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## DECISION-MAKING FOR THE RECEIPT OF INFLUENZA VACCINATION IN COMMUNITY-DWELLING OLDER ADULTS

Amanda Brittany Rae McIntyre

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**DECISION-MAKING FOR THE RECEIPT OF INFLUENZA VACCINATION IN  
COMMUNITY-DWELLING OLDER ADULTS**

(Spine title: Decision-Making for the Receipt of Influenza Vaccination)

(Thesis format: Monograph)

by

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Graduate Program in Health and Rehabilitation Sciences  
Health and Aging

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science

The School of Graduate and Postdoctoral Studies  
The University of Western Ontario  
London, Ontario, Canada

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**SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES**

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entitled:

**Decision-Making for the Receipt of Influenza Vaccination  
in Community-Dwelling Older Adults**

is accepted in partial fulfilment of the  
requirements for the degree of  
Master of Science

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## Abstract

The objective of this qualitative study was to explore the factors that influence community dwelling older adults in deciding to take or not take the seasonal influenza vaccine. Thirty-one receivers and six non-receivers (aged 67-91 years) living in assisted and unassisted urban residences participated in six focus groups in London, Ontario. Informed by van Manen's phenomenological approach, an inductive content analysis was performed to analyze the transcripts from focus groups. The major facilitators of taking the vaccine were the recommendation by and trust in health professionals, and a belief in vaccine efficacy. The major barriers were a fear of adverse reactions and the belief in resilience of an older adult. The decision-making process regarding seasonal influenza vaccination is now better understood in older adults and can easily be fit within the conceptual framework of the Health Belief Model.

**Keywords:** vaccine, influenza, elderly, older adult, decision, focus group

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# 1 INTRODUCTION

## 1.0 Background

Seasonal influenza, more commonly known as the 'flu', is an infection of the airways caused by various influenza viral strains (Butler-Jones, 2008). It is more than just an inconvenience; it can have severe, even fatal consequences. Approximately 15-20% of Canadians develop the infection per year (Statistics Canada, 2008). Despite being preventable, between 4,000 and 8,000 Canadians die every year from influenza and its complications (Canadian Coalition for Immunization Awareness and Promotion, 2009). The acute respiratory infection is caused by one of three viral types – A, B, or C. These are further divided into subtypes based on their chemical surface proteins (International Committee on Taxonomy of Viruses, 2006). Type A and type B viral strains are much more common than type C strains; hence, seasonal influenza vaccinations do not incorporate the type C viral strain. Currently, H1N1 and H3N2 (both type A viral strains) are circulating throughout the human population in the greatest frequency (World Health Organization [WHO], 2009). Symptoms begin after the virus incubates for two days inside lung epithelium. Influenza is characterized by sudden onset of fever, headache, cough, sore throat, running nose and overall malaise (Butler-Jones, 2008).

Although many of these symptoms are tiresome, they are manageable and most people recover within one week. The disease can be more harmful to high risk individuals in the population. "High risk individuals are those most susceptible to further complications and include children under the age of two,

adults over the age of 65 and people of any age with medical conditions such as asthma, chronic heart, lung or kidney disease, and weakened immune systems (WHO, 2009). Seasonal influenza can spread rapidly throughout the population by direct inhalation of viral droplets (viral particles contained by saliva) or by direct contact with viral particles. In most developed countries, anti-viral drugs may be distributed by a physician to combat infection; however, this is usually only done in special circumstances to prevent outbreaks in institutions and must be given within 24-48 hours of the onset of symptoms. Many of these are limited in their capacity to fight infection as viruses are capable of developing resistance by changing their genetic material. Anti-viral medications are not meant to replace taking the vaccine (Centers for Disease Control and Prevention, 2011). The World Health Organization (2009) and the Public Health Agency of Canada (2008) monitor viral circulation and antiviral susceptibility throughout the year. The influenza epidemic in Canada frequently peaks during the cool autumn and winter months resulting in many hospitalizations and deaths.

Hospitalizations and deaths have prime importance for the Canadian economy. Statistics Canada (2008) reported that between 70,000 and 75,000 hospitalization admissions in 2008 were for influenza complications alone. Jefferson, Wegmuller and Ward (1999) reported that employees lose up to 80% of their work hours within the first seven days of disease onset and that the total cost of influenza in Canada is approximately \$ 1 billion per year accounting for both productivity loss and health care cost.

Seasonal influenza is highly preventable. The most effective way to protect one from contracting the disease is to receive the seasonal influenza vaccination which contains an inactivated (killed) form of the virus. The inactivated virus within the vaccine elicits an immune response in the body. This allows the immune system to better defend the body should that same virus present itself again in the future (WHO, 2009). Vaccine manufacturing and delivering began in the 1950s and was widely accepted and administered to the Canadian public by the 1970s (Hilleman, 2000). Physicians recommend getting the vaccine before December in order to ensure the longest protective coverage and to avoid missing influenza season altogether (Centers for Disease Control and Prevention, 2011). The vaccine can prevent between 70% and 90% of influenza-specific illness if the correct viral strains are chosen for inclusion in the vaccine (WHO, 2009).

In industrialized countries, 90% of deaths caused by influenza occur in the elderly, a segment of the population belonging to a high risk group. Multiple studies have shown that the vaccine is highly effective in preventing severe influenza by up to 60% and death by influenza by up to 80%, specifically in older adults (Dean, Moffatt, Rosewell, Dwyer, Lindley, Booy, & MacIntyre, 2010; Fedson, Wajda, Nicol, Hammond, Kaiser, & Roos, 1993; Nichol, Margolis, Wuorenma & Von Sternberg, 1994). The vaccine is less effective (30-40%) in nursing home residents who are quite frail and have compromised immune systems. However, the vaccine is still beneficial to them in that it reduces severe influenza-related hospitalizations by up to 50-60% (Centers for Disease Control

and Prevention, 2011). Despite this strong evidence from research, on average, 35% of Canadian elderly individuals from this high risk group still fail to receive their annual vaccination (Statistics Canada, 2008). In London, Ontario, specifically, 76.3% of elderly individuals receive the seasonal influenza vaccine (Statistics Canada, 2009).

There is some risk associated with taking the seasonal influenza vaccine as side-effects have been reported. According to the Centers for Disease Control and Prevention (2011) side-effects may include soreness, redness, or swelling where the vaccine was given, a low grade fever, or body aches. Side-effects usually occur between one and two days after the vaccine has been given.

Certain rare conditions have been reported following immunization. Life-threatening allergic reactions are rare but may include breathing problems, hives, paleness, or weakness (Centers for Disease Control and Prevention, 2011).

Finally, an extremely rare condition called Guillain-Barre syndrome may develop which causes nerve damage and muscle weakness. Approximately one person per 100,000 develops this illness per year (Centers for Disease Control and Prevention, 2011). There is a national surveillance system in place in Canada for the reporting of adverse events attributable to the seasonal influenza vaccine.

The immune system is one of the first systems to decline as a person gets older. Older adults have a greater risk of developing infections with a reduced ability to fight off disease compared to individuals younger than 65 years.

Malnutrition and depression can exacerbate this decline in immunity (Ferrini & Ferrini, 2008). It is important to consider the lives of elders since the Canadian

population experiences yearly influenza epidemics. In Canada, it is recommended that all individuals over the age of 65 receive the seasonal influenza vaccine (National Advisory Committee on Immunization, 2010). The universal vaccination program, offered in Ontario since 2000, allows individuals to receive the vaccine free of charge in a variety of settings including doctors' offices, employer-sponsored clinics, public health units, local pharmacies, hospitals, long-term care homes, Family Health Teams, Community Health Centres, and Community Care Access Centres (National Post, 2006). According to the Institute for Clinical Evaluative Sciences [ICES] (2007), a national consensus conference on influenza in 1993 set a target for seasonal influenza vaccination coverage at 70% for adults aged 65 or older; this target was not fully met by 2005. The national target was raised again in 2005 to 80% (ICES, 2007). Despite this new target, vaccination rates for most high risk individuals still fall short of national targets (Kwong, Sambell, Johansen, Stukel, & Manuel, 2006). In 2008, only a moderate increase in compliance was found with 66.5% of the elderly Canadian population (aged 65 years and older) receiving the seasonal influenza vaccine (Statistics Canada, 2009a). Although the Canadian government is attempting to achieve higher compliance by increasing targets, Canadian public health researchers Kwong, Rosella and Johansen (2010) report that not enough individuals who are considered high risk are getting the shot. Given the rapidly aging Canadian population, current elderly vaccine coverage rates are a cause for concern. Peter Hotez, a George Washington University microbiologist and president of Sabin Vaccine Institute, argues that influenza



epidemics have the greatest effect on the poorest people in the country, many of whom are elderly (Mooney, 2009).

### 1.1 Theoretical Models

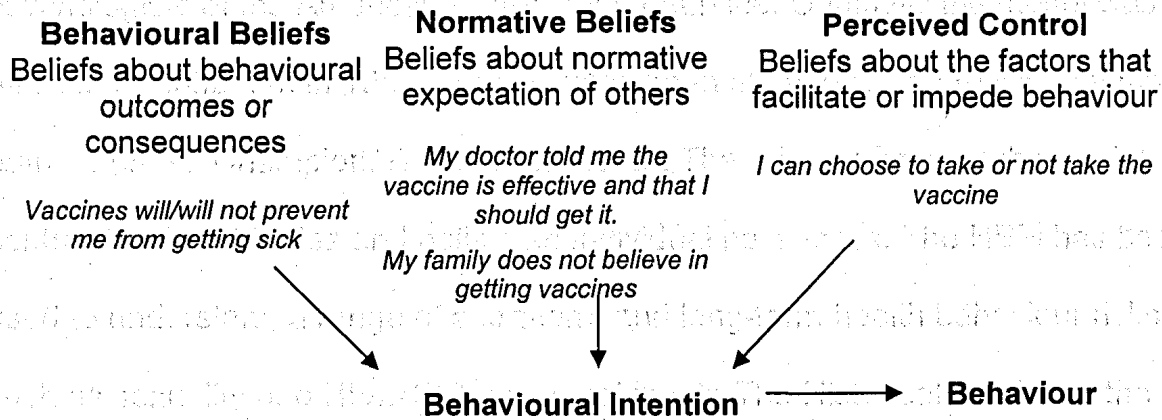
To determine which facilitators and barriers exist for elderly individuals when choosing to receive or not receive the influenza vaccination, the decision-making process must be understood. Most of the research to date has been conducted in Europe and Australia and is grounded in two pervasive theories: the Theory of Planned Behaviour (TPB), and the Health Belief Model (HBM).

Although there are variations of these two theories, TPB and HBM are very commonly used to understand the decision-making process for preventative health behaviours (Shumaker, Ockene, & Riekert, 2009). An additional theory which is less commonly used is Life Course Theory (LCT), which may also be used to study decision-making.

Ajzen and Fishbein (1980) developed the Theory of Planned Behaviour which seeks to understand how an individual's behaviour can be changed. The authors contend that since volitional behaviour is deliberate and planned, TPB can predict this behaviour which can then be modified. According to this theory, human action is directed by three constructs: (1) *Behaviour Beliefs* - beliefs about behavioural outcomes or consequences, (2) *Normative Beliefs* – beliefs about normative expectations of others, and (3) *Perceived Control* – beliefs about factors that facilitate or impede behaviour. These constructs are critical when designing programs which aim to change individuals' behaviour. Together these three constructs form a "behavioural intention." Ajzen and Fishbein (1980)

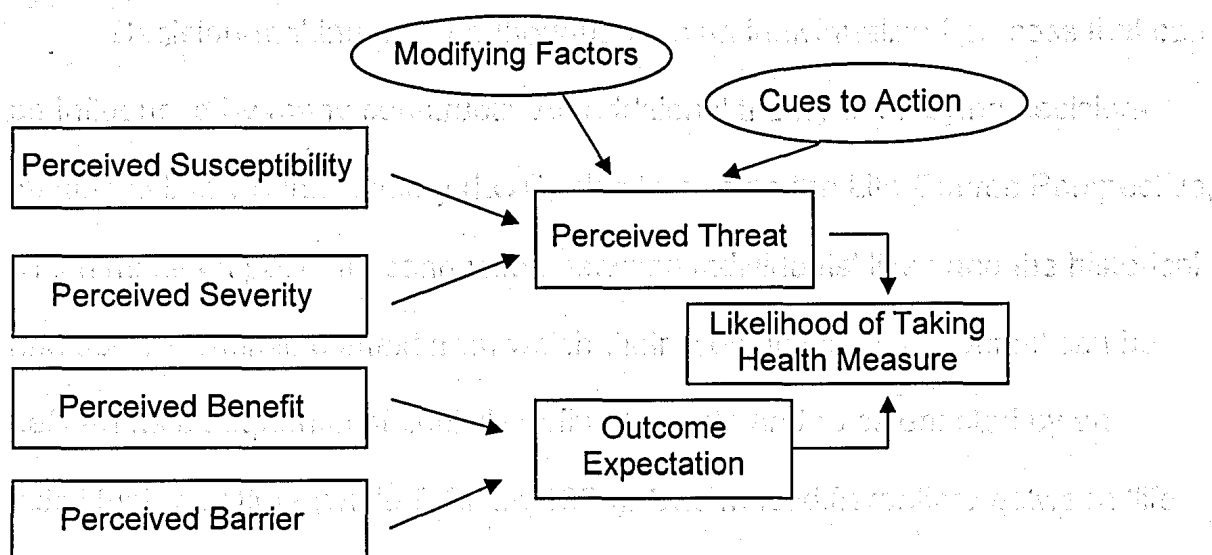
indicate that the more favorable the individual's attitude, and the greater the social pressure and perceived control, the stronger should be the person's intention to perform the behaviour in question. As an example, Figure 1-1 is a schematic representation of how this theory could explain the behaviour of an individual who may or may not obtain the seasonal influenza vaccination. The TPB is limited in that it does not take into consideration the influence of economics, though this might play a role in behaviour modification.

