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ANALYSIS OF LTCF SITE VISIT DATA IN NEW YORK STATE FROM 2006: AN EVALUATION OF PREVENTION AND CONTROL STRATEGIES FOR HEALTH CARE PERSONNEL (HCP) IMMUNIZATION.

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ABSTRACT:

OBJECTIVES: *To evaluate Prevention and Control Strategies for Health Care Personnel (HCP) Immunization at LTCF and to assess the NYSDOH, LTCF, Influenza vaccination and control guidelines and recommendations to be implemented by all acute care hospitals, nursing homes, skilled nursing facilities, health care and emergency medical services*
METHODOLOGY: *This prospective observational study was conducted at New York State Department of Health (NYSDOH) Immunization Department from June 2006- July 2007. Data was collected from Office of Health System Management (OHMS), Public Affair Groups (PAG), Division of Legal Affairs (DLA), Office of Managed Care (OMC) to identify the role of cultural, social, and behavioral factors incorporating HICPAC and ACIP materials and data in determining influenza and pneumococcal disease prevention, health promoting behavior, and provider health services.*
RESULTS: *Geo location was 34%, facility size 15 %, size and location 15%, size and low coverage is 13%, and low coverage. Residents are more immunized than employees, ie 77.4% as compare to 45.67% respectively, policy 42.2%, non policy 50.29% as far as strategies are concerned. 97.7% can improve immunization by vaccine available to staff at no cost, 95.5% withstanding orders from staff, 90.9% if immunization offered to all shifts, 88.6% for standing orders for residents, 15.9% individual counseling, and 13.6% for gifts and 15.9% for others.*
CONCLUSION & RECOMMENDATIONS: *Inactivated influenza vaccine is recommended in all persons 50 years of age and older, children 6-23 months of age, residents of LTCF, pregnant women, persons 6 months to 18 years receiving chronic aspirin therapy, persons less than 6 months of age with chronic illness, persons with COPD, CHF, Diabetes, renal dysfunction, and immunosuppression, including HIV*

KEYWORDS: influenza, vaccine, adult immunization program

INTRODUCTION

The Adult Immunization Program is part of New York State Department of Health (NYSDOH) within the Bureau of Communicable Disease Control. This study is based in the adult immunization program. The primary responsibilities of the program include outbreak investigation, consultation, training and policy development, and provision of vaccines. Services are provided to the general public, local health departments, state institutions and to health care facilities.

According to the Health Infection Control Practice Advisory committee (HICPAC) and the advisory committee on immunization practices (ACIP) for Disease control and prevention (CDC), health care personnel (HCP) can acquire infections from patients and transmit influenza to patients and other staff. Studies indicate that the majority of HCP in the United States are under immunized. On Feb 9, 2006, HIPAC and ACIP published recommendations for influenza vaccination of HCP. These recommendations for vaccinations apply to HCP in acute care hospitals, nursing homes, skilled nursing facilities, health care and emergency medical services. Recommendations from ACIP are targeted at health care facility administrators, infection control professionals, and occupational health

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professionals responsible for influenza vaccination programs and infection control programs in their institutions. HICPAC and ACIP recommended all HCP be vaccinated annually against influenza. Facilities that employ HCP are strongly encouraged through evidence based approaches that maximize vaccination rates to provide vaccines to their staff.

In order to reach this goal, literature was reviewed, abstracted, analyzed and summarized historical NYSDOH, LTCF data to characterