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Re-thinking risk communication: information needs of patients, health professionals and the public regarding MRSA – the communicative behaviour of a public health network in Germany responding to the demand for information

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Abstract

Objectives: Multidrug resistant organisms (MDRO), including Meticillin-resistant *Staphylococcus aureus* (MRSA), and healthcare associated infections (HCAIs) are pressing issues for healthcare systems across the world.

Information and communication are considered key tools for the prevention and management of infectious diseases. Public Health Authorities (PHA) are in a unique position to communicate with health care professionals, patients and the public regarding the health risks.

Study design: We used PHA helpdesk interaction data to first ascertain the information requirements of those getting in contact with the service, and secondly to examine the communicative behaviour of the PHA, with a view to improving the quality of communication strategies.

Method: Data on helpdesk interactions between 2010 and 2012 was obtained from a MDRO network of nine German PHAs. 501 recordings were coded and descriptive statistics generated for further qualitative thematic analysis.

Results: Our analysis revealed a similar pattern of questions among different groups. Key areas of need for information were around eradication, cleaning and isolation measures. Reported problems were a lack of expert knowledge and continuity of treatment. The helpdesk response was mainly a conversation offering scientific advice, but also included other communication services that went beyond the provision of scientific facts, such as follow up calls, referral suggestions and consultations on behalf of the caller. These social communication activities seem to have an important impact on the acceptability of public health recommendations and use of the helpdesk.

Conclusions: Our findings support a broader discussion about the role of information in the communication process and underline the importance of social elements in the communication process, such as relationship and trust building.

Keywords: MRSA, Information needs, Risk Communication, Antimicrobial Resistance, Public Health

Acknowledgement: This research was funded by European Commission 7th Framework Programme (FP7 – 2007-2013) under Grant Agreement 242058, EUCBB (European Union Cross Border Care Collaboration).

Introduction

Antimicrobial resistance and healthcare associated infections (HCAIs) are major topics on health policy agendas in countries across the world.¹⁻⁴ The Chief Medical Officer in the UK, Professor Dame Sally Davies, recently described the threat posed by antimicrobial resistance as “catastrophic” and put it on the same level of seriousness as international terrorism.⁵ The rise in meticillin-resistant *Staphylococcus aureus* (MRSA) infections represents a nexus between two important problems: healthcare associated infections and antibiotic resistant bacterium. With patients increasingly travelling to other countries for treatment and the growth of cross border health care, the prevalence of MRSA and other multidrug resistant organisms (MDRO) has developed a pan-European dimension which must be combated in order to ensure consistent quality of care and safeguard patients.⁶⁻⁸

Previous research has investigated the information needs of patients and health care professionals with regards to different diseases and when choosing between health care providers.⁹⁻¹² Public health authorities (PHA) are deemed to be in a unique position to communicate with healthcare professionals, patients, the public and other stakeholders about health risks and in turn can offer advice regarding to infection control. They are also in the position to advise both patients and health professionals regarding treatment and provide evidence-based recommendations to aid the smoothness of patients’ journeys through the different parts of the healthcare system (home, primary care, secondary care, long term care). The potential for movement within as well as across these different sectors, within and across different countries, has been highlighted as a major risk factor for increasing the spread of infections such as MRSA.¹³⁻¹⁵ This led some to call for the urgent creation of professional networks to support the coordination and structure of care for patients with MRSA within countries, in cross-border regions and internationally. In response, the German federal ministry of health decided in 2006 to develop regional MDRO networks across the country.¹⁶
¹⁷ In the Rhine-Main region, a MDRO network of nine PHAs was founded in 2010, covering around 250 participating organisations (e.g. medical institutions, long term care facilities, various organisations for patient transport). One of the services provided by the network is a

helpdesk offering advice to healthcare professionals, patients and the wider public. One qualified study nurse is in charge of the helpdesk answering calls during opening hours. During out-of-hours an answering machine records the entries and calls are returned the next day. Only in times of absence (e.g. vacation), a second study nurse replaces the person in charge. Both nurses have access to a network of physicians, microbiologists and experts in antibiotic therapy.

At the time of the study, only around two or three other networks offered personal information services to patients or relatives. The helpdesk has a unique position as information service for both professionals and lay-people alike and is embedded in network activities with frequent meetings and contacts with network members.

The helpdesk provides a high competent person at first contact to answer the questions or provide another service. This helpdesk was created as members of the public health authority perceived a lack of information and evidence-based recommendations for specific situations. The helpdesk is paid for by a grant from the ministry of health for a period of five years (2010-2015).

Information and communication are considered vital activities in the prevention and management of infectious diseases.¹¹ Previous research stress the importance of engaging with patients and providing information.¹⁸⁻¹⁹ However, commentators on health communication, and risk communication in particular, are beginning to focus less on the role of scientific fact provision and instead emphasise the importance of social elements of communication such as relationship and trust building.²⁰⁻²² The evidence base for the recommendation of risk communication strategies is still limited.²² Empirical studies analysing the communicative behaviour of public health authorities are much needed if measures to prevent and manage infectious diseases are to be improved.

