

**Abstract**

This paper examines the claim that media exaggerated the threat of H1N1, prompting an immediate demand for limited vaccine. We compare the *Australian's* and the *Daily Telegraph's* (UK) coverage of H1N1 with the coverage in the *Globe and Mail*, which is comparatively critical of government performance. The events of October 2009 underscore the difficulty and importance of responding to media coverage of “uncertain risks” (Renn 2008), risks for which there is a lack of scientific basis for decision making and which potentially generate anxious public responses.

**Keywords:** H1N1, pandemics, media coverage

‘We find no villains in the federal government’s officials and advisers then and think that anyone (ourselves included) might have done as they did—but we hope not twice’

- R. Neustadt and H. Fineberg (1983)

*The Epidemic that Never Was: Policy-Making and the Swine Flu Affair*<sup>1</sup>

## **Introduction**

On October 26, 2009, Evan Frustaglio, a seemingly healthy 13-year-old boy, died in Ottawa, Canada from H1N1, just as Canadian health services were starting their vaccination programs. His death featured prominently in the news media. Within hours, parents rushed to get their children vaccinated (The children still wait 2009). Despite having encouraged people for months to receive the vaccine, governments and health services appeared unprepared for a surge in demand; long line-ups formed in front of clinics across the country (Canadian Medical Association et al. 2010). The limited supply of vaccine meant that most provinces chose to administer vaccines to priority groups only, which further aggravated the situation. In the aftermath there were different views on who was to blame—if anyone—for long line-ups and anxious parents.

The Public Health Agency of Canada (PHAC) foregrounds that in October 2009 78% of Canadians believed “the media hyped and exaggerated the threat of H1N1” (2010: 55). This fact exposes a paradox: if people were confident the media exaggerated the threat, why was there such a surge in demand for the vaccine? Despite considerable attention, many questions about

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<sup>1</sup> In 1976 the US government orchestrated a large and far-reaching vaccination program in anticipation of a swine flu outbreak. The program was enacted quickly and absorbed considerable resources. Ultimately, however, swine flu never materialized.

H1N1 and social responses to it remain unresolved (Grube 2013; Liang 2011; Waterer, Hui and Jenkins 2010; Fineberg 2014).

The purpose of this paper is to examine claims that media exaggerated the threat of H1N1. We explore four main questions. First, how do people experience and respond to risk? Secondly, was media coverage of H1N1 unusual? Thirdly, and as a corollary to the previous question, how were governments depicted by the media? In other words, what did the media criticize the Canadian governments about? Finally, what lessons does this episode provide for health care officials about media and managing responses to uncertain risks? Before addressing our four questions, we will provide a brief overview of H1N1 in Canada in 2009.

## **H1N1 in Canada**

Timely information is important when responding to communicable diseases. Because people are increasingly mobile, disease surveillance must span large geographic areas, yet remain timely, accurate and comprehensive. Outbreak detection is complex; data must flow up and down organizational hierarchies. In Canada, this challenge is complicated by the fact that provincial and federal governments share responsibility for health, and it is not always clear where the line is drawn between the two orders of government (Deber 2014: 10). Even within provincial jurisdiction, there are a variety of institutional arrangements over public health and pandemic response (Deber 2014: 13-14). Many provinces have subdivided health responsibilities into regional authorities, which may not correspond to municipal boundaries. The responsibilities of these authorities vary across the country. These complex arrangements generate challenges, including externalities, unfunded mandates, and data ownership and coordination issues (Macdougall, *et al.* 2014). In addition, circumstances change; pandemics can spread or contract.

This depends partly on people's willingness to follow professional advice (e.g., getting vaccinated). Therefore plans, professional advice and predictions change as events unfold.

The Canadian governments have had a regularly updated pandemic plan since 1988. The SARS response in 2003 was roundly criticized by three separate commissions as inadequately prepared and coordinated (National Advisory Committee on SARS and Public Health and Naylor 2003; Expert Panel on SARS and Infectious Disease Control (Ont.) and Walker 2003; Campbell 2004; Macdougall, *et al.* 2014). Naylor noted that coordination problems during SARS were part of a long history of inadequate public health infrastructure to support coordinated responses to national health emergencies. The commissions variously noted a lack of integration of emergency-related data, information-sharing infrastructure, data quality and reporting standards, emergency response coordination, and agreement on a common list of notifiable or reportable diseases across jurisdictions (Macdougall 2014).

