A system for distribution of health and administrative alerts from Health Boards to locum (and other) General Practitioners

Chosen Environment

In Scotland, general practitioners (GPs) receive various health related information alerts (Table 1) which are cascaded from central (e.g. Scottish Executive Health Department[1] (SEHD) or Health Protection Scotland[2] (HPS)) and local (e.g. Public Health Department in Health Board) health organisations. These alerts are distributed at a Health Board (Primary Care Trust in England) level. The means of doing this varies from area to area within Scotland (Table 2); interestingly in England, certain "urgent communications" from the Chief Medical Officer are made publicly available on the Department of Health website[3].

Alert Type	Distributed to	Comments
Drug Alert, e.g. batch recalls and other problems	pharmacies, dispensing GPs and, if indicated, others	Have various urgency levels
Medical Device Alert	Usually to hospitals (who have the most complex medical devices), can also go to GPs	Also sent direct to registered users of the medical device.
Public Health Advice	GPs (Practices), Medical Directors (for cascade to receiving physicians) Out of hours organisations, A&E Departments, NHS24	Usually from SEHD or HPS, or localised and modified by them if originating in England
Local Health Protection Alerts	GP Practices	May only go to a limited number of practices in a locality – ad hoc arrangements for distribution
Suspicious patient alerts (e.g. patients asking for controlled drugs or drugs of addiction)	GP Practices	

Table 1: Types of health information alert in Scotland

Health Board	Alert Distribution Methodology
Area 1	Alerts posted on paper to all GPs "hosted" on the performers list[a]
Area 2	Alerts faxed to all GP Practices in the board area for local distribution in the practice
Area 3	Alerts e-mailed to administrative contact with each GP Practice for local distribution in the practice

Table 2: Health alert distribution methods. Collated from a brief telephone and e-mail query of the maintainers of the performers list in 3 health boards in Scotland

These arrangements are effective for GPs who are in partnership and work in one locality. However, locum GPs will often work in multiple localities and health board areas, so may miss out on conventional methods of distribution.

Problem

The problem faced by itinerant locum GPs is one of variable access to health information alerts, because they often work in many practices and over more than one Health Board area. Locums must rely on employing practices keeping copies of relevant alerts as part of the Practice Induction Pack[4], which *should* be provided by every practice for locums working there. Real world experience suggests that practice-based distribution often ignores part-time transient staff who therefore end up excluded from potentially important public health information. Equally, determining which alerts from the locum folder (where existing) are relevant, and reading them before a busy surgery is often given a low priority. This lack of current health information potentially puts both the practitioner and their patients at risk; The GP, by not being informed of current issues, and the patient, by not being able to use the information resource that their doctor can provide to help inform their health behaviour.

Aims & Objectives

The aim of this paper is to describe a potential resource that could provide an alternative means by which locums could keep themselves up to date. It is expected that this would use internet based technologies, including a combination of a website, RSS[5] web feed[6] and email list. Text messaging may also be considered for notification about alerts. The objective is to produce a means of addressing the information deficit that locums experience in relation to health alerts whilst not significantly increasing the administrative burden of existing alert cascade systems.

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a Performers List: statutory list of medical practitioners qualified to provide primary medical services in a particular area (http://www.opsi.gov.uk/SI/si2004/20042261.htm). Each Health Board maintains a list of GPs registered in its area, GPs working in more than one area will be "hosted" with the first board they applied to and be included on other board area lists.

Criteria

The criteria listed below have been identified from the problems outlined above. Good practice in project specification[7] suggests that criteria are classified as mandatory or desirable. In this case the classification was determined, for reasons of expediency in implementation, by those which are expected to be simply implementable using an off-the-shelf web technology (mandatory) and those which may need further customization (desirable).

The proposed resource must provide:
- A single point of contact for locums regardless of host health board area.
- A simple point of contact for health boards distributing alerts.
- Flexibility in accessing information for locums; accessible from anywhere, not just NHS facilities so that locums can use the resource from their home, allowing them the choice to read alerts at a time other than just before surgery.
- Security of information; only accessible to doctors (registered users) who have been confirmed as members of a performers list.
- Up to date and current alerts.
- Relatively low administrative cost in maintaining system.

The following would be desirable in the resource:
- Simple integration with existing health board cascade systems.
- A system to prioritise alerts to allow urgent/important ones to be read first, when time is short.
- A mechanism for easily indicating currency of alert if users are accessing the resource after a break.
- Mechanism to keep a record of which alerts have previously been viewed.

Clearly these criteria are rather broad brush, and may require clarification and adjustment following a more formal needs assessment.