Research focus and questions

This article looks at who are the main users of PHA/MDRO network information helpdesks, what information they most commonly request regarding MRSA, the means by which they were made aware of the service and the communicative behaviour of PHA responding to their requests. We also investigated the media's influence on service use. By investigating information needs and communicative behaviour, we hoped to identify ways by which communication of health care related information might be improved in the future.

Methods

The helpdesk provided a database of 577 recordings of calls featuring questions about MRSA from between May 2010 and May 2012. The raw data included information on the type of caller (patient, healthcare professional etc.), their location, the affected party, to whom the request related, the means by which they came aware of the helpdesk and the content of their request. The recordings were assessed for eligibility by applying predetermined criteria. After this initial screen, 501 recordings were deemed to be eligible for further analysis.

A preliminary coding manual was developed and piloted on a sample of 200 calls. The manual was then amended and finalised based on the information garnered from the pilot after which it was applied to the entire sample in order to provide answers to the main research questions.

Once the data had been coded, descriptive statistics were generated for the different classes of questions and also their trigger, grouped by caller type. Relative frequencies for the different responses offered by the helpdesk were also constructed. The trend in media spurred calls was also plotted against major events in order to visually assess any potential correlation.

Descriptive statistic data were then used for qualitative thematic analysis.

Results

1) Distribution of calls

While the distribution of different callers remain roughly the same, the monthly calls increase from 18 in 2010 to 22 in 2011 and 33 in 2012.

Table 1: Distribution of calls

2) Caller groups

Three different caller types were identified: doctors, nurses (in care homes), and private individuals (patients and their relatives). In 2010, 58% of questions to the helpdesk came from private individuals, 31% were asked by doctors and 11% by nurses. In 2011, the share of calls coming from doctors fell to around 20% at the same time as calls from nurses rose to 21%. The percentage of questions asked by private individuals remained roughly the same at 59%. In contrast, the proportion of total calls from private individuals fell in 2012 (48%), with doctors' share increasing (31%) and nurses staying at close to the same level as the year before.

3) Key areas of interest

Ten main questions, each with between two to six sub-categories, were identified from the database. Most of the questions asked by doctors and nurses were about eradication. The second most common question by doctors and nurses was regarding hygiene measures. Nurses were also shown to be commonly asking questions about the isolation of MRSA patients. Private individuals were mostly concerned about the control and eradication of MRSA; they also reported a lack of sufficient information as well as a refusal to be treated.

Additional material Table 2a-c: Questions from doctors, nurses and private people

4) Contact reasons

The most frequently occurring reasons for contacting the helpdesk were concerns regarding current treatment, problems in the referral process of a patient, costs involved and a mix of case specific questions about treatments for MRSA. Another frequent reason was to ask for expert advice for a particular situation. A smaller proportion of callers contacted the helpdesk exclusively for confirmation of medical advice and/or reassurance with regards to social circumstances or emotional aspects of infection with MRSA. These covered subjects such as stigma, bullying, hysteria, general anxiety regarding contracting the bacterium and scepticism regarding professional advice.

5) Helpdesk activities

The majority of helpdesk activities were isolated one-to-one verbal conversations held over the phone (activity completed 2010: 60%/2011: 57%/2012: 67%). However, the helpdesk also double-checked and confirmed information with colleagues (8%/9%/2%); followed-up or offered a follow-up call (10%/9%/3%); contacted a health care professional on behalf of the patient or caller to discuss the particular service (6%/4%/6%); provided more/additional information (such as flyer, internet addresses, etc.) (11%/13%/15%); and referred callers to named/known colleagues or institutions (5%/8%/7%).

Additional material Table 3: Helpdesk activities

6) Feedback

The feedback from the callers was difficult to obtain as it was not explicitly asked for and noted in the raw database categories. However, where feedback was noted, callers expressed their gratefulness and acknowledged the value of the helpdesk service, which is to some degree reflected by the increasing number of repeat callers year by year.

7) Role of the media

Callers mentioned different triggers for contacting the PHA helpdesk such as the use of the internet, interactions in hospital and GP visits.

An increase in calls, especially among private people, could be seen after one major local newspaper “*Frankfurter Rundschau*” had published an article on MRSA called “*Killerkeime*” (“killer bugs”). Other peaks were recognised in October 2011 and March 2012 following the advertisement of the helpdesk services in local newspapers and health care facilities.

Additional material

Table 4a-c: Triggers of doctors, nurses and the public

Table 5: Calls in the context of mass media events

Discussion

Thematic distribution of questions

The results of our analysis show that health care professionals (both doctors and nurses) as well as patients and relatives contact the MDRO network helpdesk, with a high level of consistency in terms of the questions. While the distribution of different callers remains roughly the same, the monthly calls increase. We understand this increase of calls as a sign for acceptance, increasing popularity and proof of usefulness of the helpdesk.