Figure 1-1. A schematic representation of the Theory of Planned Behavior for an individual who may or may not obtain the seasonal influenza vaccination.



**Figure 1-1. Conceptual framework for the Theory of Planned Behaviour using seasonal influenza vaccination as an example.**

The Health Belief Model was developed in the 1950s by social psychologists at the American Public Health Service. Originally the model was offered by Hoffbaum in 1958, but has since been expanded and revised by many authors (Janz, Champion, & Stretcher, 2002). The primary focus of the model centres on the attitudes and beliefs an individual possesses. The HBM has been used to understand a range of short-term and long-term health behaviour risks such as sexuality and HIV/AIDS, and smoking. In *The Historical Origins of the Health Belief Model* (1974), Rosenstock describes six constructs which provide the theoretical framework for the HBM: (1) *Perceived Susceptibility* relates to one's own opinion of contracting the illness; (2) *Perceived Severity* is one's opinion of how dangerous the illness and its consequences could be; (3) *Perceived Benefits* is one's opinion on the efficacy of advised action; (4) *Perceived Barriers* relates to one's opinion of the physical and psychological costs associated with the advised action; (5) *Cues To Action* are strategies used to promote the advised action (e.g., mass media, family or friend advice); and (6) *Modifying Factors* are intrinsic variables to the individual guiding their self-efficacy in seeking out the recommended health measure (e.g., socio-demographic variables, knowledge of disease). In combination, these six constructs form the individual's *Perceived Threat of Disease* which prepares an individual for action (Rosenstock, 1974). Figure 1-2 diagrams a schematic representation of the model.



**Figure 1-2. Conceptual framework for the Health Belief Model; adapted from Nutbeam and Harris (1998).**

According to Gilman and Lind (1990), the key to people's health change theory includes (a) socio-cultural and geographical locations; (b) type of bias; (c) capability; (d) value system; (e) human agency; and (f) how the past shapes the future. Studies of a state and geographical location, gender, health belief model could be important in the context of health events that occurred in their lifetime and also by the kind of geographical location, in which the person lives. Haines, Klemm, and Johnson (2000) assert that theory of lives can be broken down into two main parts. *Individual* is related to the psychological e.g., *Personal* level represents a control of health care, health primarily in health care, for example, the body body system. *Social* level refers to a collection of individuals grouped together because of the shared experience of being in a group or community, for example, living through the Second World War. The living or a group in the change can be used to describe the success of a particular health project. Variability related to the difference in perceptions among individuals from the

Decision-making may be thought of as an individualized process that can be influenced by many constructs. An additional theory in studying decision-making is Life Course Theory (LCT), also known as the Life Course Perspective, which makes a powerful connection between individuals' lives and the historical and socioeconomic context from which their lives unfold. 'Life course' can be defined as a sequence of socially defined events and roles enacted by an individual over time (Giele & Elder, 1998). One must differentiate between 'life course' and 'life cycle' with the former pertaining to a set of social events and the latter to biologically determined events.

According to Giele and Elder (1998), the key elements of Life Course Theory include (1) socio-historical and geographical location; (2) timing of lives; (3) variability; (4) linked lives; (5) human agency; and (6) how the past shapes the future. *Socio-historical and geographical location* identifies how an individual could be transformed by the unique social events that occurred in their lifetime and also by the distinct geographical disposition in which that person lives. Price, McKenry, and Murphy (2000) assert that timing of lives can be broken down into three constructs. *Individual time* relates to chronological age. *Generational time* represents a cohort of individuals based primarily on their age; for example, the baby boom generation. *Historical time* relates to a series of individuals grouped together because of the shared experience of some large social phenomena, for example, living through the Second World War. The timing of a discrete life change can increase or decrease the chance of a particular life trajectory. *Variability* relates to the difference in perspectives among individuals from the

same age cohort. Riley (1987) discredits the notion that *all* members of an age cohort share identical perspectives regarding particular social phenomena. Cohorts may have similar gender, class, or ethnicity characteristics but they are by no means homogenous. *Linked lives* maintains that individual lives are interconnected; the macro processes that occur in society have the opportunity to resonate between a network of shared relationships even if only indirectly. *Human agency* refers to the ability of an individual to make active, yet thoughtful and self-controlled decisions based on social structure (Clausen, 1991). Finally, *the past has the potential to affect the future*, and can be described as a domino effect. Earlier events in life can produce a chain of reactions leading to particular outcomes in the future. Life Course Theory may help understand one's decision-making process by the following example. Many older adults today are baby boomers and lived through periods of history when disease epidemics were common. These past historical experiences may have shaped or influenced their decision to receive a disease-preventative vaccine today.

The aim of this project was to analyze individual accounts of decision-making with regard to the receipt of the seasonal influenza vaccine. The Theory of Planned Behaviour, Health Belief Model, and Life Course Perspective were initially used to better understand the decision-making process.

## 1.2 Literature Review

To gain an understanding of what has been studied to date pertaining to decision-making and the seasonal flu vaccine in older adults, current literature was reviewed by searching through journal databases such as PubMed, Scopus,

Web of Science, The CINAHL Database, ProQuest Nursing Journals, PsychINFO, and Physical Education Index. Using keywords such as 'vaccine', 'influenza', 'elderly', 'senior', 'attitude' and 'knowledge', approximately 7,000 articles were returned. The criteria for being considered a "relevant" article included: (1) research on older persons (65+ years); (2) the topic of seasonal influenza or pneumococcal vaccines (the vaccine to prevent pneumonia); (3) the decision-making process regarding public health services; (4) attitudes, perceptions and knowledge; (5) written in the last 15 years; and (6) written in the English language. After a brief scan of the titles, articles were either kept or eliminated based on their relevancy. The abstracts of the remaining 250 articles were reviewed and irrelevant articles were removed. In total, 43 journals articles were reviewed that directly related to attitudes and dispositions of elders in regards to either seasonal influenza vaccine or the pneumococcal vaccine. International research on the decision-making process of older adults has been conducted using many methods; a summary of the most relevant findings for this study are presented here.

Researchers often categorize participants by demographic variables such as age, gender, ethnicity and education. Quantitative analysis often involves the examination of the effect of demographic variables on outcomes. Particular demographic variables have been shown to either increase or decrease the likelihood of vaccine uptake in elderly participants. In a mixed methods study conducted in England by Burns, Ring, and Carroll (2005) and an American study by Chi and Neuzil (2004), gender was not shown to be a predictor of vaccine



uptake. However, quantitative studies by Kamal, Madhavan, and Amonkar (2003), and Mangtani, Breeze, Stirling, Hanciles, Kovats, and Fletcher (2006) reported that more males received the influenza vaccine than females, according to a self-reported questionnaire. Using secondary analysis from the Canadian Study on Health and Aging, Andrew, McNeil, Merry, and Rockwood (2004) found that vaccine uptake was positively correlated with age (for those over the age of 65 years), upon completing a univariate and multivariate analysis. This can be at least partly explained by an individual's reduced immunity as one grows older. Also, it may be explained by the fact that as individuals grow very old, they are less likely to be making their own, independent decisions, for example, as in a nursing home. On the contrary, Evans and Watson (2003) found that among individuals over the age of 65 years, a positive predictor for vaccine uptake included a younger age. There seems to be great inconsistencies in the findings regarding how age and gender influence vaccine obtainment in older adults.

Using narrative interviews and postal questionnaires, some researchers found that living with other people, regardless if they are friends or family, and being married are major indicators for being vaccinated (Andrew et al., 2004; Burns et al., 2005; Evans, Prout, Prior, Tapper-Jones, & Butler, 2007; Santibanez et al., 2002). Similarly, Mangtani et al. (2006) found that community dwelling individuals, not living with others was a positive predictor for not receiving the vaccine. In two studies with community dwelling elders, the amount of knowledge an individual possessed regarding influenza and how the vaccine works was found to be a good indicator of vaccination receipt (Santibanez et al., 2002;

Sengupta, Corbie-Smith, Thrasher, & Strauss, 2004). Ridda, MacIntyre, and Lindley (2009) used open-ended interviews with hospitalized patients in Australia and found that non-receivers were more likely to be less knowledgeable and report inaccurate symptoms of influenza and false side effects of the vaccine. Andrew et al. (2004) found that the greater number of years of formal education that participants had achieved showed a positive correlation with vaccine uptake. A large-scale research study with 3,544 individuals, specifically targeting racial disparities in the United States of America, found that African Americans were two to three times less likely to receive the influenza vaccine compared to Caucasians (Lindley, Wortley, Winston, & Bardenheier, 2006). However, in another American study of 324 participants, there was no significant difference in vaccine uptake when results were stratified by race (Chi & Neuzil, 2004); thus further highlighting the variability in current literature. Postal and telephone questionnaires revealed that access issues such as a lack of transportation was not shown to be a significant barrier for older adults seeking the vaccine (Mangtani et al., 2006; Santibanez et al., 2002).

Numerous studies from America, Canada, Denmark and Britain have consistently demonstrated that older adults, both receivers and non-receivers, do not think that they are at risk for contracting seasonal influenza despite the research that suggests immune systems decline in function with age (Andrew et al., 2004; Evans et al., 2007; Mangtani et al., 2006; Nexøe, 1998; Santibanez et al., 2002). Using narrative interviews, Evans et al. (2007) found that participants believed that health had nothing to do with age. In another qualitative study using

interviews, Harris, Chin, Fiscella, and Humiston (2006) found that only non-receivers believed that vaccines were irrelevant to health. However, Andrew et al. (2004), and Evans and Watson (2003) found that their participants did believe that age had an effect on health. The findings from these studies reflect the seemingly contradictory trends among community-dwelling elders.

Some of the barriers that non-receivers reported include beliefs of harmful side-effects (Chi & Neuzil, 2004; Cornford & Morgan, 1999; Evans & Watson, 2003), inefficacy (Burns et al., 2005; Evans et al., 2007), and the notion that the vaccine itself would give you the disease (Harris et al., 2006; Mangtani et al., 2006; Ridda et al., 2009; Sengupta et al., 2004). Those who took the vaccine thought differently of the side-effects and believed they were manageable (Cornford & Morgan, 1999; Evans & Watson, 2003; Telford & Rogers, 2003). In a literature review on this topic, Ward and Draper (2008) reported that a recommendation from a health care worker or general practitioner (GP) was positively correlated with vaccine uptake. Family and media prompts were only moderately associated with vaccine uptake (Evans et al., 2007; Sengupta et al., 2004). Comparatively, family and media prompts were not at all associated with vaccine uptake in the study by Evans and Watson (2003).

Interestingly, studies from England (Burns et al., 2005; Telford & Rogers, 2003), America (Harris et al., 2006) and Australia (Ridda et al., 2009) revealed that government and medical mistrust was an important factor in seasonal influenza decision-making for both receivers and non-receivers. "Bad experiences" in both a historical and social context also contributed to why some

individuals chose not to receive the vaccine, although these topics were not elaborated on (Harris et al., 2006). As many of the studies demonstrate, several gaps and inconsistencies are obvious. This may be due to methodological issues including the sampling of participants with varying demographics variables such as age, ethnicity or living status (community-dwelling versus institutionalized). Additionally, contemporary research fails to allow group discussion and exchange of personal opinions, and experiences about decision-making for the receipt of the seasonal influenza vaccine, within a Canadian context. From a population-based perspective, improving vaccine uptake rates is critical in limiting the number of influenza outbreaks and cases per year. On an individual level, prior history, allergies, pain tolerance and other personal aspects will guide those in choosing whether or not they should receive the vaccine.

