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# Anticipating or Precipitating Crisis? Health Agencies May Not be Heeding Best Practice Advice in Avian Flu Press Releases

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Precrisis information disseminated by public health information officers (PIOs) will play a critical role in preparing and safeguarding publics amidst a possible avian flu pandemic. This article analyzes avian flu press releases issued by leading health agencies, the Centers for Disease Control and Prevention, the National Institutes of Health, the Department of Health and Human Services and the World Health Organization, to reveal their purposes and the nature of organizational response constructed therein. Results of this analysis indicate important considerations for practitioners may not manifest in the press releases they issued: The threat was not localized; outlets for publics to contact for more information were not always present, and there was inconsistency in how avian flu was referenced. There was a steady increase in the volume of releases since 2004, and PIOs generally seemed to recognize the importance of partnerships and timeliness in pandemic preparedness. Examining the possible pandemic flu situation may yield a more thorough understanding of audience psychology and behavior during health crises as well as enhance the salience of crisis communication models for public health emergencies when public safety is of utmost concern.

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Analysis of how a threat or potential crisis situation is constructed may inform and moderate effectiveness of crisis and postcrisis response, which is particularly pressing in a large-scale public health emergency, and the possible avian flu pandemic presents an important opportunity for public health officials to prepare publics appropriately and limit the transmission of avian flu (Ratzan, 2006). This study explores how federal health agencies are constructing the threat and preparing publics for pandemic flu through the press releases they issue. Given that examination of media content is essential prior to revealing media effects, analysis of the content of press releases is a necessary first step to reveal the ultimate success of public health campaigns. Thus, we analyze avian flu press releases issued by federal and global health agencies—the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), World Health Organization (WHO), and Department of Health and Human Services (HHS)—to reveal the themes and purposes of the releases and how organizations are representing their responses to the pandemic flu threat.

Particularly in the public health arena, health officials face a tension between disseminating information quickly, yet accurately and thoroughly, which imposes potential threats to credibility as they may later have to issue changes in protocol (U.S. HHS, 2002). This research seeks to inform that process as well as to illuminate the challenges therein, extending crisis models in public relations to situations where public information and uncertainty reduction are more pressing than image restoration. The applied value of this research lies in that it may supply practitioners at both large and small health agencies with valuable communicative directives for public health campaigns. For this exploratory wave of this line of inquiry, it is important to reveal the themes and purposes in press releases. Thus, the following questions are asked:

RQ1a: What is the primary purpose of press releases issued by the CDC, HHS, NIH, and WHO?
RQ1b: Did purpose of releases shift over time as more was known about avian flu?
RQ2: What is the most frequent secondary purpose of the press releases?
RQ3: What, if any, is the relationship between primary and secondary purpose?
RQ4a: Do the releases acknowledge the organizations' partnerships in efforts?
RQ4b: If so, are the partners public or private, or both types of organizations?
RQ5a: Do the releases contain outlets for publics to receive more information?

RQ5b: If so, what is the format of that information?
RQ6: What is the nature of the reaction or response of the organizations as constructed through use of the following terms: timeliness/urgency/haste, openness, accuracy of information, optimism, pessimism, and uncertainty?
RQ7: Is the warning or threat of avian flu localized?
RQ8: (a) Is the influenza most frequently referred to as avian, pandemic, or bird flu? (b) Is there significant difference in how the influenza is referenced? (c) Do releases reference it in different ways internally?
RQ9: Does the organization acknowledge the need for more information?
RQ10: Does release use scientific jargon not easily understood by lay publics?



## METHODS

This study examines press releases distributed by four leading health agencies—the CDC, HHS, NIH, and WHO. All avian flu press releases sponsored by the organizations were retrieved from their official Web sites, and two coders independently coded the sample. For the first wave of coding to establish intercoder reliability, a small sample (5%) of the releases was coded, following several coder training sessions. Reliability results for this wave were not acceptable across the board, ranging from .69 to 1.0 for each variable or construct measured using Holsti's (1969) formula. The coding sheet was revised, and several categories that did not appear to be measuring distinct constructs were collapsed. For the final round of intercoder reliability checks, 29% ($n = 21$) of the total sample of releases was coded. In this wave, reliability was strong across all measures, ranging from .81 to 1.0 for each construct using Holsti's (1969) formula. Having established strong intercoder reliability, the remaining portion of the sample was coded.

