‘Just don’t eat chicken’: the challenge of engaging Australian adults in appropriate preventive behaviours for bird flu

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• Leading medical experts have cautioned about the risk of inappropriate behavioural responses as a result of fear of avian influenza (bird flu) even before a pandemic emerges, and have emphasised the need for appropriate risk communication strategies. There is a paucity of in-depth qualitative research into the general public’s understanding of, and reactions to, such potential health crises. Four focus groups were conducted in April 2006 and a further eight focus groups in July 2006, to examine people’s knowledge, beliefs and behaviours in relation to avian influenza, with the primary aim being to inform the development of future communication strategies. It was clear from the focus groups that avian influenza is not a disease the participants perceive they are likely to acquire; it was not simply that Australia was far from mind when thinking of avian influenza, but that they also saw Australia as a haven protected from avian influenza. We found that, in general, participants see avian influenza as yet another example of media sensationalism—not as a disease that poses any real risk to Australia—and are clearly unprepared for a potential outbreak. Governments and health authorities should conduct further research to understand consumer perceptions of avian (or other pandemic) influenza, and attitudes towards the recommended protective behaviours, in order to proactively develop communication strategies to rapidly inform the public and encourage appropriate behavioural responses in the event that the potential risk is realised.

Introduction

Avian influenza

The influenza A (H5N1) virus has been a focus of public health attention throughout the world since 2005. The H5N1 virus is primarily...
spread by migratory birds and mechanical means (e.g. from one farm to another on the soil captured by tractor tires). The virus can be transmitted from birds to mammals (including pigs, seals, whales, mink, ferrets, tigers, leopards, stone marten and domestic cats) and from birds to humans (Alexander, 2000; Hien et al., 2004; Centers for Disease Control and Prevention, 2006). While avian influenza (bird flu) viruses were previously not known to infect humans the situation has changed with the recent occurrences of bird-to-human and human-to-human transmission, including an outbreak within an extended family living in a village in north Sumatra (Ungchusak et al., 2005). Seven members of the extended family died after becoming infected with H5N1 (Wulandari and Lyn, 2006). The initial WHO position was that ‘...an extended chain of human transmission was the most likely explanation’ for the outbreak (Butler, 2006, p. 554). However, in late June WHO concluded human-to-human transmission had occurred and that the virus detected in one of the children had mutated slightly meaning there are now at least two subtypes of the virus (Indianapolis Star, 2006; The Australian, 2006).

**Public knowledge and perceptions of avian influenza**

Leading medical experts have cautioned about the risk of panic and inappropriate behavioural responses as a result of fear of avian influenza, even before a pandemic emerges (Lancet, 2005a), and have emphasised the need for appropriate risk communication strategies to inform the public without causing panic (Lancet, 2005b). There is a paucity of in-depth qualitative research into the general public’s understanding of, and reactions to, potential health crises—and particularly their reactions to the associated media coverage; although the impact of fear-based media coverage on the attitudes and behaviours of the general public has been clearly demonstrated across a range of conditions, such as bovine spongiform encephalitis (mad cow disease) and Lyme disease. This gap in the literature is important given the potential need for governments and health services to respond rapidly and effectively to infectious disease outbreaks, walking a fine line between overcoming inertia and causing unnecessary panic.

Severe Acute Respiratory Syndrome (SARS) has been described as the first epidemic of the 21st century, with the SARS outbreak in 2003 causing both numerous deaths and public panic (Bemmler and Ligon, 2003) including, in Australia, ‘worried people jamming telephone lines or queuing to see their general practitioners (GPs)’ (Crouch, 2003, p. 23). A Hong Kong study of 126 women aged 50–64 reported an increase in depressive symptoms and emotional distress during the SARS outbreak (Yu et al., 2005). An analysis of calls to a SARS hotline in Hong Kong identified the need for gender-specific intervention planning, given evidence of the differential role of women in responding to the outbreak as a result of their gate-keeping and care-giving roles (Leung and Wong, 2005). A study with people who had been quarantined during the SARS outbreak in Toronto, using individual semi-structured interviews, found that while reported compliance was high there was a significant variation between households (Cava et al., 2005).