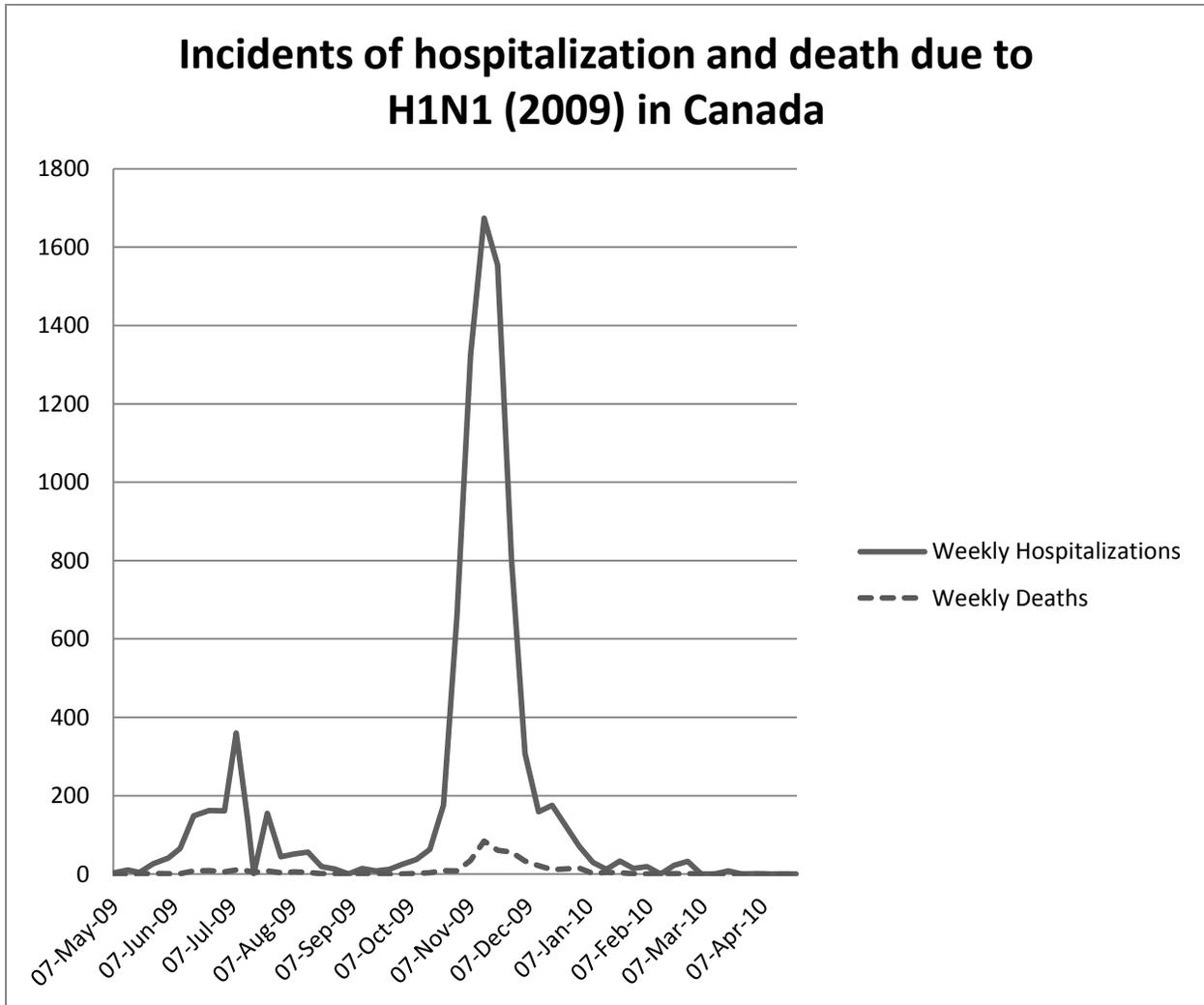
H1N1 first occurred in Canada when four students from Nova Scotia and two men from British Columbia returned to Canada from Mexico (Manitoba Health 2010). In total, 8,507 people were hospitalized for influenza (both H1N1 and seasonal), compared to 2,614 in typical flu seasons (Picard 2010). In all, 428 people died of H1N1. In contrast, approximately 8,000 died in 2007-08 due to seasonal flu and pneumonia (Public Health Agency of Canada 2010). H1N1 affected young people at an unusually high rate; in the early stages of the illnesses' spread, the median age of patients was 18 (Alphonso and Galloway 2009). This low median age indicates a very serious influenza.

In April 2009 (following the start of the first wave of H1N1 in Canada), the federal government launched a public awareness campaign. Health officials anticipated that the second

wave—in the fall of 2009—would be much more serious. The campaign focused on “infection prevention behaviours, personal preparedness and a call to action for Canadians to get vaccinated” (Public Health Agency of Canada 2010: 54). The federal government published 50 guidance documents and distributed 10 million brochures, 1.7 million guides and 4 million alert notices to travelers (54); held almost 50 press conferences between April 24 and December 15 (55); received 6.4 million visits to its website and had over 200,000 downloads (55). The federal Minister of Health and Chief Public Health Officer played prominent roles (The Standing Committee on Social Affairs, Science and Technology 2010). Generally, all orders of government worked to coordinate communications (The Standing Committee on Social Affairs, Science and Technology 2010).

The plan for vaccine administration changed over time. In early fall 2009, H1N1 was not as wide a threat as health officials had anticipated; as a result, health officials decided to delay vaccination to give more time for trials and vaccine production. From September to mid-October 2009, vaccine demand was low; polls suggested apathy (Mittelstaedt 2009). In late October, there was a surge in demand just as there was a problem with supply (Nova Scotia Department of Health and Wellness 2010). The surge in demand occurred immediately after the death of Evan Frustaglio, which received considerable media attention. Production problems caused a shortage, which created a “rush” for the vaccine; health officials in most provinces resorted to administering it only to priority groups (Public Health Agency of Canada 2010: 73), e.g., children and pregnant women. In early December the supply increased and the vaccine was once again available to the general public. There were vaccination queues, but apathy returned and governments were again trying to convince people to get the vaccine. Ultimately about 45% of

the population received the vaccine, one of the highest vaccination rates in the world (Public Health Agency of Canada 2010: 70). Figure 1 depicts the two waves.



**Figure 1:** Government planning focused largely on the second wave. Frustaglio died on October 26.

There is no specific reference to the death of Evan Frustaglio in the PHAC report. Rather, there are two indirect references. Under background, the report notes:

Media coverage of H1N1 was extensive and, at times, overwhelming. In October 2009, a survey found over three-quarters of Canadians (78 percent) believed the media hyped and

exaggerated the threat of H1N1, representing a 10-point increase from perceptions in July. Correspondingly, just over half of Canadians (53 percent) surveyed in the same month (October 2009) felt the general public's level of concern was exaggerated while close to four in ten (37 percent) felt the level of concern was consistent with the risks (Public Health Agency of Canada 2010: 55).

In the conclusion, the report notes:

there is a need to plan for different scales of pandemic response, dependent on the severity of the virus but recognizing that, even when there is a lower risk of morbidity and mortality with certain strains of a pandemic influenza, there will always be tragic cases that may move public opinion and therefore must be accounted for in a low-risk pandemic situation (Public Health Agency of Canada 2010: 92).

The report concludes that all health-related government agencies in all orders of government must improve their science communication to various audiences, including the media and general public, though it gives no indication of how to do this or which audiences in particular.

