UNIVERSITY OF CALGARY

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SYMPOSIUM ON INFLUENZA IMMUNIZATION IN THE HEALTHCARE WORKPLACE

A report of conference proceedings

June 11, 2014

Alberta Health Services

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Calgary and Area Medical Staff Society
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Better health and health care

Symposium on Influenza Immunization in the Healthcare Workplace

University of Calgary
Faculty of Medicine

A Report of Conference Proceedings

June 11, 2014

Juliet Guichon
Ian Mitchell
Margaret Russell
June 20, 2014

Symposium on Influenza Immunization in the Healthcare Workplace

University of Calgary,
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Report of Conference Proceedings

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1. LETTER OF TRANSMITTAL

UNIVERSITY OF CALGARY
FACULTY OF MEDICINE

June 20, 2014

Dr. Jon Meddings, MD, FRCPC,
Cumming School of Medicine
Health Sciences Centre
University of Calgary
3330 Hospital Drive NW
Calgary, Alberta, T2N 4N1

Foothills Campus,

Dear Dean Meddings,

In February 2014, you requested that a symposium take place to present health science evidence concerning healthcare worker vaccination against influenza, to discuss ethical and legal issues arising, and to solicit opinion as to appropriate public policy for Alberta.

That symposium took place on at our medical school on June 11, 2014. Accompanying is a report on the symposium's proceedings.

The majority of the approximately 150 people who attended the symposium, after listening to the speakers and participating in debate, recommended that Alberta adopt some form of compulsory choice regarding vaccination of healthcare workers against influenza to protect Alberta patients and healthcare workers.

Respectfully submitted,

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2. EXECUTIVE SUMMARY

During Alberta's winter of 2013-2014, influenza led to 1,133 hospitalizations, 189 intensive care unit admissions and 28 deaths of people in this province.

Yet last year, only 54% of Alberta healthcare workers are reported to have received the influenza vaccine. People who are protected from infection cannot transmit the disease. Studies demonstrate very clearly and consistently that, as more healthcare workers are vaccinated against influenza, fewer patients become seriously ill and die.

Should healthcare workers be required to be vaccinated against influenza to protect patients and themselves?

To discuss how best to protect Alberta patients and healthcare workers, the University of Calgary Faculty of Medicine held a public policy symposium about influenza vaccination of healthcare workers on June 11, 2014 attended by approximately 150 people.

At the symposium, a Calgary critical care physician told of a young, previously healthy pregnant woman who was admitted to the ICU, gasping for breath as her heart raced to pump her little available oxygen around her body. Influenza is not trite; it can cause disease, death and high cost to the healthcare system.

An obvious solution is to embrace preventive measures. These include hand washing and using masks. Receiving the influenza vaccine is more effective. The vaccine is significantly safer for humans than contracting the disease. It is moderately to highly effective in preventing infection in healthy adults under 65. Even though vaccination is not as effective among the elderly, the vaccination prevents many infections, and saves many lives and healthcare costs.

A policy of some form of mandatory healthcare worker choice regarding vaccination would likely be ethical if it can meet the following requirements: 1. It benefits the professional personally as well as protecting the patient; 2. There is a clear benefit to vaccination; 3. Making choice mandatory is the only way to be assured of patient protection.

A carefully drafted healthcare worker vaccination policy that offers accommodation for medical or religious reasons in strictly defined circumstances would be lawful. A recent British Columbia arbitration decision found that an employer policy requiring healthcare workers to choose between wearing a mask or accepting vaccination did not violate the *Charter of Rights and Freedoms*, among other law.

The overwhelming majority of symposium attendees, after hearing from medical, health science, ethics and legal experts, and discussing the matter in small groups, concluded that there should be some form of mandatory choice of influenza vaccination or protective clothing for people who work in healthcare.

A robust healthcare worker influenza vaccination policy and program in Alberta would increase patient and healthcare worker protection against influenza disease and death, and reduce pressure on Alberta's healthcare system.

For further information about the Institute for Public Health or this report, please contact Dr. William Ghali at iph@ucalgary.ca

ACKNOWLEDGMENTS

The 2014 *Symposium: Influenza Immunization in the Healthcare Workplace* was sponsored by the University of Calgary Faculty of Medicine, Alberta Health Services (AHS), the College of Physicians and Surgeons of Alberta (CPSA), the Calgary and Area Medical Staff Society (CAMSS) and the Health Quality Council of Alberta (HQCA), and their leaders, Dr. Jon Meddings, Dr. François Belanger, Dr. Trevor Theman, Dr. Steve Patterson and Ms. Patricia Pelton, without whose support the event would not have taken place.

We are grateful to the speakers who generously shared their insights at the conference: Dr. Chip Doig, Dr. Bonnie Henry, Dr. Allison McGeer, Dr. James Talbot, Dr. Roger Thomas, Mr. Michael Waite and Dr. Matthew Wynia.

The *symposium* that took place on June 11, 2014 at the University of Calgary Faculty of Medicine, was the beneficiary of the indefatigable and dedicated work of members of the Office of Continuing Education: Ms. Chloe Burnett, Ms. Ruth-Anne Marley, Ms. Linda Shorting, Dr. Diane Simpson, and Ms. Teree Young led by Dr. Lara Cooke.

We thank the following for their contributions on the day of the conference: Ms. Rachel Crooks, Mr. Murtaza Aziz Dahodwala, Dr. Roger Galbraith, Dr. William Ghali, Mr. Corey Hales, Mr. Thomas Kellner, Dr. Gail MacKean, Dr. Stacey Page, Ms. Leora Rabatach, Ms. Mariko Roe, Dr. Robert Schulz, Ms. Jessica Robertshaw and Dr. Sharron Spicer.

We thank the other members of the planning committee: Dr. Johan Bester, Dr. Mark Joffe, Dr. Diane Simpson and Ms. Dale Wright.

Special thanks are due to Jessica Robertshaw and Andrew Stewart who created the initial drafts of this report.

Juliet Guichon
Ian Mitchell
Margaret Russell

June 20, 2014
Calgary

3. SUMMARY OF PROCEEDINGS

4.1 Introduction

BACKGROUND

In 2009-2010, pandemic H1N1 influenza became national front page news.[1] "Swine flu" as it was then called, was the subject also of business[2] and sports[3] reporting and of commentary[4] and religious opinion.[5] In Alberta alone, 72 deaths were attributed to H1N1.[6]

Despite the notoriety and mortality of this one influenza strain, and despite numerous studies demonstrating vaccination's effectiveness in combatting infection and transmission of influenza, Alberta uptake of influenza vaccination remains low.[7] Even more significantly, only 54% of health-care workers employed by Alberta Health Services were reported to have been immunized in the 2013-2014 season[8].

Most Albertans probably believe that Alberta healthcare workers have a moral obligation to provide safe care to patients and to protect themselves and other workers from illness where possible. The current healthcare worker influenza

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[1] Mills, D. (2009, Oct 28). Public health urges calm after H1N1 claims youths; Seven more deaths. *National Post*, pp. A1; Picard, A. (2009, Oct 28). Why panic is not the answer. *The Globe and Mail*, pp. A1, (Last accessed, June 18, 2014); Alphonso, C., Priest, L., Matas, R. (2009, Oct 29), Flu-shot clinics struggle to keep up with demand. *The Globe and Mail,* p. A1, (Last accessed, June 18, 2014); Waldie, P., (2009, Nov 3). No business like flu business. *The Globe and Mail,* pp. A1, (Last accessed, June 18, 2014).

[2] Grant, T. (2009, Nov 3). H1N1 sick days could hamper Canada's fragile recovery. *The Globe and Mail*, pp. B1, (Last accessed, June 18, 2014).

[3] Wingrove, J., Paperny, A.M., Walton, D. (2009, Nov 5). Vaccination Night in Canada. *The Globe and Mail*, pp. A1; Mick, H. (2009, Oct 29). Athletes change their habits in the locker room. *The Globe and Mail*, pp. L1, (Last accessed, June 18, 2014).

[4] Guichon, J., Mitchell, I. (2009, Oct 28) Refusing to get vaccinated is selfish. *The Globe and Mail*, pp. A17, (Last accessed, June 18, 2014).

[5] Groenewald, J. (2009, Nov 1). Would Jesus Get Vaccinated?. *National Post*, (Last accessed, June 18, 2014).

[6] Government of Alberta. (2012, Jan). *Review of Deaths Occurring In Alberta During the 2009 Influenza Pandemic*. [Edmonton], (Last accessed, June 18, 2014).

[7] Statistics Canada. (2014, Jun*). Influenza immunization, less than one year ago by sex, by province and territory* [cited 2014 Jun 18]; Retrieved from: http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/health102b-eng.htm.

[8] Alberta Health Services. (2014, Apr 3). *2013-14 AHS employee influenza immunization rates (Seasonal summary)* [cited 2014 Jun 18]; Retrieved from: http://www.albertahealthservices.ca/Diseases/hi-dis-flu-site-level-report.pdf; Alberta Health Services. (2014). *2013-2014 AHS employee immunization rates by workplace location* [cited 2014 Jun 18]; Retrieved from: http://www.albertahealthservices.ca/Diseases/hi-dis-flu-site-level-report.pdf.

vaccination program evidently is ineffective in achieving vaccine uptake in numbers sufficient to protect optimally both patients and workers[9].

JUNE 11 SYMPOSIUM

To address this complex issue, the University of Calgary held a symposium titled, *Influenza Immunization in the Healthcare Workplace* on June 11, 2014. The idea for this event was conceived by University of Calgary Dean of Medicine, Dr. Jon Meddings.

The symposium united experts in critical care medicine, infectious disease, family medicine, immunization, bioethics and law to discuss whether Alberta ought to change its current policy regarding vaccination of Alberta health care workers and in Alberta health care workplaces. The gathering created the opportunity for extraordinary information exchange, healthy debate and ultimately agreement that Alberta Health and Alberta Health Services ought to do more to encourage health care workers to protect patients, themselves and the system from the risks posed by influenza.

[9] Talbot TR, Babcock H, Caplan AL, Cotton D, Maragakis LL, Poland GA, …Weber, D.J. (2010 Oct 1). Revised SHEA position paper: Influenza vaccination of healthcare personnel. Infect. Control Hosp. Epidemiol., 31(10):987-95.

4.2 Welcome

4.2.1 Welcome from Dean of Medicine

Dr. Jon Meddings, MD, FRCPC, Dean of the University of Calgary Cumming School of Medicine welcomed symposium attendees.

Significantly, he placed the issue influenza prevention in a patient centered context, to remind attendees why they were there. Dr. Meddings spoke of his wife who suffered from chronic illnesses and of his main desire, as a physician and as a husband, was to keep her safe from harm. Dr. Meddings reminded attendees that many patients are vulnerable, and it is healthcare worker's moral duty and professional obligation to protect them in any way they can.

4.2.2 Welcome from Director, Institute for Public Health

Dr. William Ghali MD, MPH, FRCPC is the director of the Calgary Institute for Public Health which is the newest University of Calgary health research institute. Dr. Ghali welcomed symposium attendees by reiterating the Calgary Institute for Public Health guiding principles, which are that health is a fundamental good, and there are two aspects to good health at national and regional levels: good population health to keep people healthy, and good healthcare for when people get sick.

Dr. Ghali said that the Institute for Health seeks to create knowledge and to produce evidence that informs public policy for health. This symposium is an important part of producing that evidence. Dr. Ghali also noted that, in addition to discussing the important and controversial topic of health care worker vaccination against influenza, we will also review and discuss the evidence on efficacy, and other dimensions that are weighted in important public policy decisions.

Dr. Ghali concluded by thanking and congratulating the planning committee for compiling an outstanding program that will help attendees to understand the issues more fully.

4.3 Influenza at the Bedside, Dr. Chip Doig

The symposium began by asking the question, “Why should I care about ’flu?”

Dr. Christopher Doig, the Alberta Health Service (AHS) head of Critical Care Medicine and University of Calgary Faculty of Medicine professor, addressed this question by speaking of what he sees in the intensive care unit (ICU). In his presentation, “Influenza at the Bedside”, Dr. Doig stressed that influenza is a preventable illness, and that the treatments available are not particularly effective. While most influenza infections are mild and do not require hospital care, this is not always the case. When influenza requires ICU care, it is usually because the patient has suffered Acute Lung Injury/Acute Respiratory Distress Syndrome from viral pneumonia (ARDS) or septic shock from concomitant bacterial pneumonia.

The mortality rate for patients suffering from either of these two events is approximately 30% within the first 28 days of diagnosis. Moreover, survivors can experience significant long-term side effects both physically and psychologically. In other words, if they survive, then often the lives of these patients are forever changed. Dr. Doig spoke of patients who suffered psychological effects such as nightmares and sleep disturbances because of their illnesses, and significant physical effects such as lung capacity limitations and reduced ability to perform high-level abstract reasoning, which often persist even a year after ARDS. The risk of further health complications or death in the year following ARDS is not yet fully known.

Beyond advocating for ’flu vaccination in Alberta healthcare work places, Dr. Doig emphasized also the tremendous importance of proper hand hygiene. Even though many patients do not want to ask their health care providers to wash their hands, Dr. Doig stated that they have every right to demand this, just as patients have a right to safe health care, and health care workers have a duty to provide that safe care. Dr. Doig was in favour of implementing some form of mandatory influenza vaccination program in Alberta health care workplaces.