However, due to the emerging nature of avian influenza, there has been limited research on public knowledge and perceptions of this disease. A comprehensive search of academic databases and internet sites located two surveys conducted on a nationally representative sample of US residents: one prior to the conduct of this research, in January 2006, and one shortly after this study was conducted, in September 2006 (Blendon et al., 2006a; Blendon et al., 2006b). The first survey (Blendon et al., 2006a) found that while 62% of the respondents were concerned about the possibility of an avian influenza pandemic and 57% were concerned that the pandemic could spread to the US, only 17% were very or somewhat worried about getting sick from it. The second survey (Blendon et al., 2006b) found that the public’s estimation of the likelihood of a human case of avian influenza
occurring in the US in the next 12 months had increased from 34 to 44%. Respondents in the first survey (Blendon et al., 2006a) were supportive of short-term quarantine for themselves if they had avian influenza (96%) and indicated they would wash their hands more frequently (90%), reduce or avoid travel (75%), avoid public events or gatherings (71%), stay at home during the outbreak (68%) and wear a face mask (52%) if a human avian influenza case occurred in the state in which they lived. This high level of support increased even further in the second survey (Blendon et al., 2006b), with results indicating strong support for recommended public health measures. Thus, when asked if for a period of 1 month they would comply with the following measures most respondents indicated they would: avoid air travel (93%), avoid public events (92%), avoid going to malls and department stores (91%), limit use of public transportation (89%) and reduce contact with people outside the household (88%). In addition, 90% stated they were very or somewhat likely to stay in their town or city if such an action were recommended by public health officials.

The concept of exchange reflects the fact that each party gives and receives for the mutual satisfaction of needs. Exchange theory (Bagozzi, 1978) posits that people (consumers) are motivated to maximise value by obtaining the greatest benefit at the least cost; that is, in a social marketing context, the consumer must perceive benefits in adopting a new behaviour that equal or exceed the perceived costs of changing behaviour. Thus, as Grier and Bryant (2005) remind us, we must offer benefits the consumer values, recognise both tangible and intangible costs, and ensure that all parties receive benefits in exchange for their efforts. Thus, in the context of a potential avian influenza pandemic, we must ensure that consumers perceive value in reducing the risk of transmission, recognise the financial, social and effort costs of behaviour change and ensure intermediaries are appropriately reimbursed for their efforts.

Audience segmentation involves dividing the target market into groups to better understand their current behaviours and therefore develop messages and tailor programs to meet their specific needs. This involves dividing the market into segments, evaluating each segment and selecting target segment(s) and then developing a marketing mix for those segments that take into consideration their specific benefits and costs, competing options and most appropriate distribution channels (Maibach, 2003). For example, in our recent research into adolescent sun protection behaviour (Lynch et al., 2007), we identified key psychographic segments that had fundamentally different motives for (not) engaging in sun protection—including a segment that attempted to sun protect but forgot to reapply sunscreen (thus best targeted by reminder messages) and a segment that did not sun protect because it was too much effort (thus best targeted by self-efficacy messages and product modifications).

In commercial marketing, ‘competition’ is generally alternative products or services that address the same consumer needs. In social marketing, the competition is more likely to be attitudes and behaviours that compete with...
the promoted behaviour itself (including unhealthy behaviours, social norms and opposing values). For example, in promoting safe drinking to adolescents, the competition includes alcohol advertising messages (Snyder et al., 2006), peer pressure and social norms (Borsari and Carey, 2001) and positive alcohol expectancies (Milligan et al., 1997).

A consumer centred approach dictates a thorough, well-researched understanding of the target market, specifically their knowledge, attitudes and behaviours relevant to the behaviour change at hand. The needs of the consumer should remain a key focus throughout the social marketing process. Research has been described as the ‘backbone’ of consumer orientation in social marketing (Grier and Bryant, 2005; Hastings, 2007). This includes research into the initial (health) issue, potential audiences, the chosen target audience, the competition and consideration of previous interventions and best-practice guidelines. Formative research is crucial to the development of effective social marketing programs, and includes ‘consumers’ perceptions of the products, benefits, costs and other factors (e.g. perceived threat, self-efficacy, social influences) that motivate and deter them from adopting recommended behaviours’ (Grier and Bryant, 2005; p. 324–325).