### **Preventative Health Care**

Despite evidence that preventative health care can be an effective use of resources in many instances (Wyden, Harkin and Whitehouse 2014), it is difficult to secure commitment to it. Fineberg (2013) notes many challenges that work against broad-based acceptance and action of preventative health care: it is difficult to prove conclusively that it is successful; when it is successful, one might describe it as a 'quiet' success, that occurs over time; in other words, it lacks the drama that generates media coverage and public attention; moreover, rewards of preventative health care are delayed, and are not accrued necessarily to the payer; professional

advice can be inconsistent; and permanent, long-term (and unpopular) behavior change may be required.

When it comes to their health, people do not necessarily make rational decisions. Our biases impact our ability to perceive risk accurately. Risk perception can be influenced by a sense of dread (Slovic, Fischhoff and Lichtenstein. 1982), personal control (Langer 1975), familiarity (Tversky and Kahneman 1973), exit options (Starr 1969), equitable sharing of both benefits and risks (Finucane *et al.* 2000,) and the potential to blame an institution or person (Douglas and Wildavsky 1982). It can also be associated with how a person feels about something, such as a particular technology or a disease (Alhakami and Slovic 1994). People also show confirmation bias (Wason 1960) and can be vulnerable to ‘probability neglect’ (Slovic et al. 2005). When probability neglect is at work, “people’s attention is focused on the bad outcome itself, and they are inattentive to the fact that it is unlikely to occur” (Sunstein 2003: 122).

Indeed, psychologists have noted that the reporting of *one* death can have a greater emotional impact than reporting multiple deaths if the single victim is depicted on his or her own; the photo of the individual on his own can have the effect of suppressing our ability to use probabilities to place the event in broader perspective (Slovic 2011; Kearney 2013).

### **Risk Experience and Response**

For our analysis, we categorize H1N1 as an “uncertain risk” (Renn 2008). According to Renn (2008), uncertain risks are risks where the influencing factors are largely known, but the likelihood of any adverse effects cannot be precisely described (e.g., terrorism, rare natural disasters, pandemics). He stresses that uncertain risks require reflective discourse by experts and key stakeholders about balancing the possibilities of over- and under-protection. Despite Renn’s

focus on risk communication, he offers little on the media's role in framing uncertain risks for a lay audience. This is surprising since most people base their perceptions of risk on information from the media (Fischhoff 1985, 1995; Kitzinger and Reilly 1997).

The government depends on the media in risk events. As we saw with H1N1, this can be a challenge when the media and the public are moved by a singular, tragic event. At the same time, simply declaring that the media "hyped and exaggerated the threat of H1N1" is arguably blame-shifting and naïve. Government plays an important role in setting public expectations; if it fails to meet those expectations it jeopardizes its own credibility and the credibility of its pandemic plan. Government must therefore anticipate amplified media coverage of uncertain risks and cope better with it. Otherwise, important vulnerabilities remain.

Media reactions to the events in late October 2009 expose the scope of the challenge when addressing uncertain risks. While the novelty of one death may initially attract attention, the death of one person does not change the probability that one is going to develop a disease. This rationale for risk, however, depends on a rational actor paradigm in which probability and consequence are objective and (reasonably) obtainable measures (Jaeger *et al.* 2001), which is not the case with uncertain risks. While the PHAC report refers to the challenge of communicating low morbidity pandemics to lay audiences, governments at the time of the pandemic gave mixed messages. The PHAC report highlights, for instance, that as late as August 2009, the federal Minister of Health declared, "What may come this fall is something that could test all of us, possibly to a limit we have never experienced" (Public Health Agency of Canada 2010: 47).

A psychometric approach to risk provides more insight into the effect of media than a rational one. The media tends to report the dramatic over the common but more dangerous

(Soumerai, Ross-Degnan and Kahn 1992). They tend not only to sensationalize (Johnson and Cavello 1987), but to sensationalize the most negative aspects of events (Wahlberg and Sjoberg 2000). Media connects with people at an emotional level.

A particularly powerful moment in the H1N1 episode in Canada was the death of Frustaglio just as the vaccine was released. Sociologists have focused on how the media stage and amplify death and grief and the social context in which it is interpreted. The moral panics literature (Cohen 1972; Goode and Ben-Yehuda 1999) examines episodes that include broad social concern, disproportionate response and volatile public opinion. Moral panics also encompass an element of the “taboo” – such as the death of a child. According to Walter, Littlewood and Pickering (1995), media plays a crucial role in interpreting and staging death scenes for public consumption. According to Weaver and Jackson (2012), child deaths are frequently interpreted through the lens of maternal grief, exploiting its emotional and symbolic significance. There is also a ‘utopian bias’ that underpins most coverage – no child should ever die prematurely. Mitchell et al. (2012) note that the death of a child is one of the most disruptive and profound types of loss; it produces deep, intense and prolonged grief, particularly in affluent societies. In the West, the death of a child is “an unspeakable contravention of the ‘natural’ order of things, particularly in ‘modern’ society” (14).

The rational ordering of public bureaucracies is ill-equipped to deal with these circumstances. Their interest in fairness, regulation and process cannot easily accommodate problems of profound human grief. Many of these emotionally charged events in which media and social commentators rush to impose meaning lead to a selective search for accountability and an eagerness to lay blame. The Columbia Journalism Review (1979) notes that issues involving children are often “ambiguous, complicated and touchy,” and that stories about kids can be

“nasty, intrusive and potentially sensational” (p.3, as cited in Hennink-Kaminski and Dougall 2009). More generally, in reference to crises and disasters, Pidgeon argues that “despite the inherent complexity and ambiguity of the environments within which large-scale hazards arise and the systemic nature of breakdowns in safety, cultural myths of control over affairs ensure that a culprit must be found after a disaster or crisis has unfolded” (1997: 9). In other words, while the death of Frustaglio generated the initial coverage, an aggressive and selective hunt for a culprit was likely to follow.