The purpose of this study was to understand the self-perceived influences on community-dwelling older adults in deciding to take or not take the seasonal influenza vaccine.

The research objectives of this study were to:

- Explore which facilitators influence decision-making on influenza vaccination in older adults;
- Explore which barriers influence decision-making on influenza vaccination in older adults;
- Attempt to understand how beliefs impact the decision-making in older adults related to the receipt of the influenza vaccine; and
- Attempt to understand in what way knowledge about influenza and the



## 2 METHODS

### 2.0 Research Design

A qualitative cross-sectional design was used with focus groups as the method of data collection. Qualitative methodology allowed individuals to freely express the array of influences that impacted their preventative health decisions. This study was informed by van Manen's theoretical approach for conducting phenomenological research. The author's philosophical viewpoint is set within a post-positivist paradigm whereby knowledge is based on human conjecture. Phenomenology was chosen to capture the essential meaning of the decision-making experience as it was lived. Phenomenology is not only a method, but also a philosophy. Dowling (2007) described how the philosophical viewpoints and methods used in phenomenology have changed over time from a traditional European approach originally discussed by Edmund Husserl, to the post-modern, American approach described by Max van Manen. Van Manen's approach is similar to Husserl's in that the writing of a phenomenon should be descriptive, but different because experiences should also be interpreted (van Manen, 1990). Van Manen uses the terms 'experience' and 'phenomena' interchangeably.

Traditionally, focus groups did not fit within the tenets of phenomenological research; however, in 1982 Spiegelberg described how group phenomenology, a process by which groups of 6-16 people interviewed together can be used in post-modern research. This process was incorporated in the current study. Ethical approval for this project was obtained from The University of Western Ontario Health Sciences Research Ethics Board (Appendix A).

## 2.1 Setting

Six focus groups were held at five residences in London, Ontario for the convenience of the participants. These residences included Maple Village for Seniors, 600 Talbot Street, Granite House, Masonville Manor and Windermere on the Mount. Directors of Care, Activity Managers or Building Managers facilitated access to study participants. Maple Village for Seniors and Granite House were home to residents requiring moderate levels of support. The condominium building 600 Talbot Street was home to individuals of all ages, and did not provide additional support to seniors living there. Masonville Manor and Windermere on the Mount were home to residents requiring low levels of support. Support services such as housekeeping and laundry services, health assessments, social programs and in-house dining were offered at all sites except for 600 Talbot Street. These four residences also had paid staff working on-site (e.g., Registered Nurses) and the older adults were considered community-dwelling but living with assistance, rather than living entirely independently. The four assisted living facilities ranged in price from \$1,400 to \$2,250 per month for basic accommodations which included access to some special amenities such as theatre rooms, exercise rooms, fireside parlours or swimming pools.

## 2.2 Participant Recruitment

Participants were recruited using two methods. First, posters were placed in common places such as hallways, activity rooms and laundry rooms at the aforementioned residences. Interested individuals were instructed to contact the

researcher by telephone. A participant package was given to participants the day of the focus group and included a participant contact sheet with the letter of information (Appendix B), a consent form (Appendix C), and a brief demographic questionnaire (Appendix D). The second method of recruitment involved planning meetings with the Director of Care, Activity Manager or Building Manager at the recruitment sites. These authorities acted as gatekeepers who informed older adults about the study. Again, participant packages were provided to those who expressed interest and came to the focus group. Participants who met the study inclusion criteria of living in the community without extensive assistance (i.e., requiring 24-hour care and supervision such as that offered at a nursing home), being over 65 years of age, having normal cognitive function and fluency in English, were invited to participate in focus group discussion.

### 2.3 Data Collection

Data were collected between August and October 2010, the first year after a large H1N1 influenza outbreak (December 2009) in Canada. Many of the participants who received the seasonal influenza vaccine in this study had also received the H1N1 vaccine in 2009, as indicated by self-report. It took additional effort to successfully keep data collection sessions focused on the seasonal influenza vaccine and not other vaccines such as the H1N1 vaccine, the polio vaccine, or the measles, mumps and rubella vaccine. Participants were reminded continuously that the topic was on seasonal influenza, not on any other illness.

Literature suggests that while surveys and questionnaires can provide a basic understanding of individual attitudes, qualitative techniques such as



interviewing or focus group discussion can allow the researcher to obtain rich contextual data (Flin, Burns, Mearns, Yule, & Robertson, 2006). Individuals who had either received or not received the influenza vaccine were mixed together in each focus group session, with the exception of focus group six which did not have any non-receivers. Focus groups lasted approximately 60 minutes and were digitally audio-recorded using a Sony mp3 IC digital audio recording device. The researcher prepared the room for participants, provided and set up refreshments, and moderated the discussion by adhering to the protocol. At the start of each session, the researcher welcomed the group and participants introduced themselves. A consent form (Appendix C) and demographic questionnaire (Appendix D) was completed by each participant independently. The demographic questionnaire reported on age, gender, marital status, income, living situation, and current status of influenza vaccination receipt. A brief overview of the topic was provided and participants were reminded to repeat their name before responding to a question or statement. The focus group protocol is provided in Appendix E; the creation of the focus group questions was guided by literature on the topic. In accordance with van Manen's phenomenological approach, participants were encouraged to focus on describing the experience of decision-making from the inside: the feelings associated with a specific event. Participants were also reminded to refrain from sharing any personal information learnt through the discussion. With ongoing data analysis, data saturation was reached after the sixth focus group. When no new themes emerged, focus groups were discontinued.

Two different assistants were available during focus groups; only one assistant was present at a time to help participants complete the demographic questionnaires. The assistants also took part in a method of member-checking whereby confirmation of common topics was done immediately following the completion of the focus group. The assistants made notes during the discussion and at the end summarized the common topics on the flipchart visible to all participants. The researcher concluded each focus group session by reviewing the summary of topics discussed by the participants and asking for further feedback.

#### 2.4 Data Analysis

Focus group sessions were transcribed verbatim by the researcher and organized using NVivo 8 software. The researcher and two senior researchers, in advisory roles, reviewed one transcript and independently created lists of codes describing experiences and personal meanings of the study participants. A draft of the coding scheme was then used by the researcher and one of the advisors to code an additional focus group transcript. The coding schemes were expanded and revised in both coding sessions until a consensus was reached. The researcher then independently coded the remaining focus group transcripts. The fully coded dataset was analyzed using inductive content analysis. Inductive content analysis is a process by which raw data is organized into themes based on valid inference and interpretation (Auster, 1956). Van Manen (1990, p. 79) stated that "phenomenological themes may be understood as the structures of experience," and described three approaches for researchers to uncover themes:

a) seek globally for the text's overall meaning, then b) seek for meaning in phrases or sentences that are captivating, and finally c) examine the text sentence by sentence. All three approaches were used in the current study while "keeping the question [of the meaning of phenomenon] open" (van Manen, 1990, p. 98); that is, the meaning of the experience of deciding whether to take or not take the seasonal influenza vaccine.

A number of strategies were used to ensure rigour throughout this study. The researcher used the 'Gold Standard' of parallel criteria for ensuring good, trustworthy qualitative work (Lincoln & Guba, 1985). The 'Gold Standard' is considered parallel in nature to criteria used to assess the quality of quantitative research. The four criteria include credibility, dependability, confirmability, and transferability.

By ensuring credibility, the research findings should represent an acceptable interpretation of the data, from the perspective of the participants. This can be achieved by member-checking and peer debriefing. To maintain credibility in this study, member checking was used to ensure that data obtained during focus groups was accurate and described the topic being studied. After each focus group session, the researcher and the assistant held debriefing sessions. During debriefing sessions the researcher and one of the assistants discussed the following questions:

1. What were the main themes or issues that struck you in this focus group?
2. What were you unable to get from this focus group?

3. Was there anything else that struck you as interesting or important in this focus group?

4. What new questions were raised here to pursue in future focus groups?

The discussion on the previous questions helped the researcher ensure that participants were being asked to specifically discuss their own personal decision-making process.

Dependability relates to the quality of data collection and how well a study could be repeated. In this study a focus group protocol was developed and followed closely to ensure dependability of data collection and analysis. Also, three individuals including the researcher and two experienced qualitative researchers participated in the coding process to ensure accuracy and quality. Finally, the details of the study procedure, including rich descriptions of participants, were recorded in length and are available to those who are interested in executing a similar study method.

Confirmability depicts how well findings are supported by data and not by researcher bias. To maintain acceptable confirmability, Lincoln and Guba (1995) suggest that the researcher engage in reflexive techniques during data collection and to have experts review research findings. Reflexivity is a process by which a qualitative researcher consciously engages in self-critique to ensure that his or her own thoughts and experiences did not influence aspects of a study (Koch and Harrington, 1998). The research assistant helped ensure that all of the discussion topics accurately captured the participants' perspective. The researcher was continually de-briefed by a supervisor to assure that the topics

generated emerged from data and not from personal bias. The researcher kept detailed reflective notes throughout each stage of the research process. Additionally, the two advisors independently analyzed transcripts, and then compared code drafts with the researcher to come to an agreement on the study findings. During the coding process the researcher returned to notes kept on that particular focus group session. This was done in an attempt to reduce memory bias and aid in reminding the researcher the details of that particular focus group. In addition, weekly meetings with the thesis supervisor were useful for discussing and reviewing research findings.

Finally, transferability relates to how well other individuals are able to transfer a study's findings to another context. In this study, the researcher did not attempt to make broad generalizations regarding the transferability of the research findings. Instead, rich, thick descriptions of the setting and participants were provided to allow others the opportunity to decide if these findings are able to transfer to other settings and participants. The future directions of the study's findings are elaborated on in the discussion section.

Participants in this study were recruited through a variety of methods including social media, personal networks, and direct recruitment. All participants were informed of the study's purpose and procedures, and their participation was voluntary. All participants provided informed consent before participating in the study. All data generated during the study will be kept confidential.

### 3 FINDINGS

This chapter presents findings from the study and consists of two sections. The first section describes the individuals that participated in the study and their associated demographic information. The second section outlines and describes the themes and codes that emerged from data analysis.

#### 3.0 Participants

Eleven men and 26 women (n=37) took part in six focus groups conducted at five residences in London, Ontario. The average age of participants was 82 years (SD = 6.6, Range 67-91). Participants' personal attributes from the demographic questionnaire (Appendix D) are listed in Table 3-1, suggesting that overall the study group was relatively homogenous particularly in terms of age and education. The average number of years of formal education was 14 years (SD = 2.6), which is on average two years of post-secondary training. Regarding vaccine receipt, six participants were identified as those not receiving the vaccine (further referred to as non-receivers), and 31 participants as those receiving the vaccine (further referred to as receivers). Missing data from the demographic questionnaire included 16 participants who did not disclose their primary source of income and two individuals who did not disclose their age. All recruited participants remained in the study until its completion.

**Table 3-1** Participant demographic information categorized by focus group designation

Focus Group	Gender		Age in Years	Education In Years	No. of Children	Source of Income	Vaccine Receipt	
	M	F	Mean (SD)	Mean (SD)	Mean (SD)		Yes (n)	No (n)
1 RH	2	4	84 (3.7)	12 (3.2)	1.0 (1.0)	Social Security & Pension	5	1
2 RH	2	2	79 (8.5)	12 (2.5)	3.0 (2.0)	Social Security & Pension	2	2
3 AB	0	8	81 (8.0)	15 (2.4)	3.0 (1.8)	Pension	7	1
4 RH	2	5	82 (7.0)	13 (2.2)	3.0 (1.0)	Pension	6	1
5 RH	1	4	86 (6.0)	14 (2.2)	3.0 (1.3)	Pension	4	1
6 RH	4	3	84 (4.4)	15 (2.0)	2.9 (3.0)	Pension	7	0
Mean	2	4	82 (6.6)	14 (2.6)	2.5 (2.0)	Pension	5.2	1.0

**Note:** RH = Retirement Home, AB = Apartment Building, M = Males, F = Females, SD = Standard Deviation.

and vulnerable, or if not, were a particular reason. It is interestingly, positive emotions as predicted and they would have taken the initiative to receive a flu vaccine. Parents really did, were strongly advised or simply were forced to do so.

### 3.1.3 Qualitative Findings

Parents had provided rich information about their experiences and thoughts related to their perceptions of their children and the reasons of the children's influenza vaccine. Content analysis produced 15 codes from which five by searching the main emerged (Table 3-2). The five themes include: *Interference*

Among receivers there were two sub-groups: active receivers and passive receivers. Active receivers represented the older adults who had taken the influenza vaccine regularly since it became available. Active receivers would generally seek out the vaccine by asking retirement home staff or their general practitioner when the vaccine would be available and where the clinics would be administered. Passive receivers represented the older adults who had taken the influenza vaccine when it was convenient but they did not actively seek it out. Passive receivers generally did not think about why they were taking the vaccine, they just simply took it. All thirty-one receivers indicated that they planned on continuing to receive the influenza vaccine in the future.