As with commercial marketing, we need to consider the ‘four Ps’ of the marketing mix which combine to provide maximum value to the target market or customer. These four Ps1 are:

- Product: the core benefit that the behaviour or service provides to the consumer, but also includes features of any associated tangible products and materials such as brand, reputation, packaging, etc.
- Price: the costs or barriers associated with adopting the promoted behaviour; including monetary, psychological, social, effort and other costs.
- Place: the channels through, or locations at which, the targeted behaviour will be performed; including the physical location of any associated services or distribution of physical resources, and the intermediaries involved.
- Promotion: the communication activities used to promote the desired behaviour; including advertising, merchandising, public relations, etc.

Using breast cancer screening as an example, the core product is the early detection of breast cancer; the costs include physical discomfort and fear of cancer (Bish et al., 2005); the place, in Australia, is BreastScreen clinics or private providers and the promotion is the BreastScreen Australia media campaigns (Cockburn et al., 1999).

However, it is important to note that the current study was designed to inform communications strategies (i.e. focusing on the ‘promotion’ component of the marketing mix) not for the development of a comprehensive social marketing program.

**Purpose of the study**

There has been considerable media coverage of, and public discussion about, the potential avian influenza pandemic in Australia, the United States (Ratzan, 2006; Smith, 2006) and around the world (Hien et al., 2004; Ungchusak et al., 2005). However, little is known regarding the public’s knowledge and perceptions of avian influenza and, despite calls for research into communication strategies and social marketing (Ratzan, 2006; Smith, 2006), there have been few published studies on this topic. The purpose of this project was to gather preliminary information on the Australian public’s knowledge of, and concerns about, avian influenza (H5N1), with the primary aim being to inform the development of future communication strategies.

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1The authors acknowledge that there is debate in the literature about whether social marketing has moved, or should move, beyond the 4Ps to the 5Ps or the 7Ps (with additions including People, Physical evidence, Processes, Partnership, Policies). However, as the focus of this study is on the development of a communication campaigns (‘Promotion’), this discussion is beyond the scope of this paper.
Methods

Ethics approval for this study was sought and received from the University’s Human Research Ethics Committee. The research was conducted in accordance with the Australian Market Research Society (AMSRS) Code of Professional Behaviour and Ethics.

Four focus groups were conducted in April 2006 in the state of Victoria, and each group consisted of eight participants (total \(n = 32\)). A further eight focus groups were conducted in July 2006, four in Victoria and four in New South Wales (total \(n = 64\)). All focus groups were conducted by two commercial research companies, using a discussion guide developed in consultation with the research team, with specific inclusion criteria and quotas to ensure representation of participants from a range of potential at-risk groups. Commercial research companies were used due to the short time frame for completing the project (funded by an NHMRC Urgent Research Grant). The groups were chosen based on the necessity to recruit individuals at highest risk — either risk of infection or risk of inappropriate behavioural responses — (mothers of) young children, the elderly, frequent travellers and individuals with increased exposure to birds. In each set of focus groups (i.e. April in Victoria, and July in Victoria and New South Wales), the groups consisted of: a group of young adults (i.e. 18–40) with no children, with an equal gender split, and screened to include some frequent travellers; a group of mothers of children aged 0–16 (regardless of age of mother); a group of adults aged 50+, with an equal gender split, and screened to include some smokers; and a group of people living in a rural community with extensive chicken farming, with an equal gender split, spread across all age groups, and screened to include some who were directly involved in working with chickens and some who were living in the area but working in unrelated industries.

The focus groups commenced with a general discussion of diseases in Australia (focusing on which diseases come to mind and which are of most concern). Participants were then told ‘as we cannot discuss all the diseases we have mentioned in detail, in each group session, we are going to be focusing on one disease — today being avian influenza (or bird flu)’. They were first asked to independently write down responses to five questions about their thoughts and feelings about bird flu, and then engaged in a group discussion about avian influenza (including level of concern, knowledge and risk perceptions). Participants were then engaged in a discussion of what could be done, by the government and by individuals, to reduce the risk of an avian influenza pandemic. Finally, participants discussed current and potential information needs, and sources of information, in relation to avian influenza.

Results

Key themes arising from the focus groups were that bird flu is a disease associated with poor people in Asian countries, that Australians are ‘safe’ from such outbreaks, and that the disease could be ‘caught’ rather than spread. While the initial aim of the project was to identify differences in perceptions between the targeted groups and develop specific messages tailored to their concerns and information needs, we found that the groups did not differ substantially in their responses, with all groups demonstrating a very low level of interest in, or cognitive processing of, the potential threat from avian influenza.