Needs Assessment

> *"Needs assessment has been defined as the process of measuring the extent and nature of the needs of a particular target population so that services can respond to them."*[8]

In order to determine the best form for this resource it is necessary to conduct a needs assessment[9] The Health Development Agency[10] (subsequently merged into NICE[11]) produced a number of documents[12][13] describing this process as related to health needs assessment. However the principles are more general, the key features of this process are[14]:
1. determine the purpose and scope of the needs assessment
2. gather information (data)
3. analyse information
4. identify key factors and influences linked to the priority issues and behaviours
5. clarify the programme's focus
6. validate the need by creating a clear rationale
7. continue with the planning process (i.e. develop goal and linked measurable objectives)

Each of these steps will be discussed in turn as applied to the current situation.

Purpose and scope

The purpose of this needs assessment is to determine if existing information cascade systems encompass the needs of locum GPs in terms of receiving health information alerts. The assessment's scope should include information about both "host" and other health board areas. It would also be beneficial to explore doctors' preferences on new means of receiving health alerts.

Gathering information

Information can be gathered in various ways, including:
- utilising existing data (e.g. census)/ reviewing relevant literature.
- either quantitative or quantitative surveys (using Likert Scale[15]).
- consultation with key informants who may have specific knowledge.
- interviews.
- focus groups.

In this case a combination of approaches was used. Telephone contact and questioning of the those who currently distribute the lists at health board level (key informants) was combined with informal questioning of peers and practice staff both in practices and at locum group meetings, to determine how these alerts are currently available. This was triangulated by using the web based survey tool www.surveymonkey.com, and e-mailing the members of two locum/sessional GP groups (Glasgow and Grampian) inviting them to participate in the survey.

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1. Which health board Performers list are you "hosted" on ? (i.e. which area were you initially registered in/ which area deals with your appraisal) [single forced choice answer of Scottish health boards]

2. Which other health board areas are you registered to work in ? [many choice answer of Scottish health boards, including 'other' option]

3. How do you receive Public Health alerts from your Host Health board? [many choice answer from]
   a) Posted to me at home by my host health board
   b) E-mailed to me by host health board
   c) Practices I work for have a locum folder and give me sight of these alerts when I go there.
   d) I have regular work with one practice and get alerts in internal mail there.
   e) I don't receive these kinds of alerts.
   f) Other (please specify)

4. How do you receive alerts for other health board areas in which you are registered to work in ? [many choice answer from]

   a) Posted to me at home by my host health board
   b) E-mailed to me by host health board
   c) Practices I work for have a locum folder and give me sight of these alerts when I go there.
   d) I have regular work with one practice and get alerts in internal mail there.
   e) I don't receive these kinds of alerts.
   f) Other (please specify)

5. Please can you indicate which of the following possible methods of keeping yourself up to date with current public health alerts you would be willing to consider using [Yes/no/Don't Know]

   a) Visit website to see recent alerts.
   b) Visit website after getting notification by e-mail.
   c) Visit website after getting notification by text message
   d) Have full information in alerts e-mailed to me.
   e) Via an RSS (Really Simple Syndication) feed in an RSS browser.

   There was also an option for other free form comments

Box 1: Questions from web based survey of locum GPs

Box 1 shows the questions included in the survey. As with any questionnaire this survey has the potential for bias. The use of e-mail to send out the invitation to participate already limits the respondents to those who use the internet. The response rate (18/104) is relatively low (17%), this could potentially be improved by using a postal survey[16] or by use of a pre-notice about the survey[17]. Equally the responders are self selecting and probably have some interest in actively seeking alerts, non-responders may be the people for whom the resource should be targeted. To further assess the depth of need it would be beneficial to acquire data from health boards about the number of locums hosted on their performers lists.

Analysis of the information

The results of informal questioning were confirmed by the survey results (Appendix 1). These show that respondents have **no** access to alerts for non-host health board areas and 50% have no access for their host health board area. This clearly demonstrates an unmet need for information that the proposed resource should address. Not surprisingly respondents expressed a preference for future options which use a "push" approach to send out information, rather than relying on checking a known resource. The lack of interest in using RSS technology probably stems from a lack of understanding as evidenced by the free-form comments.

Key factors and influences linked to the priority issues and behaviours

The key issue is failure of distribution of health information alerts to locum GPs. From informal questioning of key informants this appears to be a consequence of the prohibitively high administrative cost of maintaining accurate contact details for every locum *registered* to work in an area, not just those who are hosted in that area.

Clarification of programme focus

The above results clearly demonstrate that existing cascade systems fail to provide alerts for those working outside their host board area, thus clarifying an unmet need for locum GPs. To address this the new resource should focus on providing a simple facility for locums to access health alerts from any health board area. The alternative of improving the existing cascade system is impractical as it would require either significant administrative resource to maintain locum contact details, or a change in administrative systems in *every* GP practice, which would be hard to enforce.