Throughout his presentation, Dr. Doig used the case of a 28 year-old woman who was 18 weeks pregnant and admitted to ICU for complications related to influenza infection. The case demonstrated the devastating effects of complications related to influenza. Dr. Doig stated that he and his team were fighting to save two lives. The patient survived and gave birth to a healthy baby, now 3 years, who has met his pediatric milestones.

Dr. Doig concluded by asking his audience to help him by accepting influenza vaccination so that he no longer needs to fight critical complications of ’flu.

4.4 Influenza: Impact in Alberta, Dr. James Talbot

Dr. Talbot is Alberta's Chief Medical Officer of Health. He addressed the question, "How big a problem is influenza in Alberta?"

Dr. Talbot's presentation titled, "Influenza: Impact in Alberta" commenced by personalizing the vulnerable patient. Dr. Talbot told the story of a father whose child was recently diagnosed with juvenile diabetes. The diagnosis means that the son is immuno-compromised and therefore at greater risk of both influenza infection and complications. The father, who is also a healthcare worker, explained that he and his wife would do anything to keep their son as strong and healthy as possible and to protect him from harm. Such harm includes influenza and so his family members are routinely vaccinated against 'flu, but he stressed that the protection must extend also to the healthcare workers whom their son encounters.

Dr. Talbot then articulated the 4 major goals of seasonal immunization and hygiene strategies to prevent influenza. These goals are first, to reduce disease and death due to influenza by protecting those at risk by vaccinating them or changing their personal behavior; second, to reduce disease and death by reducing transmission to those at highest risk by vaccinating or changing the personal behavior of those around them; third, to reduce the use of acute care and other resources in the health care system due to influenza which could delay or deprive others who need access to such resources; and fourth, to improve Alberta's long term ability to protect the population should a true pandemic occur.

Dr. Talbot presented models; these indicate that on average, if no one was immunized against influenza, then Alberta would see 100 deaths and more than 1600 hospitalizations. At 30% immunization, then Alberta would prevent 61 deaths and 1000 hospitalizations. At 50%, 95 deaths and almost 1600 hospitalizations would be prevented in Alberta. If more than 50% of people were immunized in Alberta then even more deaths and hospitalizations would be prevented. In addition, influenza season causes 750 to 1500 extra hospital visits per week for 5 weeks. In the 2012-2013 season there were less hospitalizations at 971 and ICU admissions at 150; 37 people in Alberta died in 2012-2013 as a consequence of influenza infection. In 2013-2104, there were1133 hospitalizations, 189 ICU admissions. Influenza killed 28 people in Alberta in the 'flu season of 2013-2014. These data suggest that immunization would not only reduce disease and death but also reduce the use of acute care and other resources.

Dr. Talbot explained his reasons for believing health care workers should be vaccinated. The first is that health care professionals have a duty of care to their own patients; they must first do no harm. Failing to vaccinate may cause a healthcare worker's vulnerable patients to become ill which would be contrary to a health care worker's primary duty. The second reason is that health care professionals have a duty of care to other patients and co-workers; this means that if health care professionals do not agree to receive the vaccine and then become

ill, then they must stay at home and away from the workplace to recover and to avoid transmitting the illness. However, being absent also entails that, in a time of high demand for health care services, many individuals are unable to work; their absence will place strain on the system and their co-workers. Moreover, other patients may then be required to wait for care that could have been provided earlier or by individuals more suited to providing it. The third reason is that health care professionals have a duty to their profession and the public to provide and set a good example. If health care workers who come into daily contact with influenza patients and immuno-compromised patients are not themselves vaccinated, then why would the average person accept vaccination against influenza?

Dr. Talbot said that he strongly supported improving healthcare worker vaccination rates. He asked those healthcare workers attending the symposium to consider three questions. First, “As a health care professional, how many people in your personal and work life do you come into contact with every day who could be asymptomatic or symptomatic carriers?” The second question is, “How many degrees of separation are there between you and a grandparent, pregnant women, a diabetic, or a person on chemo for breast cancer (in other words, vulnerable people)?” And third, “If you thought you had been responsible for a person’s hospitalization or death, how much would you give to reconsider your original vaccination decision?”

4.5 Why Flu Matters - Flu 101, Dr. Allison McGeer

Dr. McGeer from Mount Sinai Hospital and the University of Toronto gave the third presentation titled, "Why Flu Matters? - Flu 101". Dr. McGeer began by stating that influenza comes in waves, and that scientists and physicians are not yet sure why the waves commence or how they subside. Canada is fortunate that influenza is a particular concern during only a specific time of year, whereas areas closer to the equator (such as Hong Kong) can see outbreaks of influenza at any time of year. Nevertheless, the burden of influenza is similar in every country around the world. In Canada each year, nearly five million people are infected with influenza, 50,000 are hospitalized, and about 2,500 will die from influenza[10,11]. This is similar to the number of people who die from road accidents, and about half as many people as die from breast cancer.

It is difficult to diagnose influenza because the only reliable tests are not commonly available and expensive, and because fewer than half of all people with serious illness due to influenza present with typical signs and symptoms[12,13]. In addition, younger, healthier people can be infected without being ill at all[14]. Because barrier methods of protection such as masks and respirators only work once a diagnosis is made, their value in protecting people from influenza is limited.

Dr. McGeer also summarized data from several studies demonstrating that influenza is consistently transmitted in acute care hospitals, and that, when patients acquire influenza in hospitals, the infection can result in very serious illness and death [15,16,17].

[10] Schanzer DL, Sevenhuysen C, Winchester B, Mersereau T. Estimating influenza deaths in Canada, 1992-2009. PLoS One. 2013 Nov 27;8(11):e80481.
[11] Schanzer DL, McGeer A, Morris K. Statistical estimates of respiratory admissions attributable to seasonal and pandemic influenza for Canada. Influenza Other Respir Viruses. 2013 Sep;7(5):799-808.
[12] Babcock HM, Merz LR, Dubberke ER, Fraser VJ. Case-control study of clinical features of influenza in hospitalized patients. Infect Control Hosp Epidemiol. 2008 Oct;29(10):921-6.
[13] van den Dool C, Hak E, Wallinga J, van Loon AM, Lammers JW, Bonten MJ. Symptoms of influenza virus infection in hospitalized patients. Infect Control Hosp Epidemiol. 2008 Apr;29(4):314-9.
[14] Kuster SP, Shah PS, Coleman BL, Lam P-P, Tong A, Wormsbecker A, McGeer A. Incidence of influenza in healthy adults and healthcare workers: a systematic review and meta-analysis. PLoS One. 2011;6(10):e26239.
[15] Taylor G, Mitchell R, McGeer A, Frenette C, Suh KN, Wong A, et al. Healthcare-associated influenza in Canadian hospitals from 2006 to 2012. Infect Control Hosp Epidemiol. 2014 Feb;35(2):169-75.
[16] Macesic N, Kotsimbos TC, Kelly P, Cheng AC. Hospital-acquired influenza in an Australian sentinel surveillance system. Med J Aust. 2013 Apr 15;198(7):370-2.
[17] Jhung MA, D'Mello T, Pérez A, Aragon D, Bennett NM, Cooper T, et al. Hospital-onset influenza hospitalizations—United States, 2010-2011. Am J Infect Control. 2014 Jan;42(1):7-11

4.6 Can Vaccination of Healthcare Workers Reduce Transmission?

4.6.1. Cochrane Collaboration Review: Elderly in Long Term Care: Does Vaccinating Their Healthcare Workers Prevent Influenza? Dr. Roger Thomas

Dr. Thomas, a professor in the University of Calgary Department of Family Medicine and contributor to a Cochrane Collaboration systematic review, presented a review of literature relating to the effect of vaccination on the prevention of influenza infection in long-term care facilities.

Dr. Thomas began by reviewing appropriate outcome measures of influenza vaccine effectiveness. He cited laboratory proven influenza, pneumonia, death from pneumonia, and hospitalization for respiratory or cardiovascular illness as being acceptable. He then went on to suggest that two commonly-used outcome measures, influenza-like illness (ILI) and all-cause mortality are not relevant as study outcomes for the purpose of measuring vaccination effectiveness. To justify this statement, Dr. Thomas provided an example from his own work indicating that influenza A virus is detected in as low as one quarter of all ILI cases assessed and that comprehensive testing reveals a wide range of viral and bacterial illnesses in cases worldwide diagnosed by physicians as ILI.[18] Dr. Thomas de-emphasized the validity of measures of all-cause mortality as influenza contributes to a low percentage of all cause deaths making it difficult to assess the true effect[19].

Dr. Thomas presented his review of the three major papers published studying effect of health care worker vaccination on elderly populations: Potter 1997[20] (12 Glasgow nursing homes) Carman 2000[21] (20 Glasgow nursing homes), and Lemaitre 2009[22](40 nursing homes in Paris). [The authors were emailed and they could not state the overlap between patients and staff in the Potter and Carman studies, but noted several homes closed in between the studies].

This literature review was restricted to published randomized controlled trials that compared outcome measures in nursing homes in which staff were either offered influenza vaccine or not. The Potter and Carman studies identified nursing homes

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[18] Thomas RE. Is influenza-like illness a useful concept and an appropriate test of influenza vaccine effectiveness? Vaccine 2014;32(19):2143-9.

[19] Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly Vaccine. 2010;29(2):344-56.

[20] Potter J, Stott DJ, Roberts MA, Elder AG, O'Donnell B, Knight PV, et al. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. J Infect Dis. 1997;175(1):1-6.

[21] Carman WF, Elder AG, Wallace LA, McAulay K, Walker A, Murray GD, et al. Effects of influenza vaccination of health-care workers on mortality of elderly people in long-term care: a randomised controlled trial. Lancet 2000;355(9198):93-7.

[22] Lemaitre M, Meret T, Rothan-Tondeur M, Belmin J, Lejonc JL, Luquel L, et al. Effect of influenza vaccination of nursing home staff on mortality of residents: a cluster-randomized trial. J Am Geriatr Soc 2009;57(9):1580-6.

where patients either “opted out” or “opted in” for influenza vaccination and thus 4x4 tables of the effects of offering or not offering vaccination to patients and staff were available. Nursing homes which offered vaccine to staff reported vaccination rates from 48% to 69%. In hospitals which vaccination was not offered staff vaccination rates were unknown in the Potter study and highly variable in the other two studies: 4.8% in Carman and 31% in Lemaitre (range 0 – 69%).

Risk of bias was low for randomization in 2 studies, unclear for allocation concealment (no statement) in all 3, high for blinding in 2 (nurses were required to alert members of the study team regarding suspected viral illness in patients), and low for attrition of patients in 1 and unclear in 2 (new admissions were not commented on) and high for missing patient data in Potter and Carman (laboratory testing for influenza in patients and in those who died).

Odds ratios and confidence intervals for each outcome were as follows (there was a good match between vaccine and circulating strains in Carman and Lemaitre, not stated in Potter):

Study	Outcome	OR	95%CI	P
Carman 2000, Potter 1997	serologically proven influenza	0.867	0.38-1.99	0.74
Potter 1997	pneumonia	0.71	0.29-1.71	0.44
Potter 1997, Lemaitre 2009	deaths from pneumonia	0.87	0.47-1.64	0.36
Lemaitre 2009	admissions to hospital	1.03	0.76-1.4	0.85

With the information provided by these statistics, Dr. Thomas and his co-authoring colleagues have concluded that the studies reviewed “do not provide evidence that vaccinating health care workers prevents their elderly patients in institutions getting influenza or its consequences.” However, the number of studies is small.

Conclusions

1. Influenza vaccination rates in Canadian nursing homes are 80-90% but this does not provide senior herd immunity as there are cases and outbreaks in homes.
2. Staff vaccination rates in hospitals and nursing homes world-wide are often < 50%, thus not providing a test whether staff herd immunity can be obtained.
3. Double dose influenza vaccine has been tested in the elderly in the Netherlands, resulting in an increase Ab geometric mean titres, but an adequately powered RCT has not been conducted.

4. Four alternatives to vaccination supported by a 2011 Cochrane review[23] were suggested as effective prevention measures including hand washing and barriers (quarantine, masks and gloves).
5. The issue of hand washing is part of the larger problem of inadequate hand washing in hospitals (there has been no RCT of the outcomes of automatic monitoring of hand washing/gel use between patients (e.g. by scanning a bar-coded staff card and reporting all data in real time to infection control).
6. The 2014 update of the Cochrane review of vaccinating healthy 18-60 year olds (which thus includes most health care workers) found the number needed to vaccinate to prevent one case of laboratory-proven influenza (NNV) = 74 and concluded that: "Vaccination shows no appreciable effect on working days lost or hospitalization."[24]

In terms of the effect of vaccination on healthcare workers Dr. Thomas concluded with the statement that RCTs do not show that staff vaccination prevents influenza in the elderly under their care (but there was incomplete testing of patients for influenza in Potter and Carman), that we have not tested staff herd immunity by complete vaccination, and with an NNV = 74 cannot rely exclusively on vaccination of staff to prevent cases of influenza in staff.

[23] Jefferson T, Del Mar CB, Dooley L, Ferroni E, Al-Ansary LA, Bawazeer GA, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. Cochrane Database Syst Rev. 2011;(7):CD006207. doi: 10.1002/14651858.CD006207.pub4.

[24] Demicheli V, Jefferson T, Al-Ansary LA, Ferroni E, Rivetti A, Di Pietrantonj C. Vaccines for preventing influenza in healthy adults. Cochrane Database Syst Rev. 2014;(3):CD001269. doi: 10.1002/14651858.CD001269.pub5.

4.6.2 Protecting Patients (and staff) from Influenza: What is the Evidence? Dr. Allison McGeer

In her second presentation, Dr. McGeer addressed the question of what evidence exists to support measures to protect patients and healthcare workers from influenza. She focused on five precautionary measures that can be taken against influenza: "social distancing" (staying away from others when ill), hand hygiene, masking both ill individuals and those in contact with them, droplet/contact precautions (combined face and hand protection for contacts and hand hygiene) and accepting the influenza vaccine.

Dr. McGeer pointed out that there is no scientific evidence supporting social distancing. While it seems likely to have some effect, it is important to remember that attempts at social distancing during outbreaks and pandemics of influenza have almost always failed, perhaps because of the difficulties of diagnosing influenza. In addition, social distancing efforts in hospitals are limited by the need to provide care.

A recent meta-analysis of several randomized controlled trials was unable to find an effect for adherence to good handwashing/disinfection in the community.[25] However, Dr. McGeer noted that there was a trend towards an effect, and that in most of the studies, hand hygiene behaviour did not improve by a large amount, so that these studies may underestimate the effect of hand hygiene on risk of influenza. Nonetheless, the best evidence at the moment is that good hand hygiene practice will have relatively little impact on reducing the risk of influenza.

Dr. McGeer presented the results from a study which indicated that masks, when worn by people who are infected with influenza, reduced detection of the influenza virus to zero in petri dishes into which study participants coughed[26]. Other studies have shown that wearing a mask results in significant reductions in aerosol shedding[27]. It is likely to be true that masks worn by infected persons will reduce the risk of transmission of influenza, but there are no good clinical studies that have tested this hypothesis yet.

There are more data regarding the effectiveness of masks worn to protect the wearer from influenza. Experimental data indicate that regular medical masks protect the wearer from about 55% of particles in a cough or sneeze. Unfitted, poorly designed N95 respirators have about the same effect, while better quality fit-

[25] Wong VW, Cowling BJ, Aiello AE. Hand hygiene and risk of influenza virus infections in the community: a systematic review and meta-analysis. Epidemiol Infect. 2014 May;142(5):922-32.
[26] Johnson DF, Druce JD, Birch C, Grayson ML. A quantitative assessment of the efficacy of surgical and N95 masks to filter influenza virus in patients with acute influenza infection. Clin Infect Dis. 2009 Jul 15;49(2):275-7. doi: 10.1086/600041.
[27] Milton DK, Fabian MP, Cowling BJ, Grantham ML, McDevitt JJ. Influenza virus aerosols in human exhaled breath: particle size, culturability, and effect of surgical masks PLoS Pathog. 2013 Mar;9(3):e1003205

tested respirators perform better[28]. Seven different studies of mask wearing in households, the community and university dorms all failed to demonstrate significant protection from influenza by wearing a mask. However, one study of an influenza exposure on a long airplane flight showed that exposed travelers who wore masks consistently were much less likely to be infected[29].

In hospitals, precautions to prevent transmission of influenza from infected patients include sufficient space between patients, good hand hygiene, and gloves, gowns and facial protection (face shields or masks and eye protection). Dr. McGeer quoted from the Cochrane review evidence that the efficacy of droplet-contact precautions for preventing respiratory virus transmission was estimated to be 90%[30] . However, Dr. McGeer cautioned that most of these data were derived from studies of SARS, which is a very different virus than influenza. She also noted that these types of precautions work only if all infected persons can be promptly identified, which poses significant challenges when influenza is considered.

Dr. McGeer then presented data on the vaccine itself, indicating that it is approximately 60% effective at preventing infection in healthy adults under 65 years of age and reduces the severity of infection, likely preventing a higher percentage of complications from influenza. In older adults, the vaccine prevents 20-40% of influenza. Despite its relatively low efficacy among the elderly, it saves many lives and is cost saving for the health care system. Dr. McGeer elaborated on the risks associated with receiving the influenza vaccination as opposed to the risks of infection with influenza and found that there were significantly more serious risks associated with not receiving the vaccine.

Finally, Dr. McGeer presented the results of two systematic reviews[31][32] of the five randomized controlled trials of the effect of healthcare worker vaccination on patient mortality and morbidity. She stated that these studies demonstrated very clearly and consistently that, as health care worker vaccination rates increase

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[28] Noti JD, Lindsley WG, Blachere FM, Cao G, Kashon ML, Thewlis RE, et al. Detection of infectious influenza virus in cough aerosols generated in a simulated patient examination room. Clin Infect Dis. 2012;54(11):1569-77

[29] Zhang L, Peng Z, Ou J, Zeng G, Fontaine RE, Liu M, et al. Protection by face masks against influenza A(H1N1)pdm09 virus on trans-Pacific passenger aircraft, 2009. Emerg Infect Dis. 2013;19(9).

[30] Jefferson T, Del Mar CB, Dooley L, Ferroni E, Al-Ansary LA, Bawazeer GA, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. Cochrane Database Syst Rev. 2011 Jul 6;(7):CD006207.

[31] Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. Cochrane Database Syst Rev. 2010 Feb 17;(2):CD005187.

[32] Ahmed F, Lindley MC, Allred N, Weinbaum CM, Grohskopf L. Effect of influenza vaccination of healthcare personnel on morbidity and mortality among patients: systematic review and grading of evidence. Clin Infect Dis. 2014 Jan;58(1):50-7.

[9] Hayward AC, Harling R, Wetten S, Johnson AM, Munro S, Smedley J, et al.. Effectiveness of an influenza vaccine programme for care home staff to prevent death, morbidity, and health service use among residents: cluster randomised controlled trial. BMJ. 2006 Dec 16;333(7581):1241.

patient mortality decreases. This effect on reduced mortality is specific to influenza in that it was shown only during influenza season and only during a year with active influenza[9].

Dr. McGeer's summarized her position. Because of:

1. difficulty in diagnosing influenza and identifying it in time to take droplet contact precautions;
2. the higher risk of illness and adverse events from lack of vaccination compared to vaccination itself;
3. the efficacy of the vaccination in preventing serious illness, hospitalization and death; and
4. the strain influenza places not just on hospitals but on the nation as a whole;

we must find new strategies to increase the influenza vaccination rate in healthcare workers, and to ensure the protection of the patients they care for.

Dr. McGeer left the audience with her most important message, "Vaccination of patients and healthcare workers is effective in reducing mortality and serious illness in patients."

4.7 Exploring Policy Options– The BC Experience, Dr. Bonnie Henry

Having heard that: 1. Influenza can be serious; 2. It has been a big problem in Alberta; 3. It is important to prevent it; and 4. Healthcare workers are an important part of prevention, the symposium then turned to the question, "What policy options have other jurisdictions adopted?" Dr. Bonnie Henry addressed that question.

Dr. Henry's presentation titled, "British Columbia's Enhanced Influenza Control Policy: Where are we now and how did we get here?", began by discussing the severity and reach of influenza infection.

Size of the Problem
Each year in Canada alone there are an estimated 20,000 hospitalizations related to influenza infection and 4,000 deaths. Influenza causes the highest number of deaths among vaccine-preventable diseases. Influenza is highly contagious, affects 10-20% of the adult population each year and 20-30% of all children. Additionally, influenza affects some population groups disproportionately: the elderly, the very young, the immune-compromised, pregnant women, and hospitalized patients are more vulnerable to influenza or to influenza complications than the general population. The impact of infection on the frail can lead to a failure to return to self care – the third most common cause of catastrophic disability behind only stroke and congestive cardiac failure. Dr. Henry stated that vaccination is the most effective protection. However, this protection is less effective among people whose bodies are not able to mount a good protective response: the elderly and those who are immune compromised. Therefore, it is extraordinarily important for those who are able to mount a good immune response from vaccine to receive it in order to reduce the chance of transmitting influenza to others.

Benefits of Healthcare Worker Vaccination
Dr. Henry stated that vaccination of healthcare workers reduces the risk to patients and decreases mortality and morbidity. Health care workers and health care systems have an ethical and moral responsibility to protect vulnerable patients from transmissible diseases. Vaccination is better than other protection such as masks and gloves because masks and gloves need to be used continuously through an influenza season; vaccine needs to be given only once per year. Moreover, infected, unvaccinated healthcare workers can transmit influenza even before developing symptoms themselves. By the time the healthcare worker becomes symptomatic and dons a mask and gloves, transmission of infection to patients may have already occurred.

Evidence in favour of Healthcare Worker Vaccination
Dr. Henry indicated that there is a wide body of evidence and multiple studies, conducted in multiple settings, using multiple methods, which have all shown the

benefits of vaccinating health care workers, and none of these studies showed any harm to those who received the vaccine. Yet, she said, a 2009 study in British Columbia revealed that approximately 25% of health care workers (HCW) did not get immunized with influenza vaccine simply because "They didn't get around to it".

Therefore, according to Dr. Henry, vaccination of healthcare workers is crucial for the following five reasons:

1. To prevent transmission to patients, including those with a lower likelihood of vaccination response themselves;
2. To reduce the risk that the health care worker will become infected with influenza;
3. To create "herd immunity" that protects both the health care worker and patients who are unable to receive the vaccine or unlikely to respond with a sufficient antibody response;
4. To maintain a critical societal workforce during disease outbreaks; and
5. To set an example concerning the importance of vaccination for every person.

Effectiveness of Voluntary HCW Influenza Vaccination Programs

Dr. Henry then discussed programs to improve healthcare worker influenza vaccine uptake. Voluntary programs lead only to modest increases in health care worker vaccination rates. These programs have used such methods as education and promotion, increased access to the vaccine, declination forms, peers who are vaccinated, incentives and role models, and audits and feedback. The United States Veteran's Affairs (VA) Program commenced in 2004. This program required that senior management performance metrics include vaccination rates; the development of toolkits and slogans to increase vaccination rates and the holding of annual national meetings and monthly conference calls. In addition, the program offered support to promote leadership involvement, to improve communication, education and access to the vaccine; and to develop champions of health care worker vaccination. The VA program required collection of annual vaccination rates for staff on the payroll and the conduct of surveys in 2008- 2009 to assess program components and factors associated with increased vaccine uptake. Yet all of these measures combined led to only an 11 % increase of vaccination uptake among HCW from 53% to 64%. Then those levels stabilized. The factors that were found to decrease vaccine uptake included changes in a champion or coordinator, difficulties in staffing, other organizational changes such as mergers, temporary shortages in the supply of the vaccine, and a loss of senior management focus as other initiatives were introduced or prioritized.

Comparison with a United States condition of employment HCW influenza vaccination program

Dr. Henry then compared these VA program outcomes with those at the Virginia Mason Medical Centre (VMMC) in the Seattle area. The Virginia Mason program

included all staff, students, contractors, vendors, volunteers and physicians. The only individuals excluded from the program were visitors and patients themselves. Multiple vaccines were made available; accommodations, while available, were strictly limited. Accommodations were provided for medical issues such as allergies or previous Guillain Barré Syndrome, or for religious convictions. All requests were reviewed by Occupational Health Services, Human Resources and physicians and could be appealed. Additionally, unvaccinated staff were required to wear a mask during the influenza season. Vaccination rates immediately rose to more than 95% and have been sustained at more than 98%. This program caused only minor employee upheaval. Five staff resigned in 2005-2006 and two were terminated. Between 2007 and 2010, two additional employees left. However as Dr. Henry emphasised, mandatory programs regarding vaccination was by far the most effective way to increase vaccination rates of health care workers. In addition VMMC staff reported that they strongly supported the program and were proud that it was part of their culture of patient safety.

British Columbia program

Dr. Henry then discussed this problem of healthcare worker transmission and prevention of influenza in the context of British Columbia. She stated that, with a population of 4.4 million and a number of different health service authorities in the province, British Columbia required a comprehensive policy swiftly to be developed and implemented. Health care vaccination rates in B.C. had been decreasing since the 2009 pandemic. So, on August 16, 2012 the Chief Executive Officers of all B.C. health authorities, acting on the advice of B.C.'s Provincial Health Officer, Dr. Perry Kendall, announced that they would implement measures to protect patients from being exposed to influenza. The Leadership Council agreed to the introduction of influenza vaccination as a condition of service for Health Authority staff in care settings in British Columbia. Any staff members who refused to vaccinate or who were unable to do so for medical reasons would be required to wear a mask when providing care during the influenza season. The goal was to achieve 95% influenza vaccination coverage. This policy also included encouragement of vaccination for patients or residents and visitors, and an enhanced sick leave policy. It is important to note that staff were not terminated for a failure to vaccinate; if not vaccinated, then they were required to take the additional precaution of wearing a mask during the flu season to minimize the risk of transmission to vulnerable patients.

The Deputy Minister decided to put disciplinary measures in abeyance in favour of education for the 2012-13 season. Even so, this program resulted in a 73-75% uptake in influenza vaccination among all Health Authority workers. Sick days were decreased in the vaccinated as compared to the unvaccinated staff.

Only three grievances were filed. Grievances were also put in abeyance during the 2012-2013 influenza season, but the Health Sciences Association (HSA) union reinstated its grievance in the spring and an arbitration between the Health

Employers Association of British Columbia (HEABC) and HSA commenced on July 9 and finished on September 20, 2013.

