or not … I'd say less likely if you weren't undergoing surgery but again, that's just what I've heard and read through the media.

Patient 12: I always kind of wonder if the nurses have, you know, kept everything clean from patient to patient, 'cause they don't always wash their hands between patient to patient after touching them and stuff, you never know what somebody else has got…. It was because there had been a bit in the paper not long before hand about the hospital not being the cleanest of hospitals, and I do always kind of worry about going in to the hospital and just picking up any infection, not just that one.

From the accounts given, the media appear to have a significant influence over patients' perceptions, although other participants were alert to the potential for exaggeration by the press;

Researcher: How do you think that's portrayed in the newspapers and media?

Patient 7: Well, I think it certainly feeds us back information that we would never know about, but I do think the media tend to hype up a lot and can frighten people.

There is some evidence that risk appraisal influenced patients' overall opinion of the value or purpose of MRSA screening, with those who expressed concern about potential MRSA infection tending to view screening as an actively reassuring measure, whilst those who were less concerned appeared to see it more as a matter of routine, simply one of the tests or investigations that happen to people in hospital. These two categories of response are illustrated below;

Patient 10: My feeling is that it always has been a problem whenever you're ill and you go into hospital, for years and years and years, there has been diseases and things you know and you've been prone to pick it up, but it feels to me that it has become

more prevalent without a doubt, and I think the, the fact that you're screened, and if it is patients bringing it in, and that's what's causing it, it's only too good [to screen for MRSA] because that's the last thing you want is another problem you know on top of what you, why you are in the hospital.

Researcher: Did you have concerns about the implications [of HAI], was it something you thought about at all?

Patient 9: Not in that sense, I mean, what I was told was that there was a lot of tests taken that day as you know, you know they take blood, they test for all different things … I was told if there was a problem of any sort they would be in touch with me before I was due to be admitted the following week…and from that point of view, no, I didn't worry about that I might have something [infection]…and I have to say I wasn't particularly concerned about catching something in there either, because I know it is a real problem but I don't believe in getting up tight about these things, you know what I mean.

It can be seen, therefore, that against a backdrop of significant media attention around health care associated infection, being screened for MRSA did seem to bring the issue of infection to the fore for patients. For some, particularly those who were concerned about personal risk of infection, MRSA screening provided reassurance that hospital staff were actively addressing risk; for others, who appeared to be in the majority of those interviewed, other aspects of their hospital stay were of much more concern, and screening seemed to be just one of those routine things that happen to people in hospital.

9.2.1.2   The experience of being screened

Respondents experienced some variation in the timing of screening, either as part of a pre-admission process, being swabbed shortly after an emergency admission, or up to a few days following admission. In addition, the number and body sites of swabs also varied, in accordance with the various protocols existing within the pilot sites. It is interesting to note that at least three patients were asked or allowed to swab their own perineum; this was received positively by patients and one can only assume that it was permitted to enhance patient modesty; however, there may be some concern around the technical competence of patients to undertake this task.

The actual procedure of being swabbed as part of the screening process did not appear to cause any form of physical or psychological difficulty; patients reported it as "no problem", or "straightforward". The overwhelming impression from the interviews was that MRSA screening was considered just one of the routine investigations associated with hospital admission. As none of the interviewees had a positive result from screening, the physical, psychological or practical implications of being treated for MRSA colonisation could not be determined.

9.2.1.3   Communications around screening

Data from patient interviews indicate a potential cause for concern around some of the communication aspects of MRSA screening; consent seemed largely implicit, no patient reported being aware that they were taking part in a pilot project which was under evaluation, and distribution of the pilot programme screening information leaflet seemed variable. Patients who were screened at a pre-admission clinic were more likely to receive printed information, while emergency admission patients appeared to have received predominantly verbal explanation, as shown below;

> **Patient 7:** In all the information that came in the post before the operation, it said that a MRSA test would be taken when I was admitted to hospital.

In contrast to;

> **Researcher:** So you didn't really have a whole lot of questions about it [screening].
>
> **Patient 4:** No, I didn't ask any questions they just said what they were doing and I accepted it, and they did it.
>
> **Researcher:** Were you given any written information
>
> **Patient 4:** No.

> **Patient 6:** I mean she didn't do a lot of explanation, I didn't feel that she needed to as such, I'm sure she felt that everybody knew about it anyway, at least on the surface.
>
> **Researcher:** Did you get any written information?
>
> **Patient 6:** No.
>
> **Researcher:** You didn't get a leaflet?
>
> **Patient 6:** No.

Despite limited distribution of printed information, most patients reported understanding what was involved in the actual swabbing procedure, finding it straightforward;

> **Researcher:** Did the staff give you an information leaflet to read or anything or did they just talk to you?
>
> **Patient 1:** They may have given me a leaflet but they talked to me and they were quite specific about it and quite detailed, and as I said you would need to be pretty dumb if [you] didn't understand why and what they wanted to do, so there may have been a leaflet, if there was I can't remember.

Notably, none of the patients interviewed appeared to have been informed of the implications of being found positive for MRSA. There may therefore be a potential ethical concern that patients submit to an investigation which may lead to further treatment or have some impact on their home lives if they are colonised, and to which they are not in a position to give informed consent in advance of screening.

> *Researcher:* Did you feel that you were given enough information about what would be involved in the swabs, or being treated for MRSA, were you given information before you took the swabs?

> *Patient 3:* No, it was just spoken of as sort of a routine, the thing they do for MRSA, but I never got any result back to say you're clear.

Practically, this may not be a significant concern as there will be other investigations that patients submit to without being fully aware of treatment implications, and all patients expressed the view that measures to detect MRSA were "a good thing"; however, it is contrary to the good practice principle of patient involvement in care decisions, and may be considered unethical.

One area of communication that several patients highlighted was the lack of information about results;

> *Researcher:* Did the information explain to you what would happen if the swabs were positive?

> *Patient 7:* Eh no, that was all a bit vague and I thought you know when the swab was taken the young man said, I think the young man said eh, if it was positive I would be informed in about 2 days…..

> *Researcher:* So you still don't know whether you were positive or not?

> *Patient 7:* No…..No information at all.

No patient could recall being given the results of their MRSA screening and all appeared to assume that "no news is good news".

> *Researcher:* Were you given the result of your test

> *Patient 1:* No I'm one of these people that if there's any adverse affects they would come and tell me and no news is good news.

This is probably an accurate assessment, and may be comparable to the many routine blood tests that patients undergo; however, given the high profile of MRSA screening, several patients did express a preference to be told.

> *Patient 3:* Because you have tests in hospital they usually come back and give you the results, it seemed odd that you never you know got anything from this one, unless they're afraid of litigation you know, somebody saying I didn't have it when I went in because the screening proved that.

In summary, patients were more likely to receive written information if they attended a pre-admission clinic. In general they appeared happy to agree to being screened following verbal explanation of the procedure, and implied consent appeared to be the primary mechanism. However, patients did not appear to be in a position to give informed consent to screening as they were not given details of the consequences of a positive result. Similarly, given the common anxieties around MRSA infection, patients generally would prefer to be given their results.

9.2.1.4   Advantages or benefits of screening

Patients and visitors were asked about the advantages or benefits of MRSA screening; all seemed to think it was "a good idea", the overarching theme being "prevention is better than cure", with interviewees feeling reassured that hospitals were taking clear action to identify and manage the risk of infection. As noted in Section 9.2.1.1, for some patients the feeling of reassurance seemed linked to perception of risk, with respondents mentioning media coverage leading to a heightened awareness of the issue of infection in hospitals, illustrated by the following quotes;

> *Researcher:* Do you feel that being screened for MRSA had any general effect on your overall experience in hospital or any aspect of your stay in hospital?

> *Patient 2:* It was positive, I mean you hear so much about it [infection] in the press and I'm glad that it actually does get followed through in the hospital, that they do test people… I would like to think that it would prevent the spread of it and to prevent the risk of infection…I think I was glad that it was done [screening] and I have no problems with it being done … I felt reassured.

> *Researcher:* What do you think about MRSA screening being introduced into hospitals?

> *Patient 7:* I think it is an excellent idea, I've got that idea well, ok, they might be carriers, so what a good idea to be tested very soon after you are admitted.

> *Researcher:* So do you think that the process of having been screened for MRSA, do you think that helped alleviate your concerns?

> *Patient 7:* Yes, I'd say so; I had a more settled feeling about it.

> *Patient 3:* To be honest I was reassured.

> *Researcher:* Are there any disadvantages of screening that you can identify?

> *Patient 3:* Well I can't think of any, no, because MRSA is obviously a bad thing to get and prevention being better than cure.

Conversely, other participants could identify the benefit of MRSA screening on being questioned, but really their position seemed to be one of viewing screening as a routine aspect of care that they were not particularly attuned to; it was just one of those things that happened to you in hospital: for example;

Patient 4: I didn't consciously think about it you know, it was done and it was a good idea at the time, you know when you think about it and all other things that happened, it just seemed to be natural you know.

None of the patients or visitors who were interviewed could identify any disadvantages of MRSA screening; it is clearly "a good thing" from their varied perspectives.

9.2.1.5   Recommendations to improve screening in future

From those patients and visitors who were interviewed, the clear message was that MRSA screening is acceptable, it should be continued and that there is support for it to be extended nationally.

No specific difficulties with MRSA screening were identified by participants; however, five interviewees identified specific suggestions to improve the process in future, noted below;

- Screen at least a sample of visitors

- Publish national league tables of infection rates in hospitals

- Insert details of possible swab sites in the information leaflet, i.e. including perineum

- Circulate factual information about MRSA rather than media scare stories

- Give patients the results of their screening test.

With the exception of providing results, these suggestions came from individual patients and therefore may not reflect a breadth of opinion; however, the quotation below does sum up the view of the three patients who recommended results be communicated;

Patient 9: When they are doing all these tests anyway, it would maybe be helpful if they actually gave you some sort of note saying, you know that you're clear, just from a personal point of view, I mean you're assuming if you don't hear everything that everything's fine, because no-one actually tells you. I mean, apart from the fact that maybe if they are doing these tests on you and you're the subject, maybe you should know the results.

9.2.1.6   Model of patient response to MRSA screening

As noted previously, complex analysis of interview data was limited by both the number and depth of participant response. However, there is some evidence of a typology of 'the accepting patient', which is presented in Figure 9.1.

Figure 9.1: Preliminary typology of patient response to MRSA screening

The themes emerging from patient interviews appear to have an influence on the patient's initial perception of personal risk from MRSA infection. Issues about the way in which staff communicate about screening seem to serve to make this a routine aspect of care, one which does not trouble patients, albeit they are not made aware of the consequences of a positive screen. However, patients may then be differentiated into two types; firstly, those who tend to be overwhelmed by other concerns about their situation and are not really thinking about or concerned about MRSA infection, yet still find screening reassuring; secondly, those who feel vulnerable to MRSA infection, possibly due to previous experiences of admission or who see themselves in a weakened condition, and therefore have a heightened awareness or concern about MRSA infection. The first type of patient appears to passively accept screening as just one of those routine things that happen in hospital, whilst the second type is more actively accepting of screening, seeing it as a positive and protective measure. Combined, these two types of patient response can be characterised as "The Accepting Patient", who appears to view MRSA screening as a "good thing".

The tentative model presented above does appear to hold good in explaining the data generated by patient and visitor interviews. Nevertheless, testing of this model by further research, either qualitative, to be confident of data saturation, or quantitative, to investigate the generalisability of this typology, is justified.

9.2.2   Patient survey

The returns from patients, their visitors, and the wider community, were considered to be complete on 20 October 2009. Eighty-one completed or partially completed questionnaires were returned from patients, and 48 were received from visitors (considered separately below). However, 30 patients had failed to endorse any of the items relating to consent, and it was necessary to exclude these from further analysis (see Table 9.28). The patient sample therefore consisted of 51 respondents.

Table 9.28: Returned surveys from patients according to hospital attended

	Totals	Ayr	Crosshouse	Aberdeen	Woodend	Western Isles	Uist & Barra	Hospital unknown
Number of survey returns	81	17	21	30	0	10	0	3
Excluded (missing consent)	30	5	4	11	0	7	0	3
Valid	51	12	17	19	0	3	0	0

9.2.2.1   Description of sample

Of the 51 respondents, 22 (43.1%) were male and 29 (56.9%) were female. The mean age was 55.43 years (SD = 16.10), ranging from 20 to 86 years of age. Twenty respondents (39.2%) indicated that they were in paid employment. The majority of respondents (n = 45, 88.2%) indicated that they lived with at least one other person, while 6 (11.8%) lived alone. Twelve (23.5%) of the patients had attended Ayr Hospital, 17 (33.3%) had attended Crosshouse Hospital, 19 (37.3%) had attended Aberdeen Royal Infirmary, and 3 (5.9%) had attended Western Isles Hospital. No returns were received from Woodend Hospital or Uist and Barra Hospital. Most respondents indicated that they had received the offer of MRSA screening in September (n = 30, 58.8%) or October 2009 (n = 8, 15.7%). A further six respondents (11.8%) had been screened in August 2009, with three respondents screened in April, June or July, and four missing responses. A summary is provided in Table 9.29.

Overall, the female respondents were significantly younger (M = 50.66, SD = 15.75) than the male respondents (M = 61.73, SD = 14.60): t (49) = 2.57, p < 0.05. In line with this, compared with male respondents, a higher proportion of female respondents were in paid employment: χ^2 (1, n = 51) = 4.41, p < 0.05.

The age and gender characteristics of respondents appeared to vary according to the hospital they had attended. Details are not reported in full here, to preserve anonymity (and also because of the unreliability associated with small group sizes), but this should be borne in mind when interpreting results.

Table 9.29: Descriptive statistics for patient sample (n = 51)

Factor	n	%
Gender		
Male	22	43.1
Female	29	56.9
Employment status		
In paid employment	20	39.2
Not in paid employment	31	60.8
Month of MRSA screen		
April-June 09	3	6.0
August 09	6	11.8
September 09	30	58.8
October 09	8	15.7
missing	4	7.8
Living arrangements		
Live with others	45	88.2
Live alone	6	11.8

9.2.2.2   MRSA screening and result of screening

All of the respondents who answered the question on whether they had accepted the offer of MRSA screening (n=49, 96.1%) clearly indicated that they had been screened for MRSA, and that they did not regret the decision. Of the two who omitted the question, one indicated elsewhere that s/he had in fact been screened, while the other clearly indicated that s/he had <u>not</u> been offered an MRSA screen, but would have accepted had it been offered. No respondents were therefore identified who had refused the offer of MRSA screening. Three respondents provided comments relating to their decision to accept screening, all of which indicated support for screening for patients (with one also mentioning the need to screen staff).

Forty-two respondents (82.4% of the sample) indicated that they had not yet been told of the result of the screening. Four respondents indicated that they had been informed of the result within a week of screening, and five omitted this question. Of the four who had received a result, two were found not to have MRSA, one to be colonised with MRSA and one to be infected.

Respondents were asked where they were swabbed, and whether the swabbing had been uncomfortable, painful or embarrassing. Two respondents omitted these questions. All but one of those who responded to these questions indicated that the swab had been taken from their nose; the other respondent indicated that a swab had been taken under the arm. Overall, between 2 and 5 respondents indicated that swabs had been taken from under the arm, groin, perineum or from open wounds. One respondent indicated that swabs had also been taken from the mouth and throat. The majority of respondents indicated that the swabbing had not been uncomfortable (n = 43, 84.3%), had not been painful (n = 47, 92.1%), and had not been embarrassing (n = 46, 90.1%). Those who indicated that it had been uncomfortable, painful or embarrassing tended to have had swabs taken from the perineum or from open wounds. Of the four respondents who had experienced perineal swabbing, none found it painful, two found it embarrassing and two found it uncomfortable.

Two open-ended questions were posed about the screening: one asked for general comments about the screening, and one asked what could have been done to make the screening better or easier for the respondent. Eight respondents provided general comments. One respondent indicated that swabs had also been taken from the mouth and throat. Three respondents indicated that it had not been a difficult experience, and one suggested that screening should be done without too much prior discussion or "fuss" to avoid self-consciousness becoming a factor. The remaining three indicated the need for more information or explanation, with one specifically mentioning lack of result of screening. Ten respondents provided comments on making the process easier, with six of these indicating that nothing more could have been done. One indicated the need for "pre-warning" for the screening, and one that the person who conducted the screen could have been more "patient-friendly". One indicated that the procedure could have been done more quickly, and one said "find a way of doing the nose swab without tickling the nose".

9.2.2.3 The offer of MRSA screening

Patients were asked when they were screened, or offered screening, with regard to the timing of hospital admission. Thirty-seven respondents (72.5%) were offered screening after admission to the hospital as an in-patient, while 9 (17.6%) were offered screening prior to admission. Five respondents (9.8%) omitted this question. Thirty-one respondents (60.8%) were admitted for an emergency, while 17 (33.3%) were admitted for a planned procedure, with three (5.9%) missing responses. All but one of those who indicated that they had been admitted for an emergency also indicated that they had been screened for MRSA after admission.

Respondents were provided with a list of eight reasons for accepting the MRSA screen, and were given the opportunity to provide any other reasons. All endorsed at least one of the reasons. A summary of responses is provided in Table 9.30. Four respondents provided additional reasons: two were to the effect that it would help limit or prevent the spread of infection and one was to the effect that a parent had been infected with MRSA (with the final reason being "glad it was done").

Table 9.30: Patients' reasons for accepting the offer of MRSA screening

Reasons for accepting the offer of MRSA screen	n	%
I thought that it was the right thing to do	44	86.3
I wanted to know whether or not I had MRSA	33	64.7
I felt pressurised into doing this	0	0
I did not know that I could refuse the screen	7	13.7
I thought that it might be of benefit to me	33	64.7
I thought that it might be of benefit to other patients	34	66.7
I was advised by family/friends to take the screen	1	2.0
I was advised by hospital staff or a health care professional to take the screen	11	21.6

9.2.2.4   Information about screening

Respondents were asked if they had been given (verbal) information about MRSA screening before the screening took place, with three response options. They were also asked if they had been given, or had used, any additional sources of information before the procedure; for this question, they were provided with four options, and an "other" option, and asked to tick as many as applied. See Table 9.31.

Table 9.31: Provision of information prior to, or during, screening for MRSA: from staff (verbal) and from other sources

Information prior to screening	n	%
Verbal information prior to screening		
No, I was not given any information before the screening	18	35.3
Yes, the person who was screening me explained it to me before he or she took swabs	26	51.0
The person who was screening me explained it to me after he or she took swabs, or during the procedure	3	5.9
Missing	4	7.8
Other sources		
I was given a leaflet before the screening	15	29.4
I was given a video or DVD to watch before the screening	0	0
I already knew something about it	28	54.9
I discussed the procedure with friends or family before the screening	0	0

Twenty-six respondents (51.0%) indicated that the person screening explained it before taking swabs, with a further 3 (5.9%) indicating that the person screening explained it during or after the procedure. Eighteen respondents (35.3%) indicated that they had not received any information before the screening had been conducted, with 4 (7.8%) missing responses.

Fifteen respondents (29.4%) indicated that they had been given a leaflet before the screening: two of the three who had been given verbal information during or after the procedure had been given a leaflet prior to the procedure; nine who had been given verbal information prior to the procedure also received a leaflet; and three who had not been given verbal information received a leaflet.