## RESULTS

Of the 72 releases, 11 (15%) were sponsored by the CDC, 17 (24%) were sponsored by HHS, 27 (37%) were sponsored by the NIH, and 17 (24%) were sponsored by the WHO. Among 8 identified primary purposes of the releases, information about vaccines/antivirals ($n = 21$, 29.2%) was the most frequent primary purpose (see Table 1). Following, in rank order, were: organizational response to the crisis (16.7%), safeguards/protection/preparation (11.1%), special event/meeting (11.1%), ongoing laboratory studies (11.1%), scientific breakthrough (9.7%), diagnosis (6.9%), and media

TABLE 1
Primary and Secondary Purposes Used in Avian Flu Releases

| | *Primary purpose* | | *Secondary purpose* | |
|---|---|---|---|---|
| *Releases purpose categorization* | *N* | % | *N* | % |
| 1. Safeguards/protection/preparation/prevention | 8 | 11.1 | 57 | 26.3 |
| 2. Diagnosis | 5 | 6.9 | 11 | 5.1 |
| 3. Scientific breakthrough | 7 | 9.7 | 17 | 7.8 |
| 4. Response/nature of org. response to the crisis | 12 | 16.7 | 25 | 12 |
| 5. Special event/meeting | 8 | 11.1 | 16 | 7.4 |
| 6. Communication | 3 | 4.2 | 15 | 6.9 |
| 7. Vaccine/antiviral | 21 | 29.2 | 22 | 10.1 |
| 8. Ongoing laboratory/research initiatives | 8 | 11.1 | 34 | 16 |
| Total Frequency | 72 | 100 | 217 | 100 |



initiatives (4.2%). A significant difference among the four agencies (CDC, HHS, NIH, and WHO) in terms of the primary purposes adopted was found, $\chi^2(3,\ 72) = 33.8,\ P < .05$. For HHS, NIH, and WHO, the most frequent primary purpose was vaccine/antiviral (41.2% of HHS releases focused on vaccine/antiviral, 29.6% for NIH, and 35.3% for WHO), yet there were no releases dedicated to vaccine/antiviral information for the primary purpose of the CDC sample. About 75% of the releases dedicated to ongoing laboratory studies were released by the NIH, and 47% of the WHO's news releases were about either special events or the organization's reaction to the crisis.

Research question 1b was asked to reveal changes in primary purposes over time. About 31% of the releases were issued in 2006 and 2007, 21% in 2005, and 17% in 2004, indicating consistent increase in volume of avian flu news releases. The most frequently used primary purpose, vaccine/antiviral, has consistently increased in volume since 2004; 42.9% of the releases on vaccines/antivirals were issued in 2007 and 28.6% in 2006. The frequency of secondary purposes of the releases (RQ2) is presented in Table 1. The most frequently used secondary purpose was safeguards/protection/preparation/prevention ($n = 57$), and the least frequent secondary purpose of the releases was diagnosis (5.1%; see Table 1).

With regard to the relationship between primary and secondary purposes (RQ3), when vaccine/antiviral was the primary purpose of the releases, 95.2% ($n = 20$) of the releases had safeguards/protection/preparation/prevention as the secondary purpose. Among the releases with the primary purpose of response/nature of organizational response to the crisis ($n = 12$), the secondary purpose of 91.7% ($n = 11$) was safeguards/protection/

preparation/prevention. There was also a high correlation between scientific breakthroughs as a primary purpose and safeguards/protection as a secondary purpose for the releases (100%). Forty-eight percent of the releases with vaccine/antiviral as the primary purpose had response/nature of organizational response to the crisis as the secondary purpose. In addition, for the releases with nature of organizational response to the crisis as the primary purpose, about 67% had vaccine/antiviral as a secondary purpose, which indicates a strong relationship between vaccine/antiviral and response/nature of organizational response to the crisis.

The majority of the releases ($n = 57$, 79.2%) mentioned the organizations' partnerships in preparedness efforts (RQ4a). All of the releases sponsored by CDC mentioned its partners, and about 85% of NIH releases and 77% of HHS releases mentioned partnership efforts, but only 58% of WHO releases made reference to partners. The organizational difference in terms of mention of partnerships was statistically significant, $\chi^2(3, 72) = 7.82$, $P < .05$. Of the 57 releases mentioning organizational partnerships, 33 (57.9%) referenced only public organizations, 17 (29.8%) both public and private organizations, and 7 (12.3%) only private entities (RQ4b).

About 62.5% ($n = 45$) of the releases contained at least one outlet for publics to contact for more information, but 37.5% ($n = 27$) did not. The NIH was the most consistent in providing further information outlets for publics (in 74.1% of its releases) followed by WHO (70.6%), HHS (47.1%), and CDC (45.5%). However, there was no statistically significant difference among the four organizations' provision of an outlet for more information, $\chi^2(3, 72) = 5.11$, $P > .05$. When the releases contained an outlet for more information, 71.1% (32) gave Web sites, and 28.9% (13) provided only a general phone number or hotline phone number (RQ5a & 5b).

