A Collaborative System-wide Response to Influenza Outbreak Management in Saskatoon Health Region

Cordell Neudorf, BSc, MD, MHSc, FRCPC¹

Aderonke Obayan, MB, BSc, MPH²

Cathy Anderson, MSc(Epidemiology), BSN, BA(Sociology)³

Janice Chomyn, BSN, RN⁴

ABSTRACT

Objective: To describe the benefits of a regional, collaborative, system-wide approach to influenza outbreak management.

Participants: Senior management representatives from affected parts of the Regional Health Authority.

Setting: Saskatoon Health Region.

Intervention: Public Health proactively engaged a broad-based, multidisciplinary planning/ management group to minimize the effect of the influenza outbreak, and institute best practice in prevention and outbreak management system-wide for the future.

Outcomes: Earlier recognition and faster resolution of influenza outbreaks, fewer outbreaks, reduced pressure on acute care, greater compliance with amantadine prophylaxis, and improved immunization rates in seniors and health care workers.

Conclusion: While many of these interventions and best practices have been recommended by individual sectors, when Public Health takes a system-wide approach facilitated by regionalization, it results in optimized planning, co-ordination, evaluation and successful outcomes.

La traduction du résumé se trouve à la fin de l'article.

Public Health Services - Saskatoon Health Region

1. Medical Health Officer

2. Formerly Associate Medical Health Officer

3. Epidemiologist/Clinical Specialist

4. Manager, Disease Control

Correspondence and reprint requests: Dr. Cordell Neudorf, Chief Medical Health Officer/Vice President, Corporate Support, Public Health Services, Saskatoon Health Region, 204, 310 Idylwyld Drive North, Saskatoon, SK S7L 0Z2, Tel: 306-655-4338, Fax: 306-655-4414, E-mail: neudorfc@sdh.sk.ca

Acknowledgements: Our thanks to: Elliot Berman, Brenda Brown, Audrey Gauthier, Janet Harding, and Loren Regier of SHR; Marion McKenzie and Sandra Knezacek of Parkridge Centre; Sharon Milne, Extendicare; Kathleen Thompson, Saskatoon City Hospital; and Influenza in Long-Term Care Committee and Sub-Committees.

Saskatoon Health Region (SHR) is the largest health region in Saskatchewan and is one of the most integrated and complex health agencies in the country with an annual operating budget of \$500 million, 10,000 employees, and more than 600 physicians. Groups under the umbrella of SHR include acute care, long-term care (LTC), home care, Public Health Services (PHS) and mental health. The 1999-2000 influenza season created many challenges for SHR. PHS in Saskatoon developed a collaborative approach to influenza management. While it seems obvious, in hindsight, we believe that this collaborative approach, facilitated by regionalization was instrumental in mitigating the effects of the influenza season on the health care system in our region.

Widespread outbreaks of influenza and influenza-like illness (ILI) occurred in Canada, USA and Europe during the 1999-2000 influenza season. Influenza activity began in November spreading rapidly from the west to the east and reaching a peak in January.¹ According to national media reports, Emergency Room (ER) flooding was considered an inevitable consequence of the outbreak. One such report lamented this "unpredictable" event. By monitoring the influenza activity across Canada, the SHR Medical Health Officer was able to predict when peak activity would most likely occur locally. He notified the senior management within SHR, warning them that emergency room crowding could be expected soon and recommending district-wide response including:

- advising the public regarding proper use of emergency rooms;
- utilizing an existing region-wide bed management team that met daily to assess and adjust to the system pressures between hospital emergency rooms, and acute care and LTC beds;
- mobilizing an Outbreak Management team that implemented control measures in LTC facilities and provided daily updates of disease activity to the bed management team and key contacts in affected departments.

BACKGROUND

During the 1999/2000 season, 8 of the 20 LTC facilities in SHR reported outbreaks of influenza with an overall attack rate of

12.1%. A total of 18 deaths were reported during the outbreak period giving a case/fatality rate of 14.1%. The pattern of illness reported in each facility was slightly different. This may reflect differences in how quickly facilities recognized the outbreak, how quickly control measures were implemented, and the extent to which amantadine prophylaxis was used appropriately.

Over 88% of the LTC residents and approximately 25% of LTC staff had been immunized in the fall of 1999. While vaccine coverage levels appeared adequate for residents of LTC facilities, staff immunization was very low; a pattern that has been observed in various surveys in Canada and the USA.¹⁻⁷

Building on the success of the district-wide approach in investigating emergency room crowding, a cross-sectoral multidisciplinary meeting was called in late March 2000 to review the outbreak, to identify issues and propose solutions, and to begin the planning process for next year. Representatives from LTC facilities, Infection Control, Laboratory Services, Pharmacy, Occupational Health, Infectious Diseases, Medicine and Public Health participated in the debriefing session. This group identified four areas for future planning:

- amantadine prophylaxis (and treatment)
- immunization
- public and professional education and
- outbreak management.