Twenty-eight participants (54.9%) indicated that they already knew something about MRSA screening. The other two sources – being given a video or DVD to watch before the screening, or having discussed it with friends/family – were not endorsed by any respondents. Two respondents indicated that they knew about MRSA screening through their work/ profession. Four other respondents added comments, three of which were to the effect that they did not know much about it and had not been given information prior to screening (e.g. "Nurse just done it"), and one to the effect that an explanation had been provided ("Nurse explained what was going to happen and I was happy to go ahead with it").

9.2.2.5   Adequacy of information prior to screening

Respondents were presented with five statements concerning the adequacy of the information that they had been given prior to MRSA screening. For each, a 10-point response scale was presented, ranging from 1 (strongly disagree) to 10 (strongly agree), and scored such that a higher score represented more adequate information. A "don't know" option was also offered for each item.

Table 9.32: Descriptive statistics relating to adequacy of information given to patients prior to MRSA screening

Item	Mean	SD	Alpha	n	Don't know	Omitted response
Adequacy of information prior to screening scale	5.90	2.89	0.87	44	-	7 (total)
I was given enough information about the MRSA screen beforehand	6.68	2.80	-	40	6	5
I was told clearly WHY I had been asked to take the MRSA screen	7.33	2.65	-	42	4	5
I was told clearly that I could REFUSE the MRSA screen if I wanted	5.29	3.83	-	42	4	5
I was given enough information about what would happen to me if I were found to have MRSA	4.91	3.73	-	44	2	5
I was given enough of an opportunity to ask questions	6.02	3.50	-	42	3	6

N.B. A higher score represents greater adequacy of information

Responses on all items ranged from 1 to 10. As can be seen from Table 9.32, the scores relating to the possibility of refusing the screen, and the information about what would happen if the result were to be positive, were somewhat lower than other scores. Sixteen respondents (38.1%) used points 1 or 2 on the scale (i.e. strongly disagreed) for the item on refusal of the

screen, and 50% used points 1 to 4 (i.e. below the midpoint). Eighteen respondents (40.9%) used points 1 or 2, and 55% used points 1 to 4, in relation to information about what would happen to them if they were found to have MRSA. Thus, while respondents tended to feel that they had been given enough information generally, had been told why they had been asked to take the screen, and had been given an opportunity to ask questions, they were less likely to feel that they had been told enough about what would happen if they were found to have MRSA, or that they could refuse the screen.

Ratings of the adequacy of information varied significantly according to verbal information given by staff prior to or during screening. Those who obtained verbal information either before or during the procedure were combined, and compared with those who indicated that they had not received verbal information prior to screening. Those who had not received verbal information found the information provided to be significantly less adequate than those who had received verbal information: $t(40) = -4.70$, $p < 0.001$. Similarly, those who had not been given a leaflet prior to screening also found the information to be significantly less adequate than those who had been given a leaflet: $t(42) = -2.81$, $p < 0.01$. No significant differences were found in the rating of adequacy of information according to prior knowledge of MRSA screening.

Table 9.33: Descriptive statistics for perceived adequacy of information according to provision of verbal information and a leaflet prior to screening

Factor	Adequacy of information		
	n	Mean	SD
Verbal information			
No information given	14	3.36	2.17
Screener explained before/during/after procedure	28	6.88	2.33
Leaflet			
No leaflet given	29	5.08	2.71
Leaflet given	15	7.48	2.62

Given that the provision of verbal information and the provision of a leaflet may have been related, a further analysis was conducted to determine whether one of these factors might mediate or explain the effects of the other. Adequacy of information was therefore regressed on both factors. Adequacy of information was found to be independently related to both verbal information ($B = 3.12$, SE $B = 0.71$, $\beta = 0.54$, $t = 4.48$, $p < 0.001$) and the provision of a leaflet ($B = 1.82$, SE $B = 0.71$, $\beta = 0.31$, $t = 2.56$, $p < 0.05$).

An open-ended section was provided for respondents to indicate the kind of questions that had not been answered prior to screening. Three respondents provided general comments here (without indicating any kind of information that they required). Three respondents indicated that they had felt too ill at the time to ask questions, but that it "happened too quickly" or that they wanted to know what would happen if they had MRSA. One further respondent also presented questions relating to what might happen if s/he were found to have

MRSA: "What treatment would I be given? How long would it take? Would I be in isolation? Would I infect other people?" Finally, two other respondents indicated that they should have been given more information, without specifying the nature of that information.

Respondents were presented with a list of possible further forms of information, and asked to endorse as many as applied (see Table 9.34).

Table 9.34: Endorsement of options for further forms of information that would have been useful prior to screening

Further forms of information that would have been useful prior to screening	n	%
None – I felt I had enough information	19	37.3
A leaflet	18	35.3
A friend or another patient to explain it	2	3.9
Someone from the hospital staff to explain it or to answer my questions in private	9	17.6
A website	1	2.0
Radio or TV programme	6	11.8
A special video/DVD on the topic	3	5.9

Three of those who indicated that they did not want further forms of information also indicated that they wanted a leaflet (1), or a radio or TV programme or DVD on the topic (2). Five of those who indicated that they wanted a leaflet before screening had already indicated that they had received a leaflet, suggesting that the respondents had not read the questions carefully, or that they were "underlining" the importance of the leaflet they had received.

Seven respondents provided comments relating to other potential forms of information, although none specified a different form of information. One comment was to the effect of wanting a leaflet "before instead of after!", and another to the effect that not enough information had been given. Two comments centred on lack of information about the consequences of a positive test result. Three centred on the fact that they had been too ill or worried or preoccupied at the time of the screen to ask questions.

9.2.2.6   Receiving results of the MRSA screen, and consequences of results

The data relating to information given at the time of receiving results were not analysed, because only four respondents had actually been given the results of the screen. However, a number of respondents provided comments to the open-ended questions in this section of the questionnaire. Four respondents indicated that they had been told that they would only receive a result if they were found to colonised or infected with MRSA. Four indicated that they wanted their result, or wanted someone to tell them about the implications of a positive test result.

No analysis was conducted on the consequences of the results (treatment at home or treatment in hospital) because only two respondents indicated that the result had been positive. Both of these respondents appeared to have remained in hospital during this time.

9.2.2.7 Acceptability of MRSA Screening

Acceptability of screening represented the main outcome variable of this aspect of the study. Two separate facets of acceptability of MRSA screening were identified for patients, visitors and public: general acceptability and personal acceptability. The descriptive statistics are shown in Table 9.35.

Table 9.35: Descriptive statistics relating to the general and personal acceptability of MRSA screening

Acceptability Items	Mean	SD	Alpha	n	Don't know	Omitted response
General Acceptability						
Overall, I believe that the MRSA Screening Programme would be acceptable to most people	9.25	1.78	-	48	1	2
Personal Acceptability Scale	9.43	1.08	0.76	50	-	1 (total)
I would advise a relative or loved one to accept the offer of MRSA screening prior to hospital admission	9.22	1.53	-	50	0	1
If I were to be admitted to hospital as a patient, I would accept the offer of MRSA screening	9.54	1.36	-	50	0	1
*I support the MRSA Screening Programme in Scottish hospitals	9.55	1.00	-	49	1	1

* change in wording from item presented to staff, from "...in this hospital"
N.B. A higher score represents greater acceptability

As can be seen from Table 9.35, acceptability of MRSA screening was on average very high among patients (with a higher score representing greater acceptability), at both a general and a personal level. The numbers of "don't know" responses were low, as were the numbers of missing responses. The personal acceptability scale was constructed by taking the mean of the contributing items, allowing one or two missing responses, and "don't know" responses were treating as missing. The coefficient of internal consistency was acceptable. The distributions of these scales (and others within this section) deviated unacceptably from normality and were dichotomised prior to further analysis (highest score vs. all other scores).

In this and subsequent sections of the analysis, categories or scores were examined in the light of age, gender, hospital admission (planned or emergency), and the information variables (whether or not verbal information about screening had been given, provision of a leaflet, personal knowledge, and perceived adequacy of information provided about screening). No significant differences or relationships in the acceptability categories were found according to any of these variables.

9.2.2.8   Attitudes and Barriers

In this section, responses to a range of items are considered. As with other aspects of this analysis, items that were common to all groups of respondents were treated separately, to allow for direct comparisons to be made among staff, patients, visitors and the public.

Table 9.36: Descriptive statistics for MRSA screening attitude items

Attitude Items	Mean	SD	Alpha	n	Don't know	Omitted response
Attitude Scale	9.22	1.13	0.63	48		3 (total)
*Routine screening of patients will help to reduce the rates of MRSA infection in hospitals	9.58	0.94	-	48	1	2
Routine screening of patients for MRSA will be beneficial to everyone	9.59	0.93	-	49	1	1
Routine screening of patients for MRSA is largely unnecessary (R)	1.70	1.86	-	47	2	2
The benefits to other patients and the wider community of screening patients for MRSA outweigh the costs	8.84	2.11	-	45	4	2
Routine screening of patients for MRSA is just 'window-dressing' (R)	2.38	2.55	-	45	5	1

* change in wording from item presented to staff, from "...in this hospital"
N.B. A higher score represents a more positive attitude, except where reverse scoring indicated (R)

As can be seen in Table 9.36, patients' responses to the five attitudinal items were very positive: mean scores were well above the midpoint on all items bar those to be reversed in scoring (R). After reversing the scoring on the two items requiring this transformation, the attitude scale was constructed by taking a mean of contributing responses (allowing for up to three missing or "don't know" responses). The coefficient of internal consistency was somewhat low but acceptable (0.63). The scale was dichotomised. No significant differences or relationships were found according to demographic or screening-related variables.

9.2.2.9   Screening of staff

Agreement with the statement that hospital staff should be screened for MRSA was high, with a mean score well above the midpoint and only one "don't know" response (see Table 9.37). Seventy-eight percent of patients (n = 40) used point 10 on the scale (i.e. strongly agree). Scores were dichotomised. No significant differences or relationships were found according to demographic or screening-related variables.

Table 9.37: Descriptive statistics for item on screening hospital staff for MRSA

	Mean	SD	n	Don't know	Omitted response
Hospital staff should be screened for MRSA	9.67	0.75	49	I	I

N.B. A higher score represents greater agreement

9.2.2.10 Barriers to screening

Four items were identified as reflecting barriers for patients to screening, and these items were also presented to the other three samples of respondents. See Table 9.38. A higher score represented a greater perceived barrier (apart from one item which required reversal of scoring). An additional item is also presented here: however, this was not included in the scale, because it had not been included in the staff survey.

Patients tended to disagree with the two potential barriers relating to screening itself: in other words, they tended to disagree that screening is physically unpleasant or upsetting for the patient. However, responses to the items relating to stigmatisation, or being made to feel "dirty", were nearer the midpoint. Both of these items also attracted a high proportion of "don't know" responses from patients, which may suggest a degree of confusion, or perhaps ambivalent feelings about these items.

Table 9.38: Descriptive statistics for items reflecting barriers to MRSA screening

Barrier Items	Mean	SD	Alpha	n	Don't know	Omitted response
Barriers for Patients Scale	2.26	1.23	0.46	45	-	6 (total)
Screening a patient for MRSA is physically unpleasant for that patient	1.70	1.76	-	46	4	I
Screening a patient for MRSA can be upsetting for that patient	1.69	1.35	-	45	4	2
A patient found to be colonised with MRSA can be stigmatised or discriminated against	4.00	2.86	-	34	16	I
Patients benefit from MRSA screening, even if they are found to be colonised or infected (R)	8.93	1.80	-	43	7	I
Additional item						
A patient found to be colonised with MRSA can be made to feel 'dirty'	4.06	3.06	-	36	14	I

N.B. A higher score represents a higher degree of agreement with the barrier, except where reverse scoring indicated (R)

The barriers for patients scale was calculated as the mean of contributing items (allowing for up to two missing or "don't know" responses). However, the coefficient of internal consistency was very low (0.46), and no single item was identified as responsible for the low internal consistency. Given this, further analysis was not conducted on the scale at this stage.

9.2.2.11 Norms

One item was identified as reflecting the perceived norm of support within the wider community (an item also used in the questionnaires given to staff). A further item represented a more personal or family subjective norm. As can be seen from Table 9.39, both norms of support for MRSA screening were strong (with a higher score representing a more positive or supporting norm). Scores on both were dichotomised. No significant differences or relationships were found according to demographic or screening-related variables.

Table 9.39: Descriptive statistics for items reflecting perceived norms of support for MRSA screening

Norm Items	Mean	SD	n	Don't know	Omitted response
Wider Community Subjective Norm					
People in the wider community would probably approve of routine screening of patients for MRSA	8.59	1.77	46	4	1
Family Subjective Norm					
Most of my friends or loved ones seem to believe that routine screening of patients for MRSA is beneficial	8.71	2.33	41	9	1

N.B. A higher score represents a more positive or supporting norm

9.2.2.12 Saliency of screening

Respondents were presented with one item reflecting the degree to which screening was a frequent or important topic of conversation, or saliency of screening. The mean score was around the midpoint. No significant differences or relationships were found according to demographic or screening-related variables.

Table 9.40: Descriptive statistics for items on saliency of MRSA screening

Saliency Item	Mean	SD	n	Don't know	Omitted response
MRSA is a frequent or important topic of conversation among people I know	5.81	2.36	43	7	1

N.B. A higher score represents greater saliency

9.2.2.13 Isolation of infected patients: Treatment options and worry of passing on MRSA to others

Table 9.41: Descriptive statistics for items on treatment options (isolation) and worry

Isolation Items	Mean	SD	n	Don't know	Omitted response
Putting patients who are infected with MRSA in a room of their own is the best way to treat this problem	9.13	1.60	38	12	1
If I had MRSA, I would prefer to be in a room with other infected patients than in a room on my own	3.58	3.51	43	7	1
If I had MRSA, I would worry that other patients would catch it from me	8.89	1.85	46	5	0

N.B. A higher score represents greater agreement

Three items were presented to patients, visitors and the wider community (but not to staff) on treatment options for MRSA, and also on worry of passing on MRSA to others. Patients tended to strongly agree that isolation of infected patients is the best treatment option, and to disagree that they themselves would prefer to be treated with other patients rather than in isolation. Respondents also tended to agree that they would worry that other patients would catch MRSA from themselves. However, the numbers of "don't know" responses were relatively large for these items.

9.2.2.14 Relationships among acceptability and attitudinal items

The two acceptability scales were dichotomised, as noted above, as were the attitude scale, the item on screening staff, and the two norm scales. Chi-squared analysis revealed that both acceptability variables varied in line with all other dichotomised variables, in the expected directions (all $p < 0.05$). No further analysis was conducted at this stage, because of the small number of respondents.

9.2.2.15 Benefit of screening for patients and perceived risk: severity of infection and likelihood of infection

Patients, their visitors and members of the public were presented with six questions on the perceived severity of the consequences of MRSA infection for themselves and other patients, on the perceived likelihood of themselves and others contracting MRSA while in hospital, and on the perceived benefits of screening for MRSA for themselves and other patients. Two of these six items were identical to those presented to staff. As noted in Section 9.1.1.14, the personal and comparative aspects of severity and likelihood were used in further analysis, while benefit items were treated separately.

Table 9.42: Descriptive statistics for perceived severity of MRSA, likelihood of contracting MRSA, and benefit of screening

Risk and Benefit Items	Mean	SD	Alpha	n	Don't know
Severity					
In your opinion, how severe do you think the consequences of MRSA infection could be for you?	8.14	2.07	-	42	8
In your opinion, how severe do you think the consequences of MRSA infection could be for patients in general (while in any hospital)?	8.74	1.22	-	43	6
Comparative Severity	0.74	1.73	-	39	-
Likelihood					
In your opinion, how likely would you be to get an MRSA infection while in hospital?	5.54	2.62	-	35	14
In your opinion, how likely is a patient to get an MRSA infection in general (while in any hospital)?	6.49	2.19	-	35	13
Comparative Likelihood	0.53	1.70	-	32	-
Benefit Scale	9.37	1.06	0.77	49	-
How beneficial do you think it would be to you to be screened for MRSA on or before any future admission to hospital?	9.23	1.37	-	48	1
How beneficial do you think it would be to other patients in the hospital to test every patient for MRSA on or before their admission?	9.49	0.96	-	49	0

Overall, respondents perceived the consequences of MRSA to be severe for themselves and others, and the benefits to be high for themselves and others. The likelihood ratings were both marginally above the midpoint, although both likelihood items attracted higher numbers of "don't know" responses. Paired t-tests were conducted to determine whether ratings for oneself differed from those for patients in general. The perceived severity for patients in general was significantly higher than perceived severity for oneself: t (38) = -2.69, p < 0.05. However, no comparable significant differences were found on ratings of likelihood and benefit. A benefit scale was computed in line with that computed for staff, by taking the mean of one or both items. Comparative severity and likelihood scores were computed by subtracting the "personal" from the "general", such that the greater the comparative score, the greater the difference between oneself and others (in favour of oneself). The comparative scores are shown in Table 9.42.

Gender differences were noted on both personal and comparative severity ratings: t (37.71) = 2.86, p < 0.01 (corrected for inequality of variance); and t (37) = -2.15, p < 0.05, respectively. Compared with females, males gave higher severity ratings for themselves, and had lower comparative severity ratings (i.e. saw less of a difference between the severity of consequences for themselves and the severity of consequences for others). See Table 9.43.

Table 9.43: Descriptive statistics for perceived severity ratings according to gender

Gender	Personal Severity			Comparative Severity		
	n	Mean	SD	n	Mean	SD
Male	18	9.06	1.30	16	0.06	1.44
Female	24	7.46	2.28	23	1.22	1.78

Those who reported having prior knowledge of MRSA before screening gave significantly lower ratings of personal likelihood of contracting MRSA than did those without prior knowledge: $t(33) = -2.39$, $p < 0.05$. See Table 9.44.

Table 9.44: Descriptive statistics for personal likelihood of contracting MRSA according to self-reported prior knowledge of MRSA

Prior knowledge of MRSA	Personal Likelihood		
	n	Mean	SD
No prior knowledge	15	4.40	2.72
Prior knowledge	20	6.40	2.23

With regard to the perceived benefits of screening, gender differences were noted, such that males rated the benefits to be greater (see Table 9.45): $t(42.06) = 2.56$, $p < 0.05$ (corrected for inequality of variance). However, given the degree of skew apparent in the benefit scale, this finding may be unreliable.

Table 9.45: Descriptive statistics for perceived benefit according to gender

Gender	Benefit		
	n	Mean	SD
Male	21	9.76	0.62
Female	28	9.07	1.23

In line with the analysis conducted on responses from staff, the relationships between the risk-related and benefit items and the acceptability and attitudinal items were considered. However, as noted above, all of the acceptability and attitudinal items, except for saliency, had been dichotomised. The benefit scale was also dichotomised for this analysis. An overview of results is shown in Table 9.46. Once again, perceived benefit was found to be significantly related to both acceptability scales and all other items, except for saliency, suggesting that perceived benefit should be construed as an attitudinal factor.