Nursing staff

Nursing home staff were mainly concerned with issues relating to cleaning and hygiene, isolation practices and eradication measures, as these represent their main responsibilities.

The consistent nature of the types of questions among this population suggests that informational needs are not being addressed elsewhere, as this information should be seminal to their daily activities.

Nursing staff also contacted the helpdesk because of perceived problems in the continuity of care for MRSA patients (“refusal to treat MRSA patients”). This seems to indicate organisational issues as opposed to knowledge deficiencies of callers, and also demonstrates a

belief of nurses that the helpdesk might be able to influence those in charge of organising care as well as provide recommendations.

Doctors

Doctors were found to mainly ask questions about eradication and cleaning. Other information needs identified related to diagnostics and specific aspects of eradication. Again, these themes are stable over the observed time period and reflect the responsibility and tasks of doctors. A peak in 2012 indicates problems in the continuity of treatment of MRSA patients that corresponds with the results from the nursing staff.

Public

Private individuals contacted the helpdesk mainly regarding questions about eradication and infection control. Their information needs were also focussed on cleaning (with a peak seen in 2011) and questions about protection against infection (peaking a year earlier). Interestingly, the public contacted the helpdesk due to lack of sufficient information provided by healthcare professionals. The calls from members of the public also indicated a persistent problem in the form of continuity of care due to refusals to continue treatment.

The thematic distribution of questions reveals two major aspects: all groups report a persistent problem with the continuity of care and they indicate a lack of sufficient information. It is, however, interesting to note that while information is widely available and can be obtained from several sources, such as GPs, online, books, magazines, people decide to call the helpdesk.

The role of the Public Health Authority

The helpdesk was set up expressly to provide scientific advice and support services in order to improve the management of MRSA patients. The majority of activities were interactive telephone conversions where advice was given.

People called the helpdesk for clarification on medical issues, but also they also called the helpdesk looking for emotional support, with the expressed intent of gaining confirmation, reassurance and clarification in frightening, disturbing or upsetting situations. The helpdesk took care of the patients or caller: follow up calls, referral suggestions, consultations with other professionals on behalf of the caller were all found to be important parts of the helpdesk's activities. The importance of these more social elements of calls was reflected in increasing appreciation resulting in repeat calls and explicit expression of gratitude.

Media triggers

The mass media is an important information channel and raises awareness in most parts of the population. In our analysis, its impact was seen most among private people. This is an interesting finding that requires further investigations regarding the hypothesis that population groups with relatively little knowledge react more easily and people with more expert knowledge are more resilient to media coverage. This investigation could help design risk communication activities that aim at preventing 'media hypes'.

The analysis of the helpdesk data does show that there appear to be transient increases in call frequency following media coverage. However, both the pattern of information needs and call triggers remain the same over the observed period of time, suggesting there is persistent interest and consequent information needs among professional groups and members of the public.

Limitations

This analysis has a number of limitations. It is a quantitative re-analysis of an existing database where the categories were developed independently from the research questions.

Therefore, only a limited spectrum of quantitative data could be used for the analysis.

The original data lacked some information that would have been important to look at: neither the duration of the calls, nor the names of the callers, or the person who answered the call were recorded. Therefore we could not elaborate any insights into different outcomes, such as

longer calls, more repeats, more referrals, etc. As a result of our investigation we suggest the inclusion of further categories such as activities of the helpdesk, feedback of the callers, duration of call, etc. to the dataset.

The qualitative approach was a convenient selective content analysis that helped to clarify questions that came up during the quantitative analysis (“Why did people call the helpdesk?”). Qualitative research could reveal more insight into the softer parts of the communication interactions and should be investigated further.

Conclusion

Social role of information: information hotline vs. helpdesk

Despite the fact that the majority of information requested is widely available on the internet, in leaflets (for patients and relatives), textbooks and further training material for health care professionals, both health care professionals and private individuals regularly contacted the helpdesk. There are two possible explanations: first, the main reason for calling is not information, but the social role and function the helpdesk provides represented in an interactive conversation and possible further communication services (follow ups, consultants, referrals, etc.). Second, the information that is widely available is not sufficient; background or context-related information and knowledge or experience is also needed in order to understand the situation and information given. Both explanations seem to be relevant for our research questions and point to a need for further research.

Knowledge and communication gaps seem to be a problem that is most apparent for private individuals. Distressing experiences with healthcare professionals appear to leave them with no, incorrect or confusing information regarding further management and hence insufficient explanations being cited as a common reason to contact the helpdesk. Further research needs to be undertaken to investigate whether there are systemic failures in education and training for professionals, and how to improve ways to respond to these knowledge communication gaps.

The activities provided by the helpdesk point to the conceptual understanding of the role of information and communication in the management of infectious patients. Information and communication is not only about the scientific facts; it is an important social activity in terms of relationship building. Offering a human interaction, putting patients in contact with a recommended and known expert/colleague; following up, contacting and discussing matters on behalf of the caller, all these activities are major elements of effective risk communication. Further research needs to be done to establish a framework to better understand the role and function of risk communication in public health.