Among non-receivers there were also two sub-groups: active avoiders and passive avoiders. Active avoiders had never received the influenza vaccine. This was for a very specific reason, most frequently because of a past negative experience by a family member or friend. Passive avoiders, however, did not take the influenza vaccine because it was not convenient, had no desire, did not feel vulnerable, or did not have a particular reason at all. Interestingly, passive avoiders expressed that they would have taken the influenza vaccine if they became really sick, were strongly advised or simply were forced to do so.

### 3.1 Qualitative Findings

Participants provided rich information about their experiences and described factors that influenced their decision-making process on the seasonal influenza vaccine. Content analysis produced 15 codes from which five overarching themes emerged (Table 3-2). The five themes include: *Moderators*,



*Beliefs, Prevention, Accessibility, and Knowledge*. While the researcher attempted to categorize codes according to the most appropriate theme, it is possible that some codes could be placed in multiple themes. For example, the code *fear of adverse events* could be placed under theme *Moderators* or theme *Beliefs*. The researcher placed the codes in their current location as this framework worked well with the Health Belief Model. The following section will describe each theme with its respective codes and present quotes from focus group transcripts to support these codes.

**Table 3 -2**  
**Themes and respective codes which emerged from focus group transcripts**

Moderators	Beliefs	Prevention	Accessibility	Knowledge
General Practitioner	Choice	Health Behaviours	Cost	Flu Symptoms
Intimate Relationships	Risk Vaccine Efficacy	Protection	Location Transportation	Vaccine Attributes
Fear of Adverse Events			Wait-time Availability	

### 3.1.1 Theme One: Moderators

The three codes encompassed by the theme Moderators were: *general practitioners*, *intimate relationships*, and *fear of adverse events*. This theme was used to describe active influences on older adults. Active influences were those which acted directly on an individual.

#### **General Practitioners**

Overwhelming response from receivers indicated that general practitioners had the strongest influence on their decision to receive the vaccine. Receivers made comments such as, "if the doctor recommends it, I just take his or her word for it," or "the doctor recommended it and I figure they know more about it than I do," and "I just trust my doctor, when he said I needed it, I took it." Receivers expressed extensive trust in the health care system and the willingness to put the ownership of their health in their physicians' hands. A participant said "the doctor recommended [vaccine] and we have full confidence in our doctor's recommendation to follow his advice."

All but one non-receiver indicated that at some point in their lifetime a physician recommended an influenza vaccination. However, their general practitioners did not pressure them into getting the influenza vaccine. This was important to the non-receiver participants as they felt in control of their own decision and were not forced to take the vaccine. Half of the non-receivers mentioned that if, in the future, a doctor stressed the importance of the influenza vaccine, then they would probably reconsider their decision and take the vaccine to appease their physician.

None of the study's participants could remember their family doctor explaining what the vaccine contains and how it worked in the body. Although receivers did indicate that "the doctor marks [vaccines] off and keeps track of it [...] they always ask you when are you going to be here for the flu shot." Another participant mentioned that "[the doctor] puts a note on the door [...] that] it's time." Finally, a participant reported that "I've been getting a phone call from my doctor's office saying did you get a flu shot and please call us." Participants frequently discussed the proactive nature of their physicians and indicated that they often promoted the vaccine. For receivers, this was a strong facilitator during decision-making.

### **Intimate Relationships**

Intimate relationships functioned as both a facilitator and barrier for receipt of influenza vaccine, where spousal influence was stronger than influences by children or friends. One older lady said that "[...] my husband always got the flu shot so I figured I better get it too." An older man said, "I think I'll do it myself because well, if I don't, I'll get hell from her [my wife]." Another older man said, "whenever I was home my wife always says 'time for the flu shot.' I said 'do we have to'? And she said 'yes we have to'."

On the other hand, the vast majority of the older adults' children reportedly did not advise their older parents to get the influenza vaccine. Only one participant said, "I've had two kids who are in the medical field and they've always reminded us." The older adults said that they were the ones who advised their adult children (if they had any) to take the vaccine, although it was stressed

that their children made their own decisions regardless of what the parents had advised.

When asked if participants reminded their friends to get the influenza vaccine, one individual said "nope, none of my friends ever sit and talk about it." However, one participant said that, "if we're all sitting around here and the person next to me is coughing their head off, you know, I think right then [...] oh geez maybe I'm going to get what she has, the flu I'm going to get," and then would be reminded to get the influenza vaccine. Similarly, one participant became a receiver only after she arrived at the retirement home because she thought she was more vulnerable to transmission as a result of living in close quarters among others. Although the older adults may not have directly spoken to one another about the influenza vaccine or the influenza illness, other older adults' presence in the building facilitated some participants' decision to take the vaccine.

The influence of friends acted as a barrier to receiving the vaccine among non-receivers. One lady said, "my friends got so sick, I didn't want any part of the vaccine." And another older man said, "the guy [friend] who took it said he was stuck taking [the vaccine] every year, now this year he's taking [the vaccine], he said better stay away. That was his advice to me." Apparently this friend had informed the participant that if you take the vaccine once, you must continue taking it ever year. Although this information is incorrect, the participant did not want to take the vaccine every year because he thought it would be a hassle.

### **Fear of Adverse Events**

Adverse events were described by participants as side-effects or symptoms that should not normally occur after receiving a vaccine. Nearly all of the study's participants had heard of others (e.g., friends, family, neighbours, etc.) who had experienced adverse events which were attributed to the influenza vaccine. These experiences ranged from mild (e.g., sore arm) to severe (e.g., infection, paralysis). However, only four receivers reported that they had personally experienced an adverse event post-receipt, which did not prevent them from receiving the influenza vaccine again in consecutive years.

When asked if participants feared the possibility of experiencing a post-receipt reaction, non-receivers were considerably more fearful when compared to receivers. Only one receiver expressed her fear of experiencing a fatal adverse event with a subsequent loss of control over the cause of her death. She said:

I think that's a real problem in not knowing for sure whether you're going to be dying of natural causes or gee if I get this flu shot, I may shuffle off with it [...] you may not be ready to plan your funeral yet.

Half of the non-receivers indicated that adverse events were the primary reason that they did not take the influenza vaccine. One fearful non-receiver said:

That's the reason I don't take it. My adult children have had reactions both times, you know both of them each time, [daughters] have had the flu shot. I don't want to get sick from someone giving me a needle.

A second non-receiver indicated that he did not take the vaccine because he believed he would have to take it every single year afterward. A third non-receiver said, "I have had friends who have taken it and been very, very sick, so

that turned me right off." One participant agreed and responded, "after they got the shot, the ingredients that were in the shot made them sick, that's what I think." Another participant agreed and shared this story:

I had a neighbour who had a terrible side-effect several years ago. She was 90ish and she was paralyzed for about 24 hours and they were really concerned. She came out of it, she was fine but her doctors told her never again to take it, the vaccine.

Receivers indicated that the possibility of an adverse event was a risk that they were willing to take when they chose to have the vaccine. One receiver said, "it didn't bother me, now if it bothered me I wouldn't get it." The receivers indicated that adverse events were not that serious. When asked what kind of mild symptoms they had experienced, one participant said, "a sore arm, a little inflamed that's all." The fear of adverse events was a barrier for non-receivers only.

### 3.1.2 Theme Two: Beliefs

The three codes encompassed by the theme beliefs were: *choice*, *risk*, and *vaccine efficacy*. This theme described how participants' beliefs about seasonal influenza and the associated vaccine related to their decision to receive or not receive.

#### Choice

Participants provided insight into their perceptions of the freedom they had in choosing to take or not take the influenza vaccine. About half of the individuals

in this study verbally expressed their belief that they had the freedom to choose. A non-receiver said, “[doctors will] suggest what you can and can’t do but it’s entirely up to the person themselves whether they get it.” Other participants said, “yeah it’s a personal decision,” “it’s your own decision whether you take it,” and “It was entirely my own thought, I think.”

Four individuals reported that their original decision may not have been their choice, or that their decision was strongly influenced. One participant said, “I started taking them when the government started asking you to take flu shots.” Subsequent influenza vaccinations were the result of continued prompting from a general practitioner, or a spouse. One lady said, “well, as a rule, when my husband was there [at the physician’s office] you had to take [vaccine]... it was not a question if you wanted it, if he was having it, you were having it.” Other participants did not know or did not express if the original decision to receive the influenza vaccine was made for them. Participants did not report that residing in an assisted living facility removed any control over their choice to receive or not receive the influenza vaccine.

Interestingly, three receivers indicated that they were health professionals before they retired. One participant said that being employed as a nurse and being pressured to take the vaccine during employment had a strong influence on her decision to continue to receive the influenza vaccine in later years; the other two receivers had similar narratives.

## **Risk**



Risk was a code used to describe how vulnerable participants believed they were in contracting seasonal influenza. All of the study participants agreed that older adults are more at risk for contracting influenza. One gentleman said, "because of our age, our immune systems are lower and if you catch a cold, before you know it you're in the hospital, you got pneumonia." Other participants agreed and reported that, "older seniors with weakened conditions," and "the elderly" are more at risk. All participants indicated that pregnant women, teachers, healthcare workers, children and individuals with immune-compromised health were also more subject to contracting influenza.

However, participants believed that an individual's risk of contracting influenza was inherent in nature and that every person is unique, therefore, they might be more or less vulnerable than others. For example, seven receivers believed that they were at a higher risk of contracting influenza and this belief facilitated them in taking the vaccine. This high risk was due to their tendency to catch other illnesses such as pneumonia and bronchitis. This perceived vulnerability heavily influenced their decision to receive the vaccine. One receiver said, "I'm subject to colds. I've had rheumatic fever [...] so consequently my [immune] system is quite low." Another participant said, "I just felt it was the proper thing to do because I was prone to pneumonia too." The other receivers indicated that even though they were not prone to getting sick or inherently vulnerable, they still received the influenza vaccine as a preventative measure to avoid getting ill. One participant exclaimed: "I've been sick with the flu at least once and I don't want it to happen again, I take the flu shots.

Two individuals were concerned about their risk not because they were vulnerable but for other reasons. First, a gentleman indicated that he took the influenza vaccine as an adult because he did not want to risk missing work as he was the owner of a local business:

Seems to me that when I first got the flu shot I was running my own business and I was terrified of not being there to take care of it because of illness so I wanted to take every precaution possible.

Second, an elderly lady, which only started taking the influenza vaccine when she came to the retirement home, said that she was "more at risk in a way because we live in a community, rather than being a couple in a home."

Interestingly, all six non-receivers indicated that they were not in need of the vaccine because they were not vulnerable and were not at risk of contracting the disease. One non-receiver said, "so far I'm okay, I never get any flu, I never get [influenza]." A third of the non-receivers reported they would only get the influenza vaccine after they had actually gotten sick and with a doctor's persistent recommendation. This perceived resilience of an older adult was a powerful influence for non-receivers to continue not taking the vaccination.

### **Vaccine Efficacy**

Participants were asked if they believed the vaccine was effective in preventing influenza. All 37 participants indicated that they did not know for sure that the vaccine was effective but that they "believ[ed] in it" despite that "some people get the flu regardless whether they have had [vaccine] or not." All 31 receivers agreed that because they had been taking the vaccine for decades,

and had not gotten sick, their experience was all the proof that they needed. One participant said, "I do believe in it, the flu shot, my wife does and she has never had the flu." When asked if the vaccine works as well as authorities report, one man said, "I have no reason to think it doesn't." Another participant agreed and said, "Well I'll tell you it's advertised so much how good it is so how can you ever pick it apart and say it's not good." The belief in vaccine efficacy was extremely persuasive and facilitated receivers in the decision-making process. One individual attributed this belief in vaccine efficacy to her belief and trust in health science. She said, "I have great respect for science and I think that a lot of work as been done for [vaccine], and we are the ones that benefit from that work." Other participants said things such as, "I think it's a good deterrent, I really feel it's a good thing to do," "I think it works," "I think it protects you," and "I think it works, I think it works extremely well. I think it does, it must." This belief and trust in health science is similar to participants' belief and trust in their general practitioners' capabilities, and more largely, the healthcare system.

### 3.1.3 Theme Three: Prevention

The two codes encompassed by the theme prevention were: *health behaviours*, and *protection*. This theme captured discussion around the role of the vaccine as part of a larger health plan, both individually and systemically.