Table 9.46: Correlations between risk and benefit items and the acceptability and attitudinal items and scales

	Personal severity	Comparative severity	Personal Likelihood	Comparative Likelihood	Benefit
General acceptability	**	*	ns	ns	***
Personal Acceptability	ns	ns	ns	ns	***
Attitude	ns	ns	ns	ns	***
Screening staff	*	ns	ns	ns	***
Wider Community Norm	ns	ns	ns	ns	***
Family Norm	ns	ns	ns	ns	***
Saliency	ns	ns	ns	ns	ns

Ns, not significant; * $p < 0.05$; *** $p < 0.001$

Personal and comparative severity ratings (i.e. severity of consequences for oneself) varied significantly according to general acceptability, and personal severity varied according to attitude toward screening staff for MRSA. Those who perceived the consequences of MRSA to be more severe for themselves, and perceived less of a difference between themselves and others, gave the highest rating for general acceptability. Those who perceived the consequences to be more severe for themselves also strongly agreed that staff should be screened for MRSA. None of the acceptability and attitudinal items was related to either likelihood rating. Further analysis was not conducted at this stage because of the small sample size.

9.2.3   Visitor survey

The returns from patients, their visitors, and the public, were considered to be complete on 20 October 2009. Forty-eight completed or partially completed questionnaires were returned from visitors. Two blank visitor questionnaires were returned by post, and were not entered into the database, and were not included in the calculations shown in Table 9.47. (Neither of these blank questionnaires was able to be paired with a questionnaire returned by a patient, and so it was not possible to know which hospital had screened the patient.)

Table 9.47: Returned surveys from visitors according to hospital attended by the patient

	Total	Ayr	Crosshouse	Aberdeen	Woodend	Western Isles	Uist & Barra	Hospital unknown
Number of survey returns	48	14	15	9	0	6	0	4
Excluded (completed by patient, not visitor)	12	3	3	2	0	4	0	0
Excluded (missing consent)	10	2	3	3	0	1	0	1
Valid	26	9	9	4	0	1	0	3

Forty-five pairs of questionnaires were returned (i.e. completed patient and visitor questionnaires with the identical reference number), with 39 unpaired (all but three of which were from patients). However, inspection of the pairs indicated that 12 of the visitor questionnaires had in fact been completed by the patient. This was judged to be the case if the following conditions were met: the age and gender were identical, the visitor-patient relationship had been left blank or the response had been to the effect that a member of hospital staff had given the questionnaire to the respondent, the handwriting was judged to be by the same person, and it had been indicated on the visitor's questionnaire that the respondent had had an MRSA screen. In these cases, the patient's questionnaire was used for further analysis (if appropriate), while the visitor's questionnaire was not analysed further.

An additional 10 respondents were excluded because they had failed to endorse any of the five consent items. Data were therefore available for 26 visitors. The analysis presented here is therefore limited to description.

9.2.3.1   Description of sample

Of the 26 visitors, 17 (65.4%) were female, and 9 (34.6%) were male. The mean age was 57.42 years (SD = 14.07), ranging from 23 to 79 years. Most (n = 18, 65.4%) were not in paid employment. Fifteen (57.7%) indicated that they were the spouse or partner of the patient, 2 (7.7%) that they were the son or daughter, 3 (11.5%) that they were another relative (e.g., parent), 4 (15.4%) that they were a friend, with one "other" and one missing response.

Table 9.48.:Descriptive statistics for visitor sample (n = 26)

Factor	n	%
Gender		
Male	9	34.6
Female	17	65.4
Employment status		
In paid employment	8	30.8
Not in paid employment	18	69.2
Relationship with patient		
Spouse/partner	15	57.7
Son/daughter	2	7.7
Other relative	3	11.5
Friend	4	15.4
Other	1	3.8
missing	1	3.8

9.2.3.2   Experience of MRSA screening

Visitors (and the wider community) were asked if they had ever been screened for MRSA, and if they had had an MRSA infection (and if yes, the extent to which they had been ill with this). Responses to these questions are summarised in Table 9.49. Within the visitor sample, 6 (23.1%) had been screened, 19 (73.1%) had not, with one missing value. Only one indicated that s/he had contracted an MRSA infection.

Table 9.49: Experience of MRSA screening and illness among visitors

	n	%
Have you ever been screened or tested for MRSA?	6	23.1
To your knowledge have you ever had an MRSA infection?	1	3.8

9.2.3.3 Acceptability of screening

As can be seen from Table 9.50, the respondents indicated high levels of agreement with the acceptability items, at both the general and the personal level.

Table 9.50: Descriptive statistics relating to the general and personal acceptability of MRSA screening

Acceptability Items	Mean	SD	n	Don't know	Omitted response
General Acceptability					
Overall, I believe that the MRSA Screening Programme would be acceptable to most people	9.08	1.67	26	0	0
Personal Acceptability Scale	9.04	1.74	26	0	0
I would advise a relative or loved one to accept the offer of MRSA screening prior to hospital admission	8.85	1.93	26	0	0
If I were to be admitted to hospital as a patient, I would accept the offer of MRSA screening	9.15	1.74	26	0	0
*I support the MRSA Screening Programme in Scottish hospitals	9.11	1.75	26	0	0

* change in wording from item presented to staff, from "...in this hospital"
N.B. A higher score represents greater acceptability

9.2.3.4   Attitudes and barriers

Overall, visitors gave high ratings to the attitudinal items, indicating positive attitudes towards MRSA screening. Agreement with the statement that hospital staff should be screened for MRSA was also high, with a mean score well above the midpoint. Fifty-eight per cent of visitors (n = 15) used point 10 on the scale (i.e. strongly agreed) to this item.

Table 9.51: Descriptive statistics for MRSA screening attitude items and attitude toward screening of staff

Attitude Items	Mean	SD	n	Don't know	Omitted response
Attitude Scale	8.77	1.73	26	-	0
*Routine screening of patients will help to reduce the rates of MRSA infection in hospitals	8.76	2.07	25	1	0
Routine screening of patients for MRSA will be beneficial to everyone	8.88	1.77	26	0	0
Routine screening of patients for MRSA is largely unnecessary (R)	1.84	1.77	25	0	1
The benefits to other patients and the wider community of screening patients for MRSA outweigh the costs	8.69	2.11	26	0	0
Routine screening of patients for MRSA is just 'window-dressing' (R)	2.65	2.62	26	0	0
Screening of staff					
Hospital staff should be screened for MRSA	9.32	1.07	25	1	0

* change in wording from item presented to staff, from "...in this hospital"

N.B. A higher score represents a more positive attitude, except where reverse scoring indicated (R)

9.2.3.5 Barriers

As can be seen from Table 9.52, visitors tended to disagree with the barrier items, although responses to the items reflecting stigmatisation and being made to feel "dirty" were nearer the midpoint. Overall, the barrier items tended to attract higher proportions of "don't know" responses from visitors than did other attitudinal items.

Table 9.52: Distribution of responses to items reflecting barriers to MRSA screening

Barrier Items	Mean	SD	n	Don't know	Omitted response
Barriers for Patients Scale	2.50	1.19	23	-	3 (total)
Screening a patient for MRSA is physically unpleasant for that patient	1.73	1.49	22	4	0
Screening a patient for MRSA can be upsetting for that patient	2.09	2.11	22	4	0
A patient found to be colonised with MRSA can be stigmatised or discriminated against	3.73	3.13	22	4	0
Patients benefit from MRSA screening, even if they are found to be colonised or infected (R)	8.48	2.42	25	0	1
Additional item					
A patient found to be colonised with MRSA can be made to feel 'dirty'	4.19	3.37	21	5	0

N.B. A higher score represents a higher degree of agreement with the barrier, except where reverse scoring indicated (R).

9.2.3.6   Norms and saliency

Scores on both the wider community and family subjective norm items were above the midpoint, indicative of stronger perceived norms in support of MRSA screening. However, scores on the saliency item were around the midpoint.

Table 9.53: Descriptive statistics for items reflecting perceived norms of support for MRSA screening, and saliency of screening

Items	Mean	SD	n	Don't know	Omitted response
Wider Community Subjective Norm					
People in the wider community would probably approve of routine screening of patients for MRSA	8.40	1.98	25	1	0
Family Subjective Norm					
Most of my friends or loved ones seem to believe that routine screening of patients for MRSA is beneficial	8.48	1.95	23	3	0
Saliency					
MRSA is a frequent or important topic of conversation among people I know	5.87	2.70	23	3	0

N.B. A higher score represents a more positive or supporting norm, or greater saliency

9.2.3.7   Isolation of infected patients: Treatment options and worry of passing on MRSA to others

In line with patients, visitors tended to strongly agree that isolation of infected patients is the best treatment option, and that they would worry that other patients would catch MRSA from themselves. They tended to disagree that they would prefer to be treated with other patients rather than in isolation. See Table 9.54.

Table 9.54: Distribution of responses to items on treatment options (isolation) and worry

Isolation Item	Mean	SD	n	Don't know	Omitted response
Putting patients who are infected with MRSA in a room of their own is the best way to treat this problem	8.86	2.10	22	4	0
If I had MRSA, I would prefer to be in a room with other infected patients than in a room on my own	3.50	3.52	22	3	1
If I had MRSA, I would worry that other patients would catch it from me	8.50	2.35	22	4	0

N.B. A higher score represents greater agreement

9.2.3.8   Benefit of screening for patients and perceived risk: severity of infection and likelihood of infection

Visitors (like patients) were presented with six questions on the perceived severity of the consequences of MRSA infection for themselves and other patients, on the perceived likelihood of themselves and others contracting MRSA while in hospital, and on the perceived benefits of screening for MRSA for themselves and other patients. Responses are shown in Table 9.55.

Table 9.55: Distributions of responses to questions relating to perceived severity of MRSA, likelihood of contracting MRSA, and benefit of screening

Risk and Benefit Items	Mean	SD	n	Don't know
Severity				
In your opinion, how severe do you think the consequences of MRSA infection could be for you?	7.86	2.71	22	4
In your opinion, how severe do you think the consequences of MRSA infection could be for patients in general (while in any hospital)?	8.71	1.27	24	2
Comparative Severity	1.19	2.29	21	
Likelihood				
In your opinion, how likely would you be to get an MRSA infection while in hospital?	5.40	2.91	20	6
In your opinion, how likely is a patient to get an MRSA infection in general (while in any hospital)?	6.59	2.77	22	4
Comparative Likelihood	1.25	2.31	20	
Benefit	8.83	1.79	26	-
How beneficial do you think it would be to you to be screened for MRSA on or before any future admission to hospital?	8.73	1.95	26	0
How beneficial do you think it would be to other patients in the hospital to test every patient for MRSA on or before their admission?	8.92	1.76	26	0

Overall, respondents perceived the consequences of MRSA to be relatively severe for themselves and others, and the benefits to be high for themselves and others. The likelihood scores were somewhat lower; this pattern of responses is consistent with that shown by the patients. Both comparative scores were positive, indicating that visitors tended to consider the severity of the consequences of MRSA, and the likelihood of contracting MRSA, to be less for themselves than for other people.

9.3   Wider community results

9.3.1   Wider community survey

The returns from the wider community survey were considered to be complete on 20 October 2009. The number of completed or partially completed returns was 409, and a further four blank questionnaires were returned (not included in further consideration of returns). Fifty-seven cases were excluded because none of the consent items had been endorsed. Thus 352 questionnaires from the public were subject to analysis.

Table 9.56 shows the returns from each of the three electoral regions. Those who were excluded from analysis because of missing consent endorsement are shown in brackets. Electoral region was used in further analysis to a certain extent, but the small number of returns from the Western Isles argued against reliance on this as a key variable. This group was therefore excluded when electoral region was taken into account, such that comparisons were made only between those from Grampian and those from Ayrshire.

Table 9.56: Response rates for public sample according to electoral register area

Electoral Register area	Number of questionnaires distributed	% of total of number randomly selected	Number of responses (includes missing consent)	% response rate	% of total responses received
Ayrshire	712	35.6	113 (129)	15.9 (18.1)	32.1
Grampian	1218	60.9	228 (262)	18.7 (21.5)	64.8
Western Isles	70	3.5	8 (11)	11.4 (15.7)	2.3
unknown			3 (7)		0.8
Total	**2000**	**100**	**352 (409)**	**17.6 (20.5)**	**100**

9.3.1.1   Description of sample

Of the sample, 136 (38.6%) were male, and 216 (61.4%) were female. The mean age was 51.0 years (SD = 15.86), with ages ranging from 19 to 91 years. Sixty percent of the sample (n = 213) were in paid employment.

Table 9.57: Descriptive statistics for public sample

Factor	n	%
Gender		
Male	136	38.6
Female	216	61.4
Employment status		
In paid employment	213	60.5
Not in paid employment	137	38.9
missing	2	0.6

As was found with the sample of patients, female respondents from the public sample were significantly younger than were male respondents: t (350) = 2.12, p < 0.05. The mean age of female respondents was 49.59 (SD = 15.53), and for male respondents, the mean age was 53.25 (SD = 16.18). No other significant differences were found according to age, gender, electoral area, or employment status.

9.3.1.2   Experience of MRSA screening

Public respondents were asked if they had ever been screened for MRSA, and if they had had an MRSA infection (and if yes, the extent to which they had been ill with this). Members of the public were also asked if they knew anyone who had had an MRSA screen or illness. Responses to these questions are summarised in Table 9.58.

Table 9.58: Experience of MRSA screening and illness among the public

Experience of MRSA screening	n	%
Have you ever been screened or tested for MRSA?	61	17.3
To your knowledge have you ever had an MRSA infection?	3	0.9
Do you know anyone personally who had an MRSA screen or someone who has been ill with MRSA?		
- screened	66	18.8
- ill	86	24.4

Within the sample, 61 (17.3%) had been screened, 284 (80.7%) had not, and 7 (2.0%) indicated that they were unsure or did not know. Very few respondents had had an MRSA infection themselves (n = 3), while 10 indicated that they were unsure or did not know.

Sixty-six respondents (18.8%) knew someone who had been screened for MRSA, 86 (24.4%) knew someone who had been ill with MRSA, and 196 (55.7%) did not know anyone who had been screened or ill (with 4 missing responses).

Female respondents more likely than were males to know someone screened for or ill with MRSA: χ^2 (1, n=348) = 7.74, p = 0.005. Respondents who had themselves been screened for MRSA were significantly older (M = 55.56, SD = 14.14) than those who had not been screened (M=50.05, SD = 16.06): t (350) = 2.49, p < 0.05. No other significant differences were found among the sample according to demographic characteristics. For further analysis, respondents were categorised according to whether or not they had had an MRSA screen themselves, and also according to whether or not they knew someone who had had an MRSA screen or been ill with MRSA.

9.3.1.3   Acceptability of MRSA screening

As noted above, acceptability represented the main outcome variable for the survey. For the public sample, the analysis took into account the following variables (in addition to those concerned with attitudes): age, gender, personal experience of MRSA screening, and whether or not they knew someone who had had an MRSA screen or been ill with MRSA. Electoral area was also taken into account to some extent, but, as noted above, the small number of respondents from the Western Isles argued against this.

Table 9.59: Descriptive statistics relating to the general and personal acceptability of MRSA screening

Acceptability Items	Mean	SD	Alpha	n	Don't know	Omitted response
General Acceptability						
Overall, I believe that the MRSA Screening Programme would be acceptable to most people	8.86	1.48	-	335	12	5
Personal Acceptability Scale	9.17	1.29	0.84	350	-	2 (total)
I would advise a relative or loved one to accept the offer of MRSA screening prior to hospital admission	9.03	1.59	-	345	4	3
If I were to be admitted to hospital as a patient, I would accept the offer of MRSA screening	9.42	1.28	-	348	0	4
*I support the MRSA Screening Programme in Scottish hospitals	9.09	1.44	-	346	3	3

* change in wording from item presented to staff, from "...in this hospital"
N.B. A higher score represents greater acceptability

Scores on the acceptability items were generally high, representing greater acceptability of MRSA screening at both general and personal levels. Given the distributions, both were dichotomised prior to further analysis (highest score vs. all other scores). Both acceptability variables, particularly personal acceptability, were related to age: for general acceptability, t (332) = -2.32, p < 0.05; for personal acceptability, t (348) = -4.14, p < 0.001. In both cases, those who gave the highest acceptability ratings were significantly older than those who gave lower ratings. In addition, those who knew someone who had been screened for or ill with MRSA were more likely to give the highest rating on personal acceptability: χ^2 (1, n = 346) = 5.56, p < 0.05.

9.3.1.4 Attitudes and barriers

The mean scores for the items reflecting attitude toward MRSA screening were high (apart from those items requiring reversal of scoring), indicative of a generally positive attitude within the sample. However, the item on the costs and benefits of MRSA screening attracted higher numbers of "don't know" responses than did the other items. See Table 9.60. The coefficient of internal consistency for the attitude scale was acceptable.

Table 9.60: Descriptive statistics for MRSA screening attitude items

Attitude Items	Mean	SD	Alpha	n	Don't know	Omitted response
Attitude Scale	8.62	1.42	0.83	350	-	2 (total)
*Routine screening of patients will help to reduce the rates of MRSA infection in hospitals	8.82	1.57	-	342	8	2
Routine screening of patients for MRSA will be beneficial to everyone	8.69	1.70	-	345	5	2
Routine screening of patients for MRSA is largely unnecessary (R)	2.04	1.66	-	341	8	3
The benefits to other patients and the wider community of screening patients for MRSA outweigh the costs	8.23	2.15	-	318	31	3
Routine screening of patients for MRSA is just 'window-dressing' (R)	2.52	1.97	-	331	17	4

* change in wording from item presented to staff, from "...in this hospital"

N.B. A higher score represents a more positive attitude, except where reverse scoring indicated (R)

The findings with regard to demographic and screening variables were similar to those noted for personal acceptability. Older respondents had higher attitude scores: $r = 0.21$, $p < 0.001$. Similarly, those who knew someone who had been screened for MRSA had higher attitude scores than those who did not know anyone who had been screened: $t (343.87) = 2.62$, $p < 0.01$ (corrected for inequality of variance). For those who knew someone who had been screened: $M = 8.84$, $SD = 1.23$, $n = 152$; and for those who did not know someone who had been screened: $M = 8.45$, $SD = 1.54$, $n = 194$. Further analysis revealed that both age and knowing someone who had been screened for MRSA remained significant when each was controlled for the other.

9.3.1.5 Screening of staff

As noted among the other samples, agreement with the statement that hospital staff should be screened for MRSA was high, with a mean score which was above 9 and only one "don't know" response. In fact, 67% of the public (n = 236) used point 10 on the scale (i.e. strongly agree). Given this, responses were dichotomised. Ratings on this item varied according to only one demographic factor: those who gave the highest level of agreement were significantly older than other respondents: $t (346) = -3.66$, $p < 0.001$.

Table 9.61: Descriptive statistics for item on screening hospital staff for MRSA

Item	Mean	SD	n	Don't know	Omitted response
Hospital staff should be screened for MRSA	9.26	1.38	348	1	3

N.B. A higher score represents greater agreement

9.3.1.6   Barriers

Scores on the barrier items tended to indicate disagreement with the barriers, although all but one attracted high numbers of "don't know" responses. See Table 9.62. Higher scores, although still below the midpoint, were noted on the items suggesting that patients found to be colonised could be stigmatised against, or made to feel "dirty". The coefficient of internal consistency was low (0.56); although further analysis was conducted, caution was used in the interpretation of results.