Conflict of Interest

The authors declare that they do not have a conflict of interest. PD did this research during her fellowship at the London School of Economics (LSE) and has since 2013 set up her own consultancy on strategic risk communication. There are no financial or other benefits that could pose a conflict of interest.

Ethics approval

As we re-analysed a pre-existing database, ethics approval was not considered necessary.

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7) Role of the media

Callers mentioned different triggers for contacting the PHA helpdesk such as the use of the internet, interactions in hospital and GP visits.

An increase in calls, especially among private people, could be seen after one major local newspaper “*Frankfurter Rundschau*” had published an article on MRSA called “*Killerkeime*” (“killer bugs”). Other peaks were recognised in October 2011 and March 2012 following the advertisement of the helpdesk services in local newspapers and health care facilities.

Additional material

Table 4a-c: Triggers of doctors, nurses and the public

Table 5: Calls in the context of mass media events

Discussion

Thematic distribution of questions

The results of our analysis show that health care professionals (both doctors and nurses) as well as patients and relatives contact the MDRO network helpdesk, with a high level of consistency in terms of the questions. While the distribution of different callers remains roughly the same, the monthly calls increase. We understand this increase of calls as a sign for acceptance, increasing popularity and proof of usefulness of the helpdesk.

Nursing staff

Nursing home staff were mainly concerned with issues relating to cleaning and hygiene, isolation practices and eradication measures, as these represent their main responsibilities.

The consistent nature of the types of questions among this population suggests that informational needs are not being addressed elsewhere, as this information should be seminal to their daily activities.

Nursing staff also contacted the helpdesk because of perceived problems in the continuity of care for MRSA patients (“refusal to treat MRSA patients”). This seems to indicate organisational issues as opposed to knowledge deficiencies of callers, and also demonstrates a

belief of nurses that the helpdesk might be able to influence those in charge of organising care as well as provide recommendations.

Doctors

Doctors were found to mainly ask questions about eradication and cleaning. Other information needs identified related to diagnostics and specific aspects of eradication. Again, these themes are stable over the observed time period and reflect the responsibility and tasks of doctors. A peak in 2012 indicates problems in the continuity of treatment of MRSA patients that corresponds with the results from the nursing staff.

Public

Private individuals contacted the helpdesk mainly regarding questions about eradication and infection control. Their information needs were also focussed on cleaning (with a peak seen in 2011) and questions about protection against infection (peaking a year earlier). Interestingly, the public contacted the helpdesk due to lack of sufficient information provided by healthcare professionals. The calls from members of the public also indicated a persistent problem in the form of continuity of care due to refusals to continue treatment.

The thematic distribution of questions reveals two major aspects: all groups report a persistent problem with the continuity of care and they indicate a lack of sufficient information. It is, however, interesting to note that while information is widely available and can be obtained from several sources, such as GPs, online, books, magazines, people decide to call the helpdesk.

The role of the Public Health Authority

The helpdesk was set up expressly to provide scientific advice and support services in order to improve the management of MRSA patients. The majority of activities were interactive telephone conversions where advice was given.

People called the helpdesk for clarification on medical issues, but also they also called the helpdesk looking for emotional support, with the expressed intent of gaining confirmation, reassurance and clarification in frightening, disturbing or upsetting situations. The helpdesk took care of the patients or caller: follow up calls, referral suggestions, consultations with other professionals on behalf of the caller were all found to be important parts of the helpdesk's activities. The importance of these more social elements of calls was reflected in increasing appreciation resulting in repeat calls and explicit expression of gratitude.

Media triggers

The mass media is an important information channel and raises awareness in most parts of the population. In our analysis, its impact was seen most among private people. This is an interesting finding that requires further investigations regarding the hypothesis that population groups with relatively little knowledge react more easily and people with more expert knowledge are more resilient to media coverage. This investigation could help design risk communication activities that aim at preventing 'media hypes'.

The analysis of the helpdesk data does show that there appear to be transient increases in call frequency following media coverage. However, both the pattern of information needs and call triggers remain the same over the observed period of time, suggesting there is persistent interest and consequent information needs among professional groups and members of the public.

Limitations

This analysis has a number of limitations. It is a quantitative re-analysis of an existing database where the categories were developed independently from the research questions.

Therefore, only a limited spectrum of quantitative data could be used for the analysis.

The original data lacked some information that would have been important to look at: neither the duration of the calls, nor the names of the callers, or the person who answered the call were recorded. Therefore we could not elaborate any insights into different outcomes, such as

longer calls, more repeats, more referrals, etc. As a result of our investigation we suggest the inclusion of further categories such as activities of the helpdesk, feedback of the callers, duration of call, etc. to the dataset.

The qualitative approach was a convenient selective content analysis that helped to clarify questions that came up during the quantitative analysis (“Why did people call the helpdesk?”). Qualitative research could reveal more insight into the softer parts of the communication interactions and should be investigated further.