### **Method for Media Analysis**

The volume of H1N1 media coverage was from 3 to 10 times greater than the volume of media coverage of other low probability / high consequence events (see, for example, Quigley and Quigley 2013; Quigley and Mills 2014). For this paper, we focus exclusively on how H1N1 media coverage in Canada compared to H1N1 coverage in other countries. We selected Australia and the UK for comparison because they are Westminster systems with universal, publicly-funded health care, delivered at the regional level (although the federal / central governments also have important responsibilities, particularly with respect to obtaining vaccines).<sup>2</sup> All three countries had operations in place to respond to H1N1 (Department of Health and Ageing 2011; Public Health Agency of Canada 2010; Hine 2010). Table 1 shows statistics on H1N1 hospitalizations and deaths for all three countries. While H1N1 was more serious in Canada, there are three reasons why the comparison is valid. First, the differences are within an order of magnitude. H1N1 caused a large number of deaths and hospitalizations in each country and

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<sup>2</sup> In the case of flu vaccines, public funding varies by province and territory (Public Health Agency of Canada 2015) and supply and distribution is determined through complex administrative processes involving federal, provincial and territorial health authorities (Public Health Agency of Canada 2014).

generated considerable media coverage. Secondly, the respective health sectors<sup>3</sup> and government prepared their responses not knowing what the eventual death and hospitalization rates would be. Finally, while we recognize there are differences between these countries (e.g., proximity to Mexico where the pandemic started), H1N1 was largely the same problem at the same time. These similarities allow us to control many extraneous variables in our comparison, which is generally difficult to do with low probability / high consequence events in different countries.

**Table 1:** Comparison of selected H1N1 statistics for three countries showing all three are within an order of magnitude

Country	H1N1 Related Hospitalizations	H1N1 Related Deaths	Population in 2009 (000,000)	Hospitalizations per 100k	Deaths per 100k
Canada	8678	428	33.7	257.51	12.70
United Kingdom	5376	474	61.8	86.99	7.67
Australia	4992	213	21.9	227.95	9.73

In January 2011 we retrieved 819 articles about H1N1. We used Factiva to search a leading national newspaper in each country. Our intention was to examine volatility and variation among these newspapers. We acknowledge that 1) media sources have their own political and ideological biases, and market orientation, which may affect their coverage and limit comparative methods, 2) we have only selected one newspaper from each country, which limits our capacity to generalize (it would be useful, for example, to examine how the *G&M*'s coverage compared with coverage in the *National Post*, the *Toronto Star* and *La Presse*<sup>4</sup>), and 3) examining the role of social media in communicating about the spread of pandemics could

<sup>3</sup> For the media analysis in this paper, the “health sector” refers to doctors, nurses and hospital staff

<sup>4</sup> For instance, the *G&M* is a national newspaper and therefore more likely to focus on federal – than provincial – issues. The same can be said for the *DT* and the *Australian*. The *Toronto Star* and *La Presse* might be more likely to cover local issues.

generate useful results. However, social media did not play an influential role in communicating risk to the public during the 2009 outbreak (Lui and Kim 2011). Moreover, while it may be declining in audience size, traditional media continues to be the most trusted news source among Canadians (see table 2).

**Table 2:** Trust among Canadians in news sources

Media Source	2012	2013	2014	2015
Traditional Media	75%	74%	70%	62%
Online Search Engines	55%	54%	62%	55%
Hybrid Media	56%	48%	55%	45%
Owned Media	38%	34%	36%	35%
Social Media	32%	34%	32%	35%

Source: Edelman (2015)<sup>5 6</sup>.

For our analysis, we selected the most widely distributed national broadsheet in each country. Our sample comprises all articles in the year following April 25, 2009, that included the term(s) most commonly used to refer to the event. We eliminated any articles that were not principally about H1N1. Content analysis of the articles was carried out in two stages. First, we reviewed articles to determine whether key actors were assessed positively, negatively or neutrally (N/A was also an option). We assigned a value of +1, -1, or 0 to each article depending on whether it was on balance a positive, negative, or neutral assessment for each key sector. We then calculated the net sum. Each order of government<sup>7</sup> was assessed separately (if one article had a negative assessment of both the federal and provincial government, then it was assessed - 2).

<sup>5</sup> Survey 200 college-educated respondents, aged 25-64, in top 25% of household income who report significant media consumption and engagement in business news and public policy (Edelman 2015).

<sup>6</sup> Traditional denotes print or broadcast media; hybrid media denotes online versions of traditional media sources (e.g. The Huffington Post); owned media denotes a brand or company website; social media denotes sites with user shared/generated content (e.g. Twitter) (Edelman n.d.)

<sup>7</sup> Orders of government refer to, in Canada, federal, provincial or municipal government, in Australia, federal, state and municipal, and in the UK, central, devolved and city.

We reduced bias in our assessments using several strategies. We assessed all the H1N1 articles during a short period of time: January and February 2011. We also applied a standard template to all articles. One researcher classified articles for each newspaper. To ensure consistency, the research group met to review a sample of articles together before and during the assessment process. To test the inter-rater reliability of our coding, 10% of articles were double coded; using Cohen’s kappa coefficient we found an inter-rater reliability agreement of  $k=.66$  for performance assessment. This corresponds to a substantial level of agreement.

Following this initial assessment, we created a three-by-three matrix to assess what the governments were criticized for. First, we used a cybernetic definition of control (information-gathering, standard-setting, and behavior modification; see Hood, Rothstein, and Baldwin 2001). For the second dimension of the matrix, we adopted the three justifications of Hood and Jackson’s (1991) administrative argument (sigma (efficiency) justifications, theta (fairness and accountability) justifications, and lambda (stability and learning) justifications). Circumstance guides which administrative argument we employ to criticize government performance (e.g. an issue of efficiency, if identified previously in a similar risk event, could also be categorized as a failure of stability and learning). In all cases, reviewers were instructed to choose the best fit.

Once we had created the categories, one reviewer analyzed the 339 relevant H1N1 articles in the *G&M*. The review occurred from December 2013 - January 2014. Once again, we used Cohen’s kappa coefficient to determine whether there was significant bias in the reviewer’s analysis; we found a high level of agreement (see Table 3).

