



## **Healthmail Evaluation Report**

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## **Executive Summary**

Healthmail is a secure means of transmitting confidential patient information between health care clinicians. Healthmail commenced in 2014. The report seeks to evaluate several aspects of the service. The aspects included are users' experience of Healthmail, Healthmail usage metrics, the authentication process, and technical issues. These were examined through a survey, usage statistics, and 10 semi-structured interviews.

There were 645 respondents to the survey. Respondents were predominantly general practitioners (GPs) and amongst this group the sample was representative of the GP population.

### **Main findings:**

- The number of users has increased from 547 in November 2014 to 1,447 in February 2017.
- Over 100,000 secure clinical emails were transmitted by Healthmail in 2016.
- Amongst Healthmail users, 81% said that they would like to see the service continue.
- Amongst Healthmail users, 61% believe that Healthmail improves patient care.
- Healthmail users differ in their level of activity, with 42% of users checking their email accounts daily, while 23% rarely check their account.
- The ability to send images and attached documents securely was valued by respondents.
- Generally, interviewees were positive about Healthmail. They discussed benefits of Healthmail including security, time-saving, and improved communication.
- Interviewees also mentioned limitations such as lack of awareness of Healthmail.

### **Main recommendations:**

- Overall 63.3% of respondents suggested that integrating Healthmail with their GP practice software system would improve Healthmail.

- Respondents suggested that HSE hospitals and primary care teams should be encouraged to engage more with Healthmail.
- Respondents suggested that Healthmail should be expanded to include community pharmacies and nursing homes.
- Respondents suggested that Healthmail should not be used to transmit routine administrative memos and mass mailings.
- It was suggested by interviewees that Healthmail could benefit from further promotion.

Healthmail is a service that has a steadily increasing user base and is described positively by most key stakeholders and Healthmail users. Healthmail improves communications between clinicians across the health service to the benefit of patients. It has a key role to play in reducing the need for outpatient referrals by providing a secure medium for clinical communication between GPs and secondary care. The service needs greater buy in from managers and clinicians in hospital and primary care teams to achieve its full potential. It should continue to be promoted widely and be supported with educational activities. It is now ripe for expansion to pharmacies and nursing homes in the community. Integration with GP practice software systems will improve both uptake and regular usage of the service.

## Background

The Healthmail service commenced in November 2014. There was a commitment given at the outset to undertake an evaluation in the second year of the project. The following aspects to be included in the evaluation were:

1. The experience of users of the service – both GPs and support staff;
2. The experience of HSE users of the service – both primary care teams and secondary care users;
3. Use cases where the service was and was not of benefit to patient care;
4. The experience of ICGP with the authentication of GP users;
5. Integration of the service with GP practice software systems;
6. The metrics of the service: service quality and uptime, how many users, how many emails, use of attachments;
7. Any technical issues, such as the TLS connections to HSE or Voluntary Hospitals.

To fulfil items 1 to 4 above, a mixed method evaluation was undertaken - an online quantitative survey among Healthmail users and in-depth interviews with relevant stakeholders - in order to establish experience and perception in relation to Healthmail and its future direction.

Within this, the specific objectives were:

1. To establish the experience of practice staff with regard to using Healthmail.
2. To document user and stakeholder perception of the benefits and barriers of Healthmail.
3. To gather information on possible barriers and solutions from the perspective of users and stakeholders.

Items 6 and 7 of the evaluation are also addressed in this report.

## Methods

An online questionnaire (Appendix A) was developed in conjunction with the GPIT group. The survey was initially sent to all Healthmail user emails, and at one week intervals thereafter was sent to Healthmail users' alternative emails and to all ICGP members. Notices were placed on the GPIT and ICGP websites and in FORUM, the monthly print magazine of the ICGP, to encourage response and all respondents who opted to do so were entered in a prize draw for free ICGP annual meeting registration. The survey data was analysed using the statistical packages for social sciences SPSS V23.

In terms of the stakeholder aspect, 10 telephone interviews were undertaken – two with ICGP representatives, four with primary care team representatives and four with secondary care team representatives. The topic guide for these interviews can be seen in Appendix C. Krueger's (1994) framework analysis approach was used to analyse the data. This thematic approach allows for themes to develop both from the research questions and the participants' narrative. Themes deduced using open coding techniques were compared, recorded and all data specific to these themes noted. Sub-themes were then sought in order to provide a full view of the participants' opinions (Braun and Clarke, 2006).

A scientific advisory group was established by GPIT to oversee this evaluation project.

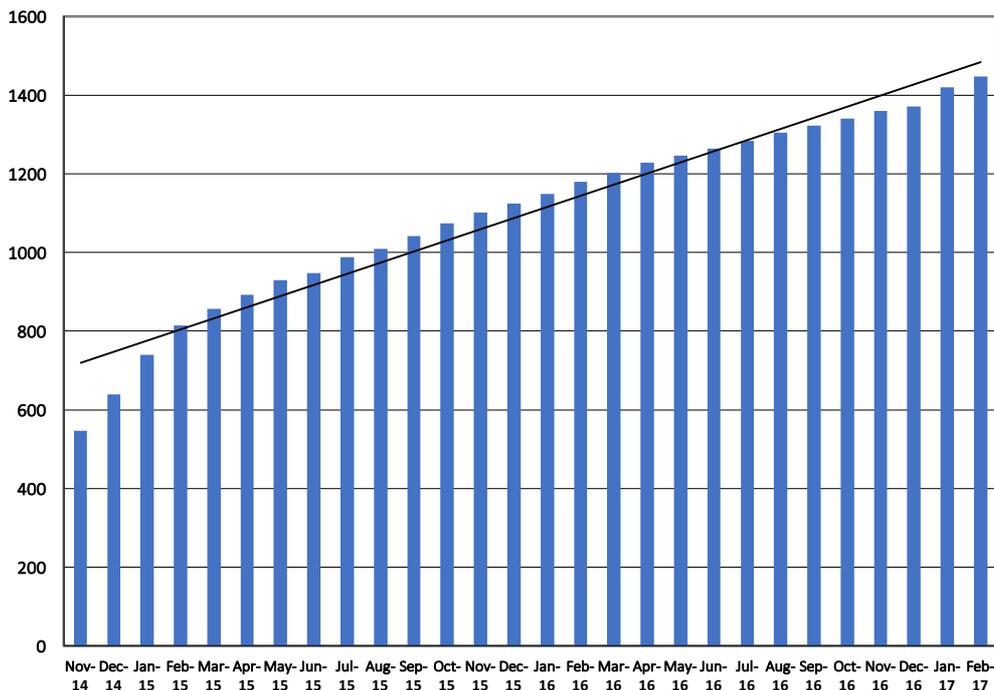
## Results

### Healthmail Current Usage

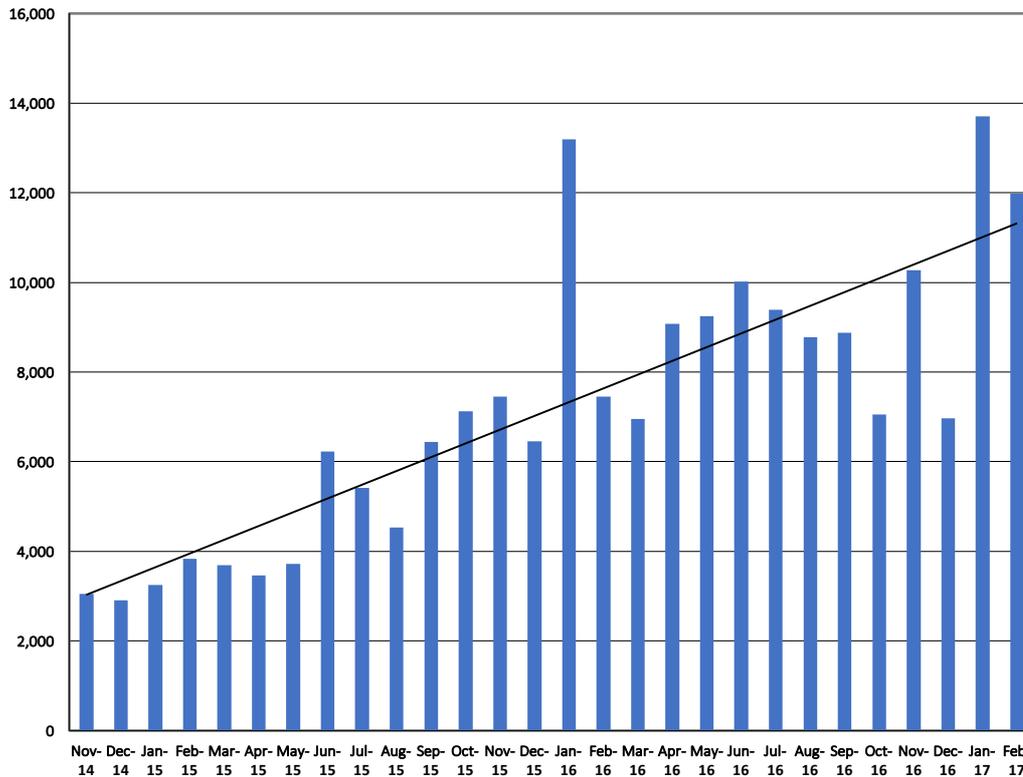
In February 2017, the total number of registered Healthmail account holders was 1,447. The number of account holders has steadily increased from 547 account holders in November 2014 as seen in Figure 1.