To investigate the nature of the organizations' representations of their responses to the threat, the frequency of the following descriptors was examined: timeliness/urgency/haste, openness, accuracy of information, optimism, pessimism, uncertainty, and precision/accuracy (RQ6). As presented in Table 2, about 65% of the releases contained terms related to timeliness/urgency/haste, revealing that timeliness was the most frequently adopted descriptor for the nature of organizational response. The second most frequently used descriptor was optimism (48.6%), and pessimism-related terms least frequently appeared in the releases (see Table 2). The nature of all four organizations' responses in pandemic preparedness was consistently represented in terms of rank order: (a) timeliness, (b) optimism, (c) uncertainty, (d) accuracy of information, (e) openness, (f) precision/accuracy, and (g) pessimism.

TABLE 2
Nature of Reaction or Response of Organization

| | | | *Presence of indicator by organization* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Presence of indicator* | | *CDC* | | *HHS* | | *NIH* | | *WHO* | |
| *Nature of reaction or response of organization* | *N* | % | *N* | % | *N* | % | *N* | % | *N* | % |
| 1. Timeliness/urgency/haste | 45 | 65.3 | 8 | 72.7 | 11 | 64.7 | 15 | 55.6 | 13 | 76.5 |
| 2. Openness | 10 | 13.9 | 1 | 9.1 | 2 | 11.8 | 6 | 22.2 | 1 | 5.9 |
| 3. Accuracy of information | 12 | 16.7 | 4 | 36.4 | 4 | 23.5 | 2 | 7.4 | 2 | 11.8 |
| 4. Optimism | 35 | 48.6 | 6 | 54.5 | 6 | 35.3 | 14 | 51.9 | 9 | 52.9 |
| 5. Pessimism | 3 | 4.2 | 0 | 0 | 0 | 0 | 3 | 11.1 | 0 | 0 |
| 6. Uncertainty | 14 | 19.4 | 3 | 27.3 | 2 | 11.8 | 6 | 22.2 | 3 | 17.6 |
| 7. Precision/accuracy | 10 | 13.9 | 3 | 27.3 | 4 | 23.5 | 2 | 7.4 | 1 | 5.9 |
| Total Releases | 72 | | 11 | | 17 | | 27 | | 17 | |

*Note.* CDC = Center for Disease Control and Prevention, HHS = Department of Health and Human Services, NIH = National Institutes of Health, WHO = World Health Organization.



Interestingly, the only organization that expressed pessimism (4.2% of the total sample) in response to the potential crisis was the NIH. About 11% of NIH releases expressed pessimism, whereas none of the other organizations used any pessimistic terms.

Regarding localization of the avian flu threat (RQ7), 13.9% of the releases localized the possible crisis, whereas 86.1% did not. There was a statistically significant difference across the four organizations in terms of localizing the threat, $\chi^2(3, 72) = 9.22$, $P < .05$. Eighty percent of the releases localizing the avian flu threat were sponsored by either CDC or HHS, whereas the NIH and WHO had only one release that did so (3.7% for NIH, 5.9% for WHO).

As seen in Table 3, 83.3% of the releases ($n = 60$) used both *avian flu* and *pandemic flu* as referents to the influenza; only 11.1% ($n = 8$) referred to it as *bird flu*. There was also a statistically significant difference found among the four organizations' use of the term *pandemic flu*, $\chi^2(3, 72) = 8.35$, $P < .05$. WHO referenced the threat as *pandemic flu* consistently in its releases, along with about 88% ($n = 15$) of HHS releases and 85% ($n = 23$) of NIH releases that did the same. However, only 54.5% ($n = 6$) of CDC releases referred to the potential crisis as a pandemic flu whereas 81.8% ($n = 9$) of its releases used *avian flu* to refer to the virus. There was no significant difference between the organizations' releases usage of *avian flu* or *bird flu* to refer to the virus (see Table 3). Interestingly, all news releases on vaccine/antiviral iviral ($n = 21$) referred to the influenza as *pandemic flu*.