Need Validation: creation of a clear rationale

Despite a limited response the survey unequivocally shows that a number of locums fail to receive *any* health alerts. This is potentially a significant risk in terms of poorly informed doctors not being able to correctly manage patients. Therefore a clear need exists to improve the alert distribution process.

Defining the goal and measurable objectives

The goal is to create a means of distributing health alerts which results in locums having access to and acting upon these alerts for all health board areas in which they work. Providing a measurable objective for doctors acting on information is complex as it relies on individual behaviour. Proxy measures such as assessing availability of access to information must be considered. Setting a target of 90% of locums reporting having access to information alerts would provide a measurable objective.

Resource Benefits

The concept is to inform doctors about relevant health issues. To paraphrase from the NHS Scotland 2001 Strategy for Information[18] *'the right information, at the right time, by the right means and with the right safeguards'*. The potential gains of the proposed resource and challenges in implementation are outlined below.

Gains

By being more informed about current key public health issues doctors would be better placed to advise patients in making choices in their health related behaviour. Also doctors will be able to be more vigilant for appropriate symptoms and signs of conditions that might not otherwise be considered, if there were not a health alert in place (recent example might be radiation poisoning). Patients trust information from health professionals above that from other sources[19], having well informed medical staff is a vital part in this process. Equally using internet based technology may result in more rapid distribution of key public health alerts.

Challenges

Engagement of both health boards and locum GPs will be crucial in the success of the resource, it must therefore be created so that both groups are willing to use it as an alternative to the existing system. For health boards this will probably mean a system which fits easily with existing information cascade systems. From a locum viewpoint it must be simple to use and not require significant technical abilities. Care must also be taken to ensure the security of the resource so that only the target audience gains access and it is not made available to the wider community. Adding users will require a means to authenticate them as GPs. This will require administrative support, as will the unending task of updating the resource with new items.

Medium and Format

The current system of health alerts uses the concept of letters and paper documents. Whilst it might be possible to extend the existing paper cascade to include a list of registered members (i.e. locum GPs), keeping the list of members' contact addresses up to date is a significant administrative undertaking; one which has already been discarded by health boards on grounds of cost effectiveness.   The internet through web pages and e-mails provides a more efficient communication method where resource users can take responsibility for keeping themselves and their contact details up to date. Modern e-mail technologies such as IMAP4[20], and increased use of web based e-mail, which have superseded POP[21], are well suited to itinerant workers accessing e-mail from multiple locations. The development of "blogging" software[22] provides the perfect platform to easily support health information alerts, with minimal technical knowledge. Using this technology would be the most appropriate means of providing this resource. Two existing blog products, WordPress[23] and MovableType[24] appear to have the required feature set and plugins to provide the items specified in the criteria identified above, e.g. restricting access and ease of use. Text messaging, whilst providing a rapid immediate alert, is probably too intrusive for this sort of information and was less preferred in the survey.

Advantages

The format of a blog configured with more recent entries first and a searchable archive of previous entries provides the benefits of ease of access to new and old alerts, thus removing the need for locums to store copies of old alerts. Entries can be categorized allowing simple indexing for the different alerts types. A blog can be syndicated into both RSS and e-mail alerts to notify users of new postings. Equally, blogs can be configured so that multiple users can add entries thus facilitating the distribution of administrative workload.

Disadvantages

The proposed system requires locums to use e-mail, the web, or an RSS browser to access health alerts. Not all locum GPs will be comfortable with these technologies; though since the new GMS contract[25] it would be unusual to find a GP who does not make some use of a computer. As highlighted in the needs assessment there is a significant bias in the survey results towards doctors who can use these technologies.

Assessing Impact

The impact of the introduction of this resource in terms of the consequences of locums using the information in the health alerts would be hard to measure directly. Measuring access to health information alerts as a proxy could be assessed by a number of means. Firstly, via a follow-up survey questionnaire, which could either be e-mailed to users or appear as a pop-up on the site (in attempt to improve the response rate). It would be sensible to use a Likert scale for questions on perceived ease of access to information using the resource. Alternatively web metrics (page hits, user views, etc.) although not standardised[26] could be used in evaluating the success of the new information resource[27]. Direct feedback from registered users would also help assess the impact.

Maintaining Currency

A web based resource would rapidly become obsolete unless it was constantly updated. Pragmatically, this could be achieved in one of two ways. Firstly, by having a fixed administrative contact who receives alerts and updates the site appropriately; alternatively a technical mechanism could be found to allow those currently distributing the alerts to automatically update the site when they issue a new alert. Clearly the latter could have initial capital implications in terms of developing the automatic mechanism, but would have lower administrative revenue cost. There would be change management implications for those boards who currently use paper systems.