**Table 3:** Cohen’s Kappa Coefficient showing high level of agreement between the coders

	Cohen’s Kappa Coefficient
Agreement of Selection of Administrative Argument	0.7366

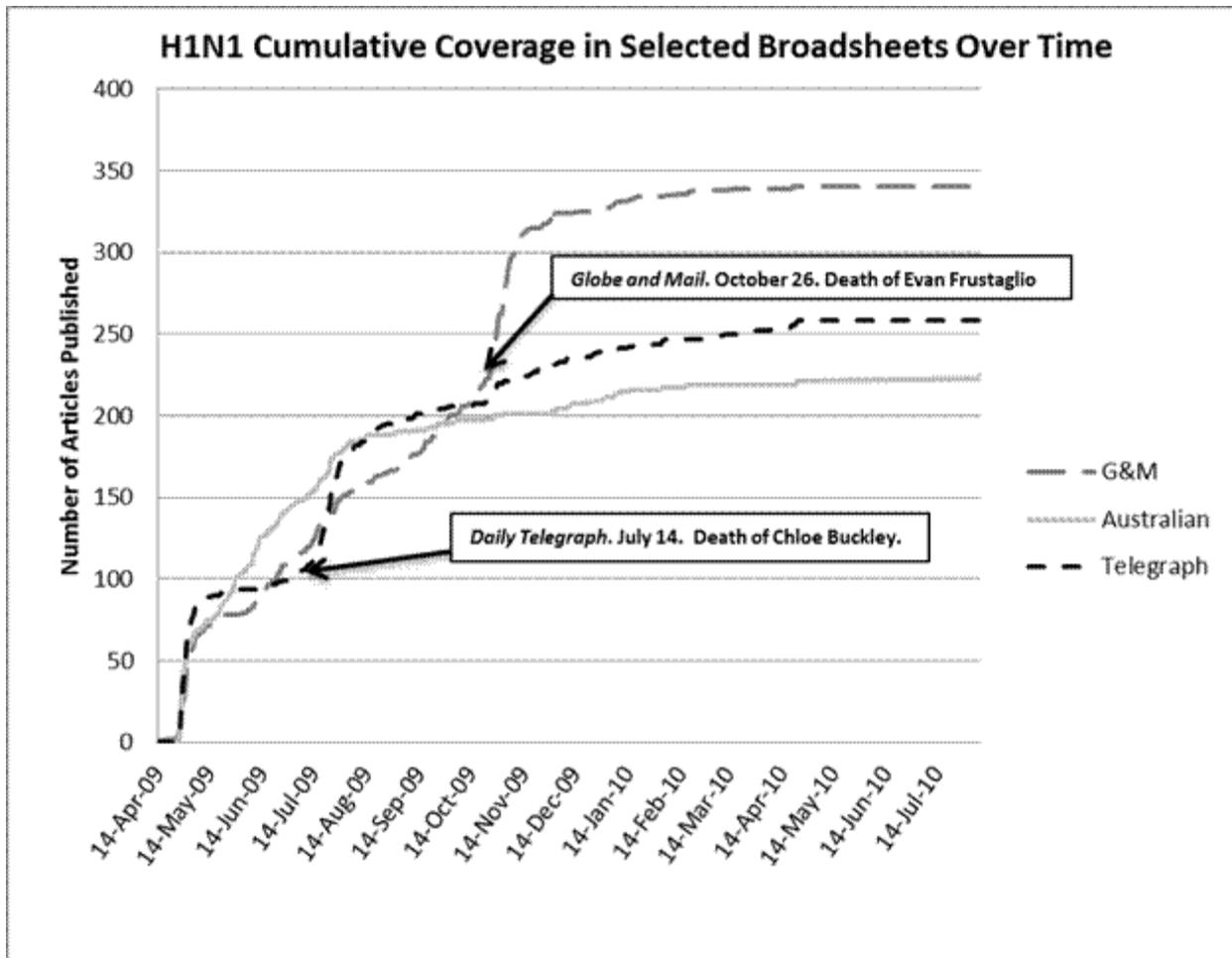
Agreement of Control Mechanism	0.7612
Agreement of <i>both</i> the Administrative Argument and the Control Mechanism	0.6842

### Media Coverage of H1N1

While the volume and distribution of coverage in the news sources were similar prior to Frustaglio’s death, there was some variation. After an initial peak in coverage through July, the *Australian* coverage slowed. The Australian flu season occurs between May and October; there may have been a sense of urgency in April / May, but by August it became clear that the pandemic would not pose a serious threat in Australia.

There is also variation in how child mortality is reported. The *Australian* rarely reported the death of children, and did not focus on the specifics of one child (with one exception where the death of one child prompted two articles in the *Australian*). There is a somewhat stronger parallel between the *G&M* and the *DT* in how child death is reported. The *DT*’s coverage spiked between mid-June and -August. There are four articles about the death of a seemingly healthy six-year-old - Chloe Buckley - which, like the case of Evan Frustaglio, contributed to a surge in media coverage. While the number of articles about Buckley’s death is lower than the *G&M*’s coverage of Frustaglio, the *DT* stories focus largely on vulnerable youth.

Figure 2 shows just how dramatically the *G&M* coverage increased following the death of Frustaglio and the release of the vaccine. In this sense, the *G&M* coverage was unusual. Between October 27 and November 26, 86 articles were published. This number represents 25% of the articles published, all within a month.