TABLE 3
How Releases Represented Influenza

| | *Presence of indicator* | | *Presence of indicator N by organization* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *CDC* | | *HHS* | | *NIH* | | *WHO* | |
| *Release representation of influenza* | *N* | % | *N* | % | *N* | % | *N* | % | *N* | % |
| 1. Avian flu | 60 | 83.3 | 9 | 81.8 | 12 | 70.6 | 23 | 85.2 | 16 | 94.1 |
| 2. Pandemic flu | 60 | 83.3 | 6 | 54.5 | 15 | 88.2 | 23 | 85.2 | 16 | 94.1 |
| 3. Bird flu | 8 | 11.1 | 2 | 18.2 | 0 | 0 | 5 | 18.5 | 1 | 5.9 |
| Total releases | 72 | | 11 | | 17 | | 27 | | 17 | |



Of the total sample of releases ($n = 72$), 44.4% ($n = 32$) contained an organizational acknowledgement of its need for more information; 55.6% ($n = 40$) did not (RQ9); this difference was significant, $\chi^2(3, 72) = 8.0$, $P < .05$. The CDC acknowledged the need for more information in a majority of its releases (72.7%, $n = 8$), compared to 29.6% ($n = 8$) of NIH releases, 58.8% ($n = 10$) of HHS releases, and 35.3% of WHO releases ($n = 6$). Finally, 34.7% ($n = 25$) of releases contained scientific jargon not easily understood by lay publics. NIH releases contained scientific jargon most frequently (51.9% of its releases), whereas WHO releases contained it least frequently (11.8% of releases). This result could be related to differences in the primary purpose of the releases; more than 75% of NIH news releases focused on ongoing laboratory studies, and 47% of WHO releases focused on special events/meetings or organizational response to avian flu.

## DISCUSSION

Given that it is in the precrisis stage that health promotion messages are used to educate the public by encouraging risk-reducing behaviors (Reynolds & Seeger, 2005), it was not surprising that vaccines were the primary purpose of approximately one-third of the sample. However, it is somewhat more alarming that not one release focused on the transmission of avian flu, which would be key information in constructing the threat of avian flu and public susceptibility. Further, the primary purpose of almost one-fifth of the articles was the nature of the sponsoring organization's response and crisis preparation, but only about a tenth of the sample of releases focused on safeguards/protection/preparation as the primary topic. Roche and Muskavich (2003) identify two categories of infectious

disease information critical to publics' reduction of risk: risk-magnitude information (likelihood of contraction and mortality) and self-efficacy enhancing messages. It seems that these media releases neglect a critical element of public health and safety messages in providing little information on transmission and prevention beyond information on vaccines. Although vaccines are critical to prevention, they are not within the direct control of publics who may want to know what they can do to prevent contraction, enhancing their sense of efficacy. This finding may suggest a need for practitioners, particularly at smaller local and state agencies, to have clearer crisis models to guide their precrisis, crisis, and postcrisis mediated and direct communications, so that breaking news—such as breakthroughs in vaccinations—is not released at the expense of information on more mundane topics such as transmission. Perhaps the dominant focus on vaccines is to alleviate public uncertainty and fear of susceptibility; however, practitioners should adopt and use a more multifaceted approach to prepare publics in the event the vaccine is either ineffective or not available to all in the event of outbreak.

Perhaps consistent with the fact that program information—not breaking news—is often not the primary focus of CDC information (Mebane, Temin, & Parvanta, 2003), the CDC was significantly different than the other three organizations with regard to primary purpose. For the HHS, NIH, and WHO, the most frequent primary purpose or topic of the release was vaccines/antivirals;yet, no CDC releases were primarily focused on progress with vaccinations for avian flu. The number of avian flu releases steadily increased since 2004, indicating that public information officers (PIOs) are paying attention to mounting public fear and uncertainty regarding avian flu. The relationships between primary and secondary purposes indicate that public health agencies—other than the CDC—are primarily relying on vaccine information both to safeguard publics and to demonstrate the active and strong response of each organization. However, publics must be likewise equipped with information about the nature of the disease itself and its transmission to develop a thorough understanding of threat and risk. In the precrisis stage, PIOs must assure publics of progress in prevention while at the same time preparing them with risk-reducing information and for possible changes in protocol, especially given the importance of self-efficacy enhancing public health messages (Roche & Muskavich, 2003).

Public trust in the health agencies and experts who are charged with safeguarding them before, during, and after in health crises is critical (Covello, Peters, Wojtecki & Hyde, 2001). Thus, we wanted to examine the nature of partnerships mentioned in the press releases and whether those partners were government or private organizations, which may moderate trust. About 80% of the releases mentioned organizational partners in pandemic preparedness,

including all CDC releases but only about half of WHO releases; this difference between organizations was significant. In the majority of the releases (58%), organizations referred to governmental or public partners. Almost one-third of the organizations' releases mentioned both private and public partnerships, and only 7 of the releases referenced private partners alone. On the whole, it seems that practitioners are doing a good job of recognizing the importance of public trust in the health agencies and officials charged with safeguarding them and are establishing almost a strength-in-numbers approach in representing organizational response.