It won’t happen to me

It was clear from the focus groups that bird flu is not a disease the participants associate with diseases they are likely to acquire. Cancer is the disease they believe they are most likely to develop, followed by mental illness and heart disease. When encouraged to think of bird flu, the focus group participants used the term ‘bird flu’ and rejected ‘avian influenza’ as a term that sounded too scientific and not consistent with their perceptions and conversations about the topic (thus the term ‘bird flu’ is used throughout the results and discussion).
by virtue of direct questioning by the focus group moderator, this still was not seen as an issue of concern for Australia. Among our participants, bird flu remains an issue quarantined with third-world countries, notably in Asia [‘Asia, third world countries’ (older adults, Victoria, April)], and associated with poor hygiene [‘...related in some way to saturation and hygiene’ (young adults, April); ‘...hygiene in community not always evident’ (mothers, Victoria, July)].

When asked who was most at risk of catching bird flu, the initial response was in relation to farmers in small Asian villages who were seen as culpable in their own poor health outcomes, because ‘everything is dirty around the area—they are lazy, disgusting, chicken poo everywhere’ (older adults, April).

When asked which specific demographic groups they thought were most at risk of catching bird flu, those with compromised immune systems—the young and the elderly, especially those with other illnesses [‘Children and elderly...’ (young adults, April); ‘Elderly more fragile and very young their immune system not as strong’ (mothers, April)]—were automatically singled out, although it was interesting to note that this response was less common in the groups of older adults.

Frequent travellers were the most well-informed, and exhibited some knowledge of the age groups likely to be effected, referring to how indiscriminate the SARS virus was and who was infected [‘SARS was thirty eight and forty year olds’ (young adults, April); ‘Don't think it picks on anyone in particular’ (young adults, April)].

We are safe in Australia

Importantly, it was not simply that Australia was far from mind when thinking of bird flu, but that participants also saw Australia as a haven protected from bird flu. The primary reason for this sense of security was our physical distance and perceived isolation from other countries. There was also a strong sense that—in addition to our geographic isolation [‘History shows we get flu viruses last—Australia has an advantage’ (young adults, April)]—Australia is less at risk because of perceived high standards of quarantine [‘It's unlikely it will reach our shores, Australia has strict quarantine procedures’ (young adults, New South Wales, July)] and financial and logistical resources that would cope adequately with any potential threat [‘They would destroy the birds—we have the money and technology’ (rural dwellers, April)].

A hypothetical scenario had to be introduced to engage the participants in the concept of bird flu in Australia, and thereby contextualise the question of what can be done. The responses, however, still highlight the fact that this was considered a far-fetched scenario and were almost exclusively focused on travel restrictions and border control (not travelling to other countries [‘Don't travel to infected areas’ (young adults, April) or letting potentially infected people enter Australia) and quarantine protection [‘Not import chickens from Asia’ (mothers, April)].

The respondents clearly do not feel threatened by bird flu for the key reason that the threat is not recognised. Given the threat is not perceived as real, they expressed no concerns about Australia's capacity to deal with the problem (that is, the problem is easy to deal with, when there is no problem).

It's just another media beat-up

Emotionally, participants expressed a strong belief that bird flu is merely media scare mongering. Participants’ past experiences with similar scares (especially SARS) has given them a perception that the media exaggerates potential health scares [‘It's another example of media hype over scares that never eventuated here. Its just like SARS, the Y2K bug...’ (young adults, New South Wales, July)]. This view was supported by participants' perceptions that the media coverage had died down [‘More concerned a year ago, but now bear less about it’ (rural dwellers, April)], reflecting that this was just another
media ‘beat-up’ and that the unnecessary overreaction of the media was dying down.

Just don’t eat chicken
It is important to note that the participants described bird flu as a disease that can be caught, rather than a disease that can be spread. Of the four segments researched, only the frequent travellers appeared to have previously undertaken some cognitive processing of the issues surrounding bird flu. Generally, mothers were less informed than frequent travellers, over 50 year olds were less informed than mothers and those living in chicken farm communities were the least informed. To residents of chicken farm communities, bird flu is an abstract concept—and there was a view that ‘wasting time on idle thought’ does not ensure the work around a farm community is accomplished.