Table 9.62: Descriptive statistics for items reflecting barriers to MRSA screening

Barrier Items	Mean	SD	Alpha	n	Don't know	Omitted response
Barriers for Patients Scale	2.89	1.63	0.56	323	-	29 (total)
Screening a patient for MRSA is physically unpleasant for that patient	2.06	1.89	-	281	66	5
Screening a patient for MRSA can be upsetting for that patient	2.61	2.44	-	299	49	4
A patient found to be colonised with MRSA can be stigmatised or discriminated against	4.15	2.69	-	287	60	5
Patients benefit from MRSA screening, even if they are found to be colonised or infected (R)	8.45	2.04	-	329	18	5
Additional item						
A patient found to be colonised with MRSA can be made to feel 'dirty'	4.01	2.78	-	289	58	5

N.B. A higher score represents a higher degree of agreement with the barrier, except where reverse scoring indicated (R).

In line with the results noted for personal acceptability and attitude, a significant correlation was found between age and barriers for patients scores, such that older respondents gained lower scores: $r = -0.14$, $p < 0.05$. Similarly, those who knew someone who had been screened for or ill with MRSA gained lower scores on the barriers for patients scale than did those who did not know anyone who had been screened or ill: $t (317) = -2.11$, $p < 0.05$. For those who knew someone who had been screened or ill: M = 2.68, SD = 1.50, n = 144; and for those who did not know someone who had been screened or ill: M = 3.07, SD = 1.73, n = 175. Both remained significant when each was controlled for the other.

9.3.1.7 Norms

Both mean subjective norm scores were above the midpoint, suggesting that the respondents perceived supportive norms for MRSA screening in the wider community, and within their circle of family and friends. See Table 9.63. However, both attracted high numbers of "don't know" responses, particularly the item on the family; this suggested that, for many respondents, this was not a topic that had been discussed or debated to any extent. Scores on both measures were dichotomised.

Table 9.63: Descriptive statistics for items reflecting perceived norms of support for MRSA screening

Norm Items	Mean	SD	n	Don't know	Omitted response
Wider Community Subjective Norm					
People in the wider community would probably approve of routine screening of patients for MRSA	8.11	1.75	303	46	3
Family Subjective Norm					
Most of my friends or loved ones seem to believe that routine screening of patients for MRSA is beneficial	8.71	1.52	234	113	5

N.B. A higher score represents a more positive or supporting norm

Those who perceived the highest norm of support for MRSA screening within the wider community were significantly older: t (301) = -2.13, p < 0.05. They were also more likely to know someone who had been screened for MRSA, or with an MRSA infection: χ^2 (1, n = 299) = 5.54, p < 0.05.

9.3.1.8 Saliency of screening

Respondents were presented with one item reflecting the degree to which screening was a frequent or important topic of conversation, or saliency of screening. The mean score was slightly below the midpoint, suggesting that screening was not a particularly salient issue within the circle of family and friends for most respondents.

Table 9.64: Descriptive statistics for item on saliency of MRSA screening

Saliency of screening	Mean	SD	n	Don't know	Omitted response
MRSA is a frequent or important topic of conversation among people I know	4.60	2.85	322	26	4

N.B. A higher score represents greater saliency

Saliency scores were significantly correlated with age ($r = 0.21$, $p < 0.001$), such that older participants gave higher ratings of saliency. Similarly, those who knew someone who had been screened for MRSA, or with an MRSA infection, gave higher ratings of saliency than did those who did not know anyone who had been screened for or ill with MRSA: $t (316) = 2.11$, $p = 0.05$. For those who knew someone who had been screened or ill: M = 4.98, SD = 2.94, n = 149; and for those who did not know someone who had been screened or ill: M = 4.31, SD = 2.75, n = 169. Again, both age and knowing someone who had been screened remained significantly related to saliency when each was controlled for the other.

9.3.1.9   Isolation of infected patients: Treatment options and worry of passing on MRSA to others

Table 9.65: Descriptive statistics for items on treatment options (isolation) and worry

Isolation Items	Mean	SD	n	Don't know	Omitted response
Putting patients who are infected with MRSA in a room of their own is the best way to treat this problem	7.98	2.62	250	96	6
If I had MRSA, I would prefer to be in a room with other infected patients than in a room on my own	3.59	3.08	316	32	4
If I had MRSA, I would worry that other patients would catch it from me	8.39	2.13	338	10	4

N.B. A higher score represents greater agreement

Three items were presented to respondents on treatment options for MRSA, and also on worry of passing on MRSA to others (see Table 9.65). Respondents tended to agree that isolation for patients infected with MRSA is the best way to treat the problem, although this attracted a very high number of "don't know" responses. They also tended to agree that they would worry about other patients catching MRSA if they themselves were infected, and tended to disagree that they would prefer to be in a room with other infected patients. Only one significant association was found between responses to these three items and any demographic or screening variable: agreement that patients should be isolated was positively associated with age: $r = 0.33$, $p < 0.001$.

9.3.1.10   Relationships among acceptability and attitudinal items

All of the attitudinal items were significantly related to the general acceptability and personal acceptability of MRSA screening. The relationships among the attitudinal items were almost all highly significant, suggesting that there was a need to attend to potential problems associated with multicollinearity. Both logistic regression (with the dichotomised variables) and multiple regression (with non-dichotomised variables) were used in the next stage, and the results were examined and compared. The results were broadly similar in terms of the patterns of significant responses, although more variables were found to be significantly

related to both acceptability variables when logistic regression was used. However, while logistic regression would appear to be the more appropriate technique, problems were noted with very small cell sizes. The results of the multiple regression analyses were more "conservative" and easier to interpret, and these (rather than the results of the logistic regression analyses) are reported below.

9.3.1.11 General acceptability

The variables significantly associated with general acceptability scores were as follows: age, knowing someone who had been screened for or ill with MRSA, agreement that staff should be screened for MRSA, and scores on the attitude scale, barriers for patients scale, the family and wider community subjective norms, and saliency. The family subjective norm was excluded because of the large numbers who gave a "don't know" response to this item. Gender was included as a control measure, given that gender was significantly related to knowing someone who had been screened for or ill with MRSA.

For the regression analysis reported here, the independent variables were as follows: age, gender, knowing someone screened for or ill with MRSA (knowing someone vs. not knowing someone), attitude, attitude toward screening staff for MRSA, barriers for patients, wider community subjective norm, and saliency. An overview of the results is shown in Table 9.66. One VIF value that was greater than 2 was noted (for attitude: 2.11), but the variable was retained because of its theoretical relevance. A significant proportion of the variance of general acceptability was explained: $R^2 = 0.35$, adjusted $R^2 = 0.33$. Overall, $F_{(8, 255)} = 17.09$, $p < 0.001$.

Table 9.66: Results of multiple regression analysis with general acceptability as the dependent variable

Item	B	SE B	β	t	p
Constant	4.95	.87		5.73	<.001
Age	-.01	.01	-.07	-1.37	.171
Gender	.07	.16	.02	0.41	.680
Knowing someone screened	.30	.16	.10	1.88	.061
Attitude	.11	.08	.10	1.31	.192
Attitude toward screening staff	.17	.07	.16	2.42	.016
Barriers for Patients	-.28	.06	-.28	-4.90	<.001
Wider Community Subjective Norm	.24	.06	.27	4.06	<.001
Saliency	.01	.03	.02	0.27	.788

Those with higher general acceptability scores were likely to perceive fewer barriers for patients in screening, to perceive a stronger norm for acceptability within the wider community, and to show a higher level of agreement with the statement that staff should be screened for MRSA. The relationships noted above with regard to age and knowing someone screened for MRSA were no longer significant when attitude was taken into account, suggesting that their relationships with general acceptability were mediated by attitude.

9.3.1.12 Personal acceptability

The variables significantly associated with personal acceptability scores were as follows: age, knowing someone who had been screened for or ill with MRSA, agreement that staff should be screened for MRSA, and scores on the attitude scale, barriers for patients scale, the family and wider community subjective norms, and saliency. As with the previous analysis, family subjective norm was excluded because of the large numbers who gave a "don't know" response to this item, and gender was included as a control measure.

For the regression analysis reported here, the independent variables were as follows: age, gender, knowing someone screened for or ill with MRSA (knowing someone vs. not knowing someone), attitude, attitude toward screening staff for MRSA, barriers for patients, wider community subjective norm, and saliency. An overview of the results is shown in Table 9.67. Again, the VIF value for attitude was 2.11. A significant proportion of the variance of general acceptability was explained: $R^2 = 0.72$, adjusted $R^2 = 0.71$. Overall, $F(8, 255) = 81.09$, $p < 0.001$.

Table 9.67: Results of multiple regression analysis with personal acceptability as the dependent variable

Item	B	SE B	β	t	p
Constant	1.91	.47	-	4.05	<.001
Age	-.01	.01	-.03	-0.67	.485
Gender	.10	.09	.04	1.07	.286
Knowing someone screened	-.17	.09	-.07	-1.91	.058
Attitude	.47	.05	.50	10.33	<.001
Attitude toward screening staff	.35	.04	.39	9.17	<.001
Barriers for Patients	-.03	.03	-.04	-0.98	.328
Wider Community Subjective Norm	.04	.03	.05	1.23	.220
Saliency	-.01	.02	-.01	-.30	.766

Those with higher personal acceptability scores had a more positive attitude towards screening, and showed a higher level of agreement with the statement that staff should be screened for MRSA. Again, the relationships of both age and knowing someone screened for MRSA with personal acceptability appeared to be mediated by attitude.

9.3.1.13 Benefit of screening for patients and perceived risk: severity of infection and likelihood of infection

Public respondents were presented with six questions on the perceived severity of the consequences of MRSA infection for themselves and other patients, on the perceived likelihood of themselves and others contracting MRSA while in hospital, and on the perceived benefits of screening for MRSA for themselves and other patients. Two of these six items were identical to those presented to staff. As noted previously, the personal and comparative aspects of severity and likelihood were used in further analysis, while benefit items were treated separately. Distributions are shown in Table 9.68.

Table 9.68: Descriptive statistics for questions relating to perceived severity of MRSA, likelihood of contracting MRSA, and benefit of screening

Risk and Benefit Items	Mean	SD	Alpha	n	Don't know
Severity					
In your opinion, how severe do you think the consequences of MRSA infection could be for you?	7.51	2.34	-	305	46
In your opinion, how severe do you think the consequences of MRSA infection could be for patients in general (while in any hospital)?	8.54	1.54	-	342	9
Comparative Severity	1.07	1.85	-	303	
Likelihood					
In your opinion, how likely would you be to get an MRSA infection while in hospital?	6.15	2.31	-	298	53
In your opinion, how likely is a patient to get an MRSA infection in general (while in any hospital)?	6.51	2.21	-	315	36
Comparative Likelihood	0.30	1.29	-	293	
Benefit	8.95	1.61	0.89	348	
How beneficial do you think it would be to you to be screened for MRSA on or before any future admission to hospital?	8.84	1.83	-	347	5
How beneficial do you think it would be to other patients in the hospital to test every patient for MRSA on or before their admission?	9.07	1.54	-	348	4

Overall, scores suggested that respondents perceived the consequences of MRSA to be somewhat severe for themselves and others, and the benefits of screening to be high for themselves and others. The ratings of likelihood of contracting MRSA were above the midpoint, but not particularly high. However, the two likelihood items attracted higher numbers of "don't know" responses.

In both aspects of risk, and in benefit, the ratings for oneself (the personal ratings) were found to be significantly lower than the ratings for others. For perceived severity of consequences, $t (302) = -10.06$, $p < 0.001$; for perceived likelihood of contracting MRSA, $t (292) = -3.93$, $p < 0.001$; and for perceived benefit of screening, $t (346) = -4.29$, $p < 0.001$. Thus, respondents rated the severity of the consequences for themselves, and the likelihood of contracting MRSA themselves, to be significantly less than the severity of consequences for others and the likelihood of others contracting MRSA. Similarly, they perceived more benefits of screening for others than for themselves.

Perceived severity of the consequences of MRSA for oneself, and perceived likelihood of contracting MRSA oneself, were treated as personal measures of risk. Comparative severity and likelihood scores were calculated by subtracting the "personal" from the "general", in line with the calculations performed on these items with other samples. The perceived benefit scale was calculated by taking a mean of the two items, again in line with the calculations performed on these items with other samples.

9.3.1.14 Severity

Age was significantly correlated with personal and comparative severity: $r = 0.25$, $p < 0.001$; and $r = -0.27$, $p < 0.001$, respectively. Those who were older rated the severity of consequences for themselves as more severe, and perceived less of a difference between the severity for themselves and the severity for others. A gender difference was also noted on comparative severity such that females perceived a bigger difference between themselves and others than did males: $t(301) = -2.19$, $p < 0.05$. However, further analysis indicated that this was explained by the age difference between males and females noted within the sample.

One other respondent descriptor was of interest here. Differences were found between respondents from Grampian and respondents from Ayrshire on both personal and comparative severity: $t(210.44) = -3.81$, $p < 0.001$ (corrected for inequality of variance); and $t(293) = 2.33$, $p < 0.05$, respectively. Respondents from Aberdeen gave significantly lower ratings on personal severity than did respondents from Ayrshire: Grampian, $M = 7.15$, $SD = 2.39$, $n = 201$; Ayrshire, $M = 8.19$, $SD = 2.10$, $n = 96$. Respondents from Grampian also perceived a bigger difference (in their favour) between the severity of consequences for themselves and the severity of consequences for others. These findings did not appear to be attributable to any demographic differences (including age) between the two groups.

9.3.1.15 Likelihood

Age was significantly correlated with both personal and comparative likelihood: $r = 0.12$, $p < 0.05$, and $r = -0.21$, $p < 0.001$ respectively. Those who were older judged that they were more likely to contract MRSA themselves, and perceived less of a difference between this likelihood and the likelihood of others contracting MRSA. A gender difference was also found on personal likelihood, such that females rated likelihood of contracting MRSA more highly than did males: $t(296) = -3.09$, $p < 0.01$. See Table 9.69. Finally, those who knew someone who had been screened for or ill with MRSA gave higher ratings on personal likelihood: $t(263.64) = 2.09$, $p < 0.05$ (corrected for inequality of variance). However, this latter factor was no longer significant when age and gender were statistically controlled: as noted above, females were more likely to know someone who had been screened for or ill with MRSA.

Table 9.69: Descriptive statistics for perceived likelihood of contracting MRSA oneself according to gender

Gender	Personal Likelihood		
	n	Mean	SD
Males	121	5.66	2.22
Females	177	6.49	2.32

9.3.1.16 Benefit

Age was significantly correlated with the perceived benefit scale, such that older respondents perceived more benefit of screening for themselves and others: $r = 0.17$, $p = 0.001$. Those who knew someone who had been screened for or ill with MRSA gained higher scores on the benefit scale: $t(342) = 2.54$, $p < 0.05$ (corrected for inequality of variance). This latter finding was not explained by age and gender differences, and remained significant when age was statistically controlled.

Table 9.70: Descriptive statistics for perceived benefit ratings according to knowing someone screened for or ill with MRSA

Factor	Benefit		
	n	Mean	SD
Knowing someone screened			
Know someone screened or ill	150	9.19	1.36
Do not know someone screened or ill	194	8.76	1.77

The relationships between the risk-related items and the acceptability and attitudinal items were then examined. See Table 9.71. The continuous, rather than the dichotomised, variables were used in this analysis: although this was not strictly warranted, it was noted that comparable results were obtained using the dichotomised variables.

Table 9.71: Correlations of risk-related variables and benefit with acceptability and attitudinal variables

	Personal Severity	Comparative Severity	Personal Likelihood	Comparative Likelihood	Benefit
General acceptability	.16**	-.04	.17**	.01	.36***
Personal acceptability	.30***	-.11	.29***	-.07	.65***
Attitude	.38***	.01	.30***	-.05	.65***
Screening staff	.31***	-.15*	.20***	-.04	.55***
Barriers for patients	-.12*	.09	-.02	-.07	-.26***
Family subjective norm	.32***	-.15*	.28***	-.04	.49***
Wider Community subjective norm	.21**	-.06	.28***	.01	.39***
Saliency	.24***	-.09	.49***	-.04	.26***

*$p < 0.05$; **$p < 0.01$; *** $p < 0.001$

Perceived benefit was significantly correlated with all of the acceptability and attitudinal variables, particularly personal acceptability and attitude ($r = 0.65$ in both cases). Again, it appeared that perceived benefit had more in common with attitudinal items than with the other risk measures. Personal severity and personal likelihood (i.e. severity of the consequences of MRSA for oneself, and likelihood of contracting MRSA oneself) were significantly correlated with most items in the expected directions. Comparative severity scores were significantly related to attitude toward screening staff, and the family subjective norm, such that those who perceived less of a difference between the severity for themselves and the severity for others were more likely to agree with staff screening, and perceived a stronger norm of support for screening within the family. Comparative likelihood scores were not significantly related to any of the acceptability or attitudinal items.

At this stage, further analysis was conducted to determine whether the severity or likelihood items made significant contributions to the multiple regression analyses of the two acceptability ratings, and whether the overall patterns of results were altered by their inclusion. None of the severity or likelihood items made a significant contribution to the explanation of variance of either general or personal acceptability, and the patterns of results were not unduly changed by their inclusion. The relationships between the acceptability ratings and personal severity and likelihood ratings were found to be mediated or explained by attitude.

9.4 Comparison of staff, patient, visitor and wider community survey items

The four samples – staff, patients, visitors, and wider community – differed in size. The numbers of patients and visitors were small (with only 26 visitors), and the two groups were typically combined when comparing the responses of samples, following examination of the data.

9.4.1 Age and gender

With regard to gender and age, the staff sample differed from patients/visitors and the public. The staff sample had a much higher proportion of female respondents, and overall, the staff sample tended to be younger. The public sample did not differ from the patients/visitors samples on gender composition, but they were significantly younger than patients/visitors: $t (427) = 2.57$, $p < 0.05$.

9.4.2 Acceptability scores

Personal acceptability scores were available for all four samples. See Table 9.72. A significant difference was found between the personal acceptability scores of staff compared with all other groups: $F_{(2,627)} = 11.94$, $p < 0.001$. Staff scores were significantly lower than those of the public and patients/visitors, suggesting that they found MRSA screening less acceptable at a personal level than did patients, visitors or the public. No difference was found between the public and patients/visitors on this measure.

Table 9.72: Descriptive statistics for personal acceptability according to sample

Personal Acceptability Scale	Mean	SD	Alpha	n
Staff	8.54	2.06	0.88	204
Patients	9.43	1.08	0.76	50
Visitors	9.04	1.74	-	26
Public	9.17	1.29	0.84	350

Patients, visitors and the public completed the general acceptability item (see Table 9.73). No difference was found on this measure between the public and patients/visitors.

Table 9.73: Descriptive statistics for general acceptability according to sample

General Acceptability	Mean	SD	n
Patients	9.25	1.78	48
Visitors	9.08	1.67	26
Public	8.86	1.48	335

9.4.3 Attitudes

All four samples completed the attitude scale items (see Table 9.74). Significant differences were found among samples on attitude scores: $F_{(2,620)} = 28.04$, $p < 0.001$. Staff had significantly lower scores (less positive attitudes towards screening) than did patients/visitors and the public, while patients/visitors combined had significantly higher scores than the public.