Amongst account holders, the total number of messages received and sent (excluding notifications and mass mailings) on Healthmail in February 2017 was 11,977. This has been an almost fourfold increase since November 2014 when the total was 3,053 messages. Further detail can be seen in Figure 2. In the year 2016, Healthmail transmitted 107,269 secure clinical emails.

**Figure 1. Number of registered Healthmail users from November 2014 to February 2017.**

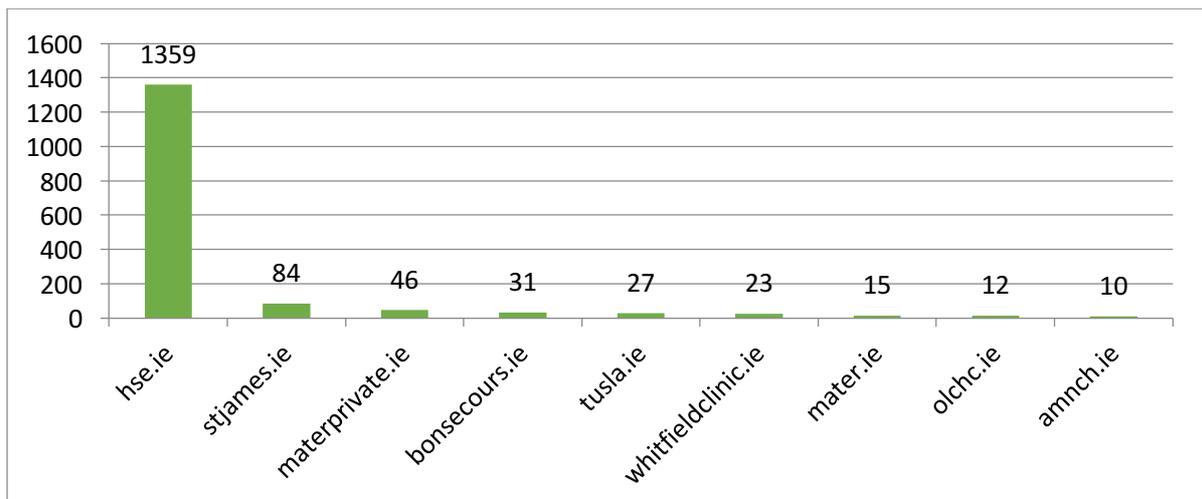


**Figure 2. Number of messages sent and received (excluding notifications and mass mailings) per month on Healthmail from November 2014 to February 2017.**



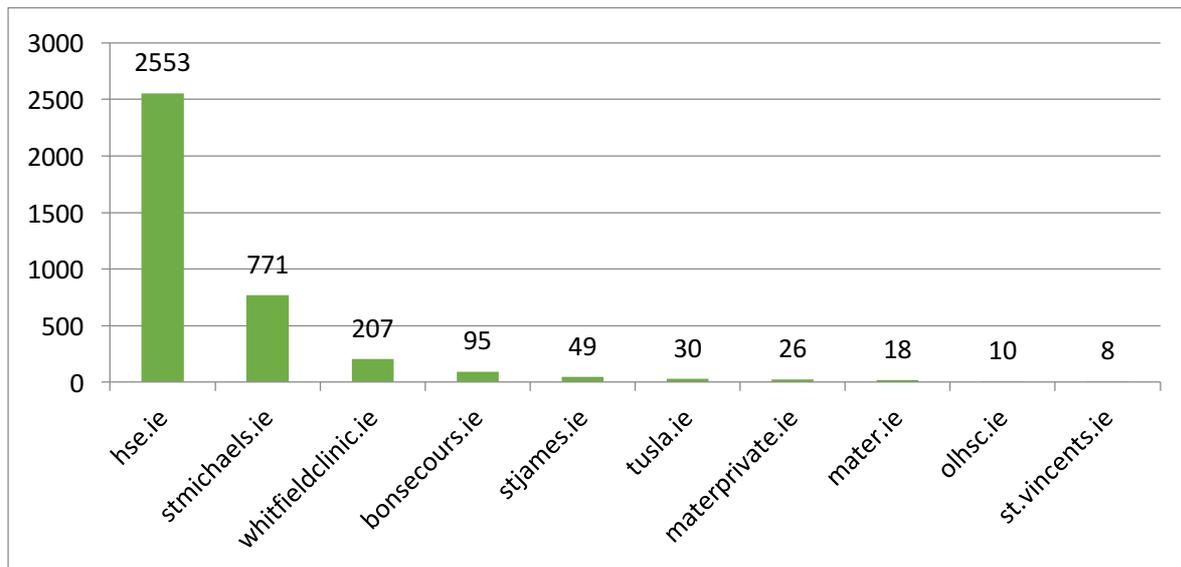
The primary domain for outgoing mail in February 2017 was the hse.ie domain with 1,359 mails sent, as seen in Figure 3.

**Figure 3. Number of Healthmail emails sent by domain in February 2017.**



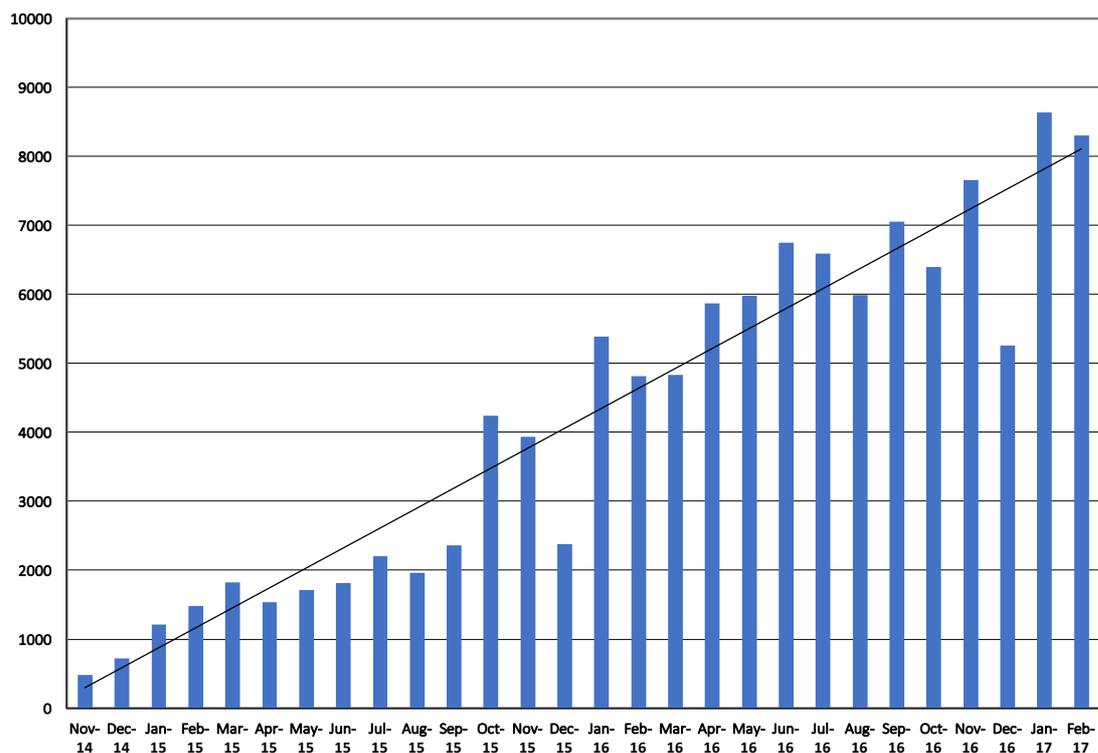
The primary domain in February 2017 for incoming mail was also hse.ie with 2,553 mails received, as seen in Figure 4.

**Figure 4. Number of Healthmail emails received by domain in February 2017.**



The number of Megabytes (MB) sent and received has steadily increased since Healthmail was available for use. As seen in Figure 5, it rose from 483 MB in February 2014 to 8,302 MB in February 2017.

**Figure 5. Total volume of messages sent and received (MB)**



## User Feedback – Survey Analysis

There were 645 respondents to the survey.

Overall, 55% (n = 276) of respondents who provided gender information were female. 45% (n = 115) of GPs were male. This is representative of the GP population where 53% of GPs were found to be female (1). Age and geographic information can be found in Table 1.

Amongst respondents, 38.6% (n = 249) have a personal Healthmail email, 39.4% have a practice/service Healthmail email, 19.4% (n = 142) of respondents do not have a Healthmail account, and 2.6% (n = 17) don't know if they have a Healthmail account. Amongst those with a Healthmail account age was the only demographic variable which was significantly related to having a Healthmail account; 63.5% (n = 40) of those under the age of 35 had a Healthmail account, whereas 89.1% (n = 123) of those over the age of 54 have a Healthmail account.

Most persons (74.4%) who have a Healthmail account are GPs and most account holders (88.2%) primarily use Healthmail in the GP practice setting (Table 2). This is as expected since Healthmail was initially established as a way for GPs to communicate securely with clinicians throughout the health services.

When asked whether they think the Healthmail service should continue, 74% (n = 375) of respondents think that it should continue, 6% (n = 30) think it should not, and 20% (n = 101) of respondents don't know. A breakdown of these results by presence/absence of Healthmail account is shown in Figure 6. Amongst account holders 81% (n = 332) think the Healthmail service should continue.

Respondents were also asked if they think the Healthmail service improves patient care; 55% (n = 275) of respondents said yes, 15% (n = 74) said no, and 30% (n = 152) of respondents said that they don't know. Figure 7 contains a breakdown of these results by presence/absence of a Healthmail account. When Healthmail account holders only are considered, a slightly higher proportion of 61.2% (n = 249) believe the Healthmail service improves patient care.

**Table 1: Age, type of area and Community Health Organisation of respondents**

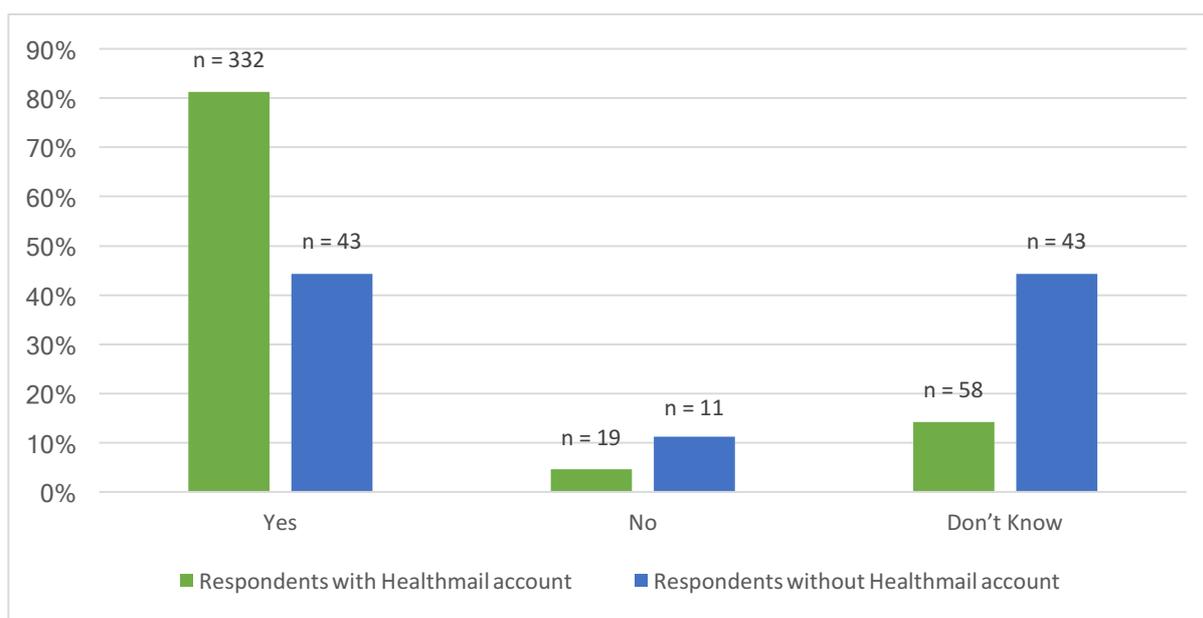
	<b>%</b>	<b>N</b>
<b>Age</b>		
<b>&lt;35</b>	12.4	63
<b>35-54</b>	60.3	305
<b>&gt;54</b>	27.3	138
<b>What type of area respondents practice in</b>		
<b>Urban*</b>	56.6	282
<b>Rural</b>	18.7	123
<b>Mixed</b>	24.7	93
<b>What Community Health Organisation (CHO) respondents are working in</b>		
<b>CHO 1</b>	6.9	34
<b>CHO 2</b>	11.7	58
<b>CHO 3</b>	6.7	33
<b>CHO 4</b>	14.6	72
<b>CHO 5</b>	14	69
<b>CHO 6</b>	11.3	56
<b>CHO 7</b>	14.4	71
<b>CHO 8</b>	7.5	37
<b>CHO 9</b>	13	64

\*an urban area was described as an area with 5,000 or more people.

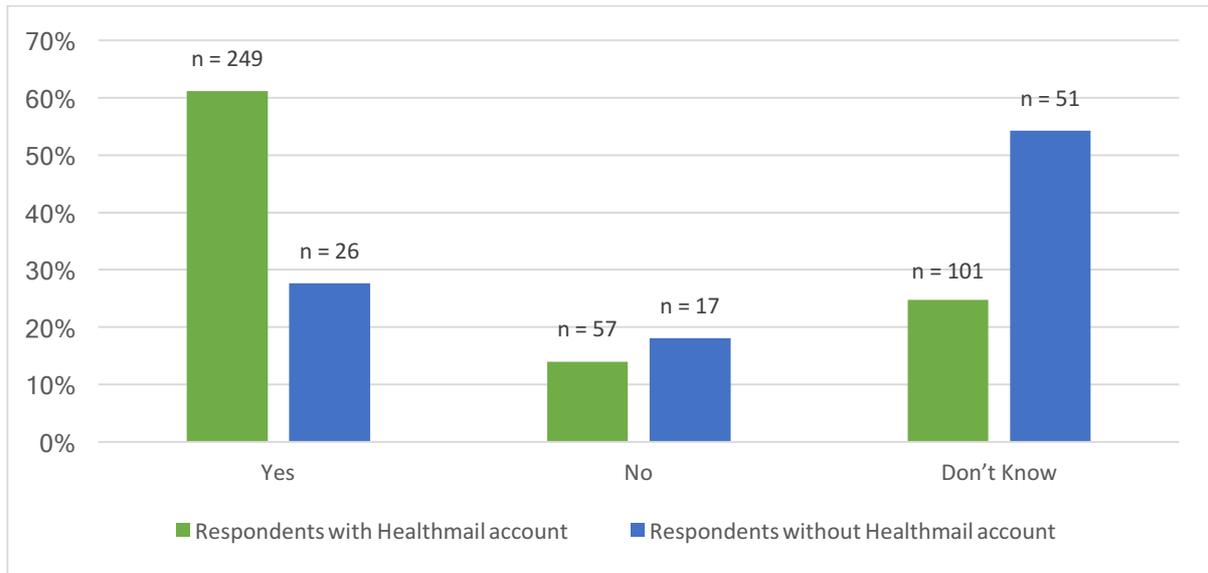
**Table 2: Setting of use and practice role of Healthmail account holders**

	%	N
<b>Setting in which account holders mainly use Healthmail</b>		
GP Practice	88.4	436
HSE Agency	2.6	13
Voluntary Agency	0.4	2
Out of hours Co-op	1.2	6
Pharmacy	1	5
Other	1	5
Don't use	5.3	26
<b>Healthmail Account Holders' Practice Role</b>		
GP	74.4	276
Practice Nurse	0.8	3
Practice Manager	11.9	44
Secretary/Receptionist	10.5	39
Other	2.4	9

**Figure 6. Whether respondents think the Healthmail service should continue, by presence/absence of Healthmail**



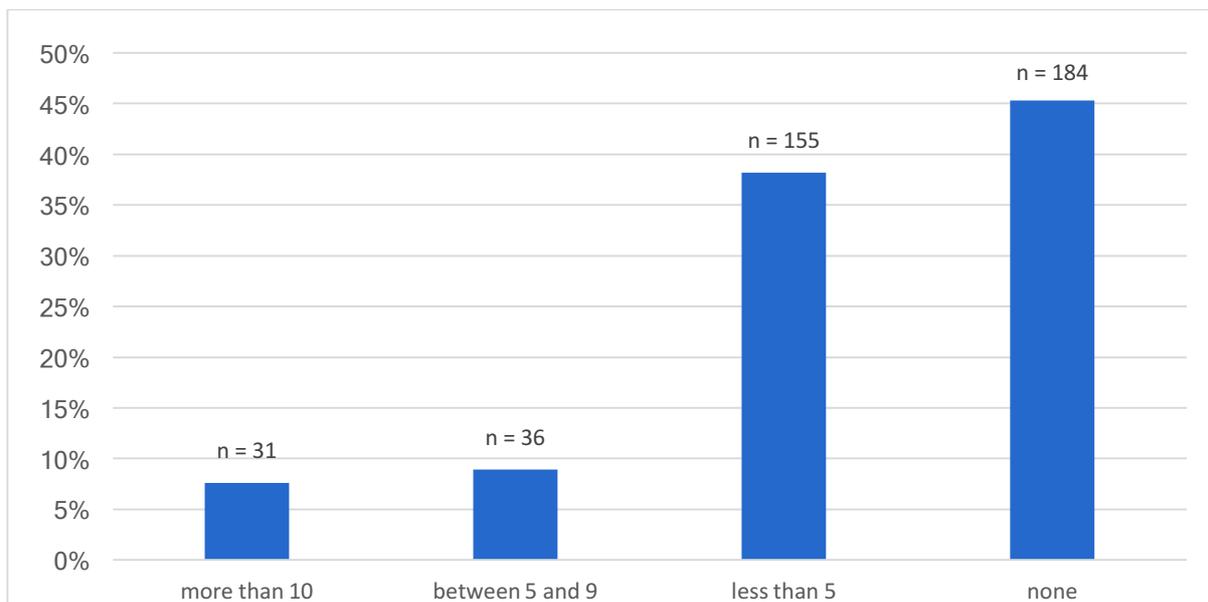
**Figure 7. Whether respondents think Healthmail improves patient care, by presence/absence of Healthmail account**



The questionnaire asked how often respondents check their Healthmail account; 42% (n = 173) of respondents who have a Healthmail account check their account daily and 24% (n = 96) check it rarely. They were also asked how often they receive Healthmail emails; 15% (n = 60) of Healthmail users receive Healthmail emails daily and 36% (n = 143) of Healthmail users receive Healthmail emails rarely.

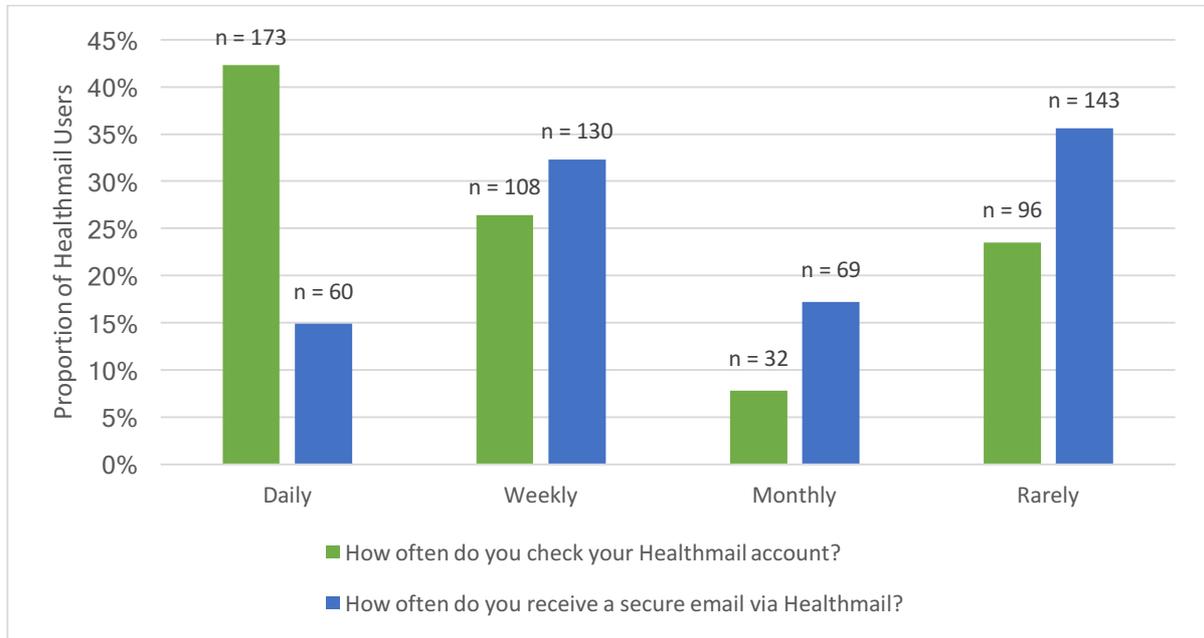
Many (45%) Healthmail account holders had sent no Healthmail emails in the previous week (Figure 8).

**Figure 8. How many secure emails Healthmail account holders have sent in the previous week**



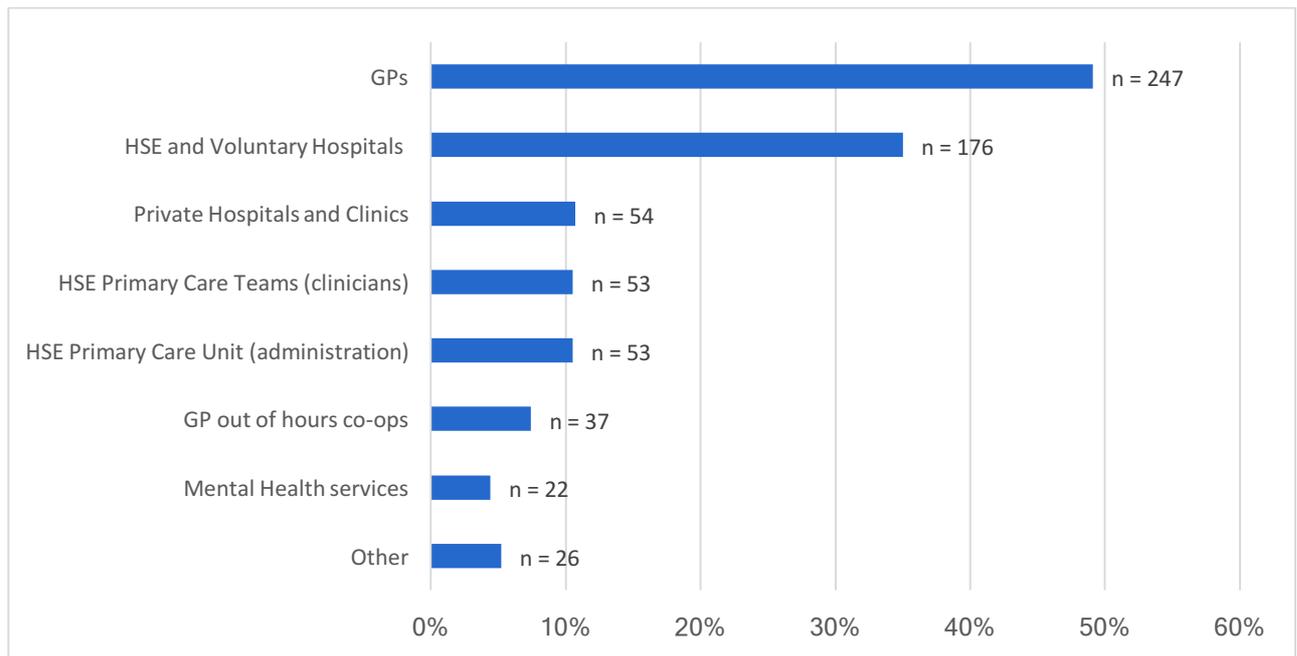
Further breakdown of Healthmail emails received and account checking, by presence/absence of Healthmail account can be seen in Figure 9.

**Figure 9. How often Healthmail users check their Healthmail account and receive emails on their Healthmail account**



Healthmail users were asked who they primarily communicate with through Healthmail. They primarily use Healthmail to communicate with GPs (60%) and HSE/Voluntary Hospitals (43%). Further information on who Healthmail users are communicating with using Healthmail can be seen in Figure 10.

**Figure 10. Who Healthmail account holders are communicating with using Healthmail**



Amongst those who responded 'other' two said they communicate with TUSLA, The Child and Family Agency, using Healthmail, another said they communicate with dieticians and another said specialist nurses.

Respondents were also asked to describe what they mainly use Healthmail for; of the 358 who responded, many wrote that they use it 'to transfer patient notes', this particularly involved GPs transferring notes/records from one practice to another. Many respondents said that they mainly use Healthmail to communicate with consultants. The consultant communication primarily involved 'seeking advice to prevent referrals', and 'urgent queries with consultants'. Respondents also discussed using it to receive results such as 'blood and x ray results'. Others have used it to contact the HSE's haemangioma service, and to communicate with primary care teams, HSE administration and TUSLA.

The majority of Healthmail users found Healthmail useful for their practice/service; 43.5% (n = 178) of users described it as 'very useful', 39.1% (n = 160) of users described it as 'somewhat useful', and 17.4% (n = 71) of users described it as 'not useful'. Respondents then provided examples of how Healthmail helped them or their patients. One theme which emerged from several responses was time saving. One respondent said:

*'Can have an email conversation with consultants and include photos to get advice for patients without them having to travel to the clinic'*

In a similar example a respondent described how they:

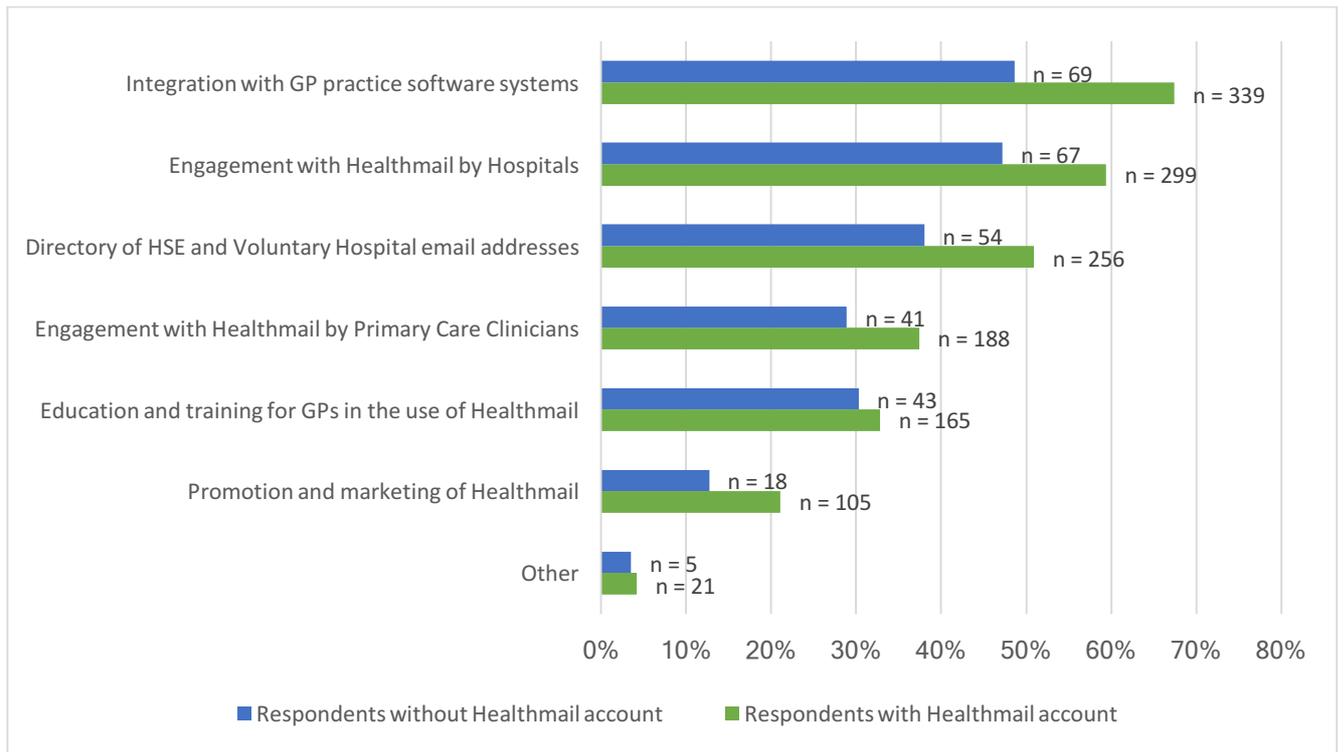
*'Expedited a patient with recurrent pyelonephritis from a 2-year urology wait to a few weeks, by emailing a Consultant Urologist who agreed she shouldn't have been waiting that long and needs investigations'.*

Another respondent *'avoided a referral for a complex frail patient with abnormal lab results'*. Others found it useful as it *'cut down costs of postage'* and *'cuts down on paperwork'*. Other interesting examples involved using it *'as a portal to send secure images of rashes'*, getting *'GP alerts re patients seeking addictive drugs'* and *'Notifying the HSE so as not to send mothers who have miscarried information re their planned births.'*

Respondents were asked to suggest ways Healthmail could be made more useful for them; respondents could tick as many boxes as they wished from a list provided. Overall 63.3% (n = 408) of respondents suggested that integrating Healthmail with their GP practice software system would improve Healthmail. Further results can be seen in Figure 11 broken down by presence/absence of Healthmail account.

Amongst suggestions in *'Other'* was a Healthmail iPhone app and a video tutorial for Healthmail. Healthmail is in fact available on smartphones and tablets using Microsoft OWA App. Many suggested that engagement with private hospitals would improve the service, while others felt that more people need to use the Healthmail service.

**Figure 11. Respondents' suggestions for making Healthmail more useful**



When asked to describe an action to improve Healthmail, a small number relayed issues about receiving irrelevant HSE emails and memos:

*'Snowed under by unimportant HSE driven emails'*

A respondent suggested that this could be addressed by making Healthmail *'clinical only, not for HSE spam'*

Others focused on the need to encourage consultants and private hospitals to use Healthmail:

*'It would be great if more consultants would enrol and use Healthmail. It could potentially reduce numbers in outpatient clinics'*

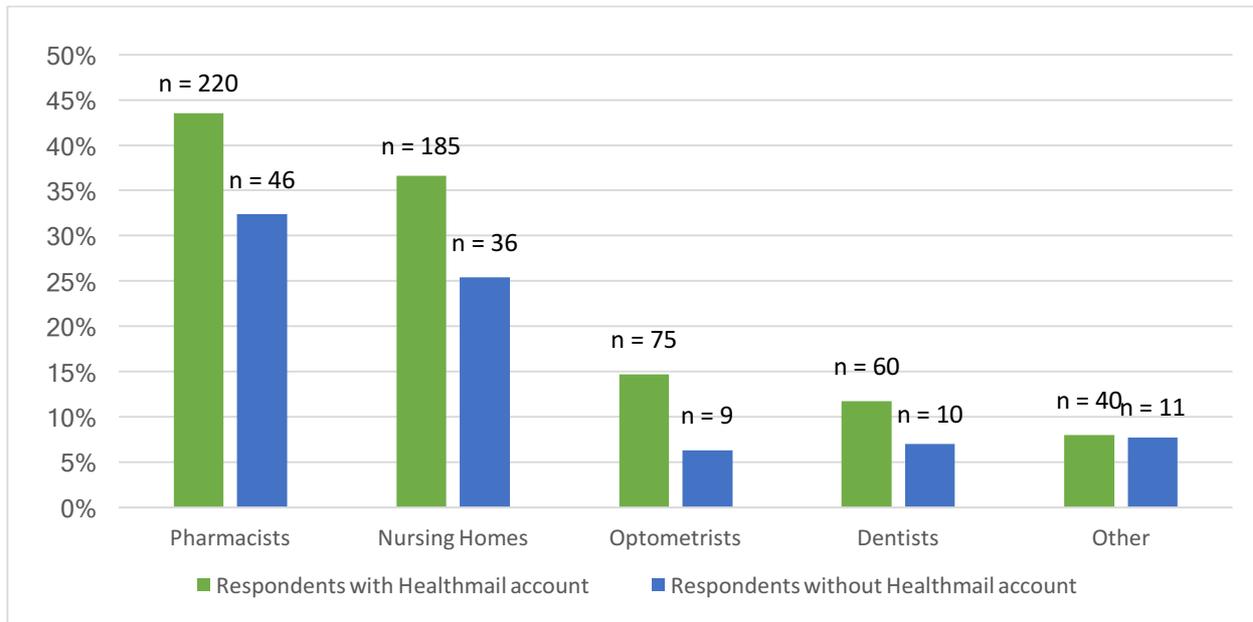
Others referred to the need for promotion and education:

*'Promote it aggressively through CME. Educate us how to use it'*

Respondents were also asked if they would like to see Healthmail expanded to other disciplines; 58% (n = 279) of respondents replied yes, 12% (n = 60) replied no and 30% (n = 144) said that they don't know. Amongst those with a Healthmail account

60% said that they would like to see it expanded to other disciplines. The disciplines respondents would like to see Healthmail expanded to can be seen in Figure 12, broken down by presence/absence of Healthmail account.

**Figure 12. Respondents' suggestions of who to expand Healthmail to, broken down by presence/absence of Healthmail account**



Those who made suggestions under the 'other' option, predominantly suggested that Healthmail be expanded to the allied health professionals such as physiotherapists, occupational therapists and speech therapists.

Respondents were also asked if they would be happy to communicate with their patients over a secure email solution; 42% (n = 209) of respondents said yes, 36% (n = 181) said no and 22% (n = 108) said they don't know.

