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# 'By failing to prepare you are preparing to fail': lessons from the 2009 H1N1 'swine flu' pandemic

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**Background:** Pandemic influenza has the potential to cause widespread death and destruction. Communications with the public have a vital role in the prevention of pandemic influenza by promoting the effective uptake of behaviours that can delay the spread of infection. This study explored the development and implementation of communications in the pandemic influenza outbreak of H1N1 ('swine flu') in 2009 in three European countries. **Methods:** In-depth interviews were conducted with senior policy and communication officials involved in the planning and delivery of communications programmes in England, Italy and Hungary. **Results:** The study found a lack of planning and a low value attached to the skills required to produce effective communications. In all case study countries there was a dearth of good quality audience research to inform the development of communications. Little thought had been given to the tone, targeting or channelling of messages. Instead, communications were characterized by a 'one size fits all' and a 'top down', expert-led response. There was also little effort to evaluate the impact of communications, but where this was done, very low levels of public compliance and engagement with key behavioural messages were found. **Conclusions:** Policy makers should prioritize investment in the skills and expertise required to achieve desired behaviour changes. Audience research should be conducted throughout the planning cycle to inform national communications strategies. This should include insights to inform the segmentation of public audiences, targeting of messages and consideration of content and emotional tone most likely to achieve desired behavioural outcomes.



## Introduction

Pandemic influenza is a public health concern that is especially difficult to plan and to manage. It is impossible to predict when the next pandemic will occur, how long it will last and what scale of harm it will inflict. The last 100 years have witnessed several well-documented outbreaks, including the 'Spanish flu' of 1918 which is estimated to have killed between 50 and 100 million people and to have infected a fifth of the world's population; 'Asian flu' of 1957 which is estimated to have killed around 1 million people and 'Hong Kong flu' of 1968 which is thought to have killed between 1 and 3 million people.[1] The SARS outbreak of 2003 infected more than 8000 people of whom 745 died.[2] In 2009 the 'Mexican' or 'swine flu' H1N1 pandemic triggered international alarm but the eventual death toll of just over 14 000 worldwide was much lower than originally feared.[3] However, few observers doubt that the threat of a much more virulent form of pandemic influenza remains and will strike at some point—be it months, years or decades.

The key preventive measure against pandemic influenza is the production and administration of an effective vaccine. Unfortunately, experience suggests that it may take several months to develop and administer a vaccine once the specific influenza strain has been identified.[4] During the window from outbreak to production and delivery of a safe and effective vaccine, the only practical defence against the pandemic—short of martial law—is communication about how to minimize the risk of infection. International agencies including the WHO and the European Union (EU) recognize the importance of public communication campaigns as a critical element of the pandemic influenza planning response.[5,6] However, reflecting a traditional approach to emergency planning, these plans lack a detailed appreciation of the science and management discipline needed for effective communication and behavioural influence planning.

The WHO and EU recommend key behavioural messages aimed at the general public during the pandemic phase should include advice about vaccine uptake (when it becomes available), respiratory and hand hygiene messages, care for the sick and social distancing messages.[7]

Reflecting what is known in a wide range of other public health topics, a recent systematic review of behaviour change in relation to pandemic influenza found that people do not respond uniformly to preventive messages. For instance, being older, female and more educated or non-White is associated with a higher likelihood of adopting protective behaviours.[8] The review identified a number of 'key ingredients' that encourage uptake of recommended behaviours—including greater levels of perceived susceptibility to—and perceived severity of—disease, and greater belief in the effectiveness of recommended behaviours to protect against the disease. There was also evidence that greater levels of national or state level anxiety and greater trust in authorities are associated with the adoption of recommended behaviours. Very similar findings were reported in a separate systematic review of factors associated with the uptake of vaccination against pandemic influenza.[9]

The 2009 'swine flu' pandemic provided an opportunity to assess how different countries' health systems responded to the emerging threat. The Effective Communication in Outbreak Management (E.Com) project funded as part of the EU Work Programme 7 research stream was established to identify lessons from the 2009 experience and to make recommendations for future pandemics.[10] One element of the E.Com project sought to assess the role of social marketing for pandemic influenza prevention in a number of states across Europe. This article is based on the findings from that research.

