Using Electronic Mail to Improve MMR Uptake Amongst Third Level Students

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Abstract
This study assessed the usefulness of email in informing third level students about special MMR clinics being provided on campus during a mumps outbreak in the NorthWest of Ireland. Email messages were sent directly to students, informing them of the clinics, inviting them to make a clinic appointment by email and providing details of walk-in clinics. In the clinics, all 177 attendees were asked to fill out a questionnaire and the response rate was 89% (n=158). Regarding the main sources of information about the vaccination clinics, email was selected by 117 (74%) as the word-of-mouth by 27 (17%), posters/leaflets by 8 (5%), and other sources by 6 (4%). Use of email as a source of information was rated as very good/excellent by 115 (73%), as good by 35 (22%), fair by 5 (3%), and poor by 6 (4%). This study demonstrates that email is a useful and acceptable way of informing third level students about immunisation clinics in an outbreak situation.

Introduction
Electronic mail (email) is popular because of its efficiency, versatility, user-friendliness and low cost. Email can play an important role in healthcare and patient education. Information available on the effective use of email in the commercial sector could easily be translated into health promotion. Currently email is not widely used in healthcare and as a source of information. This study aimed to assess the reach and effectiveness of email as a source of information to third level students, word-of-mouth by 27%, posters/leaflets by 8%, and other sources by 6%. This study was conducted in Sligo/Leitrim Area, which was one of the areas linked to a local third level institution which has a student and staff population of 4,600.

Methods
During a national mumps outbreak in Ireland, there were 145 cases notified in Sligo/Leitrim Area, NorthWest Ireland from August 2008 to end December 2008. Of these cases, over 85% (n=123) were linked to a local third level institution which has a student and staff population of 4,600. In order to control the outbreak, the local Public Health Department held special MMR vaccination clinics on-campus in the first half of December 2008 for the inadequately vaccinated students aged 18-20 years. In addition to the routine use of email, posters and student briefings, we emailed the students about the clinics through the college intranet. This method was chosen after considering that the target population; there were no re-imbursement issues, as the vaccination service was free to all. The email message invited students to make an appointment by email for the appointment-only vaccination clinics. In addition, overall levels of satisfaction with email were high. This study used a pre-validated tool. The questionnaire was anonymous and included questions about the vaccination service as well as to carry out an investigation into which source of information was rated as very good/excellent by 115 (73%), as good by 35 (22%), fair by 5 (3%), and poor by 6 (4%). This study demonstrates that email is a useful and acceptable way of informing third level students about immunisation clinics in an outbreak situation.

Results
The questionnaire was completed by 158 students of the 177 who attended the clinics (response rate 89%). Overall 41% of all clinic attendees had used email to arrange their clinic appointment. In the follow-up survey, students were requested to indicate their one, single, main source of information about the clinics, and 84% did so, with email selected by 71%, word-of-mouth by 17%, posters/leaflets by 6% and other sources by 6%. Among the remaining 16% who indicated more than one source of information, the majority again reported email, followed by word of mouth (from teachers, student representative, doctor, girlfriend). When these are included with the relevant single answers, the total overall distribution of sources of information is: email for 74%, word-of-mouth for 17%, posters/leaflets for 6% and other sources for 4%. See Figure 1 for results from the two clinics.

Figure 1: Main sources of information about the vaccination service among students attending the appointment-only and the walk-in clinics.

We asked students to rate the use of email as a source of information and as a way of making a clinic appointment (Figure 2). Almost three quarters (73%) rated the emails as a source of information as excellent or very good, 22% as good and 5% fair or poor. Regarding making a clinic appointment, 72% rated email as excellent or very good, 14% good and 8% poor or fair (18% no reply). Among the 65 students (41%) who used email to make an appointment, 77% stated that they did so because it was a preferred method of communication. However, 9 students would have preferred a different method of communication. Amongst this group, 9% preferred a different method and suggested text messaging (n=4), telephone (n=1) and letter (n=1). Among the 93 students (59%) who attended the walk-in clinic, 54% reported the email was the main type of clinic as preferred to appointment based clinics. Regarding preference for invitation to clinic, other than via email, only 1 stated that they would have preferred invitation by a different method, with one each stating a preference for text messaging, phone or letter over email.

Discussion
This study demonstrates that email is an acceptable and useful way to promote vaccine uptake among third level students in an outbreak situation. There is evidence of good reach with email, as three quarters of students reported that email was their main source of information about the vaccination clinics. In addition, overall levels of satisfaction reported were high. This situation was well suited for the use of email to promote a public health message for a number of reasons: firstly, it was an established college email system that was accessible to all of the target population; there were no re-imbursement issues, as the vaccination service was free to students and was being provided by Public Health personnel and there were no sensitive issues about patient privacy or medicolegal issues arising from the promotion of MMR vaccination during this outbreak. It is noteworthy that a minority of students (8%) suggested the use of text messaging, telephone calls or letter’s preference for email. However, in this situation, email had the advantages of being cost neutral and readily available through the college email system. A complete and current listing of student phone numbers was not available to us and use of email as a source of information and as a means for arranging vaccination appointments. In addition, we sought their opinions on how to access the vaccination service could be improved.

Thirty (19%) students filled out a comments section on how it could be made easier for students to attend the clinic. Half of these responders made suggestions for improvements which included the service should have been announced during lectures, provision of more posters, more advance notice of provision of more clinics at a range of different times including evening sessions and more walk-in clinics. The main shortcomings were that they were not aware of the walk-in clinics, time off from classes to attend clinics and one respondent stated “it didn’t have a preferred method of communication. In this situation, email had the advantages of being cost neutral and readily available through the college email system. A complete and current listing of student phone numbers was not available to us and use of email as a source of information and as a means for arranging vaccination appointments. In addition, we sought their opinions on how to access the vaccination service could be improved.

In this study, we describe the use of email in a mumps outbreak to promote the combined measles, mumps and rubella (MMR) vaccination among third level students. We evaluated the reach and acceptability of email among this target group by surveying students for their views on the use of email as a source of information and as a means for arranging vaccination appointments. In addition, we sought their opinions on how to access the vaccination service could be improved.

In this study, we describe the use of email in a mumps outbreak to promote the combined measles, mumps and rubella (MMR) vaccination among third level students. We evaluated the reach and acceptability of email among this target group by surveying students for their views on the use of email as a source of information and as a means for arranging vaccination appointments. In addition, we sought their opinions on how to access the vaccination service could be improved.
A major limitation of this study was that the survey was confined to those attending the vaccination clinics. There is no information on the views of the non-attendees, thereby leaving the results open to possible selection bias. In addition, it is not possible to assess the impact of email on the vaccine uptake rate as there was no comparison control group not in receipt of email messages. These are areas for future work. Despite the limitations, this study has established the acceptability of email messaging to students.

This survey clearly demonstrates variability in student preferences regarding appointment only and walk-in clinics, a feature which should be kept in mind when planning the delivery of services to this group. Comparing the responses from the attendees at each type of clinic there were no statistically significant differences in their generally highly favourable rating of the use of email, indicating email reaches both types of clinic. Clearly the student population access information from a range of different sources and we infer that maximal reach is likely to be had by using a range of communication methods. We recommend wider use of email among the adult student population in future public health campaigns.

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