Decision of British Columbia Arbitrator

On October 23, 2013 an award was announced.[33] However prior to the award being made the influenza protection policy for the 2013-2014 influenza season was amended in three important ways. First what was known as the "sticker requirement" or the identifier requirement was removed so that the vaccination status of the healthcare worker would not be visible to the public. Second, the policy was extended to include visitors to health care facilities. Third, the policy's language changed regarding the requirement that employees report instances of non-compliance with the policy. The term, "required" was replaced by the word, "expected". These changes rendered some of the issues in the arbitration moot.

Ultimately the arbitrator made the award in favour of the employer. The arbitrator emphasised his understanding of the gravity of influenza infection and complication for vulnerable individuals at page 81-82:

> At the outset it is important to recognize that influenza can be a serious disease. Most healthy adults recover from the infection in a relatively short time. But for elderly people and persons with underlying conditions, such as respiratory or heart issues, the disease can exacerbate those conditions, lead to complications such as pneumonia, and death. Further, elderly persons can substantially lose their independence after being infected with the influenza virus. The evidence varied about the numerical extent of some of these matters but not the fact of them."

In addition, the arbitrator found at page 86 that immunization was proven to reduce transmission:

> On all of the evidence […] I am satisfied that immunization of health care workers reduces transmission of the disease to patients […] First, by focusing on randomized controlled trials and apart from the question of whether the criticisms of them are justified, the Union experts overlook a considerable body of other forms of evidence supporting the proposition that transmission is reduced. [Dr. Allison] McGeer and [Dr. Bonnie] Henry in my view, properly take that evidence into account.

The arbitrator concluded at page 88-89 that the HEABC policy was reasonable:

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[33] *Health Sciences Association (Influenza Control Program Policy Grievance) v. Health Employers Association of British Columbia,* British Columbia Grievance Arbitration, Robert Diebolt, Arbitrator, October 23, 2013, available here: http://www.heabc.bc.ca/public/News/2013/A09-2013-Influenza%20Control%20Program%20Policy%20Grievance.pdf (last accessed June 19, 2014).

> Pausing here…the facts that: (1) influenza can be a serious, even fatal, disease; (2) that immunization reduces the probability of contracting the disease, and (3) that immunization of health care workers reduces transmission of influenza to patients all militate strongly in favour of a conclusion that an immunization program that increases the rate of healthcare immunization is a reasonable policy."

With respect to masking, the arbitrator indicated at page 89 that

> on all of the evidence…I am persuaded that masking has a patient safety purpose and effect and also an accommodative purpose for health care workers who conscientiously object to immunization.

The arbitrator went on to state that this type of a program was not unique, making the policy more reasonable and that there is "a real and serious patient safety issue" that this policy is attempting to alleviate.

Dr. Henry emphasized that the Arbitrator at page 106 found that while both the employer, HEABC, and the union, HSA, had reasonable arguments regarding whether the *Charter* would apply, the Arbitrator held it unnecessary to decide the issue because the policy would still survive *Charter* scrutiny. With respect to the claim made by the union that the policy violated the union members' right to freedom of expression (s. 2.b of the *Charter*), the arbitrator did not decide that issue. He held that even if freedom of expression were violated by the mandatory choice policy, then this violation of a fundamental freedom was a reasonable limit prescribed by law that was demonstrably justified in a free and democratic society; Mr. Diebolt wrote, "In sum on the s. 1 issue, my conclusion is that the Policy survives scrutiny respecting s. 2(b)." (Page 114). In other words, any s. 2.b violation would be "saved" by section 1.

Further, the arbitrator stated at page 115 that the policy does not infringe s. 7 of the *Charter*. He wrote, "mandatory masking does restrict one's freedom of choice, but so do many workplace rules. The mandatory aspect is not, in my view, in itself sufficient to trigger a violation of s. 7" (Page 115). The arbitrator concluded by stating at page 115 that "given the conclusions and rulings throughout this Award, it follows that the Policy is a valid exercise of the Employer's management rights". The grievance was dismissed.

Events in British Columbia Following Arbitrator's Award

Dr. Henry then outlined the events following this decision. All Medical Advisory Committees in all health authorities endorsed the policy and a provincial committee was established to implement the policy consistently. A smaller group was also created to review the accommodations for individuals. While HSA initially stated the union would appeal the arbitrator's decision, it did not and the policy has found favour with both the public and media. The vaccination of visitors has not been an

issue and thus far there have been several short-term suspensions and only one termination as a result of this new policy.

Vaccination rates are currently approximately 78% for all health care workers in B.C., however this figure might be a low estimate because not all vaccinations of healthcare workers may have been recorded.

Value of Vaccination against Influenza
Dr. Henry emphasized that influenza vaccination does four things: it protects healthcare workers; it protects their families; it protects the patients they care for; and it is a part of staying healthy and providing the best care healthcare workers can.

Conclusion
Dr. Henry also noted that some adults expect that adult vaccines will be 100% effective. Yet it would be similarly misguided to expect that anti-hypertensives will prevent all strokes, or surgery and chemotherapy will prevent all cancer from recurring. The question is not whether 60% is good enough, but whether it is better than the alternative (which is no vaccine).

It is true that while the benefits of influenza vaccination are very much greater than the risks, the effectiveness of influenza vaccines in protecting healthy adults is less than the effectiveness of vaccines for many other diseases. This is why individuals need to consider the second and third reasons for vaccination, the protection of our families and patients.

Dr. Henry concluded by stating that the evidence for vaccination against influenza being better than not vaccinating is solid. On this issue, Public Health Agency of Canada, the Canadian National Advisory Committee on Immunization, the United States Centers for Disease Control and Prevention, the United States Advisory Committee on Immunization Practices, the European Centre for Disease Control and Prevention, the American College of Physicians, the American Academy of Pediatrics and virtually every influenza and vaccination expert in the world agree.

4.8 Ethical Discussions of Influenza Vaccination, Dr. Matthew Wynia

One of the vexing aspects of policy development regarding prevention of transmission of 'flu by healthcare workers is the ethical aspect. There are many important values at stake. Dr. Wynia addressed these in his presentation titled, "Professionalism and Vaccination Mandates: When should professional obligation trump individual liberty?"

He began by stating that mandatory vaccination is a breach of autonomy and asked, "What we will need to decide is whether that breach is justifiable." He then outlined the different public health "police powers," which include surveillance, reporting, epidemiological investigations, property seizure, mandatory vaccination, quarantine, isolation and treatment, social distancing and evacuation. Dr. Wynia provided some history regarding mandatory vaccination dating back to 1809 when the first United States mandatory vaccination law was implemented in Massachusetts. He also cautioned that there has been a history of dangerous extensions of public health mandates in the United States, citing United States Supreme Court Justice Oliver Wendell Holmes Jr., writing for an 8-1 majority in the *Buck v Bell* decision (1927) "the principle that sustains compulsory vaccination is broad enough to cover cutting the fallopian tubes… Three generations of imbeciles is enough." Dr. Wynia made clear that the power to mandate vaccinations cannot be taken lightly, and that such decisions are not easily made.

With respect to mandating influenza vaccination, Dr. Wynia first posed the issue of where this vaccination sits on the spectrum of value: Is the influenza vaccination an obvious candidate for a mandate, similar to smallpox? Or is it a dangerous infringement of personal liberty, such as forced sterilization? Dr. Wynia also asked why healthcare workers in particular are different from the general population. Dr. Wynia argued that the bottom line for many commentators is that healthcare workers have an obligation to be vaccinated against influenza on the basis of their promise not to harm patients.

The Infectious Diseases Society of America and Society for Healthcare Epidemiology of America in 2010 adopted positions supporting mandatory universal healthcare worker vaccination. They noted that education and outreach are only marginally effective in increasing vaccination uptake and other employment mandates are common. In addition, 'flu mandates work and are well accepted over time. According to these organizations, vaccination should be made a condition of employment and only those with proven medical contraindications should be excused and provided with re-assignment if possible and/or masks.

Dr. Wynia then outlined several ideological objections to such a mandate. First, the mandate infringes personal liberty and conscience. People have claimed that this type of mandate does not respect the conscientious choice of healthcare workers. Second, mandates may erode conscientious practice and turn healthcare

workers into functionaries, driving some from the workforce. Third, unhealthy tension can develop when health care worker beliefs are portrayed as threats to patient safety. Finally, some argue that influenza vaccination is a "non-core" responsibility of health care professionals and that only "constitutive" obligations of medical professionalism should be enforced. However, as Dr. Wynia stated, there is nothing more core or central to medical professionalism than ensuring that patients are not harmed through the actions of their healthcare provider.

Dr. Wynia then spoke regarding the harm principle in which he quoted J.S. Mill from his text, *On Liberty*, 1859 "…the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others." This quote raised the question, "Do 'flu vaccine mandates for healthcare workers prevent harm to others?"

Dr. Wynia briefly addressed scientific objections to mandatory vaccination. Earlier speakers had summarized the data on the effectiveness of mandatory vaccination policies, but it is of interest that most who object to mandatory vaccination programs have not argued they are ineffective but rather have focused their objections on privacy concerns and liberty interests.

Dr. Wynia then discussed several political and pragmatic objections to mandatory vaccination. These includes concerns regarding publicity, because mandates can generate resistance among healthcare workers and the media might cover such conflict, making it appear there is more debate within healthcare about the effectiveness of vaccination than, in fact, there is. This could cause vaccine resistance among the public to increase, thereby reducing herd immunity. Essentially, we must ask ourselves if a vaccine mandate could backfire and reduce public acceptance of the vaccine.

Addressing this sensitive issue requires considering the terminology surrounding it. Vaccine mandates require a balance between descriptive (scientific) language versus rhetorical (political) uses of terms. In the rhetoric of politics, accuracy is not the point. Public health activities sit at the intersection of medical science and public policy – so public health is often caught up in political rhetoric. One example is the term "harm reduction," which refers to public health strategies to mitigate the harmful effects of risky behaviors. Some examples of these strategies include seatbelt laws and helmet laws but also needle-exchange programs and condom distribution. Harm reduction is based on the belief that such harmful activity will exist, therefore it is the job and responsibility of healthcare workers to minimize the inherent harms and risks associated with such activities. Libertarians are not the primary individuals objecting to harm reduction strategies; such objection tends to be made by religious conservatives who do not regard harmful activities as inevitable. Some of these individuals have started to refer to 'harm reduction' policies as 'harm maintenance' policies, to create an alternative rhetorical approach.

Returning to vaccination policy, Dr Wynia noted that childhood vaccinations are miraculously effective and are of tremendous benefit both to individuals and communities. Child morbidity from such illnesses as small pox, measles, diphtheria, mumps, pertussis, polio, tetanus and others has decreased anywhere from 95-100% with the advent of mandatory vaccination programs. However this level of community benefit requires herd immunity, and mandates have been necessary to obtain that herd immunity and to reduce outbreaks. In areas where school immunization laws were found to be more comprehensive and strictly enforced, vaccine uptake was high and incidence of illness was low.

Despite the fact mandates work, there are still ideological objections that must be considered. As noted earlier, mandates may be less effective than educational campaigns, if they strengthen anti-vaccinationists. Dr. Wynia quoted Herman Biggs, the New York State Health Commissioner, in 1915, "I would rather have the sentiment of the community strongly supporting the health authorities without legislation than compulsory legislation and an antagonistic public sentiment." Dr. Wynia stressed, however, that persuasion can be a slow process.

In addition, education is not always effective and mandates may still be necessary to achieve high vaccine uptake. Education requires constant effort and financial resources because each new generation of parents must be convinced. Further, persuasion is aided by individual perception of significant continuing risk and as risk declines (due to vaccine use) persuasion therefore becomes more difficult. In other words, the more effective a vaccine is, the more difficult it is to convince people to vaccinate over time.

Enforcement of vaccination must also be considered. With respect to childhood vaccines, jurisdictions rarely threaten parents or guardians with fines or jail time, let alone literal forced vaccination. Instead policy makers prefer using strong persuasive measures, outreach and removing barriers to vaccination. Yet many jurisdictions stipulate that students may be excluded from school. Further, opt outs for mandatory vaccinations should be complex and time-consuming, the so-called "bureaucratic nightmare" for parents and guardians to ensure that vaccination is simpler than just opting out. Studies have shown a direct correlation between a highly complex opt out program and high vaccine uptake.[34] In addition, social pressure can be placed on "free riders"; those who benefit from herd immunity but do not contribute to it. In one study people exempted from measles vaccination were 22.2% more likely to contract vaccine-preventable illness yet there were higher incidences of those same illnesses in vaccinated children, meaning that the exemptors refusal to vaccinate had consequences for the entire population[35]. As a result, some physicians will dismiss patients from their practice if they refuse to

[34] Rota JS, Salmon DA, Rodewald LE, Chen RT, Hibbs BF, Gangarosa EJ. Processes for obtaining nonmedical exemptions to state immunization laws. Am J Public Health. 2001;91(4):645-8.
[35] Feikin DR, Lezotte DC, Hamman RF, Salmon DA, Chen RT, Hoffman RE. Individual and community risks of measles and pertussis associated with personal exemptions to immunization. JAMA. 2000;284(24):3145-50.

vaccinate; 39% of physicians said they would dismiss a family for refusing all vaccine and 29 % said they would dismiss a family for refusing select vaccines. [36]

Yet, 15 states in the United States allow parents or guardians to opt-out by simply signing a standard philosophical exemption letter; this simple requirement can make opting out of vaccination simpler than receiving it. The question arises, as to whether such a simple opt out program is, in fact, a mandate. Phillip A. Hamilton (R-Newport News), sponsored an HPV vaccine "mandate" whereby "…parents [are] given information, and if they choose not to do it, they don't have to do it. They just have to sign a form so the health department knows they opted out." Is this really a mandate? Among vaccine promoters the rhetorical meaning behind a mandate is to force insurance coverage, to promote compliance, and to look tough against disease. Among vaccine detractors, it is used to stoke fear and anger against government intrusion in private lives. But using the term 'mandate' for such programs risks blurring the meanings of the terms "routine", "recommended" or "mandatory" and confusion about what is mandatory and what is a mere recommendation can arise.