The next set of questions focused on a critical element of news releases, outlets for publics to receive more information, and revealed some rather disturbing findings that merit further exploration in audience studies. Although around 60% of the releases included "for more information" outlets, it is disappointing that this number was not even higher, if not 100%. Particularly when disseminating often highly-technical medical information on a mysterious disease to uncertain publics, practitioners must provide publics with contact information. In fact, more than one-third of the releases used scientific jargon, or words not easily understood by lay publics, making information on avian flu even more intangible. Surprisingly, the CDC, who has demonstrated commendable efforts in an error of bioterrorism and global public health threats and strong responsiveness to public needs for information (Reynolds & Seeger, 2005), did not include any outlet for public contact for more information in more than half of its releases. Even more troubling when considering the challenges of reaching populations in underserved rural areas with quality health information, 70% of the overall sample of releases gave only a Web site for publics to go to for more information, and less than one-third provided a telephone number. Again suggesting a possible need for more prescriptive models for PIOs in health crisis planning stages, practitioners cannot solely depend on the Internet to disseminate disease information. Pandemic preparedness efforts must reach disparate populations who may not have Internet access and provide them with accessible outlets for more information. Although the power of the immediacy and breadth of health communication on the Internet cannot be neglected by PIOs, neither should those who cannot access it due to socioeconomic or other barriers.

Next, we sought to identify how organizations were representing their pandemic preparedness and response through use of the following characteristics in the releases: timeliness, openness, accuracy of information, optimism, pessimism, and uncertainty. Across all four organizations' releases, timeliness was the most frequent descriptor of response, followed by optimism, uncertainty, accuracy, openness, precision, and, finally, pessimism. Given that timely response is, perhaps, the most pressing demand for

practitioners before and during a crisis, it is encouraging that organizations are stressing their timely and urgent efforts in pandemic preparedness, which can serve as a model for practitioners in smaller agencies. By stressing organizational urgency in precrisis communication, practitioners may instill a sense of public confidence in their handling of the crisis situation in advance, which will likewise assure publics during a crisis. These frames should be further analyzed longitudinally to reveal how timeliness in precrisis preparedness translates and resonates with audiences. Further, organizational uncertainty was also expressed quite frequently. Practitioners were wise to acknowledge their need for more information in the releases, while at the same time insuring publics that they would release more information as soon as it was available. Interestingly, the NIH, the primary agency for medical research, was the only organization to express pessimism (present in more than 10% of its releases). Perhaps, as NIH releases accounted for the majority of the sample that focused on laboratory studies and advancements, the scientific data disseminated demanded a dose of pessimism—perhaps, in the face of a grave epidemic, to create a realistic picture.

The CDC and HHS made significantly greater efforts than the NIH or WHO to localize the threat of avian flu. Particularly in the case of a disease with only international occurrences at this point, practitioners may need to construct a threat that is not necessarily imminent but very real in precrisis communication to foster risk-reducing behaviors, should they become necessary. It is also interesting to note how organizations referenced the influenza; the vast majority (83%) of releases used both *avian flu* and *pandemic flu* within the same release. However, more than a tenth of the sample referred to it only as *bird flu*, and there was significant difference in organizations' references to *pandemic flu*. Only about half of CDC releases, compared to almost 90% of HHS and NIH releases, referred to it as *pandemic flu*, the CDC instead favoring *avian flu*, perhaps not to ignite the fear associated with *pandemic*. There was no significant difference in referrals to *avian flu* or *bird flu* across organizations, but these results do indicate some disparity and a need for public health entities to construct the threat—and especially its name and nature—consistently. Finally, amidst the inevitable uncertainty surrounding public health crises, organizations must acknowledge their own need for more information. Almost half (44%) of the releases acknowledged the need for more information, but the organizations under investigation made this confession at significantly different levels. The CDC recognized its need for more information more frequently than any other agency.

The themes and categories analyzed here establish an important framework in which to analyze crisis response from the precrisis, anticipatory stages and beyond. Public health communicators must establish a strong sense of efficacy in an informed public to insure that audiences will

adhere to protocol rather than succumb to hysteria in the face of a wide-scale crisis such as pandemic flu. They must also provide information accessible to all publics, including those who do not have Internet access. Some results of this analysis suggest some of these important considerations are not manifesting in press releases issued by PIOs at major health agencies. Scholars must continue to examine this precrisis situation in the face of possible pandemic flu to develop a more thorough understanding of audience psychology and behavior during health crises as well as to enhance the salience of crisis communication models for public health emergencies when public safety—not reputation management—is of utmost concern.

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