Respondents were lastly asked if they had 'any comments or feedback on Healthmail'. Many responses stressed that in order for it to work it needs 'more engagement by hospital consultants'. While others said there was a need for marketing and training:

*'Needs to be promoted more and more training required'.*

Others mentioned that 'Healthlink is a much better model.' While some stated that Healthmail needed to be 'integrated with our IT system.' Several respondents made clear their satisfaction with the service with one relaying that:

*'It has completely transformed my working life and greatly improved patient care'.*

Another respondent gave a similar response:

*'Healthmail has allowed us to speed up processes and workflow, freeing up staff for other tasks and improving Patient Safety'.*

While others disagreed stating that *'Healthmail adds extra work to your day'*. Security was a strong feature of one responses:

*'Secure email contact with clinical specialists is also great. Security is reassuring'.*

Others reiterated this, saying, in reference to Healthmail, that *'security & confidentiality are of paramount importance when handling clinical information'*.

### **Feedback from Stakeholders**

The results displayed below arrived from a detailed qualitative analysis of ten semi-structured interviews conducted with stakeholders.

As the present study was based on the evaluation of the Healthmail service, the themes which emerged were concentrated around the following topics:

- The benefits of the Healthmail service
- Limitations and barriers of the Healthmail service
- Suggestions for improvement

### **Benefits of the Healthmail service**

The analysis showed that the experiences of all ten interviewees towards the Healthmail service were largely positive. The interviewees who used Healthmail on a daily basis revealed that the service is very helpful and easy to use, and it makes a significant impact on their professional life. One of the general practitioners expressed that:

*'Healthmail has really transformed my working life ... It is very helpful with my work and it is absolutely vital for me' (Participant 6).*

Safety, confidentiality and practicality (in terms of communication and speed of service) were found to be the most significant benefits of Healthmail, according to interviewees. All of the participants emphasised that being able to send a patient's private data in a safe manner is a great advantage of Healthmail in comparison to the 'old system', where confidential information was faxed or posted:

*'The biggest importance of Healthmail is the fact that it is secure and encrypted' (Participant 8).*

*'...Healthmail is essential to the sharing of confidential information with the patient's consent' (Participant 5).*

It was evident that the Healthmail service contributed towards their reassurance of safety, and provided an additional sense of ease about the protection of patient privacy and confidentiality. The secure sharing of patient information was very much welcomed by all interviewees.

Furthermore, four participants agreed that the manual ways of sending confidential information, did not only have the potential to compromise a patient's privacy, but also created lengthy delays in receiving information:

*'in the previous system ... in the private hospitals you're probably looking at a turnaround of maybe 4-5 days, with the public hospitals you are looking at a turnaround of anything up to 2-3 months' (Participant 2).*

The delays in the manual process were seen as unnecessary and 'old-fashioned', and interviewees expressed that sending information electronically, through a safe channel such as Healthmail, made their work easier, faster and more efficient. The instant sending and receiving of information was found to be very helpful in terms of:

*'...reducing the number of referrals... getting quicker appointments, notifying the specialist directly about things we need seen urgently' (Participant 3).*

Additionally, being able to include attachments such as photos or a PDFs of prescriptions, was highlighted as very useful by the two interviewees. Because of this particular feature, they found Healthmail to be a very convenient and smooth system to use.

The improved communication was mentioned by the majority of participants, and specifically a hospital pharmacist emphasised that:

*'Healthmail was very good in terms of improving the speed of communication, the quality of communication, better access of information, as well as more effective discussion between health care providers' (Participant 7).*

Overall, from the stakeholders' perspective, Healthmail was viewed as a great opportunity to easily connect all parts of the healthcare system, in order to provide improved and more efficient care for patients.

### **Limitations and barriers of the Healthmail service**

The main limitation of the Healthmail service experienced by the four stakeholders were the small number of Healthmail users. Also, the uncertainty that the Healthmail messages are actually being received and read was raised by interviewees.

Both primary and secondary care team representatives were under the impression that there is still an insufficient number of healthcare providers who use Healthmail. Three of the participants felt that this is creating an additional barrier for others to start using Healthmail on a regular basis. It was suggested that the lower numbers of users might be due to a lack of awareness of the Healthmail service, as well as an unwillingness of the people who do have a Healthmail account to utilise it. A secondary healthcare representative noted that:

*'I don't think it's that well known about, we kind of came across it accidentally... Sometimes when we speak to people they haven't heard of it' (Participant 1).*

Furthermore, a primary care representative revealed that *'Practically none of my specialist colleagues use Healthmail'* (Participant 3). The lack of communication between medical professionals indicates that there is a gap in information flow, which makes communication limited, or *'one sided'*. A secondary care team representative also observed *'...there are still quite a few GPs who have a Healthmail account but don't use it. So I think that I'm communicating with them and I'm not communicating with them'* (Participant 4). Seemingly, the lack of interest as well as enthusiasm of medical professionals who do not use Healthmail creates an obstruction in the large scale uptake of the service.

From another aspect, since *'there is no onus on anyone to have to use it, it is not their main account'* (Participant 9), some of the participants felt that there is a high level of uncertainty that Healthmail emails are read. The interviewees stressed that they are always quite unsure if the intended recipient has opened, read and acted upon the Healthmail email. Some of the interviewees agreed that *'...there is no guarantee that a person actually accesses it on the other end'* (Participant 7). The lack of confirmation that the email was read, causes users to turn to alternative ways of communication, going back to old fashioned methods such as faxes or telephone calls. This undermines the purpose of Healthmail, because the same information is being sent using several sources instead of one.

The limitations specifically point out the existence of a gap in awareness about the Healthmail service, among practitioners and support staff. The particular barrier could be easily overcome with a provision of additional information about Healthmail, through education or promotion, across various healthcare cadres.

### **Suggestions for improvement**

In terms of improvement it was suggested that better promotion, confirmation of the email receipt and expansion of Healthmail to community pharmacies could be useful in the future.

Promotion of Healthmail, especially among general practitioners was encouraged by all participants. They experienced high levels of positive attitudes and curiosity, when talking with healthcare providers who have never used the service before *'...very often when we speak to places that should have heard of it they have not heard of it. When they hear of it they are delighted'* (Participant 1). One of the interviewees from the primary care sector has even taken steps to promote Healthmail among local GPs. However it was suggested that in order to make the Healthmail service more successful and effective, promotion should be done on a national level, and potentially new-users should be offered a symbolic reimbursement.

Reassurance that the email has been received and read on the other side was highlighted as essential by two of the participants. *'Confirmation of the receipt. Something that we know that it was delivered to an address'* (Participant 7) was particularly suggested by the hospital pharmacist. Another participant raised an issues

about read receipts. Since the Healthmail service cannot make *'read receipts'* mandatory for its users, encouragement from the practice managers to their employees to send their individual receipts could contribute towards greater satisfaction and usage of Healthmail. Also, in terms of further technological improvement of Healthmail, it was pointed out that *'incorporation of the Healthmail functionality directly into the patient management software'* (Participant 2) could be particularly beneficial. As suggested by two general practitioners, this would be of a great convenience for them and their colleagues, because it will allow an instant connection with Healthmail, without requirement to log in/out every time when they want to use it.

The potential inclusion of community pharmacies in the Healthmail system was welcomed by all primary and secondary care team representatives. The interviewees found that expansion of the service would contribute towards *'easier communication'* (Participant 10) and better integration of all services committed to the wellbeing of patients. The possibility that a group email could be sent to all service providers involved in a treatment of a particular patient was suggested as well. This would additionally contribute towards improved team work, and ultimately more efficient care.

### The experience of ICGP with the authentication of GP users

Item 6 of the evaluation was covered by means of a semi-structured interview with the ICGP IT professional. She found the GP authentication process to be flawless and very simple to carry out. The matching criteria, which involved three of the following: GPs name, practice address, ICGP ID number, medical council number, mobile number or alternative email address, was used to identify and verify future Healthmail users. The IT professional stated that the Healthmail support desk based in Limerick was very helpful and *'it was great to be able to pass any queries on authentication'* to them. Any potential issues were dealt with in a professional and efficient manner, which made the whole process a very positive experience.

## Technical Issues

Item 7 of the evaluation was addressed through information directly from the Healthmail service. The Healthmail system is designed as a closed private network where information flows only within the Healthmail service and between Healthmail addresses and connected health agencies. Thus two or more users with @healthmail.ie addresses can communicate with each other and a user with an @healthmail.ie address can communicate with a clinician with an @hse.ie or an @voluntaryhospital.ie address. The Healthmail system uses Transport Layer Security (TLS) to connect to Voluntary, Maternity, Children's and Private hospitals throughout Ireland. TLS is established between specific IP addresses and using digital IDs as authentication. The Healthmail service is not open to the wider Internet.