It was also evident from the focus groups that very little is known as to how bird flu can be caught. The general consensus in the April focus groups was that bird flu is transmitted directly from bird to human (i.e. by physical contact) and thus air-borne transmission is an incongruent concept. Therefore, the single most common belief as to how one catches bird flu directly relates to the consumption of a diseased bird [The eating of poultry contaminated with the virus’ (mothers, April)]. Of interest is the finding that many believe that this mode of infection can be prevented by thorough cooking of the offending bird [‘Only if undercooked— if cooked, it kills the germs’ (young adults, April)].

In the second round of focus groups (July), there was an increase in the use of words such as ‘contagious’ and ‘epidemic’, suggesting a greater awareness of the fact that the disease could be caught—possibly associated with media coverage of human-to-human transmission in Indonesia—although the perception that it was a problem ‘over there’ remained strong across all groups. However, the single most common proposed behavioural response remained changing eating habits. No spontaneous mention was made of mask wearing or bunkering down—the key solution is to restrict the consumption of chicken and eggs [‘Eat red meat not poultry, not eggs’ (older adults, April)]. The threat was also seen as something of a passing and inconsequential nature, as evidenced by the light-hearted responses of a number of the participants:

‘I’ll avoid eating chicken until the threat has passed . . . and maybe give my budgie a wide berth!’ [younger adults, New South Wales, July]

I would ask the government
Participants expressed confidence in the Government and ‘people in the know’ to let them know ‘when they should panic’, which means that they can relax until they are informed otherwise. They consistently expressed the view that if they are told to take certain actions, then they believe they are being told to do so for legitimate reasons [‘You’ve got to be guided by experts’ (young adults, April)]—and at this stage, there is no need to challenge the authority.

‘Don’t trust Government on a lot, but if bird flu then would listen—they are not going to let us die’ [older adults, April]

A number of local and international information sources were identified, including ‘Government’, ‘Medical Board’, ‘WHO’, ‘Minister of Health’, ‘AMA’, ‘Media’, ‘Health section of the Government’, ‘Infectious Diseases Authority’ and ‘CSIRO’. The only specific individuals named—and only by frequent travellers—were Dr Kerryn Phelps and Sir Gustav Nossal. However, respondents stated that in the event of needing to know information on bird flu, they would first look to the Australian Government for information. Importantly, their current perspective is that they would not pro-actively seek out infor-
mation, but would expect to be told what they need to know when they need to know.

The process of the research—which for many involved processing bird flu issues for the first time—raised areas of confusion and areas of information they would want addressed in the advent of bird flu in Australia. These included: ‘How is it spread’, ‘Access to vaccines’, ‘What are steps we should take’, ‘Mode of transmission’, ‘Mortality rate if get bird flu’ and ‘Symptoms—what to look for’.

Discussion

It was evident that the participants had very little knowledge of, or interest in, bird flu. They required considerable prompting to enter into a discussion of bird flu, and few of them spontaneously mentioned it when thinking of diseases that they were concerned about. There is considerable evidence that estimations of risk, and processing of risk information, is influenced by the extent to which specific risks are ‘available’ in people’s minds; for example, that people are exposed to via media coverage or personal experience (Kuran and Sunstein, 1999). It follows, therefore, that living in Australia, participants have not had personal experience with bird flu—and therefore it remains out of their disease horizon.

When asked who was most at risk of catching bird flu, the initial response was in relation to farmers in small Asian villages. This is directly related to the associated source of the disease and another indicator of how far removed Australians are from bird flu. There was also a strong sense of ‘blame’ attached to this view, which is consistent with the literature on victim-blaming—that is, the tendency of individuals, or in some case organisations or health systems, to blame individuals for their own poor health outcomes rather than considering aspects of the environment, system or society that may be equally or more responsible (Crawford, 1977; Dougherty, 1993; Minkler, 1999; Raphael, 2003).

