Influenza and NCDs: Reducing Influenza’s Impact on People with Chronic Diseases

Influenza can contribute to the long-term disability of some people with non-communicable diseases (NCDs). However, the risk of hospitalization and frailty among older people with NCDs can be reduced by immunization with the seasonal influenza vaccine.

That was the message delivered at the Geneva Health Forum on 19 April 2012, by Dr. Janet McElhaney, Professor of Medicine and the Alan M. McGavin Chair in Geriatrics Research, Department of Medicine, University of British Columbia, Vancouver, Canada.

Speaking at a lunchtime session devoted to prevention and management of NCDs, Dr. McElhaney put the spotlight on the link between chronic conditions like heart disease and communicable ailments such as influenza.

“People with chronic conditions have higher attack rates and are more likely to suffer from serious flu-related complications,” she said.

NCDs are a major cause of disability and death, but according to Dr. McElhaney policymakers have focused on reducing fatalities only by curbing the growing number of people developing chronic cardiac and respiratory conditions, as well as diabetes and cancers.

While these efforts are welcome, she suggests more attention should be given to the impact of hospitalization on people with NCDs who survive influenza infection.

“We need to focus on preventing hospitalization in the first place. Among people aged 65 and older who have been admitted to the hospital, one third will be more disabled when they are discharged. Half of those will never make a full recovery.”

In the elderly population, hospitalization has long been associated with negative outcomes. One study found that over 70% of elderly people who developed catastrophic disability had been hospitalized during the year. The most frequent discharge diagnoses included stroke, hip fracture, congestive heath failure, pneumonia, coronary heart disease and cancer – all of which can be complications of influenza illness.

“Communicable diseases like influenza may very well be the thing that contributes to much of the disability that we see with non-communicable diseases,” according to Dr. McElhaney.

Meet Monica, a 75-year-old woman who gets influenza

Feedback with Dr. Bram Palache
from the IFPMA Task Force on Influenza Vaccine Supply

Q&A with Dr. Janet E. McElhaney,
the Allan M. McGavin Chair in Geriatrics Research and Division Head of Geriatric Medicine at the University of British Colombia

Influenza can have devastating impact on the elderly and patients with chronic conditions.

If patients suffering from cardiovascular, pulmonary, renal and metabolic diseases (such as diabetes) contract seasonal influenza, they are at increased risk for influenza-related complications, hospitalizations and deaths.

A growing number of countries recommend seasonal influenza vaccination:

In 2009, 79 countries from each of the World Health Organization (WHO) regions included seasonal influenza vaccination in their national immunization schedules, up from roughly 50 countries in 2005.

Many countries recommend vaccination for seasonal influenza for the elderly and patients with chronic conditions.

Implication for policy:
Policymakers should take into account a wide array of measures to control NCDs including immunization programs targeting influenza.
Adding life to years

Dr. McElhaney told the symposium that advances in health care and technology have delivered improvements in life expectancy but the goal now should be to “add life to years” rather than just adding years to life. This, she said, means helping older people to live independently for longer by reducing their risk of hospital admission.

In a White Paper published at the conference, Dr. McElhaney noted that 41% of people aged 85 or older who were hospitalized in the US were discharged to long-term care or other facilities. This represents a considerable health and economic burden.

“All of this points to a potential longer-term impact of influenza. Among the elderly – and particularly those with chronic conditions – the effect may extend beyond acute infection, with a reduction in independence and functioning, and resulting in increased disability and care requirements, with associated costs.”

Counting the costs

Supporting independent-living in an active and healthy older population reduces pressure on social and health services. This, experts agree, will be an essential component of health policies as governments strive to provide care for ageing populations.

It is a message which will resonate not just in high-income regions but also in low- and middle-income countries where demographic changes toward older populations are on the horizon.

Dr. McElhaney, an established researcher and practicing geriatrician, said experts are now increasingly focused on finding ways to ensure that patients experience severe frailty only in the very late stages of their lives.

In the 1990s, researchers worked on ways to support healthy ageing among people in their 60s and 70s, many of whom were likely to be living with at least one NCD. Promoting exercise and healthy diets became a staple component of public health policies.

Over the past decade, there has been greater appreciation of the role of vaccination programs in “pushing frailty to the extremes of life,” according to Dr. McElhaney.

Vaccination is regarded as the most effective method of preventing influenza and the severe outcomes with which it is associated. Vaccination guidelines worldwide typically focus on specific populations, with most targeting the elderly and those with high-risk conditions.

Dr. McElhaney said that while debate continues on vaccine effectiveness in adults with NCDs, several studies have found reduced hospitalization and deaths in those at increased risk of influenza complications.

“The WHO suggests immunization can reduce severe illness and complications by up to 60% and deaths by 80%. There is also evidence for reduced hospitalization due to influenza and pneumonia or death during influenza season.”