#### Health Behaviours

Participants were asked to describe how they attempted to remain healthy with a compromised immune system. They discussed how they remained healthy in later life. Potential similarities and differences in health behaviours existed between individuals and they felt they could be the part of their

between receivers and non-receivers. All of the receivers said that taking the influenza vaccine was just a part of the way they tried to stay healthy. One participant said, "I think it's just something you do as part of your health, just like you try to eat properly," and another said, "for me it's a matter of health practice to do it. As [much] as it is going every six months and getting my teeth checked." Receivers reported that they used other strategies to prevent contracting influenza such as washing their hands, avoiding sick people, staying in their room when they were sick, taking vitamins, exercising, resting, having tissues on hand, and eating and drinking well. One gentleman said, "I think if you have the right diet and stuff, take some vitamins, that you can fight the flu or cold much better." Wanting to be healthy facilitated those in deciding to receive the vaccine.

Only a third of non-receivers specifically reported using preventative health behaviours such as those listed above. One non-receiver said, "I think you need lots of sleep, lots of sleep [...] and use your elbow [for sneezing]." It appears that this non-receiver relies on her body's natural defense system to fight off illnesses. Another lady said that when she felt ill in any way, she would take castor oil.

### **Protection**

For some of the study's participants, their primary reason for receiving the vaccine was for the protection of others. Many receivers reported that they took the influenza vaccine because they wanted to protect their spouse, or "[those] with a compromised illness or who is elderly." Two receivers had spouses who were ill with co-morbid conditions and they felt they could better protect their

spouse's health by getting vaccinated. One lady said, "my husband wasn't well and he would have a fit, if I didn't get the flu shot then I might give him the flu." Another lady reported,

When I started [receiving], he [doctor] recommended me taking it way back when because my husband had weak lungs and was prone to having pneumonia, and this way if I took [the vaccine] he figured my husband would be protected more.

One participant thought that "if nobody took shots of any kind [...] diseases would run rampant." Another participant agreed and said, "I think we should take them [vaccine] so that we can hold them [disease] down." Protecting others from contacting influenza was a facilitator for some participants to take the vaccine.

#### 3.1.4 Theme Four: Accessibility

The five codes encompassed by the theme accessibility were: *cost*, *location*, *transportation*, *wait-time* and *availability*. This theme was used to describe the factors affecting the older adults' decision either prior to vaccination or during vaccination.

**Cost** Participants reported that they were grateful for Canada's current universal healthcare system as many participants had to pay for medical services in the past. Receivers thought that our hassle-free healthcare system was convenient because they could just show up, receive the vaccine and not be billed at a later date. One older man said:

The other thing is it's free. Alright, it's not really free, we pay for it in our taxes, but you don't go to a doctor and he gives you the injection and gives you a bill for 65 bucks. You just go, give him your OHIP card and that's it.

Free influenza vaccinations were also important because receivers believed that in the long run it saved the government money for management of influenza among the elderly. Non-receivers indicated that free vaccinations did not influence them in any way to get the vaccine.

When asked if they would or could pay for the vaccine if it was not free, participants expressed two different opinions. A third of receivers said that although they would not object to a small fee such as \$10, they would have to reconsider their decision if the cost was much more than that. When asked if cost played a part in participants' decision, one participant said, "it certainly does in mine," and another participant said, "for some people, it's kind of nice that it's free." Elaborating on the topic, participants were asked if it was helpful that the vaccine was free. One participant said, "oh yeah, oh definitely." Another third of receivers said that cost was not a factor at all and that they would pay for the vaccine regardless of how much the fee was. One individual said that "there would be some people who couldn't afford it." Another individual said that "it depends on what price you put on your health." For some receivers, cost was a facilitator in their decision to receive, whereas for other receivers, cost was not. There were no differences in opinions from individuals that paid more or less for their monthly accommodations.

## Location

All of the receivers agreed that regardless of where the influenza vaccine was offered, it was every person's responsibility to go out and get it. However, they all appreciated the vaccine being offered in convenient locations that reduced standing and waiting, or costs associated with traveling. Some of the convenient locations that were mentioned included retirement homes, hospitals, doctors' offices, health clinics, schools, malls, and churches. One individual said, "I've gotten to the point where any travel is just too stressful for me." Another participant said, "the older you get, you don't want to stand and wait and wait [...] it's nice that it's coming into these senior homes." All of the receivers that could receive their vaccine at the residence indicated that this was a facilitator in their decision. Participants reported, "I do think it's nicer if you don't have to [go somewhere], I'm not a person who likes to stand and wait, so it's nicer when they come to you," and "it's right there [in the retirement home], it's much easier." An older man commended his residence:

It's also very convenient if you live here and you use the doctor here and as we're having clinic here just get dressed and go down and have it. That makes it very convenient. You don't have to go to some hospital somewhere or go to some clinic elsewhere.

Active receivers preferred to receive the influenza vaccine at their doctor's office whereas passive receivers did not seem to mind where they received it.

## Transportation

To get to the location where influenza vaccinations were being administered, participants reported taking their personal vehicle, public transit, a taxi, a personal driver, family or friends, a retirement home transportation service (e.g., shuttle van) or walking. Individuals from focus group (FG) #1, FG #2, FG #4 and FG #5 did not have transportation issues for two reasons. First, vaccination clinics were held on-site at their residence and second, there was a van or bus available to transport residents to their doctor's office. Conversely, individuals from FG #3 and FG #6 were responsible for finding their own way to their physicians' office to receive the flu shot. These individuals reported driving, using para-transit or public transit to get to their doctor's office. Despite the availability of a variety of transportation modes in the city of London, four seniors from FG #6 indicated that they had to travel across town to get to their doctors' offices. When participants were asked what made it easy to get the vaccine, one participant said, "having your own car." Others agreed and said, "yes," and "that's a big factor." Participants reported that transportation was not an issue in receiving because there was a system in place. However, they said that if this system wasn't in place to help them get around the city, then a lack of transportation might seriously change their decision to take it or not.

### **Wait-time**

Wait-time was considered to be the amount of time an individual had to wait in line at the vaccine administration location before they received their shot. For some participants, the amount of time they had to wait to receive the vaccine was a barrier. Four participants reported that at one time they had waited several



hours at a health clinic and school to receive the influenza vaccine; two of these individuals were passive receivers and two individuals were active receivers. The one passive receiver indicated that "by the time you get up there to get the needle you're more [or] less just discouraged." Similarly, an active receiver said "I had no trouble at the health unit, by the time [I arrived] the crowds had died down, I guess" [sarcasm]. An older man was particularly upset when he recalled:

Well generally you wait and wait, my wife and I used to go way out, we lived in [residence] and generally there were a couple hundred people in a line up. By the time you got through, by the time you sat, after you had to sit for I think 20 minutes or something, well the whole day is wasted.

Three individuals were upset that the flu clinics held at their retirement home "were open to outsiders" (i.e., general public) as this increased their wait-time. Some receivers indicated that they had not experienced wait-times because they received their influenza vaccine at their physician's office. One participant said, "you get there [the clinic] early and you don't spend the whole day waiting. I think that's probably important to seniors."

### **Availability**

The time of year appeared to cue and remind participants that the influenza season was coming. A third of receivers said that they make sure to get their influenza vaccine by late October or early November to avoid any problems that might occur in January or February, for example, bad weather or vaccine shortages. Two receivers even marked influenza vaccine clinic dates in their calendars when this information became available.

Two participants were grateful that they lived in Canada and had access to the influenza vaccine. A participant said "we're lucky to be living in this country [...] not the United States." At the time of data collection, the United States of America did not have universal healthcare and individuals wishing to receive the influenza vaccine would have to pay for it out of pocket. An older man said:

When I [was] in Canada I received it but a lot of countries didn't have it.

My job was around the world so I didn't have it [often]. In England we had it but it was, I don't know, well a hit or miss. If you happened to be in that

area you got it. If you weren't, well you didn't.

One participant lived in Britain until he was a senior and reported the influenza vaccine was unavailable there during his middle to late adulthood. Living in Canada and having access to reliable, annual influenza vaccinations was a facilitator for some participants.

All but one receiver indicated that they could get the influenza vaccine at any time once the flu season began. Another receiver said that she receives her vaccine as soon as possible so as to avoid the possibility of her physician running out later on in the season. Participants were aware that in previous years, some physicians had run out of the vaccine towards the end of the influenza season. At times, during all of the focus group sessions, participants became confused as to whether vaccine unavailability came from shortages of seasonal influenza vaccine or the H1N1 vaccine. One receiver said that her physician did not have the refrigeration capacity in the office to hold large amounts of the vaccine and therefore he did not administer the vaccine to his

patients. This individual mentioned that “[doctor] only had a little bar fridge to put [vaccine] in.” It was unknown whether this individual meant the doctor was unable to hold influenza vaccine or H1N1 vaccine in the bar fridge.

### 3.1.5 Theme Five: Knowledge

The two codes encompassed by the theme knowledge were: *flu symptoms*, and *vaccine attributes*. This theme described the knowledge older adults had regarding seasonal influenza and the associated vaccine.

#### Flu Symptoms

Participants were asked to describe what they knew about the seasonal influenza regarding its symptoms, severity and duration. Although the participants could correctly identify some key symptoms of the disease such as fever, headache, cough, sore throat, and running nose, many could not tell the difference between a cold and influenza, or define influenza-specific symptoms. One older lady said, “you’re sick just like a cold or something like that, I’m not sure myself, I think it’s more like a heavy cold maybe.” Other individuals also incorrectly concluded that the seasonal influenza was characteristic of a heavy cold. Three quarters of all the participants said that they had never personally experienced influenza. This was a surprising finding given the contagious manner of influenza viruses. Both receivers and non-receivers were aware that influenza is a serious illness and can be fatal in some circumstances. The participants who had experienced influenza described it as “terrible! If you really get a good dose of it you’ll be in bed for a week or more, violently ill.” Other

participants said, "with a real flu you ache, I did. You feel your bones are aching and you're sick to your stomach," "well if you had it, it's not fun believe me," and "three days of hell." When asked how long the illness lasted, one individual said that influenza "just seemed to have to wear off." Overall, all participants had limited knowledge of seasonal influenza. The amount of influenza knowledge a participant had was unrelated to their identity as a receiver or non-receiver and in this study influenza knowledge was not an element in their decision-making process.

### **Vaccine Attributes**

The study's participants knew little more about the seasonal influenza vaccine than the seasonal influenza illness. When asked to describe what was in a flu shot, six individuals correctly reported that the vaccine contained multiple virus strains that were most prevalent from the year before. One participant said, "the flu shot vaccine is what we had last year. The kind of viruses that were available last year so in actual, the vaccine we have this year is virtually a year behind, what we're getting." Only one of these individuals worked as an allied health professional before retirement. Another participant said:

Now let's get a little bit deeper into [...] what is a flu shot? I understand that if you're trying to get down something to kill something, to help some, actually what they do is put that disease into your system. Now I don't [know] whether that's true or not but there are different things you get and one disease kills the other, so to speak.

Participants could not agree on whether the viral strains were alive (active)

or dead (inactive). Only four out of 37 individuals were able to correctly explain how the vaccine worked inside their body. One participant thought that "the flu shot contains a little bit of the flu strain and you're injected with it. Your body will fight that little strain off and you'll be prepared if you're infected with the regular flu, you'll be ready and prepared." Some participants described incorrect ways that the vaccine worked such as: the vaccine contained synthesized viruses, the vaccine was an antibody, and the vaccine was a "mild form" of the flu. These individuals justified post-vaccine influenza symptoms as a result of these incorrect theories.

Despite that, some participants had vaccine information on adverse events, method of delivery, vaccine efficacy or makeup, nearly one quarter of all participants had no vaccine knowledge at all. Some participants said, "I really don't know anything about it other than it helps you from the flu," "I don't understand the flu shot, I don't know how they make it," and "I have no idea." Overall, all participants had limited knowledge of the seasonal influenza vaccine. The quantity and correctness of vaccine knowledge that a participant had attained was unrelated to their identity as a receiver or non-receiver and did not contribute to their decision-making process.

In summary, the most prominent factors which facilitated individuals receiving the vaccine were the recommendation by and trust in the health care system, and a belief in vaccine efficacy. The most prominent factors which hindered individuals from receiving the vaccine was the fear of adverse events and a belief in resilience as an older adult. In the next chapter these findings will



## 4 DISCUSSION

The discussion section will: present the major influences on older adults in deciding to take or not take the seasonal influenza vaccine, compare findings of this study to previous work on the subject, and finally, discuss the implications of the findings on subsequent theories of decision-making.