It is important to note that they defined bird flu as a disease that can be caught, rather than a disease that can be spread. This is a critical note of differentiation, and highlights the lack of urgency or panic associated with bird flu. If bird flu is caught rather than spread, then bird flu can be prevented by avoiding direct contact with the contagion, and thus has far less devastating impact. To catch a disease suggests the unfortunate situation of an individual being at the wrong place at the wrong time. In contrast, to have a disease spread, suggests mass contamination, indiscriminately affecting large numbers of people. We note that the use of the term ‘caught’ versus ‘spread’ was not a conscious act by participants, but provides an insight into the current state of play in the mind of the public. The single most common belief as to how one catches bird flu is that it is caught through the consumption of a diseased bird (thus placing it in the category of diseases such as BSE, which could be prevented by not eating beef, rather than diseases such as SARS). Also of interest is the finding that many believe that even this limited mode of infection can be prevented by thorough cooking of the offending bird. This is consistent with a recent study in Hanoi which found that consumers associated the risk of bird flu with the consumption of poultry (Figuie and Fournier, 2008), with 74% stopping eating poultry in January 2004 (but resuming consumption when perceived risk declined).

This distinction between ‘caught’ and ‘spread’ has important implications for the development of communication campaigns targeting the Australian population. Given that influenza viruses can be transmitted through airborne and surface contact, clarifying this misperception will be an essential component of any communication aimed at encouraging people to engage in the necessary protective behaviours (e.g. hand washing, using disposable tissues), which were not spontaneously raised by focus group participants as ways of reducing the risk of contagion.

It was also clear from the focus groups that many participants perceive bird flu to be ‘yet another’ media beat-up, rather than a genuine health risk. In the public’s mind, just like SARS which came and went (in the view of
Australians who, unlike those in countries such as Canada and Singapore, were not exposed to SARS), bird flu is expected to pass by without impacting on Australia. Further, the perceived reduction in media coverage over the last few months supports the belief that this was just another example of the media exaggerating a disease risk. This poses both a barrier to behaviour change and an opportunity to address this naivety through communication campaigns emphasising the likelihood of a future pandemic occurring (whether it is ‘bird flu’ or another form of influenza) and the protective effects of the recommended behaviours.

Contrary to the posited potential for panic in the event of an actual pandemic, but not surprisingly given the low levels of concern they exhibited, our focus group participants had not taken any actions to reduce their risk of contracting bird flu in the (unlikely) event of exposure. Even when prompted to imagine a hypothetical scenario in which bird flu was present in Australia, they did not anticipate taking pro-active steps to reduce their risk. Rather, they expressed the view that they would follow whatever instructions were issued by the government or the health-care system.

Is there a role for social marketing?

There are a number of critical factors about a potential bird flu pandemic that make it fundamentally different to the majority of issues to which social marketing has previously been applied. These include that the ultimate form of the virus has not been determined, thus the exact nature of the threat is unknown; there is currently no vaccine available to protect humans from H5N1 and a vaccine cannot be developed until the ultimate form of the virus has been determined (this would likely take 9–12 months following the initiation of the outbreak) and that due to the emerging nature of bird flu, there has been limited research on the public’s knowledge and perceptions of the disease. However, the underlying principles of social marketing provide us with some clear directions.

Social marketing, as it seeks to engage people in voluntary behaviour change, is based on a philosophy of exchange (Smith, 2000). The nature of these behaviours is such that the decision to engage, or not engage, in the behaviour is entirely voluntary. While there are some measures that could require policy changes or legal sanctions (such as closure of schools or increased quarantine procedures), most of the effective measures currently available are those for which it would not be possible to impose, or apply, the force of law—such as hand washing and the use of disposable tissues. In the case of a bird flu pandemic, the beneficiaries of an individual’s behaviour change include the individuals themselves (engaging in personal protection reduces their risk of contracting the disease), their families and social groups and the population as a whole (by reducing potential sources of transmission). In order to persuade individuals to engage in this voluntary behaviour change—particularly as many of the behaviours are effortful or are socially or psychologically challenging—we need to persuade consumers that the benefits of engaging in these behaviours exceed the perceived costs.

It is clear that, at least among the groups interviewed in this study, the primary competition to a social marketing intervention in Australia in the event of a bird flu pandemic will be the level of apathy and misperceptions of ‘safety’ among consumers based on our geographical isolation and perceived effective quarantine processes.