Dr. Janet E. McElhaney, MD, FRCPC, FACP
Janet E. McElhaney, MD, FRCPC, FACP, is the Allan M. McGavin Chair in Geriatrics Research and Division Head of Geriatric Medicine at the University of British Columbia (UBC), and Physician Program Director for Elder Care Acute Services at Providence Health Care. She is also Associate Professor of Immunology in the Center for Immunotherapy of Cancer and Infectious Diseases at the University of Connecticut School of Medicine.

Dr. McElhaney’s research interests include the impact of immunosenescence on the immune responses to vaccination, immunologic biomarkers of protection mediated by vaccination, and how vaccination plays a role in preventing disability in older adults. She leads the Vancouver Initiative to Add Life to Years” (VITALITY) Team, an interdisciplinary research team at UBC established to identify risk factors for catastrophic disability, explore the contribution of “inflammaging”, and design therapeutic interventions to reduce risk of disability. Her work is focused on engaging older patients/caregivers with interprofessional teams and research strategies to improve our understanding of how to mitigate risk and provide optimal treatment approaches during acute health events requiring hospitalization. Her research is supported by the Canadian Institutes for Health Research, the National Institute of Allergy and Infectious Diseases, National Institutes of Health, the Michael Smith Foundation for Health Research and the BC Lung Association. She is an Adviser to the European Scientific Working Group on Influenza and participates on multiple grant review panels and advisory boards in Canada, the United States, and Europe.

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Meet Monica...

Monica is a 75-year-old woman. She is independent and active in her community. A lifelong non-smoker, Monica has stable heart disease and controls her high blood pressure using medication.

One Sunday afternoon in January she begins to experience muscle aches, a fever and a cough. Fast forward 24 hours and Monica has been diagnosed with influenza and is lying in the Intensive Care Unit (ICU) of her local hospital, her breathing supported by a ventilator.

Ten days later, after three days in ICU and seven days on a regular hospital ward, she is discharged to a rehabilitation facility with a diagnosis of exacerbation of Chronic obstructive pulmonary disease (COPD). Walking is now difficult and independence has been dramatically reduced.

Within a couple of days she begins to experience a non-productive cough and her condition declines further. Having been a busy grandmother enjoying a full and vital life just two weeks prior, Monica has been transformed into a frail woman in need of ongoing care.

Her question for the geriatrician in charge of her care is simple: ‘Will I ever be able to go back home?’ The answer, unfortunately, is far from certain. The geriatrician offers a dose of reassurance but no guarantees, knowing that the prospect of a full recovery is less than promising.

Geriatricians know this story too well. The acute bout of influenza which sparked this life-changing episode is repeated across the world among older people with non-communicable diseases. Around one third of people aged 65 and older who are hospitalized will be more disabled when they are discharged from hospital. Of these, half will never recover.

For people like Monica, the risk of contracting influenza – and the chances of being so seriously affected that hospitalization is required – can be significantly reduced through immunization.

About the IFPMA Influenza Vaccine Supply (IVS) Task Force
The IVS Task Force includes 16 vaccine manufacturing companies that are involved in research, development and production of influenza vaccines, representing more than 95% of world production. The IVS member companies are Abbott, Baxter, Biken, CSL Limited, Crucell, Denka Seiken, GlaxoSmithKline Biologicals, Green Cross Corporation, Hualan Biologicals, Kaketsuken, Kitasato Institute, MedImmune, Novartis Vaccines & Diagnostics, Sanofi Pasteur, Sanofi Pasteur MSD, and Sinovac.
Q&A: Dr. Janet McElhaney

Are people with chronic illnesses at higher risk of influenza?
Absolutely. People with chronic conditions have higher attack rates and are more likely to suffer from serious flu-related complications.

How can those at risk be targeted by immunization programs?
People are more likely to get vaccinated because they identify with a certain age group than because they have a chronic illness. We need to define risk groups so that people understand that they are members of a group that is at increased risk of influenza.

What are the benefits of vaccinating older people?
Vaccination helps to control outbreaks and, for those who are infected and survive, the risk of severe illness is reduced. We want to minimize what we call 'catastrophic disability.' this is the dramatic loss of independence that can follow influenza infection.

Why is reducing hospitalization so important?
In people aged 65 and older who have been admitted to hospital, one third will be more disabled when they are discharged. Half of those will never make a full recovery. Influenza is often not picked up when older people go to hospital emergency rooms with chest pains or breathing difficulties. That’s another reason why we have to prevent these influenza-related admissions.

Immunization can reduce the risk of disability but can it reverse disability?
For people who were quite well and had a low frailty score before being infected by influenza, the chances of recovery are greater than those who were frail before an influenza infection.

What is the economic argument for vaccinating older people?
On a per person basis it’s cost-saving.

Fact box:
- Non-communicable diseases (NCDs) are the leading cause of deaths worldwide
- Nearly 80% of the deaths from NCDs are in low- and middle-income countries
- NCDs will cost over USD30 trillion during the next 20 years, pushing millions into poverty
- Influenza is responsible for 3-5 million cases of severe illness and 250,000 - 500,000 deaths annually
- In the US alone, influenza has been associated with an average of 226,000 hospitalizations per year

Written by Gary Finnegan, Medical Journalist