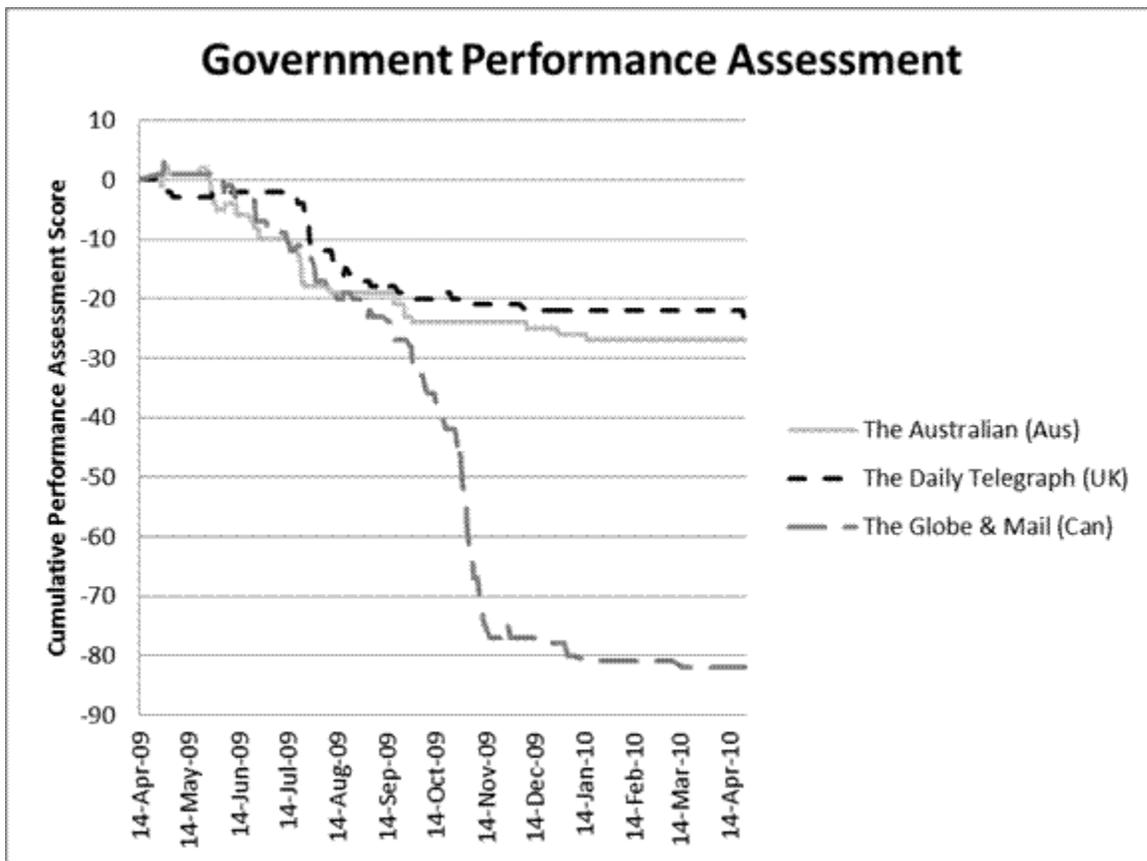


**Figure 2:** Accumulative number of articles on H1N1 for three newspapers showing large increase in publication rate in the *G&M* and the *DT* following the death of a youth.

Notwithstanding the spike in coverage after of Frustaglio’s death, only 16 articles refer to the death of a youth in the *G&M*, and only 12 of those refer to Frustaglio.<sup>8</sup> Frustaglio’s death seems to have heightened awareness of the risks associated with H1N1 just as the vaccine became available. The vast majority of media coverage, however, focused on the performance of governments in response to the surge in demand.

<sup>8</sup> A 6-year-old-girl from Brampton, Ontario (whose name was never released to the media) was the first child to die from H1N1 in Canada (Boyle 2009).

While the domestic health sector tended to receive neutral assessments and a relatively small mix of positive and negative assessments, which netted to zero, assessments of governments varied more dramatically. The *G&M* included several negative assessments of government (-82); the *DT* and *Australian* had moderately negative assessments (-23 and -27, respectively). Figure 3 shows performance assessments of governments in each of the three newspapers. In the *G&M*, 63% of the negative assessments can be attributed to the federal government and 37% to the provinces. In comparative perspective, media coverage in the *G&M* was unusual. Whether this was due to an overzealous *G&M*, an over-anxious population or a poorly prepared government response is unclear.



**Figure 3:** Cumulative performance assessment of government during the 2009 H1N1 pandemic (by broadsheet and date) showing a significant increase in negative assessments by the *G&M* from mid- Sep 2009 two months prior to the death of Evan Fustaglio

Scoring: Negative assessment = -1; Neutral assessment = 0; Positive assessment = +1

### **G&M Criticisms of Canadian Government**

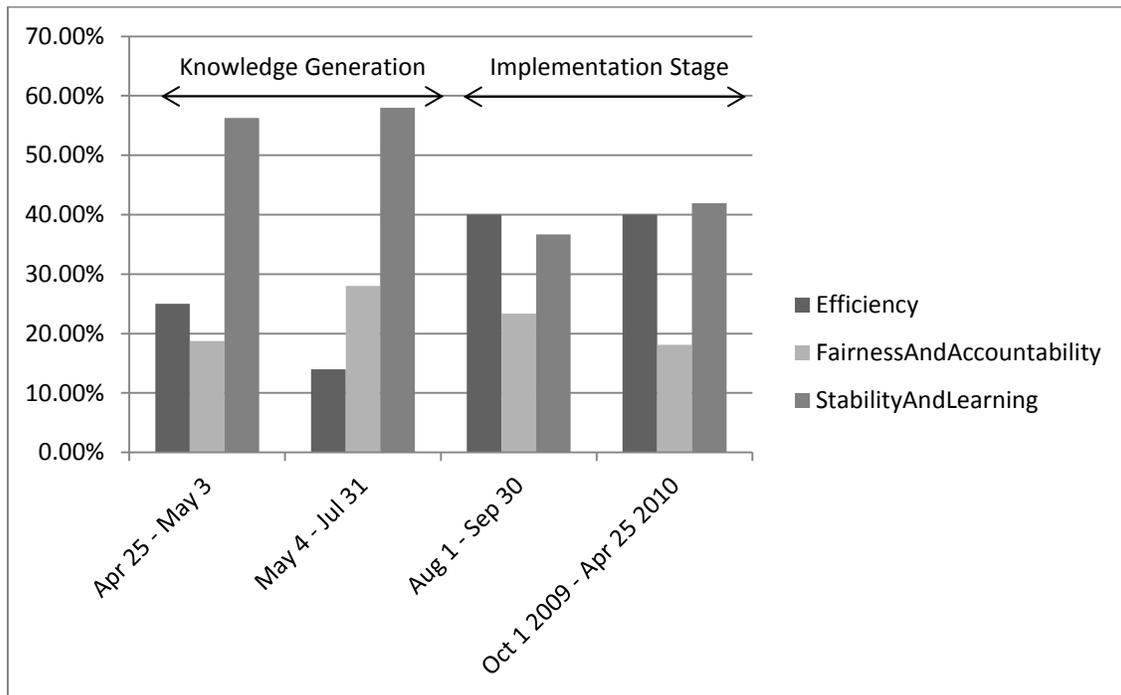
Of the 339 articles in the *G&M*, 48% (161) included negative performance assessments of governments. There are 201 negative performance assessments in total. We categorized criticisms according to cybernetic control and the administrative argument that journalists used to frame their criticisms (see Table 4). The most common criticism concerned the intersection between behaviour modification and stability and learning, constituting 32% (64) of the total. Efficiency and behaviour modification (28) and each of the three argument types concerning standard setting (32, 32 and 27) ranged from 16 to 13% of the total negative performance assessments. These criticisms might be grouped as the second most common. Few criticisms concerned information-gathering, which is particularly ironic given its importance to public health initiatives.