Conclusion

Social role of information: information hotline vs. helpdesk

Despite the fact that the majority of information requested is widely available on the internet, in leaflets (for patients and relatives), textbooks and further training material for health care professionals, both health care professionals and private individuals regularly contacted the helpdesk. There are two possible explanations: first, the main reason for calling is not information, but the social role and function the helpdesk provides represented in an interactive conversation and possible further communication services (follow ups, consultants, referrals, etc.). Second, the information that is widely available is not sufficient; background or context-related information and knowledge or experience is also needed in order to understand the situation and information given. Both explanations seem to be relevant for our research questions and point to a need for further research.

Knowledge and communication gaps seem to be a problem that is most apparent for private individuals. Distressing experiences with healthcare professionals appear to leave them with no, incorrect or confusing information regarding further management and hence insufficient explanations being cited as a common reason to contact the helpdesk. Further research needs to be undertaken to investigate whether there are systemic failures in education and training for professionals, and how to improve ways to respond to these knowledge communication gaps.

The activities provided by the helpdesk point to the conceptual understanding of the role of information and communication in the management of infectious patients. Information and communication is not only about the scientific facts; it is an important social activity in terms of relationship building. Offering a human interaction, putting patients in contact with a recommended and known expert/colleague; following up, contacting and discussing matters on behalf of the caller, all these activities are major elements of effective risk communication. Further research needs to be done to establish a framework to better understand the role and function of risk communication in public health.

Conflict of Interest

The authors declare that they do not have a conflict of interest. PD did this research during her fellowship at the London School of Economics (LSE) and has since 2013 set up her own consultancy on strategic risk communication. There are no financial or other benefits that could pose a conflict of interest.

Ethics approval

As we re-analysed a pre-existing database, ethics approval was not considered necessary.

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Year	Months	Number of calls	Number of questions	Monthly call average	% of questions by doctors	% of questions by nurses	% of questions by private people
2010	May-Dec (8 months)	143	137	17.9	31.4	11	57.7
2011	Jan-Dec (12 months)	264	243	22	20.2	21	58.9
2012	Jan-May (5 months)	167	121	33.4	31.4	20.7	47.9

Table 1: Distribution of calls

Tables

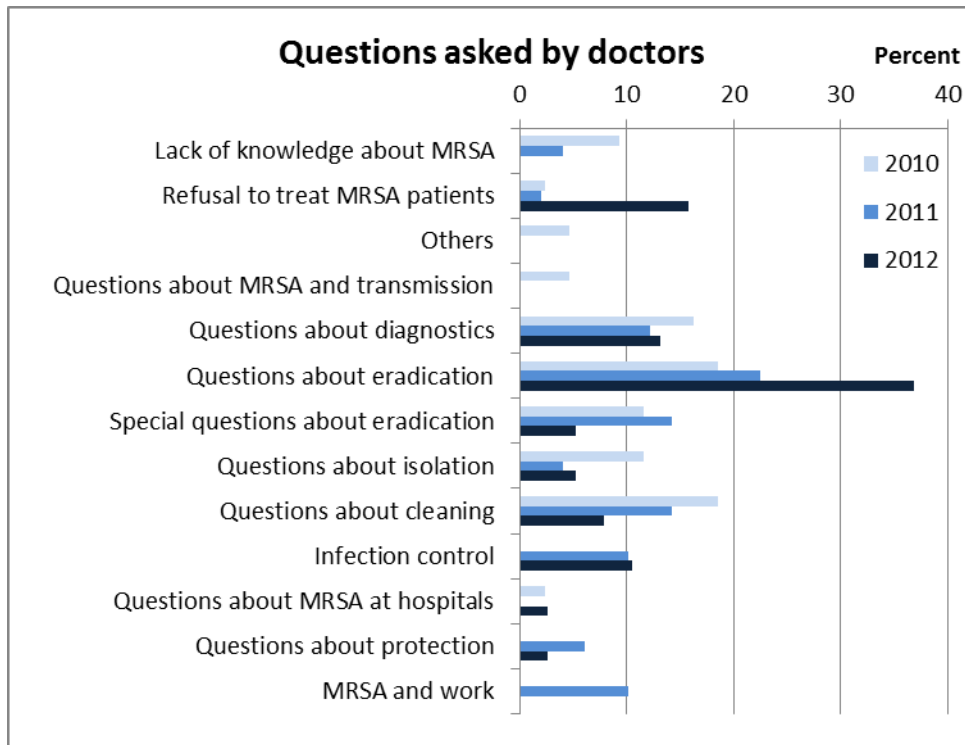


Table 2a: Questions from doctors

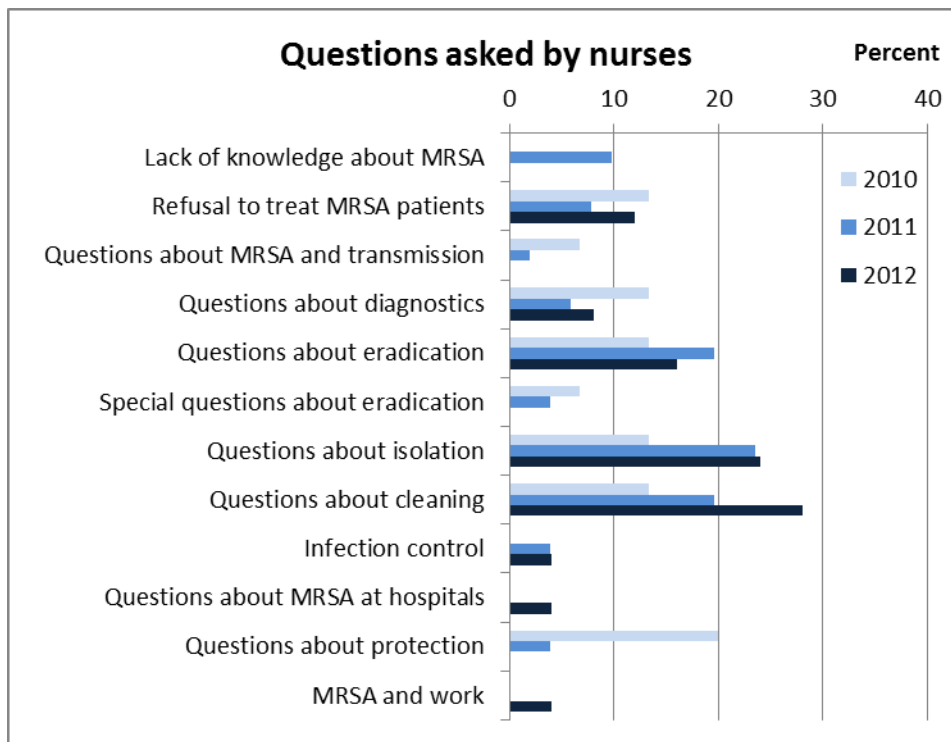


Table 2b: Questions from nurses

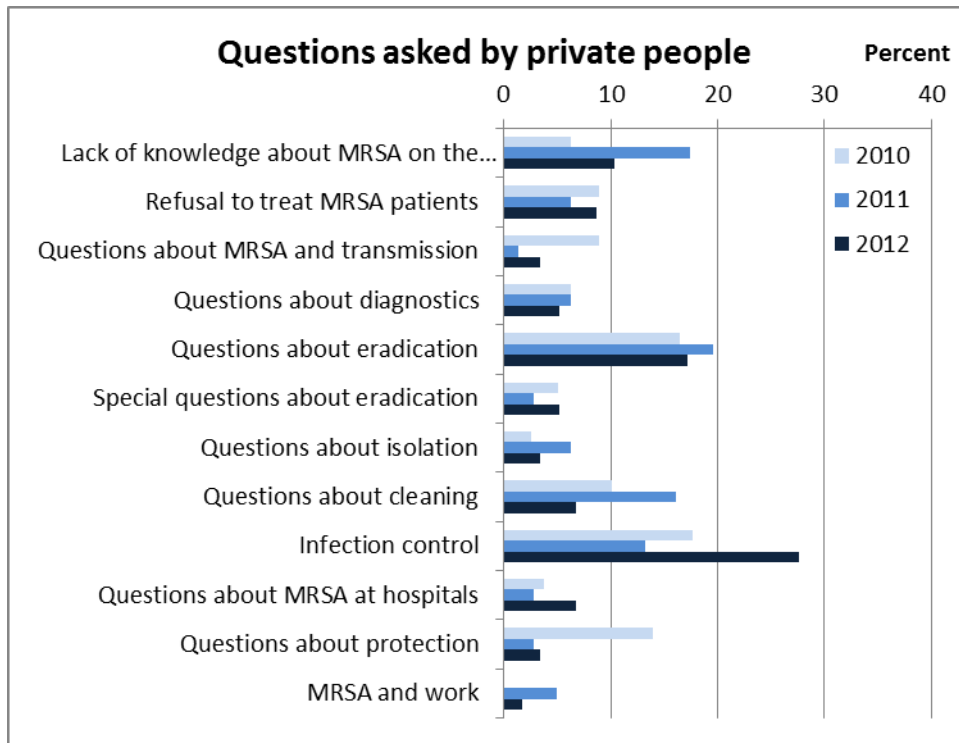


Table 2c: Questions from private people

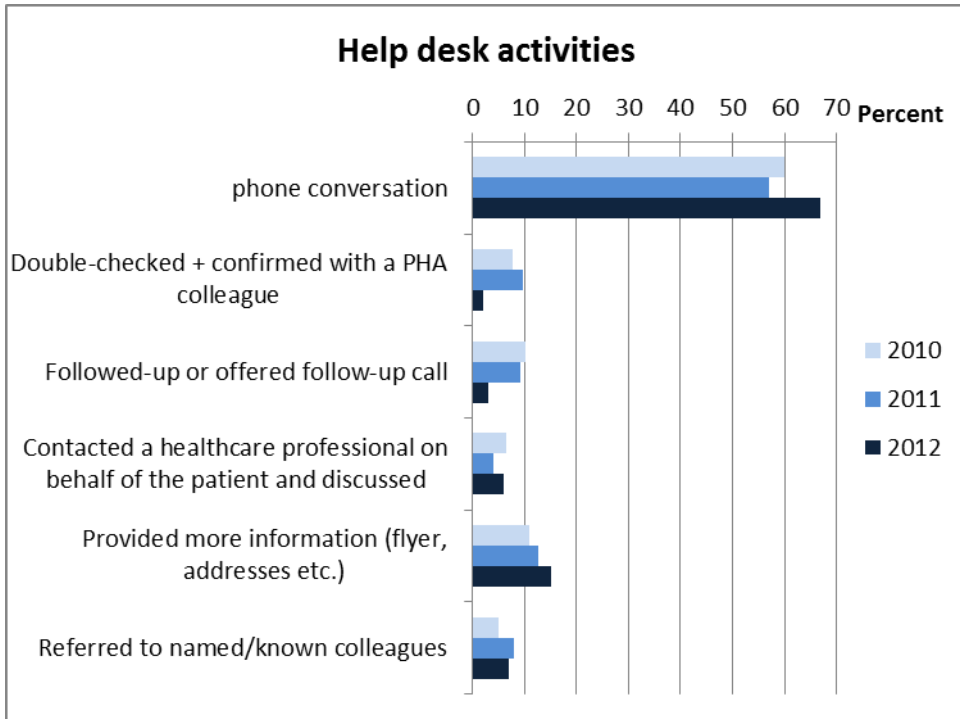


Table 3: Helpdesk activities

Tables 4a-c, 5

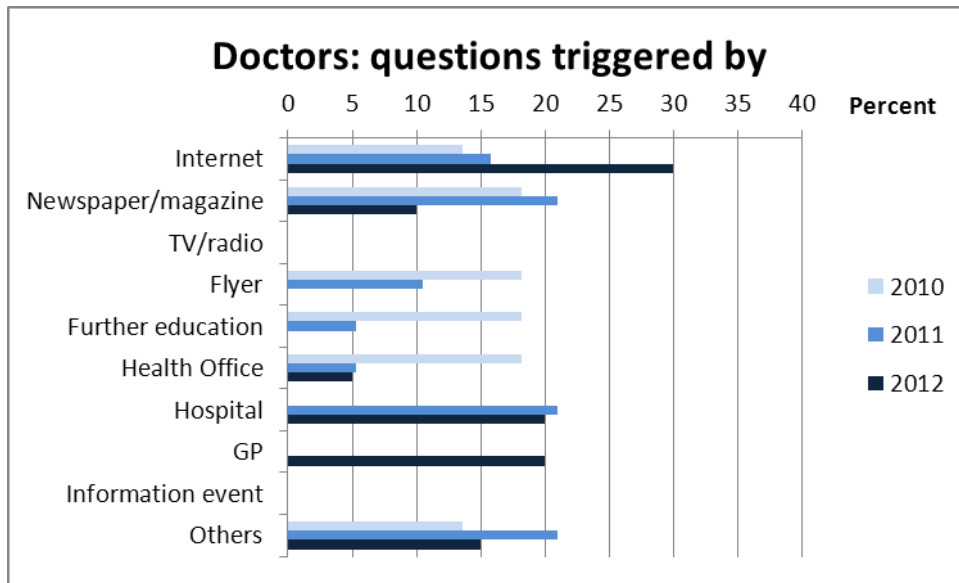


Table IVa: Triggers of doctors