Table 9.74: Descriptive statistics for attitude according to sample

Attitude Scale	Mean	SD	Alpha	n
Staff	7.63	2.23	0.87	199
Patients	9.22	1.13	0.63	48
Visitors	8.77	1.73	-	26
Public	8.62	1.42	0.83	350

All four samples also completed the item on attitude toward screening staff for MRSA (see Table 9.75). A significant difference was found on this item between staff and the public and patients/visitors, such that staff demonstrated significantly less agreement with the statement that staff should be screened for MRSA than did all other groups: $F_{(2, 612)} = 60.60$, $p < 0.001$. The public and patients/visitors did not differ in their response to this item.

Table 9.75: Descriptive statistics for agreement that staff should be screened for MRSA according to sample

Staff screening	Mean	SD	n
Staff	7.43	2.95	193
Patients	9.67	0.75	49
Visitors	9.32	1.07	25
Public	9.26	1.38	348

9.4.4   Barriers

All four samples completed the barriers for patients items (see Table 9.76), although, as noted above, the coefficient of internal consistency for patients/visitors was unacceptable, while that for public respondents was low. A significant difference was found on scores (although caution is required in the interpretation of results): $F_{(2, 568)} = 20.35$, $p < 0.001$. Staff gained higher scores (i.e. perceived more barriers) than did the other samples.

Table 9.76: Descriptive statistics for barriers for patients according to sample

Barriers for Patients Scale	Mean	SD	Alpha	n
Staff	3.70	1.98	0.66	180
Patients	2.26	1.23	0.46	45
Visitors	2.50	1.19	-	23
Public	2.89	1.63	0.56	323

9.4.5   Norms

With regard to the wider community subjective norm (an item completed by all four samples), no significant differences were found among the samples. See Table 9.77. Further, no significant difference was found between the public and patients/visitors on the family subjective norm rating.

Table 9.77: Descriptive statistics for norms according to sample

Norms	Mean	SD	n
Wider Community Norm			
Staff	8.17	2.14	168
Patients	8.59	1.77	46
Visitors	8.40	1.98	25
Public	8.11	1.75	303
Family Norm			
Patients	8.71	2.33	41
Visitors	8.48	1.95	23
Public	8.71	1.52	234

9.4.6   Saliency

Staff did not complete the item on saliency of screening within the circle of family and friends. A significant difference was found between the public and patients/visitors on saliency, such that the public respondents indicated that MRSA screening was less of a topic of conversation among people they knew (i.e. less salient) than did patients and visitors: $t(103.90) = 3.60, p < 0.001$ (corrected for inequality of variance). See Table 9.78.

Table 9.78: Descriptive statistics for saliency according to sample

Saliency	Mean	SD	n
Patients	5.81	2.36	43
Visitors	5.87	2.70	23
Public	4.60	2.85	322

9.4.7   Treatment of patients

Patients and visitors demonstrated significantly stronger agreement than did the public with the need to put infected patients in a room of their own: t (127.58) = 3.70, p < 0.001 (corrected for inequality of variance). See Table 9.79. No significant group differences were found on the other two items relating to isolation and worry about passing on infection.

Table 9.79: Descriptive statistics for question on isolation of patients according to sample

Putting patients who are infected with MRSA in a room of their own is the best way to treat this problem	Mean	SD	n
Patients	9.13	1.60	38
Visitors	8.86	2.10	22
Public	7.98	2.62	250

9.4.8   Risk perception

All four samples completed two of the items on risk (severity of consequences for patients in general, and likelihood of contracting MRSA for patients in general). See Table 9.80. Staff gave significantly lower ratings for the severity of consequences and for likelihood than the public, patients and visitors: F (2, 616) = 11.20, p < 0.001, and F (2, 577) = 13.33, p < 0.001, respectively.

Table 9.80: Descriptive statistics for risk items according to sample

Risk	Mean	SD	n
Severity of consequences for patients in general			
Staff	7.15	2.28	210
Patients	8.74	1.22	43
Visitors	8.71	1.27	24
Public	8.54	1.54	342
Likelihood for patients in general			
Staff	5.50	2.26	208
Patients	6.49	2.19	35
Visitors	6.59	2.77	22
Public	6.51	2.21	315

Patients, visitors and the public completed the same four items on risk and benefit. The scores derived from these measures were personal and comparative severity, personal and comparative likelihood, and overall perceived benefits of screening. As can be seen from Table 9.81, the visitors' scores appeared more in line with those of the public than with those of patients, and it did not appear appropriate to combine visitors with patients for further analysis. The same point can also be made with regard to perceived benefits (see Table 9.82). It appeared, therefore, that patients tended to perceive personal severity as somewhat greater, with less of a difference in their perception of severity for themselves and others. They also appeared to perceive the benefits of screening for themselves and others to be somewhat greater. On the other hand, the public appeared to see the personal likelihood of contracting MRSA to be somewhat greater than did patients and visitors, and to see less of a difference between the likelihood for themselves and for others. However, no attempt was made to determine whether these apparent differences were statistically significant because of the small cell sizes involved.

Table 9.81: Descriptive statistics for severity and likelihood scores according to sample

Risk	Personal			Comparative		
	Mean	SD	n	Mean	SD	n
Severity						
Patients	8.14	2.07	42	0.74	1.73	39
Visitors	7.86	2.71	22	1.19	2.29	21
Public	7.51	2.34	305	1.07	1.85	303
Likelihood						
Patients	5.54	2.62	35	0.53	1.70	32
Visitors	5.40	2.91	20	1.25	2.31	20
Public	6.15	2.31	298	0.30	1.29	293

Table 9.82: Descriptive statistics for Benefits of Screening according to sample

Benefits of Screening Scale	Mean	SD	Alpha	n
Patients	9.37	1.06	0.77	49
Visitors	8.83	1.79	-	26
Public	8.95	1.61	0.89	348

10 Discussion

The objectives of this study were:

1. To explore patient and visitor experiences and opinions of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon relative to their perception of risk of MRSA infection.

2. To determine staff attitudes towards and acceptability of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon, relative to their perception of risk of MRSA infection.

3. To evaluate the effectiveness of the communications used to inform patients and staff of the MRSA Screening programme

4. To explore the acceptability of MRSA screening from a wider community perspective within the Pathfinder Board areas.

The following discussion will address these objectives, starting with that relating to staff.

10.1   Staff

The objective with regard to the analysis of data from staff was given as follows:

> To determine staff attitudes towards and acceptability of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon, relative to their perception of risk of MRSA infection.

This objective was addressed by considering the data emerging from six separate nominal group discussions (held over the three pilot sites, with a total of 20 clinical, 2 administrative and 14 domestic staff) and from 216 respondents to the survey. The survey explored attitudes toward and acceptability of screening, and the perception of risk, while the nominal group discussions focused specifically on issues and challenges which concerned staff about screening and recommendations for future improvement. A discussion is therefore provided here of key aspects of the staff perspective on MRSA screening.

10.1.1   Sampling issues

The staff survey was presented to all but one of the staff respondents online, while all other respondents completed a paper version of the questionnaire. There is much debate, and conflicting evidence, within the literature on the advantages and disadvantages of online presentation of surveys and questionnaires, including the compatibility of responses with those obtained from paper versions. There is growing evidence to suggest that people behave rather differently when online than they do face-to-face, and this behavioural difference is likely to manifest itself in responses to survey items [65]. Further, the characteristics of those who respond to online invitations to participate in research, and who then complete

online surveys, may be significantly different from those of people who respond to other recruitment strategies [66;67]. However, there is also convincing evidence to suggest that data collected online are generalisable and consistent with those obtained using traditional methods [68]. It is not known how representative the staff respondents were of the populations of hospital employees, but it is likely that those who were less confident or comfortable in using computers did not respond [69]. It is also feasible to suggest that those without strong opinions about MRSA screening would be less likely to take the time to respond. These points must be borne in mind when interpreting and extrapolating from the results of the survey: although comparable results may have been obtained from a traditional paper-based presentation of the survey, this cannot be guaranteed, and it is possible that the respondents were not representative of the population of staff in terms of computer literacy and strength/direction of opinion. These points are of particular relevance when considering comparisons between the responses of staff and responses of patients, visitors and the public.

It was not possible to consider differences between Health Boards or hospitals, and indeed any consideration of differences between Health Boards may have been confounded by differences in facilities and organisational "climate" between hospitals. The numbers of respondents from the six targeted hospitals varied to a great extent, and no staff from one hospital responded to the survey. (Similarly, no patient respondents were identified as having been screened for MRSA at this hospital.) In addition, it appeared that the demographic and occupational characteristics of respondents from the different hospitals varied, which meant that it would not have been possible to determine whether significant variation between staff from different hospitals reflected "true" differences between the hospitals or whether it merely reflected differences between demographic and occupational groups.

10.1.2 Acceptability of MRSA screening from the perspective of staff

The professional acceptability scale encompassed the extent to which the MRSA Screening Programme was judged acceptable by patients and staff, and the overall average rating was high. The multiple regression analysis of professional acceptability indicated that the key factors associated with professional acceptability were attitude toward MRSA screening, the perception of a norm of acceptability within the wider community, the extent to which barriers were perceived for staff when conducting screening, and the extent to which the respondent was involved in patient care. These factors accounted for 63% (adjusted) of the variance of professional acceptability, and all contributed independently to the variance of the professional acceptability score. Those who perceived that MRSA screening was more acceptable at a professional level had a more positive attitude, perceived a stronger norm of support for screening within the wider community, perceived fewer barriers for staff in the conduct of screening, and were more likely to be directly involved in patient care. These results held whether or not the elements of perceived risk of MRSA for patients – personal and comparative severity of the consequences for patients, and personal and comparative likelihood of patients contracting MRSA – were controlled for (in other words, their inclusion did not alter the main results). Neither personal nor comparative severity made

a significant contribution in their own right. However, personal likelihood, or the perceived likelihood of contracting MRSA for patients in the respondent's own ward or hospital, did make a significant contribution: those who perceived a higher risk for their own patients rated MRSA screening as more acceptable from a professional viewpoint. This contribution only became apparent when job category was also taken into account in the analysis: the simple bivariate correlation between personal likelihood and professional acceptability was not significant, and the relationship was probably suppressed by the relationship of both to the level of patient care involved in the respondent's occupation.

Four other factors were included in this analysis: the adequacy of information and training received on MRSA screening; perceived barriers for patients when screened; perceived control over the conduct of MRSA screening; and the saliency of MRSA screening among professional colleagues. The relationships between these four factors and acceptability were explained by their relationship with attitude towards screening, and this is considered in more detail below.

The other facet of acceptability measured in this study was personal acceptability, encompassing willingness to be screened oneself, to advise that a loved one be screened, and personal level of support for the MRSA Screening Programme. Again, the overall average rating was relatively high. The multiple regression analysis of personal acceptability suggested that the key factors associated with personal acceptability were attitude toward MRSA screening, attitude toward the routine screening of staff for MRSA, and the perception of a norm of acceptability within the wider community. Personal acceptability scores therefore increased in line with a positive attitude, greater agreement that staff should be screened for MRSA, and the perception of a more supporting norm for screening within the wider community. These factors accounted for 67% (adjusted) of the variance of personal acceptability, and all made independent contributions. The inclusion of the risk variables did not alter the pattern of results, and none of these risk variables made a significant contribution in its own right. Again, the roles of adequacy of information and training received about MRSA screening, barriers for patients, perceived control over the conduct of screening, and the saliency of screening were all explained by their independent relationships with attitude, as were the roles of occupational group and barriers for staff in conducting screening.

There was some indication of statistical and conceptual overlap among the attitudinal and acceptability items, such that attitude towards screening was not clearly differentiated from acceptability, clinical barriers, perceived norms for staff, and perceived benefits for patients. The statistical aspect of this was addressed through the exclusion of variables from the multiple regression analyses, but it is possible that a different selection of variables, or a different approach to the measurement of these variables, may have resulted in rather different results (particularly in the emphasis placed on the roles of certain variables). Further, variables were not corrected for skewness, mainly because of the difficulty that results in the interpretation of corrected or transformed scores [61]. However, a preliminary investigation of the effects of applying such corrections or transformations suggested that the pattern of results would remain unchanged. With these reservations in mind, the results appeared more consistent at a theoretical level with the Theory of Planned Behaviour (TPB) than with the Health Belief Model (HBM): attitudes and perceived norms of acceptability were the predominant factors, although the extent to which barriers were perceived for staff was

also a central component of professional acceptability. Perceived control (in this case, over the conduct of screening) was not significant in either of the final equations; however, given that the extent of perceived control varied (realistically) according to personal involvement in MRSA screening, this result was perhaps unsurprising, and does not undermine the utility of the Theory of Planned Behaviour in this analysis.

10.1.3 Staff perception of risk of MRSA infection in hospitals

The findings with regard to the contribution of risk are open to a number of different interpretations. First, it must be noted that, in contrast with the risk measures employed with the other samples, the severity and likelihood ratings were made with regard to patients rather than to the respondents themselves. While the emphasis on patients' risk was appropriate for staff, it means that the findings from the risk literature with regard to "personal" and "comparative" risk were not as relevant as they would be for the other samples. However, there were indications that respondents with a high degree of involvement with patients (i.e. nurses, doctors, health care assistants, allied health professionals) identified with their patients to the extent of believing that they were less likely to contract MRSA than were patients in general. A comparable finding was noted with regard to those with a high level of involvement with patients in MRSA screening, although here it became apparent that those with indirect involvement (those involved with the management of the screening programme, or at a technical level) were less likely than other respondents to display an "optimistic bias" in favour of the patients in their own hospital [23]. This variation in bias according to involvement with patients was clearly relevant when it came to explaining variation in acceptability of screening, although it perhaps raised more questions than we were able to answer. It is worth remembering, however, that risk is in itself a complex construct, and the way that information about risk is framed (e.g. whether related to the self or others; whether absolute or comparative), and the ways in which the questions are framed, are both known to have marked effects on responses to questions on the perception of risk [25;26]. The fact that the relationships of the other risk variables with acceptability were mediated by attitude is not unexpected, if one considers that the perception of risk is associated with affect [26;70]. While this is not wholly consistent with the Health Belief Model (HBM), the HBM may be a more relevant model when the risk relates to oneself rather than to one's patients.

10.1.4 Effectiveness of communication about MRSA screening with staff

The role of training and information on MRSA screening is worthy of further consideration. Despite the fact that the perception of the adequacy of training and information was significantly associated with most of the acceptability and attitudinal items, it failed to make an independent contribution to either of the acceptability scales. Given that the survey was cross-sectional, it was not possible to determine the direction of causality; however, the results suggest that the pattern of significant relationships noted between perceived

adequacy of information and training about MRSA and the acceptability and attitudinal items was explained by attitude, and there is little indication that the perceived adequacy of training and information informed attitude. This should not be taken to imply that training and information are irrelevant; rather, their role in both the formation of attitude and in the shaping of acceptability is likely to be indirect.

One factor that did emerge as important was that concerned with the screening of staff for MRSA. Again, the direction of causality cannot be determined; however, it would appear that those who find MRSA screening to be acceptable at a personal level believe more strongly that staff should be screened, irrespective of attitude toward screening, occupational group, perceived barriers and norms of acceptability, and perceived risk. This topic was also debated within the nominal group discussions. Views tended to be polarised, such that some argued that it was impractical to screen staff because of the problems associated with decolonisation, while others argued that it undermined the utility of the screening programme to exclude staff.

One final point is worth making. The results of the survey indicated that, while the overall attitude toward MRSA screening was relatively positive (endorsed by the largely supportive "talking wall" comments expressed at the end of the nominal group discussions), there were significant variations. Twenty-seven respondents (12.5% of the sample) were identified with scores of 5 or less on the professional acceptability scale; these respondents had significantly lower scores on the personal acceptability scale and other attitudinal scales and items, and significantly higher scores on scales reflecting barriers to testing. Although all of the occupations were represented in this group, it contained higher proportions than would be expected of allied health professionals, technical and laboratory staff, and ancillary and support staff. They did not differ from other respondents in the number of sources of information or training they identified in relation to MRSA screening, but they found the information and training they received to be significantly less adequate than other respondents. Thus, while the overall result is indicative of a positive attitude and a reasonable level of acceptability, some staff did not find MRSA screening to be acceptable. This was also noted using the nominal group technique. While most were broadly accepting of MRSA screening (provided that it was funded adequately), a number were not, with three critical "talking wall" comments questioning whether the extra effort, workload and money required would actually produce any benefit in terms of reduced MRSA infection rates.

10.1.5   Aspects of MRSA screening staff feel could be improved upon

A number of relevant findings emerged from the nominal group technique discussions. The issues or challenges raised regarding technical or procedural aspects of screening and communicating results at both a ward and laboratory level were deemed important by staff. The additional workload generated by MRSA screening was highlighted by laboratory

staff and by domestic staff in particular, a finding that might contribute to explaining the observation above that members of these two occupational groups were over-represented among those who did not find MRSA screening to be acceptable. Within the nominal groups, the need to ensure that funding was continued for the Pathfinder Boards and instigated for all NHS Boards if the screening programme was "rolled out" to the rest of Scotland, to maintain or increase staffing levels was ranked highly, and reinforced by the "talking wall" comments, again indicating concern that the acceptability of screening might be adversely affected by inadequate funding.

The need for more isolation facilities was ranked highly by staff in the nominal group technique, a finding consistent with the fact that just under 50% of the survey sample agreed to some extent that facilities in their hospital were inadequate. During group discussions, all staff commented on the considerable challenges created by a lack of isolation facilities with which to treat patients with MRSA. The difficulties associated with poor facilities included the following: single rooms being "blocked" by patients waiting for MRSA screen results when other patients might derive benefit from greater privacy (e.g. terminally ill patients); having to admit patients of unknown MRSA status into shared bay areas rather than into single rooms; and the significant additional cleaning work which had to be undertaken if even one patient in a bay was found to have MRSA. Domestic staff reported having to "deep clean" a six-bedded bay because a single colonised patient could not be placed in isolation. These challenges appeared to occur with relative frequency, and presented a source of frustration to staff in addition to presenting clinical risk to other patients.

Similarly, several staff expressed frustration at the variability in screening procedures within their respective Pathfinder Boards, as well as inconsistencies in practice observed during patient transfer from other hospitals. Additionally, staff commented on difficulties they had experienced in obtaining clear guidelines for decolonisation procedures, particularly in relation to advice to be given to patients who were to be decolonised at home, and their families. Whilst individuals who participated in the nominal groups shared a variety of opinions about possible improvements in screening and decolonisation procedures, significantly, a preference for a national approach to screening and decolonisation to remove variability within and between NHS Scotland Boards was clearly expressed. This finding is consistent with Normalisation Process Theory [4], whereby the normalisation or embedding of new work processes or health interventions, such as MRSA screening, requires a communal specification or coherent understanding of what the new practice involves. May and Finch [4] suggest that individuals involved in adopting any new practice have to work together to define and organise that practice into a coherent ensemble that is understandable to and shared by the people involved; it has to have "perceived suitability for the task in hand" (p. 9). If practitioners involved in MRSA screening are concerned about a lack of consistency in the procedures involved, or perceive a failure of logic (for instance screening patients but not staff or visitors), then the coherence necessary for normalisation may be challenged, the process becoming less acceptable.