The experience of the technical configuration of Healthmail has been excellent. Over thirty health agencies are securely connected to Healthmail and problems, such as a change in IP address by a hospital, are infrequent and easy to correct. Appendix B shows a list of health agencies securely connected to Healthmail.

## **Discussion**

Healthmail appears to be in widespread use as 78% of respondents have a Healthmail account. Though there may be a response bias where those with a Healthmail account were more likely to respond to this survey. The majority of respondents to the survey were GPs. Overall there are currently 1,447 registered Healthmail users.

Healthmail users seem to fall into two groups, high volume users and low volume users. For the month of February 2017, 1,447 Healthmail users sent and received 11,977 secure emails. This works out as an average of 8 emails sent or received per month. In the week before carrying out the survey, 45% of account holders reported that they had sent no Healthmail emails. Also, according to their survey replies, 35.6% of account holders rarely receive a Healthmail email. However, 42% of account holders check their account daily.

Most Healthmail communication is with GPs (49%) or the HSE/voluntary hospitals (35%). More specifically, Healthmail is being used to transfer patient notes, particularly from one GP to another. Also, account holders are seeking advice from consultants through Healthmail. Furthermore, account holders are using Healthmail to transfer patient results such as x-rays and blood results.

The survey revealed a positive correlation between age and having a Healthmail account. Several explanations may account for this. Firstly, more established GPs are more likely to have come across ethical issues surrounding the insecure transfer of patient information and therefore see the benefit of using a service such as Healthmail. Secondly, younger GPs are more likely to do locum and sessional work and thus may be less likely to have access to a Healthmail email account.

## **Benefits**

Overall, respondents were positive about Healthmail. Amongst all survey respondents 74% think Healthmail should continue and amongst Healthmail account holders 81% think it should continue. Similarly, 82.6% of survey respondents described Healthmail as either very useful or somewhat useful. Further, the majority of respondents and account holders said it improves patient care. The positivity continued in other areas of the survey with respondents saying that Healthmail has improved their working life.

This was mirrored in the qualitative interviews where participants described Healthmail as both helpful and vital to their work. This general positivity may underlie the consistent increase in Healthmail registrations since November 2014.

More specifically, both interviewees and survey respondents indicated how Healthmail saved them a lot of time. Survey respondents relayed that Healthmail reduced the number of referrals they make. Several examples were offered of a substantial reduction in referral waiting times arising from the use of Healthmail. Following on from this, interviewees said that Healthmail led to more effective communication. Reduced paper waste, a reduction in costs, and an increase in patient safety were also cited as direct results of using Healthmail.

A benefit highlighted by interviewees was confidentiality and security. Interviewees described this as the most important feature of Healthmail. Similarly, survey respondents identified Healthmail as essential for the secure transfer of sensitive information. Respondents gave examples of transferring extremely sensitive information through Healthmail which would not have been possible using previous methods such as fax. Interviewees described the previous methods of communicating sensitive information, such as fax and post, as old-fashioned and not secure.

Interviewees also pointed out that the ability to attach PDFs and photos was a benefit of Healthmail. An example of which can be seen in the survey results where respondents described sending pictures through Healthmail. The ability to send PDFs and photos with sensitive information assists healthcare providers to communicate more effectively with each other.

Finally, the ICGP's IT professional found the authentication process to be faultless and simple. The IT professional also described the Healthmail support desk as very helpful.

## **Limitations**

As mentioned above, there are 1,447 Healthmail accounts. Although the number of users is relatively high, the frequency of the usage could be questioned. According to the survey, 42% of respondents do check their account on a daily basis. However, there is still a considerable number of participants who check their Healthmail account once a month or less (31%). The irregular utilization of Healthmail by its users creates

a potential barrier in further communication between healthcare providers. This particular issue was raised during the interviews. The interviewees indicated that they were uncertain whether *'the other side'* was using Healthmail actively. They saw this as one of the main limitations of Healthmail. This limitation is not directly related to Healthmail as a service, but it arises from a lack of willingness of Healthmail account holders to utilize the service on a regular basis. Therefore, the healthcare representatives emphasised that there is always a doubt that a sent Healthmail was actually opened, read and acted upon. Interestingly, although a sense of uncertainty was seen as a Healthmail barrier, it did not discourage interviewees from further use.

In addition, a potential barrier to wider utilization of Healthmail, is a gap in awareness about the Healthmail service among healthcare professionals. Both, the primary and secondary healthcare representatives highlighted that they encountered colleagues and support staff who were unaware of Healthmail, or simply did not use it. A lack of interest or knowledge among healthcare professionals about Healthmail, additionally creates barriers towards better uptake of the service. This may be related to the time deficiency, which the majority of the healthcare professionals experienced. However, it was suggested by the interviewees that Healthmail is a time saving service. Self-interest was discussed as a prime motivator for registering a Healthmail account, therefore time-saving might be an ideal means of promoting Healthmail to potential users. Since the majority of surveyed Healthmail users communicate mostly with GPs (49%) and HSE hospitals (35%), further promotion among these sectors would be helpful for the future expansion of the service.

## **Improvement**

*'Integration with GP practice software systems'* was found to be the most desirable way of improvement suggested by the survey participants. The participants with and without Healthmail accounts equally encouraged this possibility. Moreover, the interviewees highlighted that the integration of Healthmail in practice management software (PMS) systems could be very useful and efficient. The potential integration into the systems would contribute to better communication and time saving. The integration will allow Healthmail users to address an issue highlighted by interviewees which was having to login to several accounts. Furthermore, the promotion of the service was encouraged as well. Interestingly, promotion of Healthmail was the most

common suggestion among interviewees. The interviewees found that better marketing around Healthmail, possible on a national level, would contribute to greater awareness and an increased number of users. Therefore, the further expansion to other primary care sectors (such as pharmacies and nursing homes) would contribute to the improvement of Healthmail and essentially more efficient care.

Amongst the suggestions to improve Healthmail were the creation of a Healthmail app and a video tutorial. However, there already is a Healthmail app and video tutorial.

Confirmation of the email receipt was proposed as one of the solutions for improvement. Since there are two types of receipts, delivery receipt and read receipt, it is important to distinguish the difference. Although the implementation of delivery receipts was suggested by the participants, they already exist as a part of the Healthmail service. They inform the sender that Healthmail has been delivered to the receiver, and they also provide a further sense of safety, in comparison with manual sending of data (through post or fax). However, since the read receipts are merely a human intervention, the Healthmail service cannot make them mandatory. The read receipts are triggered when the receiver opens the email, and decides to send back a read receipt. Considering the amount of emails and constraints of the time, healthcare representatives may be reluctant to send a read receipt. Therefore, although the suggested improvement could be very helpful and could provide additional reassurance, it is based on individual's choice and is not a facet that could be implemented by the Healthmail system.

## Conclusion

Healthmail is an expanding service which healthcare providers view positively. The majority of participants found it very helpful and easy to use, and for some the service made a significant impact on their working life. The Healthmail service fulfilled the stated aim of sending patient information confidentially and Healthmail's security is one of the primary benefits highlighted by users. Along with other positives such as cost and paper saving, its safe nature has seen the service expand its number of users steadily since its inception in 2014. However, there are a few limitations. There is still a considerable number of healthcare providers who have Healthmail accounts but rarely use them. Improvement of the service, in terms of further promotion and

integration of Healthmail with the PMS systems, could possibly address these issues. Several of the improvements suggested in the surveys and interviews are currently being implemented by the HSE.

## References

1. Irish College of General Practitioners. ICGP Membership Statistics, 2016.

## **Appendices**

### **Appendix A: Questionnaire**

## Healthmail Evaluation Survey

### Introduction

**Healthmail, secure clinical email, has been in operation for two years. It is now time to evaluate Healthmail, to help decide whether it is a worthwhile service and should continue to be funded by the HSE. We would be grateful if you could complete this brief (5 minute) online questionnaire, whether you are a Healthmail user or not. If you use Healthmail, we are particularly keen to hear your stories of instances in which Healthmail assisted you and your patients. Your responses are anonymous and your help is much appreciated.**

**We have tried to keep this survey as simple as possible; there are some mandatory questions, denoted with an \*, but we have kept these to a minimum.**

**Thank you for your assistance.**

**Brian O'Mahony, GPIT Project Manager**

**Karina Hull, eHealth Ireland**

**Claire Collins, Director of Research, ICGP**

\* 1. Do you have a Healthmail account? (i.e. do you have a Healthmail email address?)

- Yes, personal Healthmail email
- Yes, practice/service Healthmail email
- No
- Don't know

## Healthmail Evaluation Survey

\* 2. In which setting do you mainly use Healthmail? (tick only one)

- GP Practice
- HSE Agency
- Voluntary Agency
- Out of hours Co-op
- Pharmacy
- Other

Other (please specify)

## Healthmail Evaluation Survey

\* 3. What is your role in the practice?