Dr. Wynia concluded by listing questions to ask before making a public health intervention mandatory. First, is there clear value to the individual? Second, is there is clear value to public health? Third, is a mandate is necessary to obtain those public health benefits?

Before a vaccine program ought to be called "mandatory", Dr. Wynia suggested that, at minimum, a significant penalty should follow non-compliance. "Mandatory" cannot mean simply there is a requirement to "opt out". At minimum, transparency regarding non-compliance with the mandate must exist, as well as some bureaucratic hurdles. In addition, patients should be entitled to know that they are being placed at greater risk by healthcare providers who refuse or fail to accept vaccination. Finally, officials must mitigate potential harms to patients such as requiring healthcare workers who refuse vaccination to wear masks or to be re-assigned to be away from patient care.

In the end, Dr. Wynia favours some form of mandatory vaccination policy for heathcare workers when the vaccines prevent transmission of illness and death and when education programs are ineffective in increasing vaccination uptake to the level necessary to protect patients. In these circumstances, a vaccine mandate is a justifiable infringement upon healthcare worker liberty, despite the possible negative ramifications of mandates. Dr. Wynia ended with a cautionary quote from Winston Churchill who said "you can always count on Americans to do the right thing - after they've tried everything else." He expressed hope that Canada, and Alberta in particular, would not need to try everything else before taking appropriate action.

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[36] Flanagan-Klygis EA, Sharp L, Frader JE. Dismissing the family who refuses vaccines: a study of pediatrician attitudes. Arch Pediatr Adolesc Med. 2005;159(10):929-34.

4.9 Legal Issues for Influenza Vaccination Options, Mr. Michael Waite

In developing policy, one must always consider the law. Michael Waite, a Calgary lawyer with health law expertise, commenced his presentation by providing context to the discussion. He emphasized that seasonal influenza is a serious and potentially deadly virus affecting thousands of Canadians each year. While estimates vary depending on location, health-care worker influenza vaccination rates are inadequate, and in some places as low as 30-40%.[37] These rates do not increase with the implementation of policies designed to increase *voluntary* vaccination rates. However, implementation of stricter vaccination policies that require healthcare workers to be vaccinated or to engage in another safe alternative (such as masking) have been shown to increase vaccination rates.

Mr. Waite then detailed the likelihood of potential legal challenges for mandatory vaccination of healthcare workers. On one end of the range of policy options, healthcare workers have total autonomy; healthcare workers have unrestricted choice whether to accept vaccination. This is the current situation in Alberta unless there has been an outbreak of influenza as confirmed by the Medical Officer of Health, in which case healthcare workers are given a choice to accept vaccination or prophylaxis. If the health care worker refuses both of these options then he or she will be reassigned to a non-outbreak unit. If reassignment is not possible, then the health care worker will be placed on leave without pay until the outbreak is over. Other voluntary "opt-in" policies offer education and promotion of vaccination.

In the middle of the range is an "option based" mandatory policy (similar to Alberta's outbreak policy). These are "opt out policies" with alternatives between different safety methods such as masking.

On the far end of the range of policy options, health care worker autonomy is reduced significantly; a true mandatory policy would be where 'flu vaccination is a condition of employment for healthcare workers. Mr. Waite stressed that as health care worker autonomy decreases, the likelihood of legal challenges increases. The policy maker's goal should, therefore, be to the find the best policy that is both able to fulfill its purpose and to withstand legal scrutiny.

British Columbia and New Brunswick have influenza season policies; those provinces require proof of vaccination or masking throughout the influenza season and without such proof, healthcare workers will face disciplinary action. The 2013 arbitration decision in British Columbia upheld this policy *Health Sciences Association (Influenza Control Program Policy Grievance) v. Health Employers*

[37] Bryce E, Embree J, Evans G, Johnston L, Katz K, McGeer A, et al. AMMI Canada position paper: 2012 Mandatory influenza immunization of health care workers. Can J Infect Dis Med Microbiol. 2012;23(4):e93.

Association of British Columbia (*HEABC*).[38] Mr. Waite was unaware of any Canadian centre that currently has adopted a true mandatory vaccination policy.

Mr. Waite then turned to current expert opinion regarding vaccination policies in Canada. He first cited the Association of Medical Microbiology and Infectious Disease Canada; it stated that, "annual influenza immunization should be required as a condition of new and ongoing employment or appointment for all workers who spend time in areas where patient care is provided and/or patients are present." In addition, the Canadian Nurses Association

> believes that policies that place immunization as a condition of service should be introduced if health-care worker influenza immunization coverage levels are not protective of patients, and reasonable efforts have been undertaken with education and enhancing accessibility to immunization. CNA considers mandatory immunization policies by employers to be congruent with the Code of Ethics for Registered Nurses in Canada and the obligation to act in public interest, as noted in CNA's Objects.

Further, the commentary in the *Canadian Medical Association Journal* stated that while the effectiveness of the influenza vaccine is exaggerated in the medical literature and the media (with the effectiveness at about 60% in healthy adults), it still makes sense to vaccinate, because there is very little downside. However, the commentary also stated that given the vaccine's considerable limitations, making vaccination mandatory is likely premature.[39]

Mr. Waite then moved to the legal implications of vaccine policies and mandates. He emphasized that the implications would differ according to the level of voluntariness of the policy, who is implementing the policy (is it governmental or non-governmental) and how the policy is being implemented, for example is it to be implemented through mutual negotiations or unilateral action? Legal implications can arise regarding employment and labour issues, the Canadian *Charter* of Rights and Freedoms, human rights issues, provincial human rights legislation, and privacy issues.

Employment and Labour Issues

The 2013 *HEABC* case, as was discussed in detail by Dr. Bonnie Henry, is an example of a legal challenge with respect to labour and employment. This case concerned a labour arbitration regarding a policy of mandatory choice of either vaccine or mask during influenza season. The policy was a unilateral action by an

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[38] *Health Sciences Association (Influenza Control Program Policy Grievance) v. Health Employers Association of British Columbia,* British Columbia
Grievance Arbitration, Robert Diebolt, Arbitrator, October 23, 2013, available here: http://www.heabc.bc.ca/public/News/2013/A09-2013-Influenza%20Control%20Program%20Policy%20Grievance.pdf (last accessed June 19, 2014).

[39] Gardam M, Lemieux C. Mandatory influenza vaccination? First we need a better vaccine. Can Med Assoc J. 2013;185(8):639-40.

employer, in this case the Health Employers Association of British Columbia. However, ultimately the arbitrator decided that there was no *Charter* breach, no breach of provincial human rights legislation and no breach of privacy legislation. He ruled that the policy should be upheld.

In an employment context (for those who are non-unionized employees) a mutually negotiated term of employment is legally enforceable. However, a unilateral change to the terms of employment can be considered constructive dismissal of an employee. In addition, a unilaterally imposed term creates a challenging situation for healthcare workers who merely have privileges in health care facilities and for contractors. The ramifications and remedies available for these various groups are different and range from a breach of contract, loss of income and privilege disputes and so on.

Nevertheless, a large portion of healthcare workers are unionized employees (approximately 61%). For these employees, a mutually negotiated term of the collective bargaining agreement (CBA) would be legally enforceable. If a rule is unilaterally introduced by the company, and not subsequently agreed to by the union it may still be legally enforceable but the rule must satisfy the following requisites: it must not be inconsistent with the collective agreement; it must not be unreasonable; it must be clear and unequivocal; it must be brought to the attention of the employee affected before the company can act on it; the employee concerned must have been notified that a breach of the rule could result in his or her discharge if the rule is used as a foundation for discharge; and such a rule should have been consistently enforced by the organization from the time it was introduced. In addition, if the policy or rule affects employee privacy, then the policy must be proportional and reasonable and must be the least invasive way of achieving the policy objectives.

The Charter and provincial human rights legislation

Mr. Waite then provided several recommendations that would help to improve the chances a policy such as mandatory influenza vaccination will be upheld. These recommendations include: negotiating for the change with employees, contractors and unions; obtaining unions agreement; basing the policy on compelling, evidence-based science; attempting less invasive policies first, collecting the data on those attempts and using the least invasive method possible to achieve the goal of increasing healthcare worker vaccination rates and reducing transmission of influenza to patients.

Mr. Waite then discussed the potential challenges under the *Canadian Charter of Rights and Freedoms*. To make a *Charter* claim, the claimant must show that, the *Charter* applies to the entity being sued, and the *Charter* was violated. If the claimant was able to demonstrate these two matters, then the government must show that the violation is justifiable.

The first issue in a *Charter* analysis is determining whether the *Charter* applies.

The *Charter* applies to all government actors and actions as well as non-government actors carrying out government actions. Hospitals and health authorities are generally considered non-government but if the source of a policy is considered governmental in nature then the *Charter* can and will apply. In the *HEABC* case, the arbitrator found that there were strong arguments for both sides as to whether the *Charter* would apply. In Alberta, if the provincial government is working closely with AHS in formulating and implementing a policy it is more likely that the *Charter* would apply.

Mr. Waite then moved to the types of *Charter* violations that could potentially be argued. The first was under s. 2(b), of the *Charter*, freedom of expression; and the second was under s. 7, the right to life, liberty and security of the person. S. 2(b) states that "everyone has the following fundamental freedoms: (b) freedom of thought, belief, opinion and expression, including freedom of the press and other media of communication." This section has been broadly interpreted to include all forms of expression except violence and includes the freedom to express and the freedom not to express. The types of policies that could be at risk under a s. 2(b) challenge are "government" policies or policies that mandate some form of identifier of vaccinated rather than unvaccinated healthcare workers. In the *HEABC* case, the Union argued that the masking requirement was a form of forced expression. However the masking requirement was found to be legal in *HEABC* because the freedom not to express is not an unfettered right. Even if the freedom not to express is violated by a policy, then the violation can be justified for a compelling reason such as patient safety.

Mr. Waite nevertheless offered several recommendations to improve the chances that a policy will be upheld. Again, basing the policy in compelling evidence-based scientific research and using the least intrusive method possible to obtain the desired results may decrease potential legal challenges. On that basis, requiring unvaccinated workers to wear some sort of badge indicating their vaccination status will likely not be justifiable because there are other ways to keep track of unvaccinated workers that are less intrusive.

The second potential *Charter* violation falls under s. 7, which states, "Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice." The protection of an individual's life, liberty or security of the person includes the right to make fundamental life choices, the right to psychological and physical integrity and the right to make medical decisions. "In accordance with the principles of fundamental justice" requires the right to administrative procedures without delay and the right not to be punished if morally innocent and that laws not be vague, overbroad, arbitrary or disproportionate. The types of policies at risk under a s. 7 challenge are again, "government" policies and any non-voluntary policies. The higher the degree of choice to the individual, the less likely the policy will be successfully challenged. The likelihood of a successful challenge to the policy under s.7 is fairly high with a true mandatory policy. However, only one Canadian

decision has found a vaccination policy to violate s. 7 [40] and it is unlikely to be followed by other courts because of the specific circumstances of that case. Mr. Waite reiterated the importance of choice and a range of options for individuals to reduce the chance of a *Charter* challenge.

Mr. Waite then turned the focus to provincial human rights legislation. The *Alberta Human Rights Act* at s.7(1) states:

> No employer shall
> (a) refuse to employ or refuse to continue to employ any person, or
> (b) discriminate against any person with regard to employment or any term or condition of employment,
> because of the race, religious beliefs, colour, gender, physical disability, mental disability, age, ancestry, place of origin, marital status, source of income, family status or sexual orientation of that person or of any other person.

The type of policy at risk for a human rights challenge includes any non-voluntary policy. In the *HEABC* case, the Union argued that the vaccination and masking requirement discriminated because it did not accommodate those individuals who had contraindications or religious objections to the vaccinations or other measures required by the policy. As mentioned, the likelihood of a successful challenge is higher with a true mandatory policy. The higher the degree of choice to the individual, the less likely the policy will be successfully challenged. However, the vaccination and masking policy was not found to be discriminatory in *HEABC* because the policy does not need explicitly to address accommodation to be upheld. Mr. Waite's recommendations to improve the chances a policy will be upheld once more include giving healthcare workers a range of options for individuals and addressing accommodation explicitly in the policy. This precaution may not be necessary but is certainly worth considering. Finally, accommodation must be ensured for those employees with a bona fide inability to comply with either requirement (in this case masking and vaccination) because this is an obligation in all employment situations.

Privacy Issues

Mr. Waite then turned to privacy issues that may arise with respect to these types of policies and cited the *Personal Information Protection Act* of Alberta. Mr. Waite quoted the "Limitations on Collection", which can be found at s. 11 and state:

> (1) An organization may collect personal information only for purposes that are reasonable.
> (2) Where an organization collects personal information, it may do so only to the extent that is reasonable for meeting the purposes for which the information is collected.

[40] *St. Peter's Health System* v. *CUPE Local 778* (2002), 106 LAC (4th) 170, 2002 Carswell Ont 4709 (Ont Arb Bd).