10.2   Patients and visitors

The relevant objective of this study to the experiences of patients and visitors was given as follows:

> To explore patient and visitor experiences and opinions of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon relative to their perception of risk of MRSA infection.

The following sections consider the results from interviews with patients (n=10) and visitors (n=2) and from survey response from patients (n=51) and visitors (n=26).

10.2.1   Sampling issues

While an acceptable number of patients were interviewed, the response from visitors to the invitation to interview was disappointing. Similarly, the numbers of patients and visitors responding to the surveys were low, and it proved impossible to subject the data to a rigorous analysis. It is highly likely that the samples were not representative of the populations of patients and their visitors. Concern was also noted for the proportion of respondents who failed to indicate consent, and for the proportion of patient respondents who completed and returned the survey designed for visitors.

Two additional limitations were placed upon the analysis and interpretation of the results. First, none of the patients who were interviewed had received a positive MRSA screen, and of the 51 patients who responded to the survey, only two were self-identified as MRSA positive. Second, only four of those responding to the survey had been informed of their results (an issue discussed in more detail below). It was therefore not possible to determine whether there were differences between those receiving a positive MRSA result and those found to be clear of MRSA. Of necessity, therefore, the discussion is largely based on the experiences of patients who were screened for MRSA and not informed of their results.

10.2.2   Overall acceptability of MRSA screening from the perspective of patients and visitors

With regard to behaviour, all of the respondents who answered the question on whether they had accepted the offer of MRSA screening (n=49, 96.1%) clearly indicated that they had been screened for MRSA, and that they did not regret the decision. No respondents were identified who had refused the offer of MRSA screening. However, again it must be remembered that the sample may not have been representative; those who had refused the offer, or regretted the screen, may have been less likely to respond to the survey.

With this point in mind, the survey results were indicative of a relatively high degree of acceptability of MRSA screening among patients and visitors, with mean ratings of above 9 (on scales of 1 to 10) for both groups on both general and personal acceptability items; however, again, it should be noted that some variation in response was noted, albeit to a lesser extent than within the staff sample. However, while the patients and visitors were more homogeneous than were staff in expressing positive attitudes towards MRSA screening, the very real possibility of response biases within this group argues against the reaching of a firm conclusion on this point. Nonetheless, support for the acceptability of MRSA screening from the perspective of patients and visitors is provided by interview data, with the emerging typology of patient response presented in Section 9.2.1.5 indicating that this group appear to view MRSA screening as "a good thing to do". Further research to validate this model, particularly with patients who tested positive for MRSA, is warranted. In addition, due to the small patient and visitor sample sizes, the applicability of any of the theoretical perspectives which hold relevance for other participant groups would be purely speculative; further research to investigate theoretical relevance is needed.

10.2.3 Patient and visitor perception of risk of MRSA infection in hospitals

Data provided by interview participants highlighted the role of the media in raising public awareness and in acting as a source of information about MRSA and the risks of infection associated with hospitalisation; some expressed the view that the media "hyped-up" or exaggerated this risk of infection, causing unnecessary fear among the public. It is interesting therefore to compare this perception with the responses to the items on risk of MRSA infection presented within the surveys.

Patients and visitors who responded to the survey tended to rate the consequences of MRSA as relatively severe for themselves, although there was some evidence of an "optimistic bias" with regard to patients' ratings of severity: the personal rating was lower than the general rating. However, survey respondents were less sure of the likelihood that they would catch an MRSA infection whilst in hospital, with "likelihood" ratings around the midpoint, and high numbers of "don't know" responses. Personal likelihood ratings were higher for those who indicated that they had known something about MRSA screening before being screened themselves. To some extent, the results from the analysis of the interviews were consistent with these findings: severity of MRSA infection and the likelihood of contracting MRSA were seen to vary according to perceived personal vulnerability, with some interviewees indicating that they were vulnerable (and therefore susceptible) and others indicating that they did not think it likely that they would get an MRSA infection, and that the consequences of the infection for themselves were unlikely to be severe.

Although the risk of MRSA infection appeared to be a salient issue for patients and their visitors, particularly during the interviews, MRSA screening appeared to be a less salient issue for survey respondents. Thus, despite media coverage of MRSA, screening per se did not appear to be a frequent topic of conversation in the circle of family and friends.

10.2.4 Patient and visitor attitudes towards MRSA screening, including perceived benefits or advantages and barriers to screening

As noted in the presentation of interview findings, the actual process of being screened did not appear to cause patients any physical or psychological problems or difficulties. This was consistent with the survey results, where the majority of respondents indicated that the swabbing had not been uncomfortable, painful, or embarrassing. Those who indicated that it had been uncomfortable, painful or embarrassing tended to have had swabs taken from the perineum or from open wounds. Further, patients and visitors tended to disagree with the two potential barriers relating to screening itself: 65% of the combined samples of patients and visitors used the lowest point on the scale (i.e. strongly disagreed) that screening is physically unpleasant, and 57% strongly disagreed that it could be upsetting for the patient. However, responses to the items relating to stigmatisation, or being made to feel "dirty", were nearer the midpoint and also attracted a high proportion of "don't know" responses, perhaps indicative of the fact that most of the patients had not experienced a positive MRSA result or been subject to isolation: in fact, most had not been given a result of any kind. Overall, it seems reasonable to conclude that being swabbed to screen for MRSA does not cause patients undue discomfort or distress. However, we were unable to explore patients' reactions to receiving a positive MRSA result, or to subsequent treatment for colonisation or infection.

When provided with a list of reasons for accepting the screen, a high proportion of survey respondents endorsed the statement, "I thought that it was the right thing to do" (86%). A considerable proportion of patients accepted the screen because they wanted to know if they had MRSA (65%); this is noteworthy, given that hardly any had actually been given this information. Comparable proportions consented to screening because they thought that screening might be of benefit to themselves (65%), or to other patients (67%). Although the exact nature of this benefit was not identified, it is likely that it was associated with a desire to limit the spread of infection or colonisation. However, it is also likely that many patients accepted because they felt that it was expected of them, or part of the "routine" [13;71]; the results of the interviews suggested that MRSA screening was viewed as a routine element of health care, and similar to having routine blood or urine tests.

It emerged from the interviews that patients and visitors seemed to think screening for MRSA was "a good idea", and that "prevention is better than cure". Interviewees expressed feelings of reassurance that hospitals seemed to be taking action to identify and manage the spread of infection. Some support for this view was provided by the survey responses; when asked to rate the potential benefits of screening to themselves and other patients, the ratings were mostly positive.

With regard to the treatment of patients infected with MRSA, patients and visitors tended to strongly agree with the use of isolation; however, this item also attracted a relatively high number of "don't know" responses, suggesting ambivalence or uncertainty. Both groups tended to disagree that, if infected with MRSA, they would prefer to be put in a room with other patients rather than in isolation. This view should be taken into account in future consideration of cohorting as a management strategy, or caring for colonised and infected

patients together in the same area; some patients are clearly of the opinion that isolation is preferable and clear explanations of alternative approaches would be required (see Gasink et al. [72]; Halcomb et al. [73]).

In line with their positive attitude towards screening, 83% of the combined sample of patients and visitors strongly agreed (using points 9 or 10 on the scale) that hospital staff should be screened for MRSA. However, this was mentioned by only one interviewee, who highlighted the practical difficulties of sending staff home to be decolonised. Nevertheless, the point is worthy of consideration, and is discussed in more detail below.

10.2.5 Aspects of MRSA screening patients and visitors feel could be improved upon

Findings from the analysis of both interview and survey data suggest that there are aspects of communication about MRSA screening that could be improved upon, including the provision of results; the provision of information about the implications of test results; and the issue of consent.

Given that most of the responses to the survey were in general support of MRSA screening, the problems or issues raised by respondents are particularly worthy of attention. Although a minority of the patients indicated that they had been told that the result would be sent to their GP, and that if they had not been told of the result then it implied that they were free from MRSA, most of the sample indicated directly or indirectly that they wanted to be told the result (as noted above). Of particular concern is the fact that around 50% of this sample tended to disagree that they had been given enough information about what would happen if they were found to have MRSA. Thirty-five percent of the sample indicated that they had not received any kind of verbal explanation prior to or during screening, and only 29% indicated that they had been given a leaflet about screening. A few of the respondents indicated that they had been feeling ill or confused at the time of the screening, and had not thought to ask questions, and it is acknowledged tha other aspects of a patient's care may have priority during emergency admission: however, it does appear that the efforts of staff to inform patients about the implications of screening and to gain informed consent are inconsistent. One final point is worth highlighting with regard to information: 45% of this sample tended to disagree that they had been told that they could refuse the screen (again suggesting that gaining informed consent was not always part of the screening process). There is little doubt that most if not all of these patients would have consented to the procedure had they been asked and greater attention to the rights of the patient to participate in decisions about their care may be required. Conversely, several interview participants indicated that MRSA screening was of no real concern to them, just a matter of routine, and the level of apparent passive acceptance is noteworthy.

10.3 The wider community

The objective of this study relevant to the wider community was given as follows:

> To explore the acceptability of MRSA screening from a wider community perspective within the Pathfinder Board areas.

10.3.1 Sampling issues

The response rate to the public survey, at just under 20%, was within the expected range. Adams and White [30] achieved a response rate of around 40% using edited electoral registers, but they sent both a reminder and a second copy of the questionnaire to their sample, strategies likely to increase the response rate substantially. It is difficult to judge the extent to which the survey respondents were representative of the populations sampled, and it is likely that our respondents were, on average, older than non-respondents. It is also likely that those who took the trouble to respond were those with stronger opinions on MRSA and/or other hospital-acquired infections. However, it is not possible to ascertain this with any certainty. Information was provided by respondents on occupation (which would give an indication of socio-economic status), but these data have not yet been subject to analysis.

10.3.2 Acceptability of MRSA screening

General acceptability of MRSA screening was measured in terms of agreement with the following statement: "Overall, I believe that the MRSA Screening Programme would be acceptable to most people." It was included as a way of providing a measure comparable with the items on professional acceptability completed by staff. However, the tone of the item was such that it was likely to access a perceived norm of acceptability of the programme, and it was therefore not surprising that the perceived norm of support within the wider community showed the highest association with this item in the multiple regression analysis. However, two other factors also made significant contributions to the variance of general acceptability, and these contributions were independent of that provided by the perceived norm within the wider community: the perception of more barriers for patients when subjected to screening, and agreement with the proposal that staff should be screened for MRSA. These contributions were also independent of attitude towards screening, age, gender, saliency of screening, and whether or not the respondent knew someone who had been screened for, or ill with, MRSA. Together, these factors explained 33% (adjusted) of the variance of general acceptability, suggesting that factors other than those measured in the survey were of relevance. The elements of risk that were measured – personal and comparative severity of the consequences of MRSA infection, and personal and comparative likelihood of contracting MRSA – did not make significant contributions to the explanation of variance, and their inclusion did not alter the pattern of results.

The personal acceptability scale was comparable to that used with staff, patients and visitors, and overall scores were indicative of a generally high level of acceptability. Having said this, variation in scores was evident. Multiple regression analysis highlighted the contributions of attitude toward screening and attitude toward screening staff. These two factors made independent contributions, and the following variables were included in the analysis (and were therefore statistically controlled): age, gender, knowing someone who had been screened for, or ill with, MRSA, perceived barriers for patients when subjected to screening, the perceived norm of support for screening within the wider community, and the saliency of screening. Overall, these factors explained 71% (adjusted) of the variance of personal acceptability. Again, the elements of risk did not make significant contributions to the explanation of variance, and their inclusion did not alter the pattern of results.

The points made above concerning the degree of statistical overlap among the variables is also of relevance here. In addition, the data from this sample tended to be more highly skewed than were the data from the staff sample. This was addressed to some extent through the dichotomisation of variables, but this still remained a problem when it came to the multivariate analysis. The decision was made to report the results from the perspective of multiple regression, but the results may not be reliable, and further investigation would be required to assess this. These caveats should be taken into account when considering the remainder of this section.

The results of the personal acceptability analysis were to some extent consistent with the Theory of Planned Behaviour, in that the role of attitude was underlined. However, in contrast with the findings of the staff survey, the perceived norm of the support within the wider community did not make an independent contribution, and its role appeared to be explained by its relationship to attitudinal components. The correlation between attitude and the perceived norm of support within the wider community was stronger within the public sample than within the staff sample, and it is possible that the nature of attitude within the staff sample was more complex, or informed by more varied sources.

The Health Belief Model did not appear useful in providing an explanation of the findings, given that risk measures (in terms of severity of the consequences and likelihood of contracting MRSA) did not make significant contributions; again, the role of risk in the current analysis appeared to be mediated by attitude. It is accepted that risk perception is likely to be influenced by, and to cause, affective responses [26], and one would have expected the risk measures and attitude to be strongly related. However, only the personal measures of risk were significantly related to attitude, and these relationships were indicative of a medium effect size only (e.g. Cohen [74]). In contrast, it was apparent that the personal perception of risk (i.e. risk for oneself) differed significantly from a general perception of risk, in that a lower risk was perceived for oneself than for others, both in terms of severity and likelihood. This finding is consistent with those reported by other authors (e.g. Stone et al. [75]; French et al. [76]), and appears to represent an "optimistic bias" [23;24]. This optimistic bias has been shown to be robust [24], and appears to result from a ubiquitous cognitive bias rather than from a defensive way of coping with threatening information [23;24]. Although the extent of this bias was related to age within the public sample, it was not related to either personal experience of screening for MRSA, or to knowing someone who had been screened for, or ill with, MRSA. The latter findings are consistent with predictions (see Weinstein [23]),

but the results relating to age are of interest in a field in which samples are typically drawn from the student population [24]. The finding that personal and comparative severity ratings differed between respondents from the Grampian and Ayrshire regions is also of interest (but difficult to explain).

It would be premature to conclude that the perception of risk is of no consequence with regard to the acceptability of MRSA screening. It has long been acknowledged that "experts' and "non-experts" differ in their perceptions of risk (e.g. Slovic et al. [77]); and that people generally have difficulty in understanding or appreciating the details of risk-related information [27]. Given that the way that questions on risk perception are framed can influence not only the perception itself but also the affective response [26], further research in this area is clearly required.

One point worthy of attention is the role of attitude toward screening staff for MRSA in explaining both measures of the acceptability of MRSA screening among the public. The extent to which it contributed to acceptability ratings was marked, given that more general attitude was statistically controlled. Although, as stated above, it is not possible to determine the direction of these effects, or to impute causality, the belief that staff, too, should be screened for MRSA appeared to be a core component of acceptability. This was a consistent finding across all four samples.

10.4   Comparisons across samples

Personal acceptability scores were available for all four samples. A significant difference was found between the personal acceptability scores of staff compared with all other groups, in that staff scores were significantly lower than those of the public and patients/visitors. This suggested that they found MRSA screening less acceptable at a personal level than did patients, visitors or the public.

Significant differences were found among samples on attitude scores: staff had significantly lower scores (i.e. less positive attitudes towards screening) than all other groups, while the public had significantly lower scores than patients/visitors. Staff also perceived more barriers to screening for patients than did other groups. Similarly, staff demonstrated significantly less agreement with the statement that staff should be screened for MRSA than did all other groups. However, no differences were found between the samples on the perception of the norm for screening within the wider community.

As might be expected, a significant difference was found between the public and patients/ visitors on saliency, such that the public respondents indicated that MRSA screening was less likely to be a topic of conversation among people they knew.

With regard to risk, staff perceived the consequences of MRSA infection for patients to be less severe than did patients, visitors, or the public. They also perceived a lesser likelihood of patients contracting MRSA than did the other samples. Perhaps realistically, patients appeared to feel that the consequences of MRSA infection might be more severe for themselves than did visitors or the public. However, interestingly, compared with patients and visitors, the public appeared to feel more at risk of contracting MRSA themselves.

11 Limitations

Whilst all possible steps to establish a robust research design were taken, the study was hampered to some extent by the time constraints necessarily imposed by the need to obtain NHS Ethics Approval and Research and Development Access to each Pathfinder Board site at one end of the study and the reporting deadline at the other. This meant that recruitment to patient and visitor interviews was limited to a two week period and recruitment to the patient survey was compressed to a four week period. As a consequence of these time constraints, as well as the decision to recruit patients after discharge (due to ethical considerations), the response rate from patients and visitors was disappointing (see Section 10.2.1). More specifically, insufficient numbers of patients who had tested positive for MRSA were recruited, thus the data cannot be said to be representative of the experiences of patients who were treated for MRSA colonisation or infection (see Section 9.2). In addition, the specific objective relative to evaluating the acceptability of isolation resulting from MRSA screening could not be addressed (see Section 9.1.2.4). Had a longer data collection period been possible, the use of a consecutive research design would have been desirable, with interview data being used to inform the construction of survey items.

Similarly, the practical necessity of recruiting a convenience sample of staff to both the survey and nominal group discussions and the inability to apply a stratified sampling strategy means that whilst data represent all professional groups, it cannot necessarily be said to be representative of the population of NHS staff within the Pathfinder Boards, as this was a self selected convenience sample with relatively small numbers from each site (see Section 10.1.1). Statistical limitations are discussed in Sections 10.1.2 and 10.3.2.

12 Conclusions

The objectives of this study were:

- To explore patient and visitor experiences and opinions of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon relative to their perception of risk of MRSA infection.

- To determine staff attitudes towards and acceptability of the MRSA screening programme, identifying perceived benefits and aspects they feel could be improved upon, relative to their perception of risk of MRSA infection.

- To evaluate the effectiveness of the communications used to inform patients and staff of the MRSA Screening programme

- To explore the acceptability of MRSA screening from a wider community perspective within the Pathfinder Board areas.

These objectives were addressed through a mixed methods design.

The following items were common to all four surveys, permitting comparisons to be made among the four groups of respondents:

- Personal acceptability of MRSA screening

- Attitude toward screening (including screening staff for MRSA)

- Perceived problems or barriers relating to the patient

- Wider community subjective norm

- Two items relating to perceived risk (severity of consequences of MRSA for patients in general and likelihood of MRSA infection for patients in general).

Further comparisons were possible among patients, visitors and the wider community on the following measures:

- General acceptability of MRSA screening

- Family subjective norm

- Saliency of MRSA screening

- Treatment of patients with MRSA

- Risk (severity and likelihood) and benefit to patients of screening.

The following sections present conclusions related to the key aspects of MRSA screening outlined above.

12.1 Patient and visitor experience of and acceptability of MRSA screening

Acceptability of MRSA screening was on average very high among patients and their visitors, at both a general and a personal level, with attitudes towards screening being strongly positive. All patients who participated in an interview or responded to the survey agreed strongly that MRSA screening is of benefit and should be continued, with the general impression being that "prevention is better than cure". However, this conclusion has to be tempered by the fact that only two respondents (both from the survey arm of data collection) had been treated for MRSA colonisation and therefore the views expressed in this study cannot be said to represent the views of those who underwent decolonisation treatment.

With regards to the treatment of patients found to be positive for MRSA, taking into account that few of the respondents were in that category, patients and their visitors expressed a clear preference for being cared for in isolation, rather than being treated with other people similarly affected (i.e. cohorting is not an appealing option to patients).