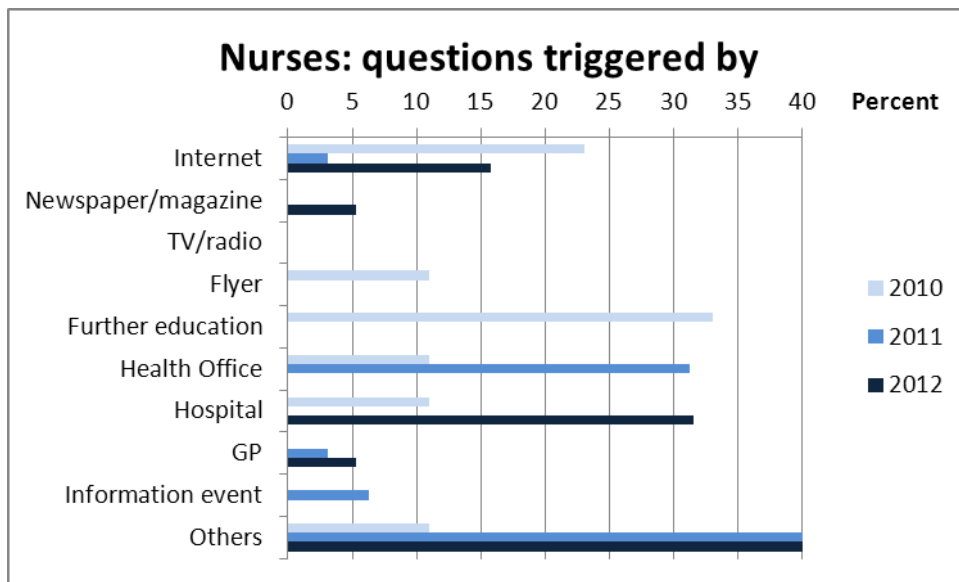


Table IVb: Triggers of nurses

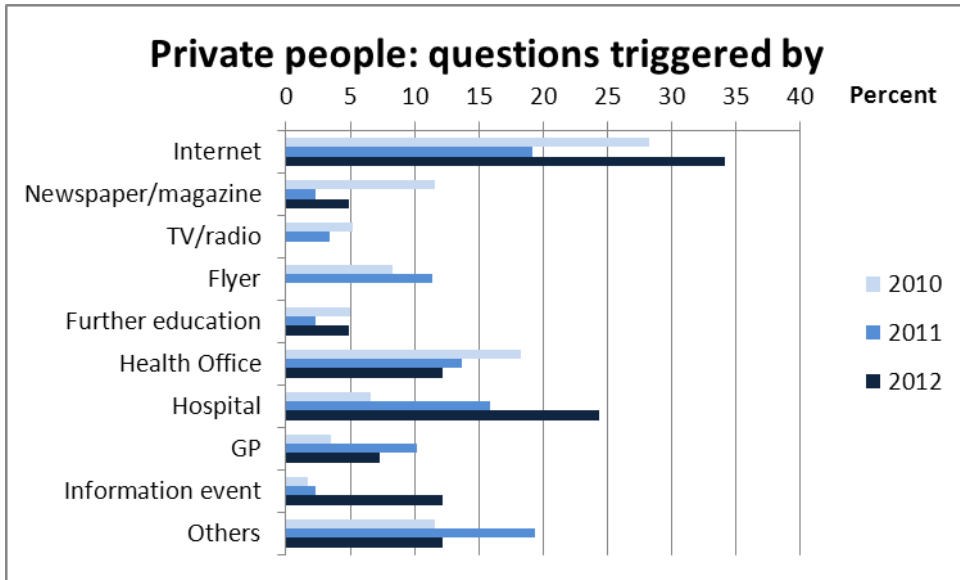


Table IV: Triggers of the public

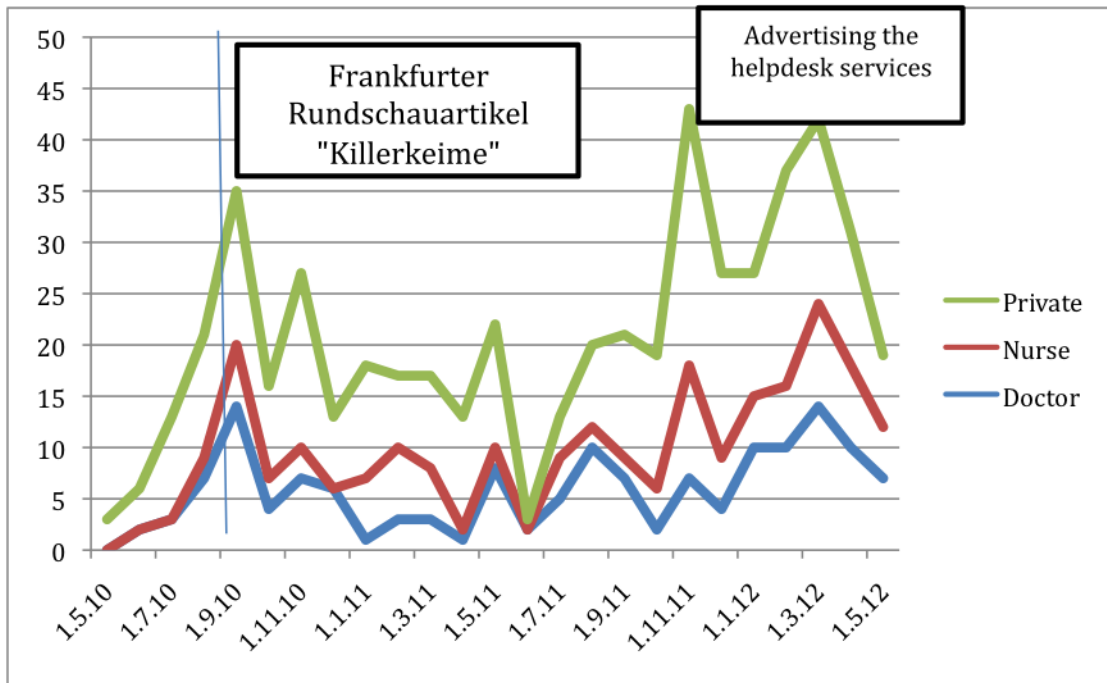


Table V: Calls in the context of mass media events