## Methods

The study involved three case study countries—England, Italy and Hungary. These countries were selected because they each reflected a different 'type' of nation state within Europe, in terms of size and geography as well as in terms of administration (centralized or federal) and history of participation in European institutions.

In depth, semi-structured interviews were conducted with three groups of respondents in each of the case study countries: senior communications specialists who prepared the 2009 public and health professional communications, senior pandemic influenza policy officials and leading social science academics who had written on the 2009 experiences. All interviews were conducted in the case study countries, face-to-face by the authors between January and April 2013.

## Results

In all three case study countries, a combination of specially designed mass media public information campaigns were used (figures 1, 2 and 3), alongside frequent news briefings, to provide both prevention information and up-to-date bulletins on the status of the pandemic. Also, information was sent from the national government to health administrators at regional and local levels, with the expectation that relevant information would be 'cascaded' to health professionals working in hospital settings, in primary care settings and in the community.

### *Understanding of audiences*

A surprising and important finding was that none of the three case study countries conducted any audience research to inform the content, design, tone, emotional appeal or targeting of the communications provided to the general public or health professionals. Reasons for the lack of audience research reflected an 'emergency mindset' among communications leads in all three countries that reflected a failure to plan and a lack of a cultural norm and infrastructure, including a lack of professional skills and funding (Italy and Hungary) to carry out such research.

> *Q. What kind of audience research was done?*
> *A. None—there wasn't time. This all happened in the space of about two weeks . . . So, good practice goes out the window'*. Senior communications expert, Department of Health, England.

> *'Information is needed urgently in this process and the decision makers can't wait for a month for the information to be ready. We need the answers now or tomorrow'*. Senior Epidemiologist, Hungary

> *'We have no model or an agency that develops for us a plan of communication . . . The Minister of Health's press office develops a brief, and they issue a tender call to obtain some proposals about the messages and the campaign. And that's it . . . This is the normal way for a campaign'*. Senior policy expert, Ministry of Health, Italy.

None of the respondents considered the lack of audience research to inform the content of their campaigns, or to target messages at different groups, an important omission. They reasoned that the key prevention messages applied to all groups in society, and that as a result there was no need to segment the audience for the purpose of communications. It was also felt that the emergency nature of the event—and its widespread coverage on daily news media—ensured that levels of awareness and knowledge were near saturation point.

Respondents did not feel that even a campaign with universal messages might need identification of—and strategies to respond to—the needs of different groups within the general population.

> *'It was just a "general" campaign –.., 'you have to do this and that'. There was not a strategy to target specific groups of people with the advertising—also because it was influenza and may hit*