### 4.0 Summary of Findings

The findings of the study show that a multitude of factors contribute to an older adult's decision to either receive or not receive the seasonal influenza vaccine. In this study, older adults lived alone or with a partner in an apartment with or without some assistance. Each participant self-identified as either a receiver or non-receiver. Receivers indicated that general practitioners had the strongest influence on their decision to receive the vaccine and expressed extensive trust in the health care system and the willingness to put the ownership of their health in their physicians' hands. Receivers were considerably less fearful of experiencing a post-receipt adverse event when compared to non-receivers. Three out of six non-receivers indicated that the potential for adverse events was the primary reason that they did not take the influenza vaccine. The belief in positive vaccine efficacy, without knowing the evidence, was also persuasive for receivers. While most receivers believed they were at risk for contracting influenza because of their age, all of the non-receivers did not think that they were at risk for transmission. The non-receivers reported feeling resilient and not part of a vulnerable population; however, this could have just been strategy to justify their decision. Regardless, this perceived resilience was a powerful

influence for non-receivers to continue not taking the influenza vaccine. Both receivers and non-receivers had a lack of knowledge regarding influenza-specific symptoms and the vaccine, which also did not influence their decision. Intimate relationships between spouses, or parents and children, were all less influential. However, non-receivers reported that hearing about their friends' adverse experiences with the influenza vaccine side-effects played a part in their decision-making process.

#### 4.1 Comparison with Existing Literature

This study did not attempt to find a relationship between gender, age, level of co-morbidity, number of years of formal education, and the receipt of the seasonal influenza vaccine. Although 70% of all participants were female, this gender overrepresentation parallels the Canadian older adult population. In 2010, 59% of individuals between 80 and 85 years were female (Statistics Canada, 2009b). Research by Burns et al. (2005), and Chi and Neuzil (2004) did not show that gender was a predictor of vaccine uptake. From 1996 to 2007, Statistics Canada (2008) reported that men and women had fairly similar vaccine uptake rates. Uptake in men had increased from 47% in 1996 to approximately 63% in 2007. Similarly, uptake in women had increased from 49% in 1996 to 66% in 2007 (Statistics Canada, 2008). Promoting the influenza vaccine to one gender or another most probably does not influence uptake overall.

The most influential decision-making factor for receivers in this study was the recommendation by a general practitioner. Many other studies including Burns et al. (2005), Chi and Neuzil (2004), Evans and Watson (2003), Nexoe



(1998), Sengupta et al. (2004), and Ward and Draper (2008) reported similar findings. A third of the non-receivers in this study, and the non-receivers in a study by Ridda et al. (2009) reported that they would only take the vaccine if they were strongly advised by their physician to do so. This suggests the crucial influence of GP prompts in the decision-making process. The patient-physician relationship is built on trust, respect and knowledge. The stronger the relationship, the more likely a patient would be willing to take a physician's advice on all health aspects including preventative health measures (Goldring, Taylor, Kemeny, & Anton, 2002). The participants in this study reported that they were not strongly influenced by other health professionals such as registered nurses, practical nurses or physiotherapists. Similarly, Evans et al. (2007) found that registered nurses had only a small influence when prompting individuals to take the vaccine. The lack of influence may be due to the fact that vaccine uptake rates by health professionals are quite poor in Canada (42% in Toronto, Ontario institutional settings) and thus they may not want to promote the vaccine (Medical Officer of Health, 2009). An explanation for this may be provided by an American study that reported that older adults trusted physicians and pharmacists more than nurses, friends, family or the internet (Donohue, Huskamp, Wilson, & Weissman, 2009).

In this study, both receivers and non-receivers believed the vaccine was effective. Evans et al. (2007) found that a belief in vaccine efficacy was closely related with those receiving the vaccine. However, Burns et al. (2005) and Evans and Watson (2003) found that non-receivers believed that the vaccine was

ineffective and was a primary reason for refusal. Although non-receivers in this study believed the vaccine was effective, this was not a strong enough motivator for them to receive it.

As demonstrated by the current study and validated by literature, familial relationships between spouses, children, and other family members, and friends influence older adults' decision to receive the influenza vaccine (Andrew et al., 2004; Burns et al., 2005; Evans et al., 2007; Santibanez et al., 2002). However, spouses had a stronger influence than the older adults' children, as indicated by overall consensus of the groups. This could be the result of closeness of living quarters with a spouse or neighbour of similar age, as opposed to grown children living away of home. Additionally, the child parent relationship is very different from a spousal relationship. Senguputa et al. (2004) found that advice from the community both positively and negatively affected one's decision to receive or not receive the vaccine. However, Evans and Watson (2003) found no connection between the influence of family and friends, and the decision to receive or not. Whether or not family and friends have an influence on an individual may depend on the cultural milieu in which that older adult lives. According to Briley (2007), individuals from varying cultural backgrounds have different values which may influence their decision-making process and ensuing behaviour. The participants in the current study were not asked which cultural and ethnic backgrounds they identified with.

Burns et al. (2005), and Evans and Watson (2003) reported that advertising through media outlets such as television, radio, posters etc. had no

influence on vaccine uptake. The current study's participants were aware of such media prompts but also reported that they had no impact on their decision for vaccine uptake. One possible explanation for the inattention to advertisements could be de-sensitization as the result of an H1N1 outbreak in Canada. During the 2009-2010 influenza season, there was heavy media coverage, from the Canadian Public Health Agency, advising individuals to receive both the H1N1 vaccine and the seasonal influenza vaccine in tandem. Individuals in this study discussed their annoyance with the constant influenza coverage. The role of media in over-advertising the influenza vaccine and causing annoyance to the public, in general, may account for the low vaccine uptake rates.

Although the current study's non-receivers believed that the vaccine was effective, the fear of adverse events was sufficient to overcome the perceived benefits of the vaccine. Three of six non-receivers indicated that they did not want to experience post-receipt symptoms. Findings by Chi and Neuzil (2004), Cornford and Morgan (1999), Evans et al. (2007), and Evans and Watson (2003) support this conclusion as well. Cornford and Morgan (1999), and Telford and Rogers (2003) found that receivers interpreted adverse events differently than non-receivers. Similarly, one receiver in the current study said that he felt pain at the site of injection but that that was normal and it would not stop him from having another shot. Non-receivers were also fearful of contracting influenza or other diseases from the vaccine itself; this ideology is frequently present in related literature (Harris et al., 2006; Mangtani et al., 2006; Ridda et al., 2009; Sengupta et al., 2004).

Recipients of the vaccine discussed their belief in whether or not they had control over the decision-making process in regards to receiving or not receiving the vaccine. Some participants said that they had complete control over the decision whereas others said that the decision was probably made for them in the beginning. In a 2001 survey conducted in Alberta, Canada, nursing home vaccine uptake rates were as high as 95% for institutions having influenza vaccine standing orders (Russell, 2001). Individuals living in an Ontario nursing home are also heavily persuaded to receive the vaccine as a result of the constant influenza awareness that the health care professional staff deliver (Extendicare, 2011). Individuals living in low support retirement homes or on their own in the community are exposed to fewer direct reminders which may help explain why vaccine uptake rates are not meeting the set targets.

All of the participants in this study were aware that adults over 65 years of age should be vaccinated annually because of their particular vulnerability. However, most of the study's participants believed that they personally were resilient to influenza transmission. Only one quarter of receivers had a strong fear of contracting the illness because of their poor immune systems. Although Harris, et al. (2006) found that non-receivers believed that vaccines were irrelevant to health, the non-receivers in this study did not have such extreme beliefs. The non-receivers just simply did not think they were at risk of influenza transmission and that their immune systems were in good health. Andrew et al. (2004) and Evans and Watson (2003) have shown that belief in resilience of

older adults plays a critical role in the decision-making process as it is a positive predictor for vaccine uptake.

Many participants felt they had their own ways of preventing influenza. Similarly, individuals in a qualitative study by Evans et al. (2007) reported that they had specific health behaviours that would prevent or reduce their chance of influenza transmission. Receivers reported using both health behaviours and the vaccine for protection whereas non-receivers thought they could fight off illness with their own remedies. Additionally, receivers believed it was important to receive the vaccine to protect others from transmission; while non-receivers did not engage in this discussion. While it is recommended to individuals of all ages to engage in a healthy lifestyle to reduce the risk of chronic disease, health behaviours have not been shown to prevent influenza-related illness (Bovier, Chamot, Gallacchi, & Loutan, 2001).

Accessibility issues relating to the cost of the vaccine, location of administration, transportation and availability were not prevalent in this study. It is possible that older adults living in their own private home in the community without vaccine clinics onsite may still experience these types of issues. Research conducted in Europe and North America has also reported that access issues do not impede receiving the vaccine (Mangtani et al., 2006; Santibanez et al., 2002). Because there has been emphasis on regular vaccinations by governments in North America, influenza vaccine administration is offered in a multitude of locations in communities which makes it easier for individuals to obtain the vaccine (National Post, 2006). Most issues relating to accessibility

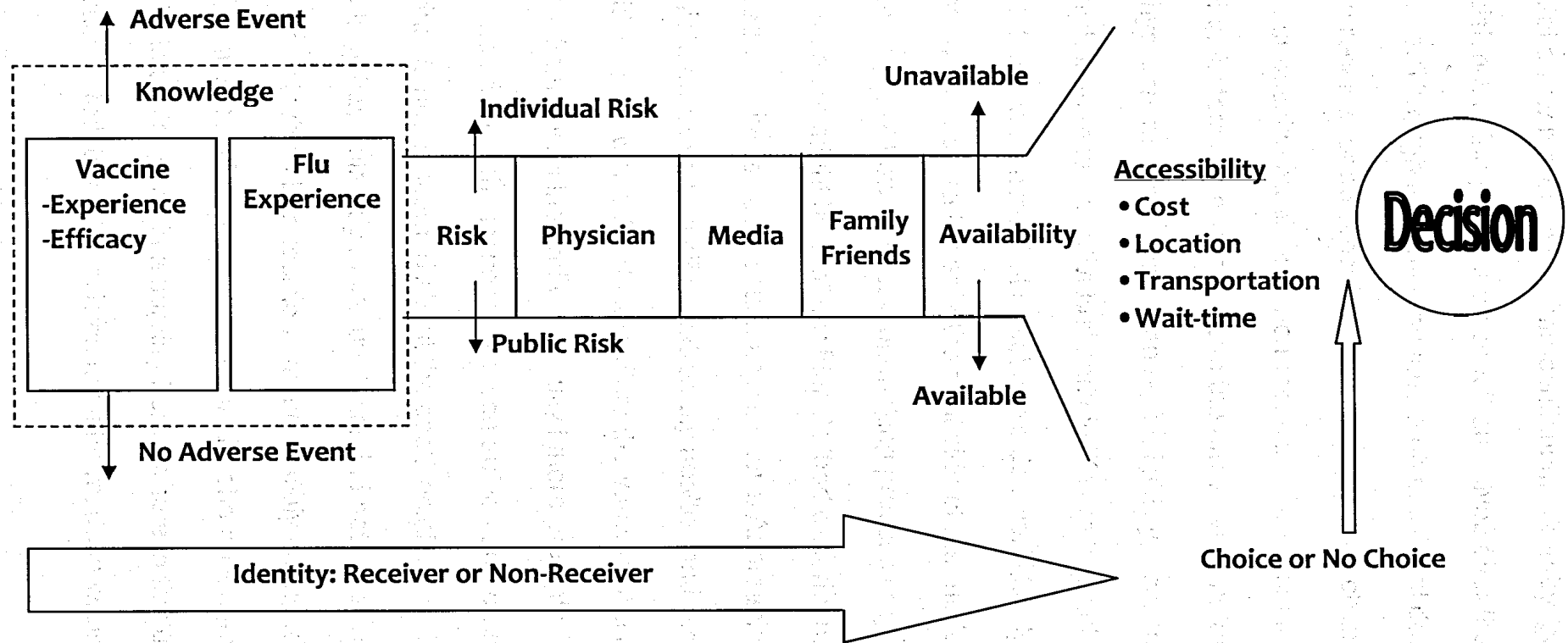
have been eliminated; the Public Health Agency should be commended for their efforts in addressing the matter.

Previous research is confirmed by this study's finding that there is an overall lack of knowledge about seasonal influenza and the influenza vaccine in both receivers and non-receivers. Santibanez et al. (2002) performed a study whereby older American adults, with an average age of 75 years, were interviewed over the phone and were asked to respond to open-ended questions. In the Santibanez et al (2002) study, only 44% of participants could accurately provide one symptom of influenza. A recent qualitative study by Raftopoulos (2007) also reported on the knowledge deficit in community dwelling Greek older adults. It is unclear why even educated participants, with 14 years of formal education on average, and exposed to persistent informative mass media advertising, still had relatively little vaccine and influenza knowledge.

#### 4.2 Comparison with Existing Models

It has been shown that a multitude of factors play a role in the decision-making process. Some of these factors are highly influential, whereas others are not; it also appears that these factors are time dependent and occur in a step-wise fashion. The researcher used the codes produced by the study's findings to create a model in which the decision-making process for the receipt of the influenza vaccine in older adults can be conceptualized (Figure 4-1). This model is an original contribution of this study and is not based on prior decision-making models used to understand preventative health behaviours.