12.1.1 Barriers to screening

For the vast majority of patients, MRSA screening of any body site, except open wounds, is not found to be physically or psychologically distressing; the worst that could be said is that the nasal swab tickles. In general, patients disagree that barriers to screening are relevant and tend to believe screening is of benefit to them personally and to the wider community.

12.1.2 Patient and visitor perception of risk

Despite the high level of media attention given towards healthcare associated infection, patients' perceptions of the risks of MRSA infection seem to vary;

- Survey responses indicate patients tend to believe the consequences for themselves would be severe, but that they are not particularly likely to become infected

- Patients who perceived the consequences of MRSA to be more severe for themselves, and perceived less of a difference between themselves and others, gave the highest rating for general acceptability. Those who perceived the consequences to be more severe for themselves also strongly agreed that staff should be screened for MRSA

- Interview data indicate that some patients view themselves as vulnerable to MRSA infection and welcome screening as a preventative and protective measure

- Other patients are more worried about their specific health issues and tend not to consider the risk of MRSA as being of particular concern, viewing screening as just one of those routine things that happen to people in hospital; a conceptual model of "the accepting patient" appeared to be emerging.

12.1.3 Effectiveness of communication with patients about MRSA screening

There is evidence that communication between staff and patients about MRSA screening could be improved;

- Only 37.3% of patients reported feeling they had enough information prior to screening

- Distribution of the pilot programme screening information leaflet seemed variable

- The majority of patients did appear happy to agree to being screened following verbal explanation of the procedure; however 35.3% of patients reported not being offered any explanation prior to screening

- Consent to being screened for MRSA seemed largely implicit and 50% of survey respondents report not being aware they could refuse to be screened

- Most notably, 55% of patients disagreed that they had been informed of the implications of being found positive for MRSA

- Few patients could recall being given the results of their MRSA screening and all appeared to assume that "no news is good news", but would rather be given their results.

12.2 Staff attitudes towards and acceptability of MRSA screening

The presentation of results has identified that the majority of staff hold positive attitudes towards MRSA screening, finding it acceptable at both a professional and personal level.

- Staff with higher scores on the professional acceptability scale were more likely to have a high level of patient care or involvement (compared with indirect or no care/involvement), to have more positive attitudes towards screening, to see fewer barriers for staff, and to perceive a stronger norm for acceptability among the wider community. Adequacy of information/training provided by the hospital lost significance in the analysis, suggesting that the relationship between this variable and professional acceptability was mediated or accounted for by the attitudinal, barrier and normative variables

- Staff with a greater personal acceptance of MRSA screening held more positive attitudes towards screening, believed more strongly that staff should be screened for MRSA, and perceived a stronger norm for MRSA screening among the wider community. Perceived adequacy of information/training, job category, perceived control and saliency were not significant in the final equation.

However, a significant minority of staff tend to hold negative attitudes, leading one to question the acceptability of MRSA screening to those individuals; for example, there was with strong support amongst this group for the statement that the costs of screening would outweigh the benefits. As the success of the future rollout of MRSA screening may well be disproportionately affected by those with negative attitudes, understanding the perspective of this minority group is important. Further analysis of survey data failed to reveal specific factors influencing these negative attitudes and additional research in this area may be justified.

12.2.1 Perception of risk

In relation to the perception of risk associated with MRSA infection;

- With regard to severity, the greater the perceived severity for patients in one's own ward or hospital, the greater the acceptability, the more positive the attitude, the more supporting were the norms for screening, the greater the perceived control over screening, and the more salient the issue. However, it was attitude rather than the perception of severity that explained professional and personal acceptability of MRSA screening

- Personal likelihood (i.e. the likelihood of patients in one's own ward or hospital of contracting MRSA) was significantly related to professional acceptability of screening, such that a greater likelihood was related to a greater acceptability. However, this relationship only became apparent when job category was also taken into account in the analysis

- Staff who perceived a lesser likelihood for their own patients in comparison with patients in general were more positive generally with regard to acceptability and attitudinal factors.

12.2.2 Barriers to MRSA screening

Staff tended to disagree with any suggestion that screening is physically or psychologically distressing for patients; similarly, staff tended not to perceive any other clinical factors to be significant barriers to screening. Conversely, the most strongly identified barrier to MRSA screening reported by staff is inadequate facilities, primarily the lack of isolation facilities.

Nominal group discussions across all Pathfinder Board sites highlighted challenges around the increased workload for laboratory and domestic staff in particular, with clear concern being expressed about future funding of the screening programme to maintain adequate staffing levels.

Inconsistencies in screening and decolonisation protocols within and between NHS Boards are highlighted as a potential source of confusion or irritation for staff, leading to a reduction in acceptance of the efficacy of current procedures.

12.2.3 Effectiveness of communication with staff about the MRSA screening programme

Information and training about the MRSA screening pilot was generally perceived as more adequate by staff directly and indirectly involved in screening than it was by those who had no involvement. Those who perceived training or information to be more adequate demonstrated more positive attitudes towards screening. The direction of this relationship remains unclear, and it cannot be assumed that the provision of more training or information will lead to an improvement in attitude.

12.3 Wider community attitudes towards and acceptability of MRSA screening

Findings from the survey of the wider community in Pathfinder Boards and surrounding areas indicated that acceptability of MRSA screening was generally high, with those who gave the highest acceptability ratings being significantly older than those who gave lower ratings. Attitudes were generally positive, although not quite as strongly as those expressed by patients; however, there were strong norms of support for screening.

12.3.1 Barriers to screening

The general public tended to express less certainty about potential barriers to MRSA screening, with a high proportion of "don't know" responses; however, overall, and as with patients and NHS staff, potential barriers to screening do not appear to be of concern.

Although not expressing the view as strongly as patients, the wider community tend to also agree that, if they were found positive for MRSA, being isolated is preferable to being cared for in a room with others.

Those with higher general acceptability scores were likely to perceive fewer barriers for patients in screening, to perceive a stronger norm for acceptability within the wider community, and to show a higher level of agreement with the statement that staff should be screened for MRSA.

12.3.2 Perception of risk

In relation to perception of risk, the wider community rated the severity of the consequences of having MRSA infection for themselves, and the likelihood of contracting MRSA themselves, to be significantly less than the severity of consequences for others and the likelihood of others contracting MRSA. Similarly, they perceived more benefits of screening for others than for themselves. However, the relationships between the acceptability ratings and personal severity and likelihood ratings were found to be mediated or explained by attitude.

12.4 Comparison of acceptability of MRSA screening across participant groups

It is evident that the minority of NHS staff who are less accepting of MRSA screening are influencing comparisons on all elements investigated in this study;

- Although generally holding positive attitudes and finding MRSA screening acceptable, staff scores were significantly lower than those of the public and patients/visitors, suggesting that they held less positive attitudes and found MRSA screening less acceptable at a personal level than did patients, visitors or the public

- Similarly, staff demonstrated significantly less agreement with the statement that staff should be screened for MRSA than did all other groups

- Staff gave significantly lower ratings for the severity of consequences and for likelihood of getting MRSA infection than the public, patients and visitors.

12.5 Summary of conclusions

Whilst acknowledging the limitations of this study, there is compelling evidence that MRSA screening is broadly acceptable to patients, visitors, the wider community and (to a lesser extent) NHS staff. However, a significant minority of NHS staff tend to have more negative attitudes and do not believe MRSA screening to be acceptable.

Lack of isolation facilities, increased workload, inconsistencies in screening and decolonisation protocols within and between NHS Boards, and uncertainty around future funding are concerns expressed by staff.

Saliency scores were around or below the midpoint for all groups i.e. MRSA is not a particularly important or frequent topic of conversation.

All participant groups tend to disagree that there were any other physical, psychological or social barriers to screening; i.e. no barriers to screening were identified apart from lack of facilities.

Communication with patients about MRSA screening could usefully be strengthened to encompass suitably informed consent, ensuring patients are made aware of the consequences of being found positive for MRSA, and providing a mechanism to notify patients of their results.

There is strong support for the screening of staff from all participant groups i.e. patients, visitors, the wider community and NHS staff. The evidence suggests that the acceptability of MRSA screening may be adversely affected if future programmes fail to address the apparently widespread view that staff screening is necessary.

Patients, visitors and the wider community all express a preference for patients (including themselves) who are found to be positive for MRSA to be nursed in isolation rather than in a room with other colonised patients.

Theoretically, the Theory of Planned Behaviour (TPB), rather than the Health Belief Model (HBM), appears to offer a suitable framework with which to understand these results; attitudes and perceived norms of acceptability were the predominant factors influencing personal acceptability for staff.

13 Recommendations

13.1   Professional practice

The following recommendations are made in relation to professional practice:

- Nationally agreed guidelines for screening procedures and decolonisation processes should be considered, to improve consistency within and between NHS Boards

- A consistent approach to providing written and verbal information to patients should be adopted to ensure that patients are in a position to provide informed consent for screening

- A mechanism should be introduced to ensure patients are given their results; if this is impractical, they should be told clearly that their result is negative if they have not heard within 5 days, rather than be left to assume this is the case

- Consideration should be given to providing reassurance to NHS staff that adequate funding will be provided to maintain acceptable staffing levels to address laboratory and domestic cleaning workload concerns

- The limited availability of isolation facilities should be addressed in future NHS facilities development plans

- Proposals to screen staff, or a justification not to do so, should be developed.

13.2   Further research

Further research in the following areas is warranted:

- Further investigation of patient response to MRSA screening;

    - using a sequential design with qualitative interview findings informing the development of an administered questionnaire

    - conducted over an appropriate time span

    - targeted investigation of the experience and attitude towards screening of patients who test positive for MRSA and require treatment

    - testing of the typology of patients' response to MRSA screening to investigate generalisability.

- Further exploration of the relationship between perceptions of risk and acceptability of MRSA screening

- Exploration of the underlying factors which create negative attitudes towards screening in NHS staff.

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15 Appendices:

Appendix 1: West of Scotland Research Ethics Service Letter of Approval

Acute Services Division
WoSRES

West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 5
Ground Floor,
Tennant Institute,
Western Infirmary,
38 Church Street,
Glasgow G11 6NT

Telephone: 0141-211-6270
Facsimile: 0141-211-1847

25 May 2009

Dr Kay Currie
Head of Division and Research Programme Leader
Glasgow Caledonian University
Cowcaddens Road
Glasgow
G4 0BA

Dear Dr Currie

Full title of study:	**An evaluation of a methicillin resistant staphylococcus aureus (MRSA) pilot screening programme: what are patient, visitor and staff views of the acceptability of MRSA screening?**
REC reference number:	09/S1001/40

The Research Ethics Committee reviewed the above application at the meeting held on 20 May 2009. Thank you for attending to discuss the study.

Ethical opinion

The Committee had a few questions for Miss Stewart which were answered to their satisfaction.

The Committee had no issues with Study Design and Patient Information Sheets

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Participant Consent Form: Patient's telephone interview		
Letter of invitation to participant		
Advertisement		
Questionnaire: Non validated		

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Appendix 2: Glasgow Caledonian University Research Ethics Committee Letter of Approval

PMcQ/EI

7th April 2009

Dr. Lesley Price
Room A534
NMCH
Glasgow Caledonian University
Glasgow

Dear Dr. Price,

Re: **An evaluation of a meticillin resistant staphylococcus aureus (MRSA) pilot screening Programme: patient, visitor, staff and the general public view of the acceptability of MRSA screening**

Thank you for your submission of your Ethics Proposal.

I can now confirm that Ethical Approval has been granted for the above study.

Yours sincerely

Patrick S. McQuillan
Chair
Research Ethics Committee NMCH

Appendix 3: NHS Ayrshire and Arran Research and Development Letter of Approval

Research and Development
58 Lister Street
Crosshouse Hospital
Kilmarnock
KA2 0BB

NHS
Ayrshire
& Arran

Miss Barbara Gemmell
Project Manager
NHS Ayrshire and Arran
47 Lister Street
Crosshouse Hospital
Kilmarnock
KA2 0BE

Tel: **(01563) 825856**
Fax: **(01563) 825806**

Date: 22 July 2009
Your Ref:
Our Ref: KF/KLB/NM R&D 2009AA026

Enquiries to: Karen Bell
Extension: 25850
Direct Line: 01563 825850
Email: Karen.bell@aaaht.scot.nhs.uk

Dear Miss Gemmell

An evaluation of a methicillin resistant staphylococcus aureus (MRSA) pilot screening programme: what are patient, visitor and staff views of the acceptability of MRSA screening?

I confirm that NHS Ayrshire and Arran have reviewed the undernoted documents and approve the above study.

Approved documents:

Document	Version	Date
IRAS Application - R&D	Version 2.2	01/05/09
SSI - Ayrshire	Version 2.2	Not signed or dated
Consent Form – Patient	No version number	Not dated
Consent Form – Staff	No version number	Not dated
Consent Form - Visitor	No version number	Not dated
Cover Letter - Patient	No version number	Not dated
Cover Letter – Visitor	No version number	Not dated
Information Sheet – Staff	No version number	Not dated
Information Sheet – Visitor	No version number	Not dated
Information Sheet- Patient	No version number	Not dated
MRSA Posters	No version number	Not dated
MRSA Staff Nominal Group Guidelines	No version number	Not dated
MRSA Staff Survey	No version number	Not dated
Patient interview topic guide	No version number	Not dated
Visitors interview topic guide	No version number	Not dated
Staff Consent Form – Focus Groups	Version 2	05/06/09
Cover Letter, Consent Form and Information Sheet – Patient	Version 2	01/06/09
Cover Letter, Consent Form and Information Sheet – Visitor	Version 2	01/06/09
Patient Survey Letters	Version 2	21/07/09
Visitor Survey Letters	Version 2	21/07/09
Patient Survey Form	Version 2	21/07/09
Visitor Survey Form	Version 2	21/07/09

R&D 2009AA026
An evaluation of a methicillin resistant staphylococcus aureus (MRSA) pilot screening programme: what are patient, visitor and staff views of the acceptability of MRSA screening?

Appendix 4: NHS Grampian (and on behalf of NHS Western Isles) Research and Development Letter of Approval

Research and Development
Foresterhill House Annexe
Foresterhill
Aberdeen
AB25 2ZB

MRSA Project Screening Manager
2nd Floor Administration Block
Aberdeen Royal Infirmary
Foresterhill
Aberdeen
AB25 2ZN

Date 05/08/09
Our Ref 2009MD005
Enquiries to
Extension 51121
Direct Line 01224 551121

Dear

<u>Management Approval for Non-Commercial Research</u>
MREC Ref: 09/S1001/40
NRS Ref: NRS09/SR09
Project title: An evaluation of a methicillin resistant staphylococcus aureus (MRSA) pilot screening programme: what are patient, visitor and staff views of the acceptability of MRSA screening?

Thank you very much for sending all relevant documentation. I am pleased to confirm that the above project is now registered with the NHS Grampian Research & Development Office. The project has R & D Management Approval to proceed locally from 10/08/09 to 09/11/09. This is based on the documents received from yourself and the relevant Approvals being in place.

All research with an NHS element is subject to the Research Governance Framework for Health and Community Care (2006, 2nd edition), and as Chief or Principal Investigator you should be fully committed to your responsibilities associated with this.

It is particularly important that you inform us when the study terminates.

The R&D Office must be notified immediately and any relevant documents forwarded to us if any of the following occur:
• A change of Principal Investigator, Chief Investigator or any additional research personnel
• Premature project termination
• Any amendments – substantial or non-substantial (particularly a study extension)
• Any change to funding or any additional funding
• Any Serious Adverse Events

We hope the project goes well, and if you need any help or advice relating to your R&D Management Approval, please do not hesitate to contact the office.

Yours sincerely

Ms Pat Duff
Research and Development Manager

Cc: Dr Kay Currie, Glasgow Caledonian University
NHS Research Scotland Co-ordinating Centre

Appendix 5: NGT: Raw data per NHS Board

Professional staff: rank ordered issues or challenges by NHS Board pilot site

Ayrshire NGT: ward/lab staff (n=4): 10 votes each: Issues/challenges:

Rank	Vote count	Issues & challenges
1	7	different methods of screening within the NHS Board (nasal or full)
2	6	getting all patients screened; not missing anyone
3	5	limited isolation facilities; where to put positive patients
3	5	we don't have access to the 'best' equipment (e.g. hydrogen peroxide sterilising equipment)
3	5	rapid/advance lab process might be useful for high risk patients/areas
4	3	increased cleaning times
4	3	controversial: screening staff (practical & political issues)
5	2	lack of equipment e.g. dynamap/fans etc ; needs cleaned between use
6	1	staffing levels; ward staffing needed to meet compliance levels; lab, to process samples
6	1	Long term benefits should be realised i.e. should be ongoing
6	1	ongoing funding
6	1	need a 'decant' ward to enable proper disinfection

Grampian NGT: Lab Staff (n=3): 10 votes each: Issues/challenges:

Rank	Vote count	Issues & challenges
1	7	lack of isolation facilities for patients – therefore unable to act on positive results of screening
2	6	communication of results to ward staff – ward staff need to be aware of processes for reporting (results can be available but ward staff are not aware of them)
3	5	increased workload for lab staff
3	5	non compliance with sample labelling e.g. identifying admission or follow up & location of swab
4	4	implementing a system for segregation of samples on arrival at the lab
5	2	inconsistent advice for decolonisation
6	1	responding to out of hours demand on lab staff

Western Isles: Infection control / laboratory / doctors (n=7): 5 votes each: Issues/challenges:

Rank	Vote count	Issues & challenges
1	4	Increased lab time from 5-6 days with same staffing numbers
1	4	Raised demands/expectations of lab service
2	3	Staff numbers and time
2	3	Lack of space for working and storage in labs
2	3	Staff screening & follow up – questions around whether staff should be screened
2	3	Patient views on isolation & ideas they get from the media
2	3	Maintaining compliance with the screening policy over time
2	3	Impact on delays on surgery
2	3	Bed management of isolation rooms and bays
3	2	Potential for increased resistance due to increases in treatment
3	2	Increased workload around surveillance reporting / action
3	2	What is the ongoing funding

Western Isles: Nurses /Doctors / admin (n =8): 5 votes each: Issues/challenges:

Rank	Vote count	Questions and issues
1	6	Are patients aware of and consenting to participation in the pilot study?
1	6	For positive patients, patients/visitors & relatives need information about what this means and what to do
2	5	Who should follow up patients screened in pre-op assessment – is it the hospital or GP?
2	5	Tracking results needs to be streamlined
3	4	Has this pilot made any difference to infection rates
4	3	Should staff be screened
4	3	How do we screen other patients using the hospital e.G. Day cases, outpatients, investigations
4	3	Opportunity for education/training for staff during ward rounds is reduced due to restricted access to patients
5	2	Use of side rooms for emergency patients waiting for results – blocks bed for other side room use
5	2	Is a small hospital with a low infection rate an appropriate site for a pilot study
6	1	We don't always know if a patient has been admitted to a hospital previously

– N.B. number of questions rather than issues

Professional staff: rank ordered recommendations by NHS Board pilot site

Ayrshire NGT: ward/lab staff (n=4): 10 votes each [1 vote missing]: Recommendations