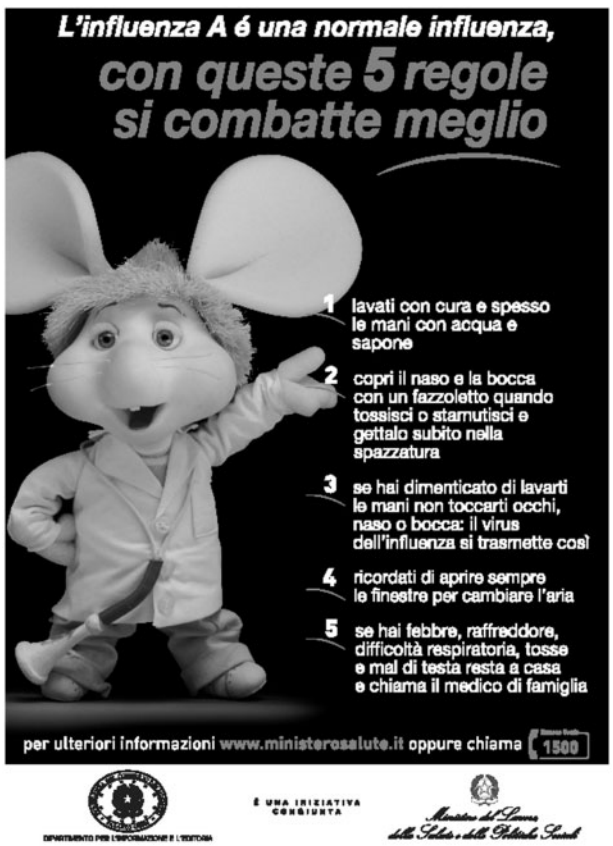


**Figure 1** Italy pandemic influenza information poster


**Figure 2** England pandemic influenza information poster

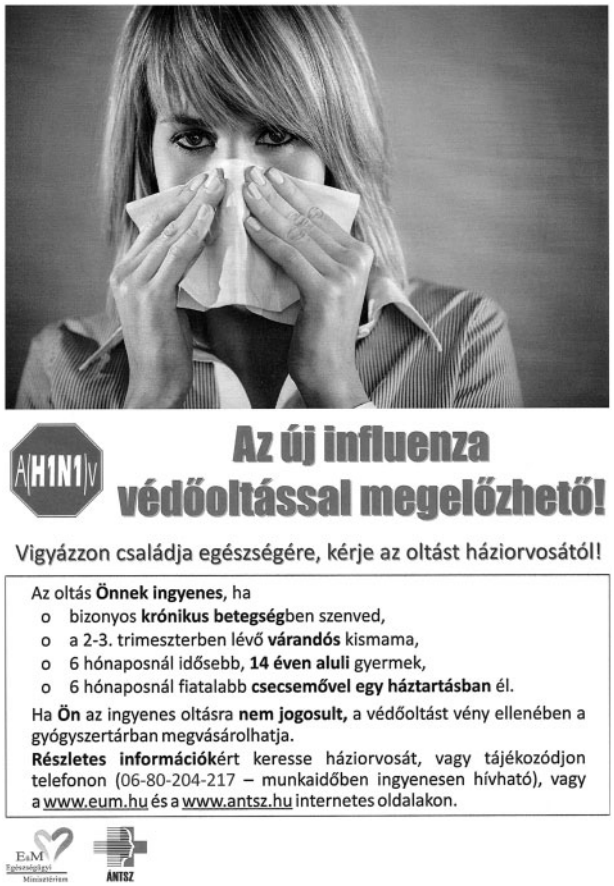


**Figure 3** Hungary pandemic influenza information poster

*everyone so—it was not like HIV/AIDS that you have special target groups'*. Senior epidemiology expert, Instituto Superiore di Sanita, Italy

In England, the official guidance recommends the targeting of communications.[11] It says, that *'messaging should avoid "one size fits all" approaches and instead be targeted to segments of the population to achieve the greatest level of engagement with any communications campaign'*.

However, despite this, respondents questioned the assumption that audience segmentation was a worthwhile approach for what was described as a 'general campaign'.

*'This is where I get unconventional. Segmentation can be no use whatsoever. Do you get payback for the specificity? Sometimes there is a case for the "general" because it can deliver the width and depth to reach most of the key groups cost effectively'*. Senior communications expert, Department of Health, England

## Message content and tone

The lack of audience research contributed to communications campaigns in all three countries that employed an expert-led and 'one size fits all' character. The recommended behavioural messages were broadly similar in each of the three countries and followed international recommendations. They included messages about how to prevent the spread of infection, hand and respiratory hygiene messages, social distancing messages, how to treat symptoms, identification of groups prioritized for vaccine uptake and how to access vaccination when it became available.

Although there was no audience research evidence to inform decisions about tonality of communications, there was some consideration given to this issue and in the way that spokespeople communicated with the news media. In general, across all case study countries, the intended tone was one of seriousness at the potential risk posed by the pandemic coupled with reassurance that appropriate measures were being taken. There was awareness of the need to communicate reassurance and to avoid panic. In England, more emotionally driven creative executions were discarded in favour of instructional advertising and branded under the NHS banner to convey reassurance.