**Table 4:** Classification of articles by cybernetic control classes and administrative argument classes showing few in Information Gathering and the strongest association between Behavior Modification and Stability and Learning

	<b>Information Gathering</b>	<b>Standard Setting</b>	<b>Behaviour Modification</b>	<b>Totals</b>
<b>Efficiency</b>	5 (2.5%)	32 (15.9%)	28 (13.9%)	<b>65 (32.3%)</b>
<b>Fairness And Accountability</b>	4 (2%)	32 (15.9%)	7 (3.5%)	<b>43 (21.4%)</b>
<b>Stability And Learning</b>	2 (1%)	27 (13.4%)	64 (31.8%)	<b>93 (46.3%)</b>
<b>Totals</b>	<b>11 (5.5%)</b>	<b>91 (45.3%)</b>	<b>99 (49.3%)</b>	<b>201 (100%)</b>

To detect variations in negative performance assessments over time, we divided the *G&M*'s coverage into four periods: before the first wave (April 25 to May 3); the first wave

(May 4 to July 31); the interim period (August 1 to September 30); and the second wave (October 1 to April 25). Standard setting and behaviour modification are very similar throughout the entire episode although behaviour modification passes standard setting during the second wave. As noted, information-gathering gets little attention. When we consider which administrative argument is used to frame criticism (figure 4) we see that the majority are framed as criticisms of stability and learning. From the interim period onward, however, criticisms are framed less as criticisms of stability and learning and more as efficiency concerns. In short, there seem to be two distinct periods in the criticisms: what Renn would call the knowledge generation stage, which is concerned largely with learning, and the implementation stage, which is concerned with stability, learning *and* efficiency. This growing concern over efficiency can be detected before the death of Frustaglio.



**Figure 4:** Breakdown of articles by administrative argument showing an increase in the proportion of efficiency claims by the third and fourth periods and a related decrease in the proportion of stability and learning claims

## **Discussion and Conclusion**

Uncertain risks create communication challenges for health officials. Their inability to predict the likelihood of events within a narrow range - as well as to articulate the possible consequences - conveys knowledge gaps from which people can draw the wrong inferences; these inferences can lead to exaggerated concern and heightened anxiety. Arguably, Frustaglio's death reframed the H1N1 story from a pandemic that was under control or not particularly threatening to one which could prove fatal to healthy youth. This reframing affects all stages in Renn's risk governance framework: social concern increased; tolerance and acceptability decreased; circumstances required a risk management process that was adaptive and immediate. In essence, the problem health officials were addressing before Frustaglio's death changed after his death. The governments and their plan were in a highly vulnerable position: they had been strongly encouraging people to receive the vaccine but now the governments did not have enough. H1N1 shows both the volatility of media coverage around uncertain risks, and the consequences of this volatility. Media coverage cannot easily be predicted but it can have considerable impact on demand for public services. Coverage can also be highly negative of government performance, which can undermine credibility in the governments' plan. For these reasons governments must carefully consider how to prepare for high volume, volatile media coverage. Here, we suggest lessons governments might draw from H1N1.

First, governments should recognize the role they play in influencing how media and populations respond to messages concerning uncertain risks. For months, governments had contributed to heightening awareness of H1N1. There was a large public bureaucracy working on pandemic response since SARS in 2003 (Liang 2011). As noted, H1N1 communications included press conferences, alert notices, brochures, downloads and a website. While PHAC

implies the media over-reacted to H1N1, evidence suggests that the governments reacted strongly also, as the PHAC report attests. Leadership also matters. Our media analysis shows that the health sector received much more favourable coverage than governments. Medical practitioners are trusted more than elected officials and civil servants (Freed et al. 2011). Crisis response led by political figures can generate more negative coverage (Eisenman et al. 2007): the motives and competence of politicians are suspect, and members of opposition parties may attack the position of elected officials for political gain. This erodes trust in the process (Kramer, 1999; Hardin 2006). Notwithstanding their formal constitutional duties and barring more controversial policy decisions, governments should be seen to support – not lead - those working on the frontline. The public is less likely to doubt the knowledge, competence and motives of health professionals, which is crucial to establishing trust (Peters, Covello and McCallum 1997).

Second, governments should be sensitive to powerful stories. While the death of Frustaglio seems poorly timed from a health services operational perspective, it should not have been a surprise that a young person would die of H1N1 in the fall of 2009. Moreover, there are many things that could have alerted health services to the possibility of media and public over-reaction: healthy young people were vulnerable (high dread); the disease was indiscriminant (uncontrolled); there was not enough vaccine ready (few escapes/exits); the national media published a powerful photo of a child (probability neglect); and governments were expected to have obtained enough vaccine (ability to blame an institution). PHAC publishes guidebooks on a variety of topics yet ironically its report does not list any on the subject of child death or dealing with the media (Public Health Agency of Canada 2010: 45-46).