- GP
- Practice Nurse
- Practice Manager
- Secretary/Receptionist
- Other

Other (please specify)

\* 4. How often do you check your Healthmail account?

- Daily
- Weekly
- Monthly
- Rarely

5. How often do you receive a secure email via Healthmail?

- Daily
- Weekly
- Monthly
- Rarely

6. How many secure emails have you sent via Healthmail in the last week?

- more than 10
- between 5 and 9
- less than 5
- none

\* 7. Who are you communicating with using Healthmail? (tick all that apply)

- HSE and Voluntary Hospitals
- Private Hospitals and Clinics
- HSE Primary Care Unit (administration)
- HSE Primary Care Teams (clinicians)
- Mental Health services
- GPs
- GP out of hours co-ops
- Other

Other (please specify)

8. What do you mainly use Healthmail for? You can list up to three items.

1.

2.

3.

9. We would love to hear examples of how Healthmail has helped you or your patients. Could you please tell us your experiences? Please don't include any patient identifiable details. You can give up to three examples.

Example 1:

Example 2:

Example 3:

\* 10. How useful is Healthmail for your practice/service?

- very useful
- somewhat useful
- not useful

11. Which of the following are important to make Healthmail more useful to you? Please tick all that apply.

- Integration with GP practice software systems
- Education and training for GPs in the use of Healthmail
- Directory of HSE and Voluntary Hospital email addresses
- Engagement with Healthmail by Hospitals
- Engagement with Healthmail by Primary Care Clinicians
- Promotion and marketing of Healthmail
- Other, please specify

Other (please specify)

12. What should we do to improve the Healthmail service? You can enter up to three key actions.

1.

2.

3.

13. Would you like to see the Healthmail service expanded to other disciplines?

- Yes
- No
- Don't Know

14. To which of the following would you like to see Healthmail expanded? Please tick all that apply.

- Pharmacists
- Dentists
- Optometrists
- Nursing Homes
- Other

Other (please specify)

15. Would you be happy to communicate with your patients over a secure email solution?

- Yes
- No
- Don't Know

16. In your opinion, does the Healthmail service improve patient care?

- Yes
- No
- Don't Know

\* 17. Should the Healthmail service continue?

- Yes
- No
- Don't Know

18. What type of area do you practice in? (In this evaluation an urban area is defined as one with a population of 5,000 or more)

- Urban
- Mixed
- Rural

\* 19. What is your gender?

- Male
- Female

\* 20. What is your age?

- <35
- 35-54
- 55+

21. What Community Health Organisation (CHO) area do you currently practice in?

- CHO 1: Donegal, Sligo/Leitrim/West Cavan and Cavan/Monaghan
- CHO 2: Galway, Roscommon and Mayo
- CHO 3: Clare, Limerick, and North Tipperary/East Limerick
- CHO 4: Kerry, North Cork, North Lee, South Lee, and West Cork
- CHO 5: South Tipperary, Carlow/Kilkenny, Waterford and Wexford
- CHO 6: Wicklow, Dun Laoghaire and Dublin South East
- CHO 7: Kildare/West Wicklow, Dublin West, Dublin South City, and Dublin South West
- CHO 8: Laois/Offaly, Longford/Westmeath, Louth and Meath
- CHO 9: Dublin North, Dublin North Central and Dublin North West

22. If you have any comments or feedback on Healthmail, please enter them here:

23. If you wish to enter the prize draw for free registration to the ICGP annual meeting, please enter your name and email address here. Please note that this will not be connected to your responses above, which will remain anonymous.

Name:

Email:

## Appendix B: Healthmail connected agencies

Here is a list of hospitals and health agencies connected securely to Healthmail.

### Health Service Executive Clinicians

All HSE Regions are connected, this means you can communicate securely with clinicians in all HSE Hospitals and Primary Care Teams who have an @hse.ie email address.

### Voluntary Hospitals:

AMNCH, Tallaght - @amnch.ie

Beaumont Hospital, Dublin - @beaumont.ie

Cappagh National Orthopaedic Hospital - @cappagh.ie

Coombe Women & Infants University Hospital - @coombe.ie

Mater Public, Dublin - @mater.ie

Marymount University Hospital and Hospice, Cork - @marymount.ie

Mercy Hospital, Cork - @muh.ie

Milford Care Centre, Limerick - @milfordcarecentre.ie

National Maternity Hospital, Holles Street -@nmh.ie

National Rehabilitation Hospital - @nrh.ie

Our Lady's Hospice, Harold's Cross, Dublin - @olh.ie

Our Lady's Children's Hospital, Crumlin - @olchc.ie and @olhsc.ie

Rotunda Maternity Hospital, Dublin - @rotunda.ie

South Infirmity Victoria University Hospital, Cork - @sivuh.ie

St Francis Hospice, Dublin - @sfh.ie

St James's Hospital, Dublin - @stjames.ie

St John's Hospital, Limerick - @stjohnshospital.ie

St Luke's Hospital, Rathgar, Dublin - @slh.ie

St Vincent's Hospitals Group - @st-vincent's.ie, @svuh.ie, @stmichaels.ie,  
@svhg.ie

Temple Street Children's University Hospital - @cuh.ie

### **Private Hospitals and Clinics**

Affidea Clinics - @affidea.com

Aut Even Hospital, Kilkenny - @auteven.ie

Bon Secours Hospital, Dublin and Tralee - @bonsecours.ie

Mater Private Hospital, Dublin and Cork - @materprivate.ie

St Vincent's Private Hospital, Dublin - @svph.ie

Whitfield Clinic, Waterford - @whitfieldclinic.ie

### **Agencies:**

Central Remedial Clinic (Dublin, Limerick & Waterford) - @crc.ie

Department of Health - @health.gov.ie

Enable Ireland - @enableireland.ie

Health Products Regulatory Authority - @hpra.ie

Healthlink, National Messaging Broker - @healthlink.ie

National Cancer Control Programme - @cancercontrol.ie

SouthDoc Out of Hours Coop - @southdoc.ie

### **Health Agencies with Healthmail Accounts:**

Caredoc, caredoc@healthmail.ie

CIT/OPAT Programme, [cit@healthmail.ie](mailto:cit@healthmail.ie)

Clinical Genetics, Crumlin, [dnalab.olchc@healthmail.ie](mailto:dnalab.olchc@healthmail.ie)

Eastdoc GP Co-op, [eastdocgpco-op.gp@healthmail.ie](mailto:eastdocgpco-op.gp@healthmail.ie)

Galway Hospice, [galwayhospice@healthmail.ie](mailto:galwayhospice@healthmail.ie)

Health Protection Surveillance Centre, [hpsc@healthmail.ie](mailto:hpsc@healthmail.ie)

Marymount Hospice, Cork, [marymounthospice@healthmail.ie](mailto:marymounthospice@healthmail.ie)

National Cancer Registry Ireland, [ncri@healthmail.ie](mailto:ncri@healthmail.ie)

National Pancreatic Cancer Service St. Vincent's Hospital  
[pancreas.svuh@healthmail.ie](mailto:pancreas.svuh@healthmail.ie)

National Pancreatic Cancer Service Mercy University Hospital,  
[pancreas.muh@healthmail.ie](mailto:pancreas.muh@healthmail.ie)

NEDOC North East Doctor On Call, [nedoc@healthmail.ie](mailto:nedoc@healthmail.ie)

QUIT, Smoking Cessation, [quit@healthmail.ie](mailto:quit@healthmail.ie)

Safetynet Homeless Network, [safetynet.gp@healthmail.ie](mailto:safetynet.gp@healthmail.ie)

St Francis Hospice, Dublin, [stfrancishospice@healthmail.ie](mailto:stfrancishospice@healthmail.ie)

More information on Healthmail is available at:

<https://www.healthmail.ie>

<http://www.ehealthireland.ie/Case-Studies/Healthmail/>

Support for Healthmail is available Monday to Friday from 09.00 to 17.00:

Phone 1800 800002 and choose option 2

Last updated 08/02/2017

## Appendix C: Qualitative Interview Topic Guide

Information about the respondent: name, role, assignation.

Clarification as to whether the interview is on or off the record, and how comments could be attributed or anonymised.

Please describe how you use Healthmail.

Tell me who you communicate with via Healthmail.

Comment on the importance or otherwise of Healthmail to you or your service.

What impact would the cessation of the Healthmail service have on you?

What are the limitations of the Healthmail service, from your perspective?

What improvements would you like to see in the Healthmail service?

Do you have any views on expanding the Healthmail service to other groups of clinicians in primary care?

Do you have any further comments or feedback, either good or bad, you would like to give?