*'It was basically an information campaign—"this is what you need to do". There was reassurance—not a panic. We looked at different [existing creative] options—dominos falling over and all that—but we binned all that. It had to be absolute clarity. "If you have these symptoms, this is what you do"'*. Senior communications expert, Department of Health, England

In Italy, respondents spoke of a political culture in which the overriding imperative was to avoid public alarm at all costs.

*'In Italy the government doesn't want to give the impression that things are going very bad. In the US there are many experts who say, "you have to tell the truth" and to be very direct because otherwise people don't change behaviour. But in Italy it doesn't work like that—you have to keep people as quiet as possible—so usually the campaigns are not very aggressive'*. Senior epidemiology expert, Instituto Superiore di Sanita, Italy

In England and Hungary the primary spokespeople who provided updates to the news media throughout the pandemic were people who were regarded as non-political health experts. The non-partisan role of these communicators was felt to have been important in establishing trust among the public about the management of the pandemic.

In Italy, in contrast, both the Prime Minister (Berlusconi) and the Health Minister (Fazio) took a personal—and highly visible—role in the publicity campaign. This identification of the pandemic with politicians in Italy was felt to have contributed to distrust in the way the pandemic was managed, and to have given succour to the anti-vaccination movement there.

*'One of the criticisms of Prof Fazzio (Health Minister) was that he was too reassuring at the beginning of the pandemic and when the vaccination campaign was due to start, people outside the crisis unit said the pandemic was not such a big problem, and why were we spending so much money on vaccines?'* Senior policy expert, Ministry of Health, Italy

By seeking to make political capital from the management of the pandemic, Italian politicians were felt to have given a critical news media permission to treat the issue as any other political story and to undermine the arguments put forward by political leaders.

*'If you go to a TV programme as Minister of Health and say, "I don't need to be vaccinated" that is a problem. And that is what happened. What was the reaction? Very simple—no one in the general population went for a vaccination and among healthcare workers the uptake of vaccination was no higher than for seasonal influenza'*. Senior academic, public health, La Sapienza University, Italy

*'In the press it was continuous. It was a massacre. Every day . . . Italians don't trust their government, politicians, health authorities'*. Senior epidemiology expert, Instituto Superiore di Sanita, Italy

## Communication channels and social media

Although all three countries developed their own social advertising campaigns in 2009 to communicate messages to the general public, there was appreciation that for most people, these campaigns were only one of a range of sources of information about pandemic influenza. In the view of respondents, the most important sources were mainstream media (TV, radio and print media).

Overall, respondents perceived the role of social media and the internet to have been an obstacle to communication. They felt that

anti-vaccination proponents had been more advanced in their use of these technologies and that the 'official' voice had been either absent or had been slow and cumbersome.

> *'People started talking about the vaccine as an experimental vaccine. And one of the leaders (of the anti-vaccine movement) was Romina Power, an ex-singer—a singer is more famous than a doctor and if people don't trust authority figures—the internet creates these problems because there is no filter—you don't know if the information is trustworthy or not'*. Senior epidemiology expert, Instituto Superiore di Sanita, Italy

Respondents in England in particular, pointed out that present day planning for communications was much more advanced in how to use social media. Hungary also plans to make much more proactive use of social media in future.

> *'The old school view is that social media is just another channel... But YouTube is the second biggest search engine now—particularly among younger target audiences. It is not sufficient to just have broadcasting information because it will create a vacuum which will be filled with various voices'*. Senior communications expert, Department of Health, England

### A failure to evaluate

The lack of concern about formative evaluation that failed to inform the development of the three case studies' responses to the H1N1 pandemic, was matched by a similar lack of investment in summative evaluation. Only in England was there any government-funded monitoring of public knowledge, attitudes and behaviours during and following the pandemic.[12]
In Italy in particular, respondents reported a lack of interest from policy makers in the lessons from public health interventions.