Future

Properly maintained, the resource will provide a useful information source for locum GPs to receive health alerts regardless of their host health board. There is potential for the resource expanding to provide an additional way for those currently receiving alerts to access the information. Indeed it could be considered for use to provide the main form of delivering health alerts in the future. Other developments could include "adding value" to the alerts by including links to appropriate internet health information resources. It would be important to consider a mechanism for feedback from the users of the site to involve them in such developments. To provide these services would require a specific support team to maintain and develop the resource including; an experienced webmaster, IT

support staff, specialised medical librarian staff (to locate appropriate related health resources for each alert), medical staff (to advise about categorising alerts and appropriateness of links), and administrative staff (to maintain and check membership).

It may be appropriate in the future to try to integrate the resource into existing public health support structures within NHS Scotland e.g. NHS Health Scotland[28] or the NHS Scotland e-library portal[29] and so utilise the public health and medical library skills that these organisations already possess.

Appendix 1: Needs Assessment Survey Results

Health Board Areas

1. Which health board Performers list are you "hosted" on ? (i.e. which area were you initially registered in/ which area deals with your appraisal)

		Response Percent	Response Total
Ayrshire and Arran		5.6%	1
Borders		0%	0
Dumfries and Galloway		0%	0
Fife		0%	0
Forth Valley		0%	0
Grampian		33.3%	6
Greater Glasgow and Clyde		**44.4%**	**8**
Highland (including Argyll)		5.6%	1
Lanarkshire		11.1%	2
Lothian		0%	0
Orkney		0%	0
Shetland		0%	0
Tayside		0%	0
Western Isles		0%	0
Other (please specify)		0%	0
	Total Respondents		**18**
	(skipped this question)		0

2. Which other health board areas are you registered to work in ?

		Response Percent	Response Total
Ayrshire and Arran		52.9%	9
Borders		29.4%	5
Dumfries and Galloway		23.5%	4
Fife		29.4%	5
Forth Valley		**58.8%**	**10**
Grampian		23.5%	4
Greater Glasgow and Clyde		35.3%	6
Highland (including Argyll)		52.9%	9
Lanarkshire		**58.8%**	**10**
Lothian		35.3%	6
Orkney		17.6%	3
Shetland		17.6%	3
Tayside		35.3%	6
Western Isles		11.8%	2
Other (please specify)		17.6%	3
	Total Respondents		**17**
	(skipped this question)		1

Health Alerts

3. How do you receive Public Health alerts from your Host Health board?

		Response Percent	Response Total
Posted to me at home by my host health board		33.30%	6
E-mailed to me by host health board		0%	0
Practices I work for have a locum folder and give me sight of these alerts when I go there.		16.70%	3
I have regular work with one practice and get alerts in internal mail there.		11.10%	2
I don't receive these kinds of alerts.		**50%**	**9**
Other (please specify)		0%	0
	Total Respondents		**18**
	(skipped this question)		0

4. How do you receive alerts for other health board areas in which you are registered to work in ?

		Response Percent	Response Total
Posted to me at home by the health board		0%	0
E-mailed to me by the health board		0%	0
Practices I work for have a locum folder and give me sight of these alerts when I go there.		0%	0
I have regular work with one practice and get alerts in internal mail there.		0%	0
I don't receive these kinds of alerts.		**100%**	**17**
Other (please specify)		0%	0
	Total Respondents		**17**
	(skipped this question)		1

Future Options for getting alerts

5. Please can you indicate which of the following possible methods of keeping yourself up to date with current public health alerts you would be willing to consider using.				
	Yes	**No**	**Don't know**	**Response Total**
Visit website to see recent alerts	24% (4)	**71% (12)**	6% (1)	**17**
Visit website after getting notification by e-mail	**94% (16)**	6% (1)	0% (0)	**17**
Visit website after getting notification by text message	40% (6)	**60% (9)**	0% (0)	**15**
Have full information in alerts e-mailed to me	**81% (13)**	19% (3)	0% (0)	**16**
Via an RSS (Really Simple Syndication) feed in an RSS browser.	14% (2)	14% (2)	**71% (10)**	**14**
			Total Respondents	**18**
			(skipped this question)	**0**

6. Other comments (optional)	
1	Not likely to visit website would prefer to get the info in one e-mail - lack of time to bother otherwise. Never heard of an RSS browser.
2	I often look at th alerts on doctors net uk - good source of current public health info
3	No idea what an RSS is or how to access it.
4	not sure what a RSS is
	Total Respondents **4**
	(skipped this question) **14**

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