He also quote the “Limitations on Use” in s.16:

> (1) An organization may use personal information only for purposes that are reasonable.
> (2) Where an organization uses personal information, it may do so only to the extent that is reasonable for meeting the purposes for which the information is used.

Finally he cited the “Limitations on Disclosure” in s. 19:

> (1) An organization may disclose personal information only for purposes that are reasonable.
> (2) Where an organization discloses personal information, it may do so only to the extent that is reasonable for meeting the purposes for which the information is disclosed.

The type of policy at risk for a privacy challenge would be any policy that requires the disclosure of an employee’s vaccination status to their employer. Policies that require masking may be seen as “disclosing” health information about the employee. In the *HEABC* case, the Union argued that the masking requirement was a disclosure of employee health information by the employer. It was argued that healthcare workers were essentially becoming a walking image of their health care choices. However a successful challenge under Alberta’s privacy legislation is unlikely as long as the infringement of privacy is minimally intrusive and necessary. In the *HEABC* case, the collection of vaccination status and disclosure through masking were seen as necessary for the implementation of the employer program and therefore not in violation of provincial privacy laws. Mr. Waite’s recommendations to improve the chances that a policy will be upheld include ensuring that the collection of employee information is necessary and sufficiently connected to the employer program, and that only the minimal amount of information necessary is collected.

Ultimately, Mr. Waite recommended an option-based mandatory vaccination policy as the most viable and legally enforceable strategy. The influenza vaccination requirement should be negotiated if at all possible and union involvement in the planning and implementation of the program is essential in unionized environments.

4.10. Small Group Discussions
Conference attendees

The individuals who participated in the five small group discussions were asked to review 6 different policies. These policies were:

1. Unconstrained choice
Health care workers may freely choose to be vaccinated or not. No repercussions (e.g. if excluded from work during flu outbreak by lawful authority, then no loss of pay).

2. Refusal of vaccination permitted only after completion of education program. Health care workers may not opt out of vaccination without undergoing education. What should the curriculum contain? (If a health care worker has received the education, refused vaccination and is excluded from work during an outbreak, then the issue arises about whether the health care worker may receive pay).

3. Incentive to vaccinate
Health care worker receives a benefit for evidence of having been vaccinated (e.g. time away from work).

4. Forced choice
Health care workers must choose among infection prevention measures. In other words the health care worker must provide evidence of having been vaccinated or do something else - e.g. wear protective clothing.

5. Temporary repercussions for not having been vaccinated
Health care worker will lose pay if excluded from work because of failure to be vaccinated (without medical excuse).

6. Immunization as a condition of employment
HCW must provide evidence of having been vaccinated or find work outside health care (unless medical excuse for failure to have been vaccinated).

Discussants were then asked to examine each policy using four questions:

a. In your opinion, is the policy lawful?
b. How does the policy balance important values?
c. What pragmatic advantages and disadvantages do you foresee in implementing the policy?
d. What additional information might be required to determine whether to advance this policy option?

Discussants were then asked to choose the policy option they believed was the most appropriate balance between health care worker freedom, and patient and population protection.

Discussants then briefly indicated why they believed the other policy options are less appropriate.

4.10.1 Summary of Discussion by Members of Group One
Dr. Stacey Page, Chair (Leora Rabatach, Reporter)

Option 1
There was consensus that a change from the current model (unrestrained choice) was needed because the current model yields suboptimal rates for vaccination. However some claimed that the aim is to decrease the transmission of influenza and we don't know what vaccination rate is needed to reduce transmission effectively. Therefore, they said, there is an issue regarding the level of vaccination to aim for, as perhaps we are already at the suboptimal level. It was also stated that while we are currently far from our goal of 80% vaccination of healthcare workers, even lower rates such as 30% offer some protection.

However Option 1 does offer some advantages because it preserves autonomy. It would be best overall to convince health care workers to be vaccinated with their own free will.

Option 2
Discussants stated that this option assumes that education will change behaviour, which is not always the case. They believed a number of important factors must be considered when implementing this policy option such as: how is it designed and who designs it, how is it communicated, who mandates and delivers it, and where do the resources for the education come from?

It was noted that often health care workers have the same misconceptions about the influenza vaccine as the public, and some healthcare workers receive minimal education about vaccines, therefore education is a good way to change this.

Some disadvantages included the unsustainability of a vaccination education program, particularly since it has been tried in the past and was not sustainable. The advantages included the fact that health care workers still have a choice to refuse the vaccine after they are educated, preserving autonomy. A model where people must attend a class on vaccines to avoid some sort of professional repercussion was suggested. Some said that health care workers are often educated about vaccines but still refuse them and that often the objection is to the delivery method - people don't want needles. Group members recommended that there be some sort of standardized provincial educational message to all health care workers about vaccination.

If this policy option is implemented, then the education delivered should be collaborative, because education often occurs in silos and this issue impacts the whole workforce. While education might not change behavior it does change knowledge and awareness.

Option 3

Incentives could include benefits such as time away from work or financial compensation. The disadvantages of this option include the fact that offering time away leads to fewer workers present during an outbreak, and assigning monetary value to the vaccine removes professionalism. Some individuals also believed that incentives were unsustainable and an irresponsible way to use tax dollars. One person said that not everyone will be motivated by the same type of incentive. To cause incentives to work, existing disincentives must be eliminated. These include long lines to receive the vaccine and inadequate amounts of vaccine available; these discourage healthcare workers from receiving vaccination. Punitive responses such as shaming people for not accepting vaccination should not be used, because these do not encourage teamwork.

Option 4

This policy allows the most protection to patients, because health care workers are a risk to the patient if they are not vaccinated or take no other protective measures. A practical method of enforcing this option was to stipulate mandatory choice of either vaccines or other protective measures in the contract for each new employee.

Having to wear a mask violates the privacy of the health care worker, because other employees will know they have not had the vaccine however, masks could be for several issues, like having a cold. One disadvantage is that masks give a false sense of security and there is still a major risk of transmission when symptomatic. A sick health care worker is much more dangerous to a patient than an unvaccinated health care worker and it needs to be acceptable to take time off when sick.

Option 5

This policy would be an effective way to prevent the spread of infection while encouraging health care workers to accept vaccination. If a healthcare worker has the flu or has not been immunized, why are they not expected to stay home? They are a risk for patients and currently heath care workers have to take leave for other problems that could be harmful to the patient, like addiction. Vaccination should be considered part of fitness for a job; if you are not vaccinated, then it makes sense that you should not be allowed to work.

Group One Summary

In Group One, there was consensus that health care workers should be encouraged in some way to receive the 'flu vaccine. An appropriate policy for vaccination of health care workers would take a multi-pronged approach, using a combination of education, forced choice between protective measures, and temporary consequences for not receiving the vaccine.

Using incentives may not be an appropriate method to encourage health care workers to receive the vaccine, because such incentives may be unsustainable, an inappropriate use of tax dollars, and may not be successful in encouraging health care workers to receive vaccines.

4.10.2 Group Two
Dr. Sharron Spicer, Chair (Murtaza Aziz Dahodwala, Reporter)

Option 1
Discussants believe that this option was the best in preserving the autonomy of the healthcare worker to decline is preserved. A healthcare worker is also a patient. As they become a patient, they have the rights of the patient.

Options 4 and 5

Some discussants stated that they don't believe that vaccinating a staff member makes them a patient in the true sense of the word. They are taking measures to protect themselves, like wearing a bicycle helmet. The balance of the scale should be toward those with the most to lose. If a patient is vulnerable, then the staff member 'rights' argument is not strong enough. For outbreak situations, a policy in line with 5 would apply, but for regular situations, 4 would be suitable.

Option 6
Some discussants believed that either the government had to take a stand and mandate vaccination fully, or not do it at all. This option was found to be more suitable if grandfathered in, because it would allow health care workers time to think about their options and then it can be made a condition of their employment.

One discussant mentioned that there is precedent for this type of policy in the US because it is viewed as the most equitable way to forewarn people. By year 3 of employment, health care workers must choose between accepting vaccination or not to staying in the position.

It was also noted that before BC implemented its new policy, the province had a certain rate of sick leave. After implementation this rate dropped by 25 per cent.

Group Two Summary

In Group Two, there was consensus in favour of option number 4. This decision would present a slight shift from the current model (unrestrained choice) and enable AHS to encourage but not force health care providers to receive the flu vaccine. This new model would allow for personal autonomy and choice, and would also provide for protection of individual privacy within the workplace, while enhancing overall patient safety and quality of care.

To support this decision from an organizational perspective, new educational initiatives - focused on both health care providers and the communities they serve - would need to be created to enhance vaccination uptake.

4.10.3 Group Three
Dr. Robert Schulz, Chair (Mariko Roe, Reporter)

Discussants found that a healthcare and culture shift is required and that this shift should begin with an evaluation of who is being employed. The group speculated that a healthcare worker might still transmit the infection if he or she is vaccinated and yet does not wear a mask. Masking, however, impedes conversation, is uncomfortable and creates challenges in healthcare worker compliance. For example, what areas would be included in the health care facilities, would cafeterias and lunchrooms require masking?

Some discussants believed that a multi-pronged approach is confusing to the public whereas some others believed that was necessary. It was mentioned that the policy must be approached holistically with hand washing policies not just vaccinations. Healthcare worker complacency was mentioned as a problem as well as the difficulty of accurate recordkeeping and enforcing a strict policy in light of exemptions to vaccination requirements based on medical and religious grounds.

Group Three Summary

This group was polled before the discussion on their policy options and then polled again after the discussion. The results of these two polls are as follows.

Option:	Before Discussion:	After discussion
Option 1:	1	0
Option 2:	0	0
Option 3:	1	1
Option 4:	15	15
Option 5:	1	0
Option 6:	6	8

The group was able to come to a consensus on policy 4.

4.10.4 Group Four
Dr. Gail MacKean, Chair (Thomas Kellner, Reporter)

Option 1
It was agreed by almost all that this option was a joke.

Option 3
Group members stated that extra vacation would be a strong incentive.

Option 4
Discussants believed that this was the lesser of two evils, but that masking came with issues regarding how often it needs to be changed, when and where it needs to be worn, and a lack of efficacy. It was noted that unvaccinated Meals on Wheels employees must comply with strict rules of wearing one mask per house when delivering food. These clients are not necessarily patients, but the health authority is paying for their meals. The point being, if you are in the profession, you need to follow the rules.

Option 5
It does not appear that this option was discussed

Option 6
It was stated by one discussant that this option would not be effective because facilities are different, and that this was an oppressive option.

Group Four Summary
There was consensus by the group for option number 4, specifically for ethical reasons. For Option 4 to be successful, patient care areas would need to be defined, in a format similar to the BC health system. If AHS adopted Option 4, then those areas (and the health care workers and patients within) would be protected by a mask or vaccination at all times. This option would allow for flexibility and freedom of choice. Additionally, it would affect only those directly involved in patient care, and would exclude those who do not interact with patients in any way. Group members noted that accommodations for things such as religious beliefs are important. In addition, many concerns arose regarding who will in fact be obligated to receive vaccinations and what will count as a health care facility.

4.10.5 Group Five
Ms. Jessica Robertshaw, Chair (Rachel Crooks, Reporter)

Option 1
Discussants felt that health care workers should have the ability to make their own decisions and should not be forced to be vaccinated.

Option 2

Most people do not have a full understanding of what to do to prevent the spread of infection, however it was noted that if information could be revealed in a positive manner then that would be helpful.

Option 3
One person stated that incentives would promote a culture of wanting to be vaccinated and wanting to do it for the right reasons whereas force could create backlash.

Option 4
Some said that healthcare workers who are not involved in directly caring can have certain accommodations. Others mentioned that the differences in effectiveness of masks versus vaccination were not as high as perceived. A member noted that if AHS is going to make a policy for vaccination then this requirement should become a condition of employment for all new employees.

Option 5
It does not appear that this option was discussed.

Option 6

Some discussants stated that it was their right as an Albertan to go into an institution with an illness for treatment and come out without having picked up another one. It was also noted that vaccination is for the protection of the health care workers as well. Some believed that there is an expectation to care for others, and that is the job of a health care provider; the duty to care trumps autonomy issues. As one individual stated, “I chose this field and I want to protect the people I come into contact with so I should have vaccines to protect them and me”. However many agreed that there could be an allowance for religious and medical reasons without job termination, but that unvaccinated individuals should not be able to come to work.

Group Five Summary

The majority of these discussants chose option 6. However some members stated that vaccination and hand washing must both be considerations in preventing influenza. One person was concerned that rubella vaccination is mandated and yet influenza vaccination is not, and that it appears that there is a policy gap. [41]

[41] For the purposes of the *Public Health Act*, RSA 2000, c P-37, the regulations mandate vaccination against the infectious disease, rubella, (but not influenza) for day care workers and healthcare workers in the Province of Alberta. Section “Rubella” 5(5) of Schedule 4 of Alberta Regulation 238/85, *Public Health Act*, *Communicable Diseases Regulation* states, **“**All staff of day care facilities and persons with face to face contact with patients in a health care facility shall ensure that they are immunized against Rubella.”