> *'Usually the government wants to show that it is doing something—then the results (it thinks)—who cares about them? I don't think (public health) campaigns have been scientifically evaluated... the results are not usually given much importance'*. Senior epidemiology expert, Instituto Superiore di Sanita, Italy
> *'Part of the problem that no one is interested in proper planning. Monitoring doesn't happen'*. Senior academic, public health, La Sapienza University, Italy

In Hungary, the reasons for the failure to learn lessons from the 2009 experience were put down largely because of a lack of capacity.

> *'If there was money and time we would have done it, but it's impossible when people are overloaded... We didn't learn enough from the fantastic several months that we survived. We didn't write papers or collect enough data as no one had the capacity or funding to do it'*. Senior epidemiologist, Hungary

## Discussion

Official reviews of the management of the 2009 pandemic have focused on what was widely felt to be an inappropriate and too rapid raising by the WHO of the global pandemic alert levels, on the costs associated with the production of a vaccine, and (in the UK in particular) on the decision to prescribe a prophylactic medicine for which there was little evidence of effectiveness.[13] Other aspects of the response—including the role of communications—have been subjected to less thorough scrutiny and criticism. Indeed, in the UK the official strategic response led by Dame Hines provided a positive assessment of the management of communications.[4]

This was made in spite of the evidence from the Government's own monitoring of public attitudes and behaviours found that reported uptake of recommended behaviours was very low. Only 9.5% of the adult population reported having bought sanitizing gel and 2.0% reported avoiding public transport.[12]

In all three case study countries, a key feature of the response to the 2009 outbreak was lack of preparedness and an 'emergency mindset' that led to the production of rushed outputs that lacked planning and consideration of their purpose. There was an evident lack of engagement among policy makers and senior officials in national governments and relevant communicable disease prevention organizations, with market research and media-buying professionals whose expertise is in understanding and responding to the needs and motivations of different customer segments. A further consideration was the fact that none of the three case study countries had a central health promotion agency that had responsibility (and in-house expertise) for designing and managing the programmes—but instead delegated this critical task to policy leads or communicable disease experts—reflecting the low status that health promotion and communications are accorded, relative to the technical experts in communicable disease control.

Meanwhile, the growing scientific literature on behaviour change demonstrates that tailored messages focusing on known motivators for specific groups are more likely to produce desired behavioural outcomes than a uniform information giving or instructional campaign.[14–16] Evidence from public health areas other than pandemic influenza, indicates that well-planned and sustained health promotion programmes that are informed by—and respond to—the various needs and motivations of different audiences, can make a significant impact on disease prevention, management, early diagnosis and compliance with treatment.[17,18] Successes in smoking prevention and cessation[19,20] and teenage pregnancy prevention[21] offer examples of the potential for well-designed and executed interventions to influence behaviour.

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## Key points

- Communications with the public are a vital element of preventing and reducing infection of pandemic influenza and in motivating people to present for vaccination, but evidence from 2009 shows that communications planning is poor and not informed by evidence-based knowledge or behavioural change science.
- Key aspects of good communications with the public include audience research to understand needs and motivations of different groups, segmentation and targeting of messages to different groups and evaluation. None of these elements featured in the 2009 experience in the three case study countries.
- The infrastructure—including the skills and expertise—to undertake effective social marketing was considered

inadequate and as a consequence important decisions were taken by technical experts and politicians who lack the expertise in communications and behaviour change.
- National and international health agencies should prioritize investment in the skills and expertise and provide guidance on how to undertake timely and effective planning ahead of a future pandemic influenza outbreak.

## References


1 Health Protection Agency. Available at: http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/PandemicInfluenza/History/ (24 April 2014, date last accessed).

2 Center for Disease Control and Prevention (CDC). CDC Severe Acute Respiratory Syndrome (SARS). Available at: http://www.cdc.gov/sars/about/faq.html (24 April 2014, date last accessed).

3 European Centre for Disease Prevention and Control (ECDC). ECDC Daily Update 2009 Influenza A (H1N1) Pandemic. 2010. Available at: http://ecdc.europa.eu/en/healthtopics/Documents/100118_Influenza_AH1N1_Situation_Report_0900hrs.pdf (24 April 2014, date last accessed).