Figure 4-1. Model explaining time-dependent factors influencing the decision-making experience in older adults for the receipt of the influenza vaccine including: vaccine and influenza knowledge; risk; direct and indirect influences by physician, media, family, friends, availability, accessibility, and choice.



The horizontal arrow represents a time-continuum whereby factors influencing the decision-making process present themselves over the course of an individual's lifetime. Through this time-continuum an individual develops a particular identity: a receiver or non-receiver. An individual may change their identity of an active or passive receiver or non-receiver throughout their life course. The following factors are aligned above the arrow: vaccine and influenza knowledge, risk, physician, media, family, friends, availability, accessibility, and choice. Factors which influence an individual early in life are located towards the left side of the model and influences that affect one's decision shortly before vaccine administration are located towards the right side of the model.

Here is an example of how the decision-making process may evolve over time. A young non-receiver might hear of her friend's 'bad experience' with the vaccine that involved an adverse event such as a seizure. Approaching mid-life, the non-receiver might perceive herself as extremely healthy and resistant to influenza. As an older adult, when the doctor offers the vaccine, the non-receiver may choose not to take the vaccine and continually ignore prompts from the media, family or friends. When the influenza season arrives and clinics are offered, this individual is not concerned about the cost, location, availability or wait-time because they have already made up their mind not to receive the vaccine. The only time at which her decision can be forcibly changed is when her right to refuse vaccination has been eliminated, that is, she no longer has control over the decision. This could occur in a nursing home where individuals can choose not to be vaccinated, but this decision must be made in writing (Russell,



2001). This model is beneficial because it adds the fourth dimension, time. With the added benefit of understanding how these influences occur over the life-course, we can appreciate when influences are expected to occur, and how long we can anticipate them to last.

The Health Belief Model focuses on the attitudes and beliefs of an individual and contains the following six constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and modifying factors. In the current study the strongest beliefs, as indicated by overall consensus of the group, were resilience as an older adult, vaccine efficacy, negative adverse events and the trust in general practitioners. These four beliefs can be explained by the HBM. From the original six constructs of the HBM, *perceived susceptibility* can explain older adults' assumptions that they are not vulnerable to illness. If an individual does not feel susceptible to transmission, they will not feel the need to obtain the vaccine. Participants' belief in vaccine efficacy can be understood by the construct *perceived benefits*. Consistent reminders from media, family, friends, and a general practitioner can be explained by *cues to action*, reminders which 'cue' an older adult to take the vaccine. A fear of adverse events can be explained by the construct *perceived barriers*, in which one is fearful of the physical cost of receiving the vaccine, such as experiencing an adverse event. *Perceived barriers* can also explain issues relating to availability, accessibility and choice. Finally, the extent to which an older adult is knowledgeable in vaccines and influenza can be explained by *modifying factors*. This construct describes how socio-demographic variables and

structural variables such as the knowledge of disease may impact decision-making.

As for the other two theories that had the potential to explain findings of this study, the Theory of Planned Behaviour is missing the element of how susceptible an individual believes they are in contracting the illness, which this study found to be critical in decision-making. The Life Course Theory places a large emphasis on historical and social but not personal events which do shape decision-making. Findings in this study suggest that a series of small occurrences and interactions, and not major historical, political or social events, ultimately influenced and mediated the decision to take or not take influenza vaccine.

#### 4.3 Scope and Limitations

The main goal of this study was to understand what influenced older adults living with minor assistance in the community to receive or not receive the seasonal influenza vaccine. In terms of qualitative research, this study had a large sample size of elderly individuals and a research design that allowed individuals to communicate openly without being constricted to select responses offered by a questionnaire. The individuals selected for this study were, on average, 82 years old. Therefore, the opinions expressed were those from the 'old-old' subgroup of the elderly population. Quite often these opinions are overlooked in literature. The old-old subgroup (75-84 years old) has defining differences from the young-old (60-75 years old) or oldest old subgroup (85+ years old). All participants lived in the community in homes offering no, or low to

moderate levels of support. This is important because it suggests that participants had high independence and less contact with health care providers than they would have at a nursing home. The sample size of participants was sufficient to achieve data saturation. As a result of the nature of the qualitative research approach, a smaller sample size was needed compared to the requirements needed in quantitative research. It is crucial in phenomenological studies to obtain rich descriptions of experiences from participants. Finally, much of the previously published research has originated from Europe or Australia, and to the researcher's knowledge, this is a unique qualitative study on this topic in Canada.

The findings of this study should be considered in view of its inherent limitations. Twenty-nine participants were recruited from London, Ontario, in homes offering assistance. London is a regional centre and health care hub located in Southwestern Ontario where everyone has free access to influenza vaccinations. Elderly living with any kind of assistance are in contact with healthcare staff and this might affect one's decision to receive the vaccine. In Canada, health care professionals are responsible for reminding older adults, on a regular basis, to receive the vaccination. In this study, the ratio of receivers to non-receivers was approximately five to one, while in London, Ontario, the ratio of older adult receivers to non-receivers is approximately three to one. Thus, there was an underrepresentation of non-receivers, which might have influenced the findings of the study. Some caution is needed as participants self-reported their vaccination status, though Mac Donald, Baken, Nelson, and Nichol (1999)

report the sensitivity for self-report of vaccine receipt to be from 92-100% and specificity from 71-98%.

Finally, this study was conducted with methodological rigour and followed Lincoln and Guba's 'Gold Standard' of parallel criteria as outlined in the methods section 2.4 Data Analysis. Member checking was used to ensure that reporting of data was done accurately and represented the thoughts and opinions of the study's participants. Given the inherent nature of data collection and analysis in a qualitative research study, knowledge is co-constructed with participants and the researcher. An attempt was made to remove any bias as result of prior knowledge and assumptions from interfering with data conceptualization. Reflexive techniques and peer debriefing was essential to ensure this high quality data analysis.

#### 4.4 Future Directions and Knowledge Translation

This study has generated findings that will further inform the decision-making process regarding preventative health behaviours. Future models should incorporate the element of time to observe when influences occur and how these influences are maintained over the life course. This could be done by conducting a longitudinal study involving a large number of participants. Findings suggest that further research is needed to explain, in greater depth, the role of family physicians, the potentiality of improved education about the vulnerability of the elderly, "herd immunity" and side effects related to vaccine intake.

To enhance knowledge translation of study findings, a copy of the study's executive report was provided to Middlesex-London Public Health Unit (Appendix

F). Additionally, a summary of findings in lay language and a thank you letter was sent to each individual that participated in the study (Appendix F) and each gatekeeper that helped to recruit participants. The study findings were also presented at: Canadian Geriatric Society 31st Annual Meeting in Vancouver, British Columbia; Health and Rehabilitation Sciences Graduate Research Forum in London, Ontario; Aging, Rehabilitation and Geriatric Care Symposium in London, Ontario; and Canadian Association on Gerontology 39th Annual Scientific and Education Meeting in Montreal, Quebec. The manuscript was submitted for publication in the peer-reviewed, scientific journal, *Canadian Journal of Public Health*.

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# Appendices

### Appendix A. Ethical Approval

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## Office of Research Ethics

The University of Western Ontario  
 Room 4180 Support Services Building, London, ON, Canada N6A 5C1  
 Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca  
 Website: www.uwo.ca/research/ethics

### Use of Human Subjects - Ethics Approval Notice

**Principal Investigator:** Dr. A. Zecevic

**Review Number:** 17198E

**Review Date:** June 18, 2010

**Review Level:** Expedited

**Approved Local # of Participants:** 49

**Protocol Title:** Decision Making for the Receipt of Influenza Vaccination in Community-Dwelling Older Adults

**Department and Institution:** Health Outcomes & Health Services Research, University of Western Ontario

**Sponsor:** N/A

**Ethics Approval Date:** July 07, 2010

**Expiry Date:** July 31, 2012

**Documents Reviewed and Approved:** UWO Protocol, Letter of Information and Consent. Poster.

#### Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada/CH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced study on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- all adverse and unexpected experiences or events that are both serious and unexpected;
- new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the HSREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the HSREB.

Chair of HSREB: Dr. Joseph Gilbert  
 FDA Ref. #: IRB 0000940

#### Ethics Officer to Contact for Further Information

<input type="checkbox"/> Janice Sutherland (jsuther@uwo.ca)	<input type="checkbox"/> Elizabeth Wambolt (ewambolt@uwo.ca)	<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Denise Grafton (dgrafton@uwo.ca)
--	---	---	--

This is an official document. Please retain the original in your files.

cc ORE File



Appendix B. Letter of Information

Dear [Name]:

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

Focus Group #: \_\_\_\_\_

## Decision-making for the Receipt of Influenza Vaccination in Community-Dwelling Older Adults

### CONTACT INFORMATION

Please print

**FULL NAME:**

---

**TELEPHONE NUMBER:**

---

**FULL ADDRESS:**

**Street**

---

**Apartment Number**

**City/Town**

**Province**

**Postal Code**

**Phone Number**

**What is the purpose of this study?**

It is estimated between 200 and 400,000 deaths occur annually in Canada due to influenza infections. Thirty percent of these deaths are reported in the population aged 65 and over. Influenza is a highly contagious disease which can weaken the immune system and lead to other serious related diseases such as pneumonia, heart attack, etc. While there is an abundance of information available through various channels in the community, influenza vaccination rates remain substantial. The purpose of this study is to explore and describe factors that may influence decision-making for the receipt of a vaccine.

Info Line



## **Decision-making for the Receipt of Influenza Vaccination in Community- Dwelling Older Adults**

**Principal Investigator:** Aleksandra Zecevic, PhD  
Faculty of Health Sciences, University of Western Ontario

**Co-Investigator:** Amanda McIntyre, MSc (can.)  
Faculty of Health Sciences, University of Western Ontario

### **LETTER OF INFORMATION**

We invite you to take part in this study that will look at why older adults choose or do not choose to receive the seasonal influenza vaccination. This letter contains information to help you decide whether or not to participate in this study. It is important for you to understand why this study is being conducted and what it will involve. Please take the time to read over this material and feel free to ask questions if anything is unclear or if there are words that you do not understand.

#### **What is the purpose of this study?**

It is estimated between 4000 and 8000 deaths occur annually in Canada due to seasonal influenza. Ninety percent of these deaths are from the elderly population. Seasonal influenza is a respiratory disease which can weaken the immune system and lead to other more devastating diseases such as pneumonia, and even death. While there is an abundance of information and many vaccination programs available in the community, influenza vaccination rates remain suboptimal. The purpose of this study is to explore what factors influence your decision-making for the influenza vaccine.

Initial here: \_\_\_\_\_

### **Why have you been contacted?**

You have been contacted because you are an independent, community dwelling individual and you are 65 years of age or older.

### **What is involved if you choose to participate?**

This research study will be conducted at a convenient location for all participants (ex. library, apartment building common room etc.). We would like to invite you to participate in a focus group session with five or six other participants that will last approximately 60-90 minutes. During the focus group we will discuss what types of things influenced your decision to receive or not receive the seasonal influenza vaccine. We will also ask you to complete a questionnaire with demographic information. Focus group discussion will be audio-recorded to allow us to analyze the data later on. Audio-recording of focus groups is mandatory so if you do not wish to be audio-taped, you should not participate in the study.

### **What happens to the information gathered in the study?**

Data collected in the focus group and the questionnaire will be later analyzed and eventually published in a scientific paper; you may choose to receive a personal copy of the final report. To protect your identity, your name will be replaced with a unique code that will be used to identify participants in audio-recordings and questionnaires. All hard copies of the data will be locked in a cabinet in a secure office at The University of Western Ontario, where only the investigators will have access. All data will be destroyed after 7 years.

### **What are the risks and discomforts to you if you participate?**

There are no known risks associated with participating in this research. However, some people may experience emotional stress when recalling specific memories related to past experiences with public health services or vaccinations. You are free to choose what you will and will not discuss. You may ask for specific information that you have shared to be removed from typed versions of the focus group session.

Initial here: \_\_\_\_\_

**What are the benefits to you if you participate?**

There are no known personal benefits associated with participating in this study, but you will assist in providing a better understanding of why older adults choose or do not choose this particular preventative medicine. Your participation is making a contribution to gerontological research.

**Voluntary Participation**

Participation in this research study is voluntary. You may refuse to participate or refuse to answer any questions and withdraw from the focus group at any time with no effect on your future care. However, any information collected up to that point, may still be used in the study.

**Other Pertinent Information**

Please note the consent form attached to this letter. Should you be interested in taking part in this study, please sign the consent form and contact Amanda McIntyre [REDACTED]. Please note, not all participants who complete the consent form will be contacted for the study.

If you have any questions or concerns regarding this study, please contact the Principal Investigator, Dr. Aleksandra Zecevic [REDACTED]. If you have any questions about your rights as a research participant or the conduct of the study you may contact The Office of Research Ethics at (519) 661-3036 or by email at [ethics@uwo.ca](mailto:ethics@uwo.ca). Representatives of The University of Western Ontario Health Sciences Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

This letter is for you to keep. You will also be given a copy of the consent form if you agree to participate.