‘The marketing mix’: The most effective tools currently available for reducing mortality and morbidity from a bird flu pandemic are basic hygiene and self-protection behaviours. It is generally agreed that ‘change agents typically want target audiences to do one of four things’ (Kotler et al., 2002); however, in this case the required changes include all four of the categories of behaviour change that social marketers address:

(a) accept a new behaviour—encourage individuals to wear a face mask if they have
symptoms or are exposed to others who have symptoms,
(b) reject a potential behaviour—discourage individuals from engaging in a range of behaviours that could increase the spread of bird flu such as frequenting places where large crowds gather,
(c) modify a current behaviour—encourage individuals to wash their hands more frequently and thoroughly, and reduce unnecessary physical contact with other people and
(d) abandon an old behaviour—encourage individuals to stop using handkerchiefs and instead use disposable tissues.

In order to do this, we will need to incorporate all four Ps of the marketing mix. As stated in the introduction to this paper, the purpose of the present study was to inform the development of a communication strategy (‘promotion’) rather than to develop a comprehensive social marketing program. Thus, a detailed analysis of the other aspects of the marketing mix would require additional research. This would need to include research to better understand:

- **Product**—What we are ‘selling’ is a set of behaviours that individuals can engage in to reduce their risk of contracting, and transmitting, bird flu—although it is likely these behaviours will change as the pandemic progresses and other control measures become available or are deemed necessary—but further research is needed to understand the way that this product is perceived by the target audience.

- **Price**—In order to persuade people to engage in the recommended behaviours, we will need to reduce the perceived costs of engaging in them (financial, social, psychological, etc.) and increase the perceived benefits (increased protection from the disease), thus the need for further research into the perceived (and actual) barriers to, and benefits from, engaging in the recommended preventive actions.

- **Place**—Given the need to provide information, services and products to the entire population, we will need to use a range of channels to disseminate information and facilitate the behaviour change (for example, medical practitioners, schools, workplaces), thus future research needs to address the most feasible, and acceptable, channels for disseminating information to the community in the event of a pandemic.

- **Promotion**—Given the potential for the disease to spread rapidly once it achieves effective human-to-human transmission, we will need to develop effective messages and a clear and comprehensive plan for the media channels for their dissemination. This research provides some initial insights which can be used to develop and test such messages.

As with any health communication campaign, the application of a consumer orientation is fundamental to the success of the behaviour change effort (Maibach and Holtgrave, 1995). In order to develop appropriate communication strategies, we need to fully understand the target audiences’ knowledge, beliefs, attitudes, concerns and current behaviours. This can only be achieved by extensive and appropriate market research with the different target audiences. The research described in this paper is exploratory in nature, limited to a small number of participants and limited to two Australian states; it is likely that different barriers and facilitators will exist in other regions. For example, in a review of formative research conducted for syphilis awareness campaigns in eight US cities, Vega and Roland (2005) concluded that the different messages developed demonstrated the need for culturally appropriate messages to be tailored for each city.

**Conclusion**

The Australian public sees bird flu as yet another example of media sensationalism, and not a disease that poses any real risk to Australia—thus they do not need to arm themselves with any knowledge about potential transmission or strategies for prevention. However, it raises the important question of
whether these attitudes and hypothetical responses would differ in the event that bird flu cases were diagnosed in Australia. It could be argued that these attitudes place an even greater burden on the Government to be fully prepared should there be a bird flu outbreak in Australia as the public will, at least initially, believe what the Government says and take the actions it recommends. Thus, governments and health authorities should pro-actively develop communication strategies to rapidly inform the public and encourage appropriate behavioural responses in the event that the potential risk is realised.

It appears from the results of this study that developers of communication campaigns may face a number of challenges, including: the need to raise awareness and concern about bird flu to a level that motivates consumers to respond but not to a level that causes public panic; the need to ensure that there are clearly identified control measures that the public can take prior to and during a bird flu outbreak, and that there is a strategy for communicating these measures in an effective manner to the public; and the need to convince persons that they need to comply with all of the recommended control measures, not just those that they personally believe are important.

However, beyond the implications for communication campaigns suggested by this study, there is a need for further research to underpin future social marketing programs to address pandemic influenza (or other large-scale infectious disease outbreaks). Such research should address issues related to the product itself (protection from infectious disease) and its associated tangible products (e.g. facemasks, tissues); the price of engaging in the recommended behaviours, as perceived by the target audiences and the appropriate channels for the dissemination of messages and associated resources.

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