4 Hines D. The 2009 Influenza Pandemic: An Independent Review of the UK Response to the 2009 Influenza Pandemic. London: UK Government: The Cabinet Office, 2010.

5 World Health Organisation. Pandemic Influenza Risk Management: WHO Interim Guidance. 2013. Available at: http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf?ua=1 (24 April 2014, date last accessed).

6 European Union. EU's Influenza Preparedness Plan. Available at: http://ec.europa.eu/health/preparedness_response/pandemic_flu_preparedness/index_en.htm (24 April 2014, date last accessed).

7 World Health Organisation. What Can I Do To Protect Myself From Catching Pandemic (H1N1) 2009? 2010. Available at: http://www.who.int/csr/disease/swineflu/frequently_asked_questions/what/en/ (24 April 2014, date last accessed).

8 Bish A, Michie S. Demographic and attitudinal determinants of protective behaviours during a pandemic: a review. *Br J Health Psychol* 2010;15:797–824.

9 Bish A, Yardley L, Nicoll A, Michie S. Factors associated with uptake of vaccination against pandemic influenza: a systematic review. *Vaccine* 2011;29:6472–84.

10 Effective Communication in Outbreak Management (ECOM). Available at: http://www.ecomeu.info/ (24 April 2014, date last accessed).

11 Department of Health, UK Government. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213268/UK-Pandemic-Influenza-Communications-Strategy-2012.pdf (24 April 2014, date last accessed).

12 Rubin J, Potts H, Michie S. The impact of communications about swine flu (influenza A H1N1v) on public responses to the outbreak. *Health Technol Assess* 2010;14:183–266.

13 Cohen D, Carter P. WHO and the pandemic 'Conspiracies'. *BMJ* 2010;340:c2912.

14 Centers for Disease Control and Prevention. Gateway to Health Communication and Social Marketing Practice. 2014. Available at: http://www.cdc.gov/healthcommunication/ (16 June 2014, date last accessed).

15 Government Communication Network and Central Office of Information. Communications and Behaviour Change. London, Available at: https://gcn.civilservice.gov.uk/wp-content/uploads/2013/01/commongood-behaviourchange.pdf (16 June 2014, date last accessed).

16 Wakefield M, Loken B, Hornik R. Use of mass media campaigns to change behaviour. *Lancet* 2010;376:1261–71.

17 National Institute for Health and Care Excellence (NICE). *Behaviour Change at Population Community and Individual Levels. Reference Guide*. London: NICE, 2007.

18 National Institute for Health and Care Excellence (NICE). *Behaviour Change Individual Approaches. NICE Public Health Guidance No 49*. London: NICE, 2014.

19 Brown J, Kotz D, Michie S, et al. How effective and cost-effective was the national mass media smoking cessation campaign 'Stoptober'? *Drug Alcohol Depend* 2014;135:52–8.

20 Sowden A, Arblaster L. The Cochrane Library, 1998 Available at: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001006/pdf/standard (16 June 2014, date last accessed).

21 The Office for National Statistics. *Conceptions in England and Wales 2012*. London: ONS, 2014.


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# Short Report

# Microbiological safety of glasses dispensed at 3D movie theatres

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Recent popularity of three-dimensional movies raised some concern about microbiological safety of glasses dispensed into movie theatres. In this study, we analysed the level of microbiological contamination on them before and after use and between theatres adopting manual and automatic sanitation systems. The manual sanitation system was more effective in reducing the total mesophilic count levels compared with the automatic system ($P < 0.05$), but no differences were found for coagulase-positive staphylococci levels ($P = 0.22$). No differences were found for mould and yeast between before and after levels ($P = 0.21$) and between sanitation systems ($P = 0.44$). We conclude that more evidences are needed to support microbiological risk evaluation.

## Introduction

Three-dimensional (3D) movies are becoming more popular than ever, despite being a technology discovered in the 1920s.[1] Recent improvements in digital filming technology guarantee high quality standard and satisfaction of spectators in terms of 3D vision, comfort and safety.[2] While it is known that the strong sensorial exercise that is induced by the vision of a 3D movie can evoke