Rank	Vote count	Recommendations
1	6	Same screening method should be used nationally (not sure if this should be nasal or triple screening)
1	6	Continue / increase level of government funding
2	5	Occasional screening of staff in areas where mrsa remains a problem
3	4	Boarding patients from low risk to high risk; patients should be cohorted & staff allocated to specific cohorts so staff don't travel between patient groups
3	4	Increase education, especially for visitors (leaflets, posters, policing visiting times)
3	4	A rolling programme of radical room disinfection
3	4	Advanced lab testing (rapid & increased sensitivity) for high risk patients/areas
4	2	Continue to screen all patients on admission and discharge
4	2	Ongoing staff education on all infection control issues
5	1	Additional ward equipment e.G. Dynamap, fans, iv pumps etc
5	1	Repeat triple screen of any patient admitted to high risk areas (e.g. Ortho)

Grampian NGT: Lab Staff (n=3): 10 votes each: Recommendations

Rank	Vote count	Recommendations
1	6	National policy and guidelines for screening and decolonisation and processing samples
2	5	Increase and improve isolation facilities
2	5	Improved record keeping and filing regarding patient notes for screening and treatment
3	4	Sufficient funding for facilities and staff
3	4	Feedback trends in results to maintain staff motivation and compliance
4	3	Training of staff about the urgency associated with sample collection and delivery
5	1	A system for segregation of samples (pink forms)
5	1	Marketing, communication, showcasing the process that is to be undertaken when strategy is launched
5	1	Lab & ward staff – need clear lines of responsibility for reporting and action 'dedicated staff'

Western Isles: Infection control / laboratory / doctors (n=7): 5 votes each: Recommendations

Rank	Vote count	Recommendations
1	7	We need a robust risk assessment tool that is easy to use
1	7	Ongoing funding beyond the roll out
1	7	Standardise processes across scotland
2	5	Need to report true results of the pilot & act appropriately i.e. If of no benefit, stop screening
3	3	Need increased staff time / numbers for screening process
3	3	Ensure screening of patients at high risk of adverse consequence from infection
4	2	Selective screening based on professional / common sense approach
5	1	Need more patient and public information and media coverage to explain changes in screening

Western Isles: ward nurses / doctors / admin (n=7): 5 votes each: Recommendations

Rank	Vote count	Recommendations
1	6	More isolation rooms are needed
1	6	Increase staffing levels
2	5	Keep it simple – need information that everyone understands
2	5	Employ more general assistants for every clinical area & give them responsibility for screening and tracking results
3	4	Mrsa screening leaflets on it's own are not enough to give patients information, they need explanation as well
3	4	Share knowledge and good working practices across nhs boards
4	3	Information should be given to everyone and reinforced regularly
5	1	Visual clues to patient status outside the room
5	1	Posters alone don't work – the message needs to be reinforced

Domestic staff: rank ordered issues or challenges by NHS Board pilot site

Grampian NGT: Domestics (n = 2) 10 votes each; issues or challenges

Rank	Vote count	Issues & challenges
1	5	Extra work involved for the labs *(note domestic staff highlight recognition of lab workload)*
2	4	Not enough isolation rooms
2	4	Following confirmation of positive results creates additional work particularly if patient is not in isolation – cleaning 6 bed bay rather than single room
2	4	Communication methods when results are positive – domestics not always informed
3	2	Staffing implications on the shop floor at ward level – increased workload with time constraints
4	1	Need additional cleaning equipment required for each positive case

Western Isles NGT: Domestics (n= 10) 5 votes each [3 votes missing]; issues or challenges

Rank	Vote count	Issues & challenges
1	14	Moving patients before they've had 3 negative results leading to unnecessary cleaning of a room/bay
2	8	Reduced staffing at weekends and need to wait for access to rooms before they can start cleaning, leading to time pressures to finish work
2	8	Lack of communication or delays in communication regarding results leading to cleaning rooms unnecessarily
3	5	Other staff (i.E. Nursing auxiliaries) not aware of or not performing their duties in cleaning
4	4	Rapid turnover of patients in bed space leading to no time to clean space
4	4	Lack of information re changes in mrsa processes
4	4	Ward general assistants are not always available to help with cleaning

Domestic staff: rank ordered recommendations by NHS Board pilot site

Grampian NGT: Domestics (n = 2, 10 votes each) Recommendations:

Rank	Vote count	Recommendations
1	8	Funding for increased staff and equipment
2	6	Staffing levels to accommodate extra cleaning
2	6	More isolation facilities

Western Isles NGT: Domestics (n= 10, 5 votes each [1 vote missing]) Recommendations:

Rank	Vote count	Recommendations
1	10	Domestic staffing levels need to be increased
2	8	More single rooms with showers
2	8	Need information or education about equipment e.G. Steam cleaners
3	7	Need more public awareness so patients can understand policies and what is being done to them
4	5	No more than two beds in a room or bay
5	4	Need continuity of domestic staff that is cleaning same areas and no contracting out of services
6	3	Need prompt reporting of results to domestic staff
6	3	Sharing good practice with other health boards
7	1	Training staff

Appendix 6: NGT: Collated data per staff groupings

Issues & Challenges:

Clinical staff: Lab / Infection control / Ward Nurses/ Drs: n = 22 ; votes = 145 in total

Rank	Vote count	Issues
1.	Tot = 29	Ward based screening issues
	6	Getting all patients screened; not missing anyone
	6	Communication of results to ward staff – ward staff need to be aware of processes for reporting - (results can be available but ward staff are not aware of them)
	5	Non compliance with sample labelling e.G. Identifying admission or follow up & location of swab
	5	Tracking results needs to be streamlined
	3	Maintaining compliance with the screening policy over time
	3	How do we screen other patients using the hospital e.G. Day cases, outpatients, investigations
	1	Delays getting patients notes: we don't always know if a patient has been admitted to a hospital previously
2.	Tot = 25	Ward facilities: isolation rooms and equipment
	15	Limited isolation facilities; where to put positive patients; bed management of isolation rooms and bays
	5	We don't have access to the 'best' equipment (e.G. Hydrogen peroxide sterilising equipment
	2	Lack of equipment e.G. Dynamap / fans etc ; needs cleaned between use
	2	Use of side rooms for emergency patients waiting for results – blocks bed for others
	1	Need a 'decant' ward to enable proper
2.	Tot = 25	Patient centred concerns
	6	For positive patients, patients/visitors & relatives need information about what this means and what to do e.G. Cleaning house, decolonisation etc
	5	Who should follow up patients screened in pre-op assessment – is it the hospital or gp?
	4	Has this pilot made any difference to infection rates
	3	Impact of positive result on delays in surgery
	3	Patient views / worries about isolation & ideas they get from the media
	2	Potential for increased resistance due to increases in treatment
	2	Inconsistent advice for decolonisation

Rank	Vote count	Issues
4.	Tot = 23	Workload /staffing issues
	5	Increased workload for lab staff
	4	Increased lab time from 5-6 days with same staffing numbers
	4	Raised demands/expectations of lab service
	3	Staff numbers and time
	3	Increased cleaning times
	2	Increased workload around surveillance reporting / action
	1	Responding to out of hours demand on lab staff
	1	Staffing levels; ward staffing needed to meet compliance levels; lab, to process samples
5.	Tot = 19	Lab facilities / technical issues re screening
	7	Different methods of screening within the nhs board (nasal or full)
	5	Rapid/advance lab process might be useful for high risk patients/areas
	4	Need to implement a system for segregation of samples on arrival at the lab
	3	Lack of space for working and storage in labs
6.	Tot = 9	Staff screening
	3	Staff screening & follow up – questions around whether staff should be screened
	3	Controversial: screening staff (practical & political issues)
	3	Should staff be screened?
7.	Tot = 8	Pilot study issues
	6	Are patients aware of and consenting to participation in the pilot study
	2	Is a small hospital with a low infection rate an appropriate site for a pilot study
8.	Tot = 4	Funding issues
	2	What is the ongoing funding?
	1	Ongoing funding
	1	Long term benefits should be realised i.E. Should be ongoing
9.	Tot = 3	Staff training issues
	3	Opportunity for education/training for staff during ward rounds is reduced due to restricted access to patients

Recommendations:

Clinical staff: Lab / Infection control / Ward Nurses/ Drs: n = 21 ; votes = 139 in total [1 vote missing]

Rank	Vote count	Recommendation
1.	Tot = 46	Screening / lab procedures
	7	We need a robust risk assessment tool that is easy for everyone to use
	7	Standardise screening & decolonisation processes across scotland
	6	Same screening method should be used nationally (not sure if this should be nasal or triple screening)
	6	National policy and guidelines for screening and decolonisation and processing samples
	5	Improved record keeping and filing regarding patient notes for screening and treatment
	4	Advanced lab testing (rapid & increased sensitivity) for high risk patients/areas
	4	Share knowledge and good working practices across nhs boards
	2	Continue to screen all patients on admission and discharge
	2	Selective screening based on professional / common sense approach?
	1	Repeat triple screen of any patient admitted to high risk areas (e.G. Ortho)
	1	A system for segregation of samples (pink forms)
	1	Lab & ward staff – need clear lines of responsibility for reporting and action 'dedicated staff'
2.	Tot = 31	Funding / staffing levels
	7	Ongoing funding beyond the roll out
	6	Continue / increase level of government funding
	6	Increase staffing levels
	5	Employ more general assistants for every clinical area & give them responsibility for screening and tracking results
	4	Sufficient funding for facilities and staff
	3	Need increased staff time / numbers for screening process
3.	Tot = 28	Education / information
	5	Keep it simple – need information that everyone understands
	4	Mrsa screening leaflets on it's own are not enough to give patients information, they need explanation as well
	4	Increase education, especially for visitors (leaflets, posters, policing visiting times)
	4	Feedback trends in results to maintain staff motivation and compliance
	3	Training of staff about the urgency associated with sample collection and delivery

Rank	Vote count	Recommendation
	3	Information should be given to everyone and reinforced regularly
	2	Ongoing staff education on all infection control issues
	1	Posters alone don't work – the message needs to be reinforced
	1	Need more patient and public information and media coverage to explain changes in screening
	1	Marketing, communication, showcasing the process that is to be undertaken when strategy is launched
4.	Tot = 24	Patient management including isolation facilities
	6	More isolation rooms are needed
	5	Increase and improve isolation facilities
	4	A rolling programme of radical room disinfection
	4	Boarding patients from low risk to high risk; patients should be cohorted & staff allocated to specific cohorts so staff don't travel between patient groups
	3	Ensure screening of patients at high risk of adverse consequence from infection
	1	Additional ward equipment e.G. Dynamap, fans, iv pumps etc for isolation use
	1	Visual clues to patient status outside the room
5.	Tot = 5	Staff screening
	5	Occasional screening of staff in areas where mrsa remains a problem
5.	Tot = 5	Pilot study results
	5	Need to report true results of the pilot & act appropriately i.E. If of no benefit, stop screening

Issues & Challenges:

Domestic staff: n = 12 ; votes = 67 in total [3 votes missing]

Rank	Vote count	Issues & challenges
1.	Tot = 28	Staffing demands / workload
	8	Reduced staffing at weekends and need to wait for access to rooms before they can start cleaning, leading to time pressures to finish work
	5	Extra work involved (for the labs)
	4	Rapid turnover of patients in bed space leading to no time to clean space
	5	Other staff (i.E. Nursing auxiliaries) not aware of or not performing their duties in cleaning
	4	Ward general assistants are not always available to help with cleaning
	2	Staffing implications on the shop floor at ward level – increased workload with time constraints
2.	Tot = 23	Increased cleaning required due to lack of isolation facilities
	14	Moving patients before they've had 3 negative results leading to unnecessary cleaning of a room/bay
	4	Not enough isolation rooms
	4	Following confirmation of positive results creates additional work particularly if patient is not in isolation – cleaning 6 bed bay rather than single room
	1	Additional cleaning equipment required for each positive care
3.	Tot = 16	Communication issues
	8	Lack of communication or delays in communication regarding results leading to cleaning rooms unnecessarily
	4	Communication methods when results are positive – domestics not always informed
	4	Lack of information re changes in mrsa processes

Recommendations:

Domestic staff: n = 12 ; votes = 69 in total [1 vote missing]

Rank	Vote count	Recommendations
1.	Tot = 28	Funding / staffing levels
	10	Domestic staffing levels need to be increased
	8	Funding for increased staff and equipment
	6	Staffing levels to accommodate extra cleaning
	4	Need continuity of domestic staff that is cleaning same areas and no contracting out of services
2.	Tot = 19	Facilities
	8	More single rooms with showers
	6	More isolation facilities
	5	No more than two beds in a room or bay
2.	Tot = 19	Information / educaiton
	8	Need information or education about equipment e.G. Steam cleaners
	7	Need more public awareness so patients can understand policies and what is being done to them
	3	Sharing good practice with other health boards
	1	Training staff
4.	Tot = 3	Communication
	3	Need prompt reporting of results to domestic staff

Appendix 7: NGT: Notes from "Talking Wall"

Summary thoughts: What would you like to say to the Health Minister?

MRSA Screening is a Good Thing!

- MRSA screening works!

- Keep promoting MRSA screening to keep the issue alive.

- Good idea!

- Very good idea- to be continued!

- Most if not all staff think it is a good idea & should be continued

- MRSA screening has increased awareness, it is important, please maintain the process!

- Improving care continuously!
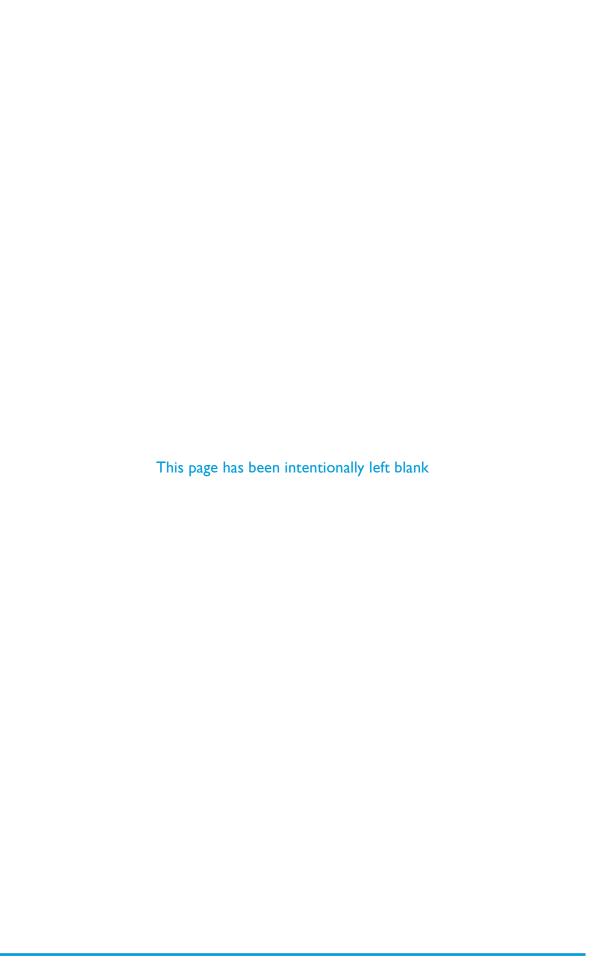
MRSA Screening is a Good Thing …. however!

- MRSA screening needs to mean more than a political paper exercise!

- Why is there such a stigma about MRSA being contracted in hospital from nursing staff (when visitors don't comply with hygiene advice)?

- Why do you try to copy America in MRSA screening issue instead of implementing best European procedures?

- MRSA education must be continually reinforced – little and often.

- Good idea to let people know about MRSA screening.

- It is necessary to do this so as to appreciate the safeguards put in place for all patients.

- Ensure that patients colonised for MRSA are followed through into treatment and given.

- Appropriate information to reduce their anxiety.

MRSA Screening is a Good Thing …. Please continue to fund adequately!

- MRSA screening is a good idea but to get rid of it we must spend the money!

- MRSA pathfinder project is realising positive patient benefits; continue to fund the project and implement it as a national policy.

- A national policy with national funding would be more cost effective and I think more acceptable to patients knowing they would be given the same care all over Scotland.

- Fully fund the costs of the total screening programme.

- More attention to cleaning and funding for processing of samples.

- Prevention is better than cure - enable more monies to be able to do this.

- Where is the money for extra nursing staff?

- More staff needed: domestic and nursing.

- Employ more staff; more side rooms, steam cleaning of beds etc.

- Fantastic but needs more manpower and money!

- Good idea but we need more dedicated staff for this task i.e. ward assistants.

- Ensure process is adequately funded into the future.

- We need to keep this scheme going – give us the resources!

Is MRSA Screening Worth the Costs and Effort?

- Be honest about the results: is the extra work of any benefit?

- The pilot has proved that all patients do not need to be screened, it is not cost effective to do so, therefore think of the money that could be saved and use it elsewhere!

- Created more work!

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1. Originator's report number:	HPS/HAIIC/MRSA/2011/02/3
1a. Additional Report Number:	E.g. If published under EU contract
2. Publishers Name and Location:	National Services Scotland Health Protection Scotland Room, 1 Cadogan Square, Cadogan Street, Glasgow G27HF
3. Funding source and period covered:	SGHD HAITF Delivery Plan DELIVERY April 2008 to March 2011 AREA 4: GUIDANCE AND STANDARDS Item 4.3
4. Sponsor's Name and Address:	Nursing Advisor HAI Chief Nursing Officer Directorate St Andrew's House
5. Report Classification and Caveats in use	UNLIMITED
5a. Date written:	31 December 2009
5b. Date published	February 2011
5c. Pagination:	162
7a. Report Title:	NHS Scotland MRSA Screening Pathfinder Programme Final Report Volume 4: To Evaluate the Feasibility and Potential for Rollout of the MRSA Screening Programme
7b. ISBN	978-1-873772-34-8
7b. Conference details (if part of conference then give conference particulars):	Not Applicable
7c. Part of Series	
7d Supersedes document	
7e Review date	
8. Authors:	MRSA Screening Programme Team
9. Descriptors/Key words should be terms from the HPS taxonomy	MRSA; Screening; Epidemiology; Statistics, Cohort Study, Healthcare; Healthcare Associated Infection; Infection Control, Scotland, Staff acceptability, Patient acceptability, qualitative research, survey, quantitative research

10a. Abstract : [Maximum 200 words]

The MRSA Screening Pathfinder Project implemented Universal Screening within three Pathfinder Health boards from August 2008 to July 2009. A study of staff and patient acceptability of MRSA screening was undertaken during the pathfinder study. A mixed methods triangulation design was used to enable merging of qualitative and quantitative data sets. MRSA screening was found to be highly acceptable to patients, visitors, the wider community and (to a lesser extent) NHS staff. A significant minority of NHS staff tended to have more negative attitudes and did not believe MRSA screening to be acceptable; lack of isolation facilities, increased workload, inconsistencies in screening and decolonisation protocols within and between NHS boards, and uncertainty around future funding were concerns expressed by staff. Overall the patient acceptability was good. The number of patients with a MRSA positive test included (although proportional to the prevalence) was too small to make any meaningful judgement of acceptability of interventions or of screening as a whole for patients who screen positive. Further research is required with respect to this.

Authorisation *(complete as applicable)*

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Project/Programme Manager	Sally Stewart
Document Business Classification	Active Projects and Programmes, Healthcare Associated Infections and Infection Control, Epidemiology and Statistics