Initial here: \_\_\_\_\_

### Appendix C. Consent Form

Consent form for the Research  
Project on the Health of  
Children in the  
Province of Ontario

I, Dr. Robert M. Anderson, M.D.  
Faculty of Health Sciences, University of Western Ontario  
London, Ontario, Canada

have read the contents of this form, have had the nature of the study  
explained to me, and I wish to participate. All questions have been  
answered to my satisfaction.

#### CONSENT FORM

Name of the Participant  
(print name)

Signature of the Participant

DATE

Name of parent/guardian

Signature of parent/guardian



## Decision-making for the Receipt of Influenza Vaccination in Community- Dwelling Older Adults

**Principal Investigator:** Aleksandra Zecevic, PhD  
Faculty of Health Sciences, University of Western Ontario

**Co-Investigator:** Amanda McIntyre, MSc (can.)  
Faculty of Health Sciences, University of Western Ontario

### CONSENT FORM

I have read the Letter of Information, have had the nature of the study explained to me, and I agree to participate. All questions have been answered to my satisfaction.

\_\_\_\_\_  
Name of the Participant  
(please print)

\_\_\_\_\_  
Signature of the Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of person obtaining consent

\_\_\_\_\_  
Signature of person obtaining consent

## Appendix D. Demographic Questionnaire

1. How many years have you lived in the United States?

2. How many years have you lived in the state?

3. What is your current ethnic identity? (Please check all that apply.)

Gender:

- Male
- Female

Marital Status:

Current Status:

- Single
- Married
- Divorced
- Widowed
- Currently in a relationship

Where do you live now?

- Living alone
- Living with a spouse/partner/roommate
- Living with children
- Living with other family members

What is your main source of income?

- Employment (part-time or full-time)
- Social Security
- Pension/Retirement Funds
- Other
- Do not provide disclosure

Education:

- Grade 4 or less
- Grade 5 or 6
- High School diploma
- Trade
- College
- University
- Graduate school or post-graduate



Focus Group #: \_\_\_\_\_

## Decision-making for the Receipt of Influenza Vaccination in Community-Dwelling Older Adults

### DEMOGRAPHIC QUESTIONNAIRE

*This questionnaire should take approximately 5 minutes and will include information about age, gender, marital status, income, living arrangements, chronic illnesses and influenza vaccine receipt. You can skip any question you choose not to answer.*

**Gender:**

- Male
- Female

**Year of Birth:**  
\_\_\_\_\_**Marital Status:**

- Single
- Married
- Divorced
- Widowed
- Common-Law

**With whom do you live?**

- Living Alone
- Living with spouse/partner/roommate
- Living with children
- Living with other family members

**What is your main source of income?**

- Employment (part-time or fulltime)
- Social Security
- Pension/Retirement Funds
- Other
- Do not wish to disclose

**Education**

- Grade 8 or less
- Grade 9 to Grade 12
- High School diploma
- Trade
- College
- University
- Graduate/Professional School

**Do you reside in a/an:**

- Urban area (e.g. downtown)
- Rural area
- Suburban area (outside city)
- Unsure

**How many children do you have?**  

---

**Do you suffer from any of the following illnesses?**

- Heart, Kidney or Liver Disease
- Diabetes
- Arthritis
- Asthma/Emphysema

**Did you receive the flu shot this year?**

- Yes
- No
- Don't Know/Can't Remember

### Appendix E. Focus Group Guide

- 1. What is the purpose of the program?
- 2. What are the goals?
- 3. How do you measure success?
- 4. How do you know you are doing well? (What are the signs that you are doing well?)
- 5. How do you know you are doing poorly? (What are the signs that you are doing poorly?)

What are the most important things you have learned from the program? What are the most important things you have learned from the program?

- 1) What are the most important things you have learned from the program?
  - a. What are the most important things you have learned from the program?
  - b. What are the most important things you have learned from the program?
- 2) How do you know you are doing well? (What are the signs that you are doing well?)
  - a. What are the most important things you have learned from the program?
  - b. What are the most important things you have learned from the program?
- 3) How do you know you are doing poorly? (What are the signs that you are doing poorly?)
  - a. What are the most important things you have learned from the program?
  - b. What are the most important things you have learned from the program?
- 4) What are the most important things you have learned from the program?
  - a. Family, friends, other people, etc.
  - b. Work - customer service, etc.
  - c. Physical appearance, etc.
  - d. Other things?
  - e. Other things?
- 5) What are the most important things you have learned from the program?
  - a. What are the most important things you have learned from the program?
  - b. What are the most important things you have learned from the program?
  - c. What are the most important things you have learned from the program?
  - d. What are the most important things you have learned from the program?
  - e. What are the most important things you have learned from the program?

# Decision-making for the Receipt of Influenza Vaccination in Community-Dwelling Older Adults

## FOCUS GROUP PROTOCOL

- Welcome group
- Introductions
- Overview of the topic
- Provide guidelines and ground rules for speaking (one at a time, *always* say your name)
- Start recording

*Hi! My name is Amanda and I'm working on a study to try and understand why people do or do not get flu shots. I would like to talk to you about what influenced your decision to receive or not receive the vaccine.*

## FOCUS GROUP QUESTIONS

- 1.) What do you know about seasonal influenza and its severity?
  - Who is most at risk?
  - What kind of complications can occur?
- 2.) What do you know about the seasonal influenza vaccine and how well it works?
  - Works well/Doesn't work well
  - Side-effects are major/Side-effects are minor
- 3.) What types of things contributed to your decision to receive or not receive the influenza vaccination?
- 4.) What types of things made it easier to obtain the influenza vaccine?
  - Family, friend or other social pressures?
  - Media – radio, television, advertisement etc.
  - Physician recommendation?
  - On a priority list?
  - Positive past experience?
- 5.) What types of barriers did you encounter that may have restricted your ability to receive the vaccine?
  - Personal experience involving adverse reactions?
  - Negative past experience?
  - Not on priority list?
  - Past historical events?
  - Access issues?

### Appendix F. Thank You Letters and Executive Report

Dear [Name],

Thank you for [action]

[Faded paragraph of text]

[Faded paragraph of text]

[Faded paragraph of text]

Sincerely,

[Faded signature block]

June 1, 2011

[Address]

To [Participant];

Thank you for participating in the study conducted at [Place of Residence] regarding the decision-making process of older adults as they choose to either take or not take the seasonal influenza vaccine. The comments you provided during the focus group were extremely useful and I am grateful for your input in this project.

The data obtained from multiple focus groups has been reviewed and the major findings of the study are included in the attached Executive Summary. Please feel free to contact me by email or telephone if you have any questions about the attached report. I hope that you find it interesting and informative.

Your participation has allowed the study authors to gain a better understanding of the decision-making process in older adults regarding one aspect of preventative health behaviour.

Sincerely,

Amanda McIntyre, MSc  
Aleksandra Zecevic, PhD  
Faculty of Health Sciences  
School of Health Studies  
Arthur and Sonia Labatt  
Health Sciences Building, Room 220  
London, ON, N6A 5B9, CANADA  
[Redacted]

June 1, 2011

[Address]

To [Gatekeeper];

Thank you for allowing us to conduct the study at [Place of Residence] regarding the decision-making process of older adults as they choose to either take or not take the seasonal influenza vaccine. Your assistance in organizing participants for focus groups was extremely valuable and we are grateful for all of your support in this project.

The data obtained from multiple focus groups has been reviewed and the major findings of the study are included in the attached Executive Summary. Please feel free to contact me by email or telephone if you have any questions about the attached report. I hope that you find it interesting and informative.

By allowing us to recruit participants from [Place of Residence] you have allowed the study authors to gain a better understanding of the decision-making process in older adults regarding one aspect of preventative health behaviour.

Sincerely,

Amanda McIntyre, MSc  
Aleksandra Zecevic, PhD  
Faculty of Health Sciences  
School of Health Studies  
Arthur and Sonia Labatt  
Health Sciences Building, Room 220  
London, ON, N6A 5B9, CANADA  
[REDACTED]

June 1, 2011

[Address]

To [Organization];

The 2010-2011 influenza season has come to an end. This year Canada experienced lower than normal seasonal influenza vaccination rates in all age categories. In a recent study conducted by researchers in the Health and Rehabilitation Sciences Graduate Program at The University of Western Ontario, we investigated what influences a community dwelling older adult in deciding to take or not take the seasonal influenza vaccine.

Information collected from thirty seven participants during six focus groups has been reviewed and a summary of major study findings are included in the attached Executive Summary. Please feel free to contact me if you have any questions about the attached report.

Sincerely,

Amanda McIntyre, MSc  
Aleksandra Zecevic, PhD  
Faculty of Health Sciences  
School of Health Studies  
Arthur and Sonia Labatt  
Health Sciences Building, Room 220  
London, ON, N6A 5B9, CANADA

[Redacted]

Thank you for your attention.

As the first author of this highly collaborative study, I'd like to thank my research partners, the research assistants, and the study participants. I'd also like to thank the funding agencies that supported this research. The study was a team effort and the success is due to the hard work of all participants, research assistants, and the research team. I'd like to thank the research assistants for their hard work and the research team for their support. I'd like to thank the funding agencies for their support. I'd like to thank the research assistants for their hard work and the research team for their support. I'd like to thank the funding agencies for their support.



## Executive Summary

### Decision-making for the Receipt of Influenza Vaccination in Community Dwelling Older Adults

#### Background and Rationale

Seasonal influenza is more commonly known as the 'flu'. It is an infection of the lungs caused by a virus. Influenza symptoms include fever, headache, cough, sore throat, and a runny nose (Butler-Jones, 2008). The disease can spread very fast through the population by directly inhaling the virus. Seasonal influenza can be dangerous for 'high risk' individuals including children under the age of two, adults over age 65, and people of any age with weakened immune systems (World Health Organization, 2009). A Statistics Canada report in 2008 showed that there were between 70,000 and 75,000 hospitalization admissions for influenza and influenza complications. Seasonal influenza is treatable and preventable. The most effective way to prevent getting the illness is to take the vaccine; many studies have shown that the vaccine is effective in preventing death by up to 80% in older adults (Nichol, Margolis, Wuorenma & Von Sternberg, 1994). In Canada about 35% of older adults do not receive the vaccine (Statistics Canada, 2008).

*The purpose of this study was to understand what influences an older adult living in the community to accept or refuse the seasonal influenza vaccine.*

#### Methods

Eleven men and 26 women took part in six focus group discussions at five London, Ontario locations. All participants were older than 65 years of age and were fluent in the English language. The average age was 82 years. Six participants had not received the vaccine and 31 participants had. Group discussions lasted approximately 60 minutes and were audio-recorded. Discussions were written word by word, and analyzed for content to identify predominating themes.

#### Major Findings

This study found that many factors contribute to an older adult's decision to receive the seasonal influenza vaccine or not. The belief that the vaccine was effective in preventing disease, and the risk of contracting the disease as a result of their age, was persuasive for receivers. Receivers indicated that their family doctors had the strongest influence on their decision to receive the vaccine while spouses and children were less influential. The belief that older adults are resilient was a powerful influence for non-receivers to decide not to take the influenza vaccine. Most non-receivers were fearful of experiencing undesirable events such as symptoms caused by the vaccine itself. Although most of the participants had limited knowledge about influenza symptoms and the vaccine, they all expressed extensive trust in the health care system. Finally, cost of the vaccine, location of administration, wait-times, transportation, and vaccine availability did not play a particular role in the final decision to receive it or not.

#### Strengths and Limitations

The strengths of this unique qualitative study on this topic in Canada include a large sample of independent older adults, and a research design that allowed individuals to communicate openly. The findings of this study should be considered in light of some limitations. Participants were recruited from London, a regional health centre located in Southwestern Ontario where everyone has free access to influenza vaccinations. In this

study, the ratio of receivers to non-receivers was approximately five to one whereas the ratio of receivers to non-receivers in London, Ontario is approximately three to one, thus, there was an overrepresentation of receivers.

### Conclusions

This study has found that older adults trust their family doctor and they follow their advice regarding vaccine receipt. Older adults' knowledge about vaccines is limited. While vaccine receivers believe that the vaccine is effective, non-receivers have faith in the resiliency of their immune systems.

### References

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World Health Organization. (2009). *Influenza (seasonal)*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs211/en>.

Related Work  
Bibliography

University of Toronto, Centre  
for Health and Behavioural Science  
Graduate School of Health Sciences (GHS)  
2011

Knowledge, Attitudes, and Beliefs of Adults  
The Ontario Health Services Council  
2009

Teaching and Learning in Health Care  
The University of Toronto, Ontario  
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