Four subcommittees were struck, one for each of the identified areas.

Amantadine prophylaxis

A standard protocol for amantadine prophylaxis and treatment throughout SHR was developed collaboratively by public health, pharmacy and family medicine representatives and involved:

- consultation by the SHR Medical Department Head of LTC and pharmacy representatives with physicians discussing the proposed process and recruiting their support, obtaining consent in advance for amantadine use from LTC residents or their families;
- determination of creatinine clearance levels for all the residents in July/August 2000, and creation of customized amantadine dosages for each resident to be in patient charts;

- provision to physicians of the protocol through a newsletter that was also included in outbreak management kits distributed to the LTC facilities. The protocol worked well and by early September 2000, most of the LTC residents in Saskatoon had a written order for amantadine prophylaxis.

Public and professional education

A survey was taken to identify factors responsible for low staff immunization rates. The survey results guided the development of the educational strategies employed in an aggressive immunization campaign by SHR Occupational Health and Safety Nurses with a focus on physician, public and staff education. Physician education was provided through newsletters and office visits by a community pharmacist. The media, posters and pamphlets were employed in educating the public about influenza prevention. In-services were held to improve staff knowledge on influenza and address the myths on influenza vaccine.

Immunization

The immunization campaign was geared towards increased coverage for LTC residents, staff, eligible acute care patients and high-risk members of the public. While these efforts improved staff coverage rates, they did not yield the expected results as only an estimated 40% staff coverage (compared with 25% the previous year) was achieved and 57% staff coverage in 2001. An increase of 317% influenza immunization coverage was achieved in acute care patients compared to the previous year. This was achieved through identification of patients requiring influenza vaccine and administration of the vaccine prior to discharge.

Outbreak management

Respiratory Outbreak Guidelines for LTC facilities were established, and Outbreak Management kits were developed. These kits included the following:

- a checklist for activities when an outbreak occurs, including sample linelists for reporting;
- swabs, requisitions and media for collection of specimens;
- a videotape outlining how to take a nasopharyngeal swab and how to implement infection control measures; and

- educational materials such as handouts for staff, family and friends.

In September, staff from PHS and the LTC Infection Control Practitioner visited the LTC facilities and introduced the Influenza Outbreak kits to them. The work was complete and ready for the upcoming influenza season.

OUTCOMES

In the ensuing 2 years (2000/2001, 2001/2002), the system-wide Influenza Management Committee met in late spring and early fall to review our approach and prepare for the upcoming influenza season. Continued collaboration has resulted in earlier recognition and faster resolution of outbreaks, fewer outbreaks, reduced pressure on acute care, greater compliance with amantadine prophylaxis and improved immunization rates in seniors and staff. By thinking system-wide about influenza management, PHS has been able to better meet its objectives of disease prevention and control, and contribute to minimizing the effect of the annual influenza season on the health care system in the region.

DISCUSSION

Although there were no major outbreaks in the past influenza season, there was prompt reporting of disease clusters by LTC facilities with appropriate action taken. A meeting was held in May 2001 to debrief in the 2000-01 influenza season, to review how the guidelines worked, and to identify modification required for the next influenza season. Overall, the feedback from staff regarding the guidelines was very favourable.

While many have recommended organized programs for influenza vaccination in LTC facilities,^{1-4,8,9} a system-wide approach provides the avenue to optimize proper planning, coordination, evaluation and a successful outcome.

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Received: July 26, 2001

Accepted: March 7, 2003

RÉSUMÉ

Objectif : Décrire les avantages d'une approche régionale collaborative et systémique pour la gestion des épidémies de grippe.

Participants : Représentants de la haute direction des secteurs touchés de l'office régional de la santé.

Lieu : Région sanitaire de Saskatoon.

Intervention : Suivant une approche proactive, les autorités de santé publique ont amené un vaste groupe multidisciplinaire de planification/gestion à réduire l'effet d'éventuelles épidémies de grippe et à instaurer à l'échelle du réseau des pratiques exemplaires de prévention et d'intervention en cas d'éclosion.

Résultats : Reconnaissance plus précoce et résolution accélérée des épidémies de grippe, éclosions moins nombreuses, allègement de la pression sur les soins actifs, meilleure observance de la prophylaxie par l'amantadine et taux d'immunisation améliorés chez les aînés et les travailleurs de la santé.

Conclusion : Beaucoup de ces mesures et pratiques exemplaires avaient été recommandées individuellement par les secteurs, mais lorsque les autorités de santé publique adoptent une approche systémique (grâce à la régionalisation), la planification, la coordination et l'évaluation sont optimales, et l'on obtient des résultats favorables.