The communications challenge is significant. Government cannot dismiss the emotional weight of a child's death. While the death may not tell us much about the probability of a disease spreading, it has a strong emotional impact and will likely draw media attention. Government must address consequence and probability separately. It should acknowledge the profound grief associated with the death of a child (consequence), but then be specific about what it knows about the likelihood of contracting illnesses (probability) to de-mystify new and emerging diseases. Ominous descriptions, such as the one conveyed by the federal Minister of Health in 2009, heighten anxiety. No doubt governments did much to reduce concerns when Frustaglio died but by then it was too late. The governments must work closely with the media in advance to report the spread of disease and persuade media to depict events in the appropriate context. By the end of October there was considerable evidence from Canada and abroad that H1N1 should not cause alarm (Schabas and Rau 2009). There is also considerable data on child death and illness that could have helped to convey that risks associated with H1N1 were much lower than risks we face every day.<sup>9</sup> Importantly, health officials could have shown evidence that vaccines work, and that a significant percentage of the population would ultimately receive the vaccine in a timely manner. And there are other actions the population can take to reduce the spread of a disease, such as washing hands regularly. Finally, editorial boards make decisions about how to report stories. The *Australian* and the *DT* were much less alarming than the *G&M*. The governments had the opportunity to coach the media over time, and not strictly following the death of Frustaglio when anxiety levels were high, as many of the same journalists covered the story for many months. Relatedly, governments can do more work with organizations designed

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<sup>9</sup> People do not comfortably compare risks. For instance, accidents, cancer, congenital malformations/deformations, assault/homicide, heart diseases, intentional self-harm, cerebrovascular diseases, and septicemia all ranked as higher causes of mortality for youth (ages 1-14) in Canada in 2008 than influenza/pneumonia (Statistics Canada 2012).

to improve scientific communication in the media, such as the Science Media Centre of Canada and the Evidence Network of Canadian Health Policy (The Science Media Centre of Canada 2013; The Evidence Network n.d.).

Third, government should be more sensitive to the different response stages with uncertain risk. In the early stages, criticisms were framed as stability and learning criticisms, relating to capacity to learn and adapt, even in adverse conditions. While these criticisms remained high throughout, we saw a rise in efficiency criticisms from August onward. There may be a temptation with uncertain risks to focus on learning, with optimism that we can understand better the problem and maintain a stable operation. As the second wave approached, however, there was concern over operational effectiveness. Government needs to be aware of how and when to move beyond the knowledge generation phase of the risk governance process to the decisions and implementation of actions phase. Measures of success in operational and learning phases are not the same. Governments could establish more rigorous independent oversight to comment on work-in-progress during the different stages of an operation; there is evidence that in other jurisdictions there was such scrutiny.<sup>10</sup> The *G&M* coverage suggests that there were operational problems and that they pre-dated Frustaglio's death.

The best way to address increased demand for health services is with an effective response that meets public expectations. In the absence of data to help health officials be more specific about the magnitude of the risk, government should employ a precautionary approach, particularly when harm is potentially catastrophic or irreversible (Sunstein 2009). Uncertain risks

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<sup>10</sup> In the U.S., for example, the President's Council of Advisors on Science and Technology prepared a report (PCAST 2009) assessing pandemic preparations to facilitate the transition from the knowledge generation phase to the decisions and implementation phase.

also require government to avoid vulnerability. It is, however, unrealistic for a pandemic plan to dictate constant availability of sufficient human resources to respond to worst case scenarios. Adaptive capacity and a diversity of means to accomplish mission-critical tasks are necessary. Future scenario exercises are a good way to increase adaptive capacity. Uncertain risks, in particular, can benefit from scenario exercises because the external driving forces (supply and demand of vaccines) are neither predictable nor under the complete control of health authorities (for examples of scenario exercises, see van Asselt et al 2010; van der Heijden 2005). Yet adaptive capacity does not come naturally to public bureaucracies. Despite decades of public management reform aimed at improving the delivery of public services (Aucoin 1998), the vaccination program seemed insensitive to the manner in which people organize their lives. People stood in line for hours to receive the vaccine. There are few public services today with such a standard of service. It was not difficult for the media to find stories that resonated with the public: parents having to take the day off work to get their children vaccinated (Appeal for calm as vaccination continues 2009); line-jumping by those not in risk groups (Wente 2009); family doctors not providing vaccinations due to bureaucratic obstacles (Alphonso, Priest and Matas 2009). Frustaglio's death may have increased coverage of H1N1 significantly but coverage almost certainly would have subsided more quickly had the health service provided more efficient service. A more decentralized approach which employs the entire health community, including more family doctors, would help.

Finally, government needs to get better at getting it wrong. The PHAC report claims that the media hyped and exaggerated the threat of H1N1. This claim is unsettling because the report side-steps, however gently, the responsibility that health-related government agencies have to anticipate media coverage and incorporate it into their plan. Because of our limited knowledge

with uncertain risks, we may misinterpret early warning signs, over- (and under-) react and give bad advice. Governments need an organizational culture that supports action in the face of uncertainty and learning in uncertain situations. Political culture is not conducive to this type of risk-taking; again, letting the health sector lead may generate better results.

It would be disconcerting if government approached the next health crisis with a distrust of the media. This distrust would inevitably lead to less transparency, which would further erode trust in government process (Kramer 1999). Civil servants would become more nervous about engaging with the media knowing the potentially negative consequences of a high dread message amplified by the media. Rather, government should work to understand the incentive structures and the biases in media coverage and public reaction to it, particularly during a highly emotive and volatile event, and account for these features in government pandemic planning. Ultimately, government will still need media to help communicate its message. The rise of social media makes the need for adaptive capacity in the health sector even greater. Next time, the pandemic may be more severe and, like in Australia in 2009, we may have considerably less lead time.

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