4.11 Group Discussion, Dr. William Ghali

This discussion saw the introduction of the key points of the small breakout discussion, as noted in 2.11. When the small groups reunited, Dr. Ghali led the plenary session by addressing crucial questions. He began by asking attendees what they thought of the evidence on the efficacy of influenza vaccination of healthcare workers, based on the presentations by Drs. Thomas and McGeer. These presentations concerned identical evidence,and drew very different bottom-line conclusions on efficacy (Thomas indicated that there is no evidence to support the efficacy of vaccination; McGeer indicated that the evidence is strong and definitive.). Dr. Ghali spent some time reconciling the two views, indicating that the choice of study endpoints, and the extent to which a reader puts weight on findings that are not statistically significant influences one's take-away conclusions. He did point out that all study outcomes reviewed by Drs. Thomas and McGeer were uniformly less frequent in the higher frequency vaccination groups in the studies reviewed. In other words, although not statistically significant, the pattern of the frequency of the outcomes was in the direction showing an effect from vaccination.

Dr. Ghali then asked attendees to indicate by show of hands whether they believed influenza vaccination of healthcare workers is: 1. proven to be efficacious and no longer in need of study; 2. proven to NOT be efficacious and no longer in need of study; or 3. or still of somewhat uncertain efficacy, and in need of further study to ensure that the goals of reduced mortality and complication due to influenza infection are being met. The majority of attendees opted for choice number 1 above. The second most common response, selected by approximately 25% of attendees, was choice number 3. No one chose option number 2. These opinions on the evidence were presumably based on the attendees having listened to the presentations of both Drs. Thomas and McGeer (including perhaps any additional knowledge that they had coming into the symposium)

Dr. Ghali then proceeded to determine attendee views on whether influenza vaccination of healthcare workers should be mandatory or not, and whether the time is now to move to some type of mandatory or mandatory choice policy. The collective view among attendees was that there should be some form of mandatory influenza vaccination. Dr. Ghali also polled attendees to discover how many were health care workers and if they worked on the front lines of health care and had patient interaction on a day to day basis as opposed to managerial roles. The majority of symposium attendees appeared to be healthcare workers, and a large subset of these were also healthcare workers who held managerial roles. This discussion proved interesting and helpful as attendees could see where each other lay on the spectrum of policies thanks to a sharing of the results of the small group discussion.

In Dr. Ghali's opinion, the issue of whether some policy regarding healthcare worker vaccination is needed does not require more study. What is needed,

however, is research that would study the effects of such the adoption of policy where adopted in Canada both before and after adoption to determine the policy's effect in increasing vaccination uptake among healthcare workers and reducing disease and death overall.

An attendee asked what would be the outcome of the symposium. Juliet Guichon, who chaired the meeting, explained that this report would be drafted for submission to the University of Calgary Dean of Medicine, who presumably would offer it to interested persons in health services and government.

4.12 Summary of the Day, Dr. Ian Mitchell

Dr. Mitchell clearly and comprehensively summarized the main points of each of the speakers.

Dr. Mitchell opened with a powerful story. He spoke of his late wife who, for the last few years of her life, spent long periods in hospital and in a nursing home. Exposure to influenza was a great anxiety because, if she contracted the disease, complications could be expected. Indeed, an influenza outbreak in the nursing home occurred and exposed the difficulties in prevention, perhaps due to lax policies on vaccination of staff. During the outbreak, the home was closed to visitors. A visitor ban is not a minor part of "infection control"; it has major implications. It meant that a person who was already vulnerable and who had lost a great deal of her usual enjoyable activities and mobility was deprived of the companionship of family and close friends, even if they themselves had been vaccinated. Thus, Dr. Mitchell reminded attendees, mainly healthcare professionals, why it is so important to protect vulnerable patients: because they are someone's family.

Then Dr. Mitchell summarized the talks of others. Drs. Doig and Talbot told us how Influenza affects Albertans, whether as individuals or collectively.

Dr. Chip Doig recounted the story of a pregnant woman admitted to the Intensive Care Unit because of the severity of the disease, and her dependence on multiple modalities of life support. Happily she survived and delivered a healthy infant. In the ICU, extensive precautions of every kind are taken to reduce the possibility that patients will acquire infection in Hospital. This is necessary because in the ICU, a significant number of those with Influenza die – these patients are already very sick, so any additional disease burden can easily become fatal. Dr. Doig told people that he could recall no ICU patient with influenza or family member who had been vaccinated against the disease. Some said that they had not realized how important it was.

The next speaker moved the focus from the individual patient to the population at large. Dr Jim Talbot outlined the effect of influenza on Alberta, and made the points that:

1. Influenza is a common disease;
2. It may be severe, particularly in those already compromised;
3. It has a huge effect on individuals and families
4. It has a huge effect on the health care system
    a. There can be a surge in numbers of patients
    b. Staff can decrease at this peak time because some of them become infected themselves
5. Vaccination works.

Having heard of the serious effects on influenza of an individual and on the population, Dr Alison McGeer told us about more about the perpetrator – the disease itself. In her talk, “Flu 101”, she described Influenza a virus made of RNA that reproduces in our cells, and in which the RNA can change readily, making previous immunity almost useless. There may be problems in making an individual patient diagnosis of influenza. For example, only 50% of patients have ‘typical’ symptoms, fever and cough. And of those with fever and cough, most are infected with another virus. Despite this problem with individual diagnosis, annual epidemics can be easily identified. Around 2500 Canadians die of influenza each year each year. Health care workers are at increased risk of influenza, and influenza is transmitted to patients in hospitals and nursing homes by healthcare workers and visitors. When Influenza strikes Nursing Homes, the fatality rate is 5%, and when there are outbreaks in acute care hospitals, the fatality rate is 9 – 20%.

Turning to the issue of whether vaccination reduces disease and death were two speakers with opposing views. Dr. Roger Thomas dealt specifically with the question, “Elderly in long-term care facilities: Does vaccinating their health care workers prevent influenza ?” He used the technique of systematic review to examine the evidence. Systematic reviews are a way of looking at all the available evidence that meets predetermined conditions. In other words, a systematic review combines results from a number of published research studies, with the aim of minimizing bias. There were three studies that met the specific criteria for scientific merit. Dr Thomas described in detail the difficulties in studying a topic like vaccinating large numbers of employees, avoiding bias and coming up with a clear answer. He concluded that there was no proof that vaccination prevents the spread of infection. This does not mean vaccination is not effective, it points to the methodological difficulty of studying this topic. He concluded “These three C-RCTs do not provide evidence that vaccinating health care workers prevents their elderly patients in institutions getting influenza or its consequences”.

Dr A McGeer, in her second talk, focused quite broadly on the evidence about effective measures to prevent spread of influenza. These included:

- Social distancing i.e. avoiding social contact, effective but nearly impossible to do
- Hand hygiene - A small effect, but difficult to assess adherence
- Masks worn by caregivers - Some evidence of benefit.
- Droplet/contact precautions (combination of gown, glove, mask/respirator used with hand hygiene)- Effective (all measures combined) with meticulous attention to every detail, but requires identification of infected persons
- Vaccination – Effective.

She reviewed a broad range of studies about vaccination of hospital staff, including the meta-analysis written by Dr. Thomas. She included studies in hospital systems in the United States. From this wide review, Dr. McGeer concluded that

vaccinating hospital staff against influenza was beneficial both to protect the staff and the patients they care for.

With the information that healthcare workers are important in preventing the transmission of the serious illness, the conference then heard from someone who had been at the ground level in creating a policy response in another Canadian jurisdiction. Dr. Bonnie Henry helped develop and successfully defend British Columbia's mandatory choice influenza vaccination program for health care workers. She noted, as did other speakers, that influenza has a disproportionate effect on the vulnerable. The reasons for the British Columbia policy of mandatory choice for health care workers were:

1. Patient protection
2. Self-protection (health care workers have increased exposure to influenza)
3. Maintenance of a critical societal workforce (health care staff) during outbreaks
4. Health care workers should set an example of the importance of vaccination for others.

Dr. Henry reviewed the process in British Columbia. Influenza vaccination was mandated (see next section for a discussion on what mandated might mean) for health care workers, and those who were not immunized were required to wear masks during influenza season. One union grievance was taken to arbitration and a judge supervised the arbitration process. The judge heard evidence from experts from both sides. His ruling in favor of the requirement for vaccination of health care workers was based on the preponderance of evidence. He stated there was "a real and serious patient safety issue". The unions did not appeal the ruling; hence compulsory choice of vaccination or masking by health care workers is the law in B.C.

Dr. Henry emphasized the necessity of working with health workers and their unions, and using compulsion as last resort. She also emphasized the importance of dealing with specific situations when the wearing of a mask might pose problems. One obvious example was a patient receiving Speech Therapy, where the therapists lips need to be seen, thus no mask would be worn during treatment sessions.

The ethical issues were many. Dr. Matthew Wynia reviewed those that might arise with any mandatory intervention. He addressed first the meaning of "mandatory," a meaningless concept if there are no consequences. To be truly mandatory, there must not be an easy option for those who refuse. Dr Wynia emphasized the need to strike a balance between the professional obligation of health care professionals to put patient interests before their own interests, and the individual rights of the health care professionals to control their own bodies. In general, there was a societal bias in favour of actions that protect patients

The issue of mandatory or mandatory choice of vaccination was like many public health interventions, an action at the intersection of politics and science. Despite historical instances of misuse of legislated power delegated to public health to control disease, Dr Wynia believed that mandatory influenza vaccination of health care workers was not misuse of this power. He listed the conditions to be met for a public health intervention to be mandatory. These were:

1. There should be clear medical value to the individual
   The aim might be to benefit patients, but the health care practitioner should also benefit
2. The public health benefit must be clear
3. A mandate must be the only way to provide the public health benefits
   Alternatives need to be explored; at a minimum they would include education, public outreach and the provision of free vaccinations.

Mr. Waite reviewed legal issues that might arise in Alberta. The considerations were the law itself, such as employment law including union agreements and contract law, the Canadian Charter of Rights And Freedoms ("Charter"), the Alberta Human Rights Act and Alberta privacy law. Regarding the Charter s. 7 term, "fundamental justice", there is little jurisprudence supporting 'absolutes' such as forcing vaccination with no possibility of an alternative.

In determining whether a policy about compulsory vaccination was 'legal', consideration would be given to:

1. The type of policy
2. Who is affected
3. How it is implemented

It was possible to breach rights granted under the Canadian Charter, but these should be the minimum possible, to be saved by the Charter's s. 1. He reviewed the Judge's comments in the B.C. case. The judge did not rule directly on Charter issues, but said that if he had to make such a ruling, then the mandatory choice of masking or vaccination as planned in BC would not breach rights guaranteed by the Charter.

In preparation for Small group discussion, Mr. Waite and Dr. Wynia presented the prepared range of options, from no pressure of any kind on health care workers to have influenza vaccination all the way to compulsory vaccination with dismissal if refused.

Each group had a facilitator and a note taker. Groups were asked to discuss the options, and then return to present their thoughts to the conference attendees as a whole. Dr William Ghali led this part. The groups reached broadly similar conclusions. Most opted for some form of mandatory choice such as choice of

vaccination and mask wearing as had been developed in BC. A few wanted vaccination to be an absolute condition of employment.

Dr Mitchell had been convinced by the evidence presented that condition of employment vaccination was justified. Patients were

1. Already sick
2. More likely to get influenza if exposed
3. More likely to get complications
4. If they choose to have vaccination, they are likely to have a poor immune response to vaccination and may not get good protection themselves.

Dr. Mitchell told another story – this time about his grandson. He explained that the boy had a number of medical conditions and consequently he was frequently a patient in hospital, sometimes needing intensive care. Dr. Mitchell reminded us that children, too, need their caregivers to put their interests first.

Dr. Mitchell concluded that health care workers have a duty to protect those in their care.

4. BIOGRAPHIES

5.1 SPEAKERS

Christopher Doig, MD, MSc, FRCPC
Alberta Health Services Alberta Zone Clinical Department Head, and
Faculty Department Head, Department of Critical Care Medicine,
Cumming School of Medicine, University of Calgary, Calgary, Alberta

Dr. Doig is the Alberta Zone Clinical Department Head and faculty Department Head for the Department of Critical Care Medicine. Dr. Doig is also an intensive care unit specialist at the Foothills Medical Centre and a Professor in the Departments of Medicine, Critical Care Medicine, and Community Health Sciences. He has also served as Head of the Department of Community Health Sciences 2010 - 2013.

Having joined the University of Calgary in 1995, Dr. Doig's research interests include the validation of scoring systems for organ dysfunction and acute lung injury in the intensive care unit, outcome assessment in trauma, and ethics and outcome for organ donations. He is also a co-team leader for the Alberta Sepsis Network.

Dr. Doig is a highly respected expert on the care of the critically ill; he is a past board member of the Shock Trauma Air Rescue Society of Alberta (STARS), and was also the first full-time faculty member from the University of Calgary to be named President of the Alberta Medical Association.

Bonnie Henry, **MD, MPH, FRCPC**
Medical Director
Communicable Disease Prevention and Control Services and Public Health Emergency Management
Vancouver British Columbia

Dr. Bonnie Henry is currently the Medical Director, Communicable Disease Prevention and Control Services and Public Health Emergency Management with the British Columbia Centre for Disease Control and is Medical Director for the provincial Emerging and Vectorborne Diseases program as well as a provincial program for surveillance and control of healthcare associated infections; a position she started in February of 2005. Previously she was Associate Medical Officer of Health for Toronto Public Health, where she was responsible for the Emergency Services Unit and the Communicable Disease Liaison Unit.

She is a specialist in Public Health and Preventive Medicine and is Board Certified in Preventive Medicine in the US. She graduated from Dalhousie Medical School and completed a Masters in Public Health in San Diego, residency training in

preventive medicine at University of California, San Diego and in community medicine at University of Toronto.

More recently, Dr. Henry worked with the WHO/UNICEF Polio eradication program in Pakistan in 2000 and with the World Health Organisation to control the Ebola outbreak in Uganda in 2001. She joined Toronto Public Health in September 2001 and in 2003 was one of the leads in the response to the SARS outbreak in Toronto. She was on the executive of the Ontario SARS Scientific Advisory Committee and is an assistant professor at the University of British Columbia, Faculty of Medicine. Dr. Henry is the Chair of the Canadian Coalition for Immunization Awareness and Promotion and a member of the Canadian National Advisory Committee on Immunization and the National Infection Control Guidelines Steering Committee. She chaired the Canadian Public Health Measures Task Group and was a member of the Infection Control Expert Group and the Canadian Pandemic Coordinating Committee responding to pandemic H1N1 (2009) influenza. She is the author of “Soap and Water & Common Sense” a guide to staying healthy in a microbe filled world.

Allison McGeer, MD, FRCPC
Microbiologist, Infectious Disease Consultant
Department of Microbiology Mount Sinai Hospital
Toronto Ontario

Dr. McGeer is a Professor in the Departments of Laboratory Medicine and Pathobiology and Public Health Sciences at the University of Toronto. In addition to her position as director of infection control at Mount Sinai Hospital, Dr. McGeer is an infection control consultant to The Scarborough Hospital and The Baycrest Centre for Geriatric Care. She currently serves on Canada's National Advisory Committee on Immunization and on the infection control subcommittee of the Ontario Provincial Infectious Diseases Advisory Committee, and is a member of several local, provincial and national pandemic influenza committees. She is an expert reviewer for many research funding agencies including the Canadian Institute of Health Research and US National Institutes of Health, and has served on the editorial boards of several journals, including the Canadian Medical Association Journal, and Infection Control and Hospital Epidemiology.

Dr. McGeer completed an undergraduate and master's degree in biochemistry, then her medical degree at the University of Toronto. She specialized in internal medicine and infectious diseases followed by a fellowship in hospital epidemiology at Yale New Haven Hospital. She returned to Mount Sinai Hospital in 1989 as microbiologist and director of infection control. Her major research interests are in the prevention of infection in hospitals and nursing homes, and the use of surveillance to advance the prevention, diagnosis and treatment of infectious diseases. She is the principal investigator of the Toronto Invasive Bacterial Diseases Network and the Ontario Group A Streptococcal

Study, two collaborative surveillance networks studying the epidemiology of severe community-acquired infections.

James Talbot, MD, BSc, PhD FRCPC (Medical Microbiology)
Chief Medical Officer of Health
Alberta Health
Edmonton Alberta

Dr. James Talbot is the Chief Medical Officer of Health for Alberta. He was a Senior Provincial Medical Officer of Health for Alberta since September 2009 until his new appointment in 2012. Dr. Talbot has a B. Sc. degree, PhD in biochemistry and an M.D. from the University of Toronto. He is a Royal College of Physicians and Surgeons specialist in medical microbiology.

Dr. Talbot has worked in public health since 1991, with posts as the director of the Provincial Laboratory for Northern Alberta, Chief Medical Officer for Nunavut and Associate Medical Officer of Health for Capital Health and then Alberta Health Services.

Roger Thomas, MD, PhD, CCFP, MRCGP
Professor
Department of Family Medicine
Cumming School of Medicine, University of Calgary
Calgary Alberta

Dr. Thomas is a professor in the Department of Family Medicine at the University of Calgary and a member of the Institute for Public Health. Dr. Thomas was awarded a Lifetime Achievement award by The College of Family Physicians of Canada and is a trailblazer and leader in family medicine research.

Dr. Thomas completed an undergraduate degree in economics at the University of Cambridge, a Ph. D. (Sociology) at Yale University and an MD at McMaster University. He was an Assistant Professor of Sociology & Anthropology at the University of Guelph from 1970-1974, the Medical Officer of Burgeo Hospital, Newfoundland in 1979, the Medical Superintendent at Bonavista Hospital, Newfoundland from1979-1980 and the Medical Officer & Medical Superintendent of Mulanje Mission Hospital in Malaŵi from1980-1983. Dr. Thomas was also an Associate Professor of Family Medicine at East Carolina University, the University of Toronto and the University of Ottawa from 1983-1995. In addition Dr. Thomas was the Postgraduate Programme Director (Family Medicine) at the University of Ottawa from1993-1997 and a Professor of Family Medicine at the University of Ottawa from 1995-1998. He was also a Professor and Chair of Family Medicine at Memorial University of Newfoundland from 1998-2001.

Dr. Thomas's research currently includes systematic reviews assessing the effectiveness of influenza vaccine; and interventions in schools, families and with mentors to prevent children and adolescents from starting to smoke. He is the lead author on a recently published systematic review in the Cochrane Library based on the effectiveness of smoking prevention programs in schools in 25 different countries.

Michael Waite, LL. M, Called to the Bar of Alberta
Partner, Stones, Carbert & Waite LLP
Calgary Alberta

As a partner with Stones Carbert Waite LLP in Calgary Alberta, Michael maintains an active civil and commercial litigation practice. Michael began his legal career with Bennett Jones LLP. In 2003, Michael joined Stones Fontaine Carbert and became a partner in 2006. Michael maintains an active civil and commercial litigation practice. Michael is an accomplished advocate and is experienced advising and representing healthcare institutions, physicians and other health professionals with respect to a wide range of complex issues. Michael also advises employers and employees on various employment, disability and human rights issues. Michael also practices in the area of Estate Litigation. Michael also has experience advising and representing insurers and plaintiffs in a broad range of insurance claims. Michael's commercial litigation practice includes energy litigation, construction litigation, contractual disputes, directors' and officers' liability, shareholder disputes, and oppression actions.

In 2009, Michael was the recipient of the prestigious University of Calgary Faculty of Law Honourable W. K. Moore Award for outstanding commitment and contribution to the U of C Faculty of Law. In 2007, Michael was named one of Calgary's "Top 40 Under 40" by Calgary Inc. magazine. In 2006, Michael completed his Master of Laws (LL. M.) in Health Law and Policy at the University of Alberta. Michael is a member of the Board of Directors of Student Legal Assistance at the U of C Faculty of Law and was a member of the Board of the Calgary John Howard Society from 1999 to 2009 (Chair 2001-2008). Michael is also a member of the Board of Directors of the Calgary Medical Legal Society and is Co-Chair of the CBA Health Law Subsection (Alberta Branch – South). In 2010, Michael was elected to the National Executive of the Canadian Bar Association Health Law Section and in 2011 was elected Secretary-Treasurer. Michael has appeared before all levels of court in Alberta as well as the Federal Court of Canada.

Matthew Wynia, MD, MPH, FACP
Director
Institute for Ethics at the American Medical Association
Chicago, Illinois

Dr. Wynia is the Director of Patient and Physician Engagement for Improving Health Outcomes and the Director of the Institute for Ethics at the American Medical Association. He also holds a position as an Associate Professor in the Department of Medicine at the University of Chicago.

Dr. Matthew Wynia's research interests are wide-ranging and include physician responses to utilization review, differences in the codes of ethics of medical professional associations and healthcare organizations, professionalism, and performance measures for health care ethics. He is the Director for the Institute for Ethics at the AMA. His work has been published in the New England Journal of Medicine, JAMA, and other leading medical journals.

5.2 CONFERENCE FACILITATORS

William Ghali MD, MPH, FRCPC
Large Group Section Leader
Professor, Departments of Medicine & Community Health Sciences and Scientific Director, Institute for Public Health
Cumming School of Medicine, University of Calgary

Dr. William Ghali is the Scientific Director of the Institute for Public Health at the University of Calgary. He is also a Professor in the Departments of Medicine and Community Health Sciences at the University of Calgary, and a practicing physician specialized in Internal Medicine. He recently completed two terms as a Canada Research Chair in Health Services Research, and is funded as a Senior Health Scholar by the Alberta Innovates Health Solutions. Clinically, he is trained as a General Internist (MD ['90] - University of Calgary, FRCP(C) ['94] - Queen's University, Kingston, Ontario), and completed methodological training in health services research and epidemiology at the Boston University School of Public Health (MPH ['95]).

Dr. Ghali's research program is in the general area of health services research and his work focuses on interdisciplinary approaches to evaluating and improving health system performance to produce better patient outcomes and improved system efficiency. His work aims to enhance the use of health information to produced applicable knowledge on system performance and patient outcomes, and through knowledge translation, tangible health system improvements.

Dr. Ghali has held millions of dollars of peer-reviewed research funding from various agencies, and has published over 320 papers in peer-reviewed journals. He has received numerous awards, including a Canadian Top 40 Under 40 Award from the Caldwell Group (2006), the David Sackett Senior Investigator Award from the Canadian Society of Internal Medicine, and Distinguished Alumni Awards from both the University of Calgary's Faculty of Medicine (2009) and the Boston University School of Public Health (2001). He was also featured recently by the

Globe and Mail (April 2012) as the Canadian public health researcher with the highest publication H-index, a bibliometric measure of publication impact.

Juliet Guichon BA, BA (Hons Juris), MA, BCL, SJD
Conference Chair, Planning Committee Co-Chair, Report Senior Editor
Assistant Professor
Cumming School of Medicine
University of Calgary

Dr Guichon is an Assistant Professor in the Department of Community Health Sciences, University of Calgary. She was formerly Senior Research Associate, Office of Medical Bioethics, University of Calgary and has taught law and ethics at the University of Brussels (VUB).

Dr Guichon was born in Calgary to British Columbia and Alberta pioneering families. She is a graduate of Yale University (*cum laude* and with distinction in History) who was awarded the Commonwealth Scholarship and earned two law degrees at Oxford University. After being called to the Bar of Ontario, she successfully defended her doctoral dissertation at the University of Toronto Faculty of Law.

Her scholarly interests are at the intersection of medicine, law and ethics in issues of reproduction and reproductive technology, decision making in pediatrics and Child Welfare law, end of life decision making and advancing public health through access to vaccination. She has published in these areas in scholarly journals, and writes about them in the popular press to help inform the public. She was senior editor of a recent book focusing on the rights of the offspring of reproductive technology, and presents frequently at academic conferences and in hospital grand rounds.

Dr Guichon is recognized as an innovative thinker who focuses on the vulnerable and advocates for public health and is a frequent public commentator. A team builder, volunteer and founder of two child health advocacy groups, Juliet received the Canadian Public Health Association Public Health Hero award in May 2014 for her leadership of HPV Calgary and HPV Canada.

Ian Mitchell, **MB, ChB, MA, DCH, MRCP(UK), FRCPC.**
Conference Summarizer, Report Editor, Planning Committee Member
Professor of Paediatrics
Cumming School of Medicine, University of Calgary

Dr Mitchell is a Professor in the Department of Paediatrics, University of Calgary. He is also Director, Office of Health and Medical Education Scholarship, and Co-Chair Ethics teaching in MD Course, both in the Cumming School of Medicine, University of Calgary. Dr Mitchell is a respiratory specialist at the Alberta Children's

Hospital and Director of the Respiratory Home Care Clinic and the RSV Prevention Program.

He was formerly Director, Office of Medical Bioethics, University of Calgary (1999-2006) and President of Canadian Bioethics Society (2002-2004) and currently is a member of two national bioethics committees. His research interests in bioethics include issues arising in the long term care of technologically dependent children, adolescent consent, moral distress in paediatric trainees and end of life issues. In paediatrics he publishes on RSV infection and prevention, medical child abuse, tracheostomy care and asthma.
He has had many teaching awards and has received the Community Service Award, Faculty Association, University of Calgary (2011) and life time achievement awards in Paediatric Respirology (Vic Chernick Award) from the Canadian Thoracic Society(2012) and the Marsden Award in Medical Ethics, Canadian Medical Association (2013).

Margaret Russell BSc (Chemistry), MD, PhD (Epidemiology), FRCPC (Public Health & Preventive Medicine)
Conference Co-Chair, Conference Report Editor, Planning Committee Member
Associate Professor
Department of Community Health Sciences
Cumming School of Medicine, University of Calgary

Dr. Russell is an Associate Professor in the Department of Community Health Sciences, University of Calgary. She was an Alberta Medical Officer of Health (1995 – 2005); and was Director of the Foothills Hospital Travel Clinic for International & Occupational Health from 1989-2000. Her interests lie in the area of the prevention and control of vaccine-preventable diseases (particularly influenza); including principles of surveillance, the methodologies and measures relevant to prevention and control of these diseases, the evaluation of vaccination programs, and examination of strategies to prevent and control these diseases, including 'one health' approaches to influenza control. She has served on local and provincial pandemic influenza planning Committees. Dr. Russell is a member of the pan-Canadian Influenza Research Network and one of the founder-members of the Canadian Association for Immunization Research and Evaluation. She is co-author of the Lancet paper of the year for 2010 (Loeb M, Russell ML, Moss L. et al. Effect of Influenza Vaccination of Children on Infection Rates in Hutterite Communities: A Randomized Trial. JAMA 2010;303(10):943-50), an award given on the basis of "most likely to influence practice and research". Current research includes examination of approaches to the measurement of vaccine coverage, a cluster randomized trial comparing the efficacy of inactivated versus live attenuated influenza vaccine in providing indirect protection to those not targeted for vaccination, and aspects of school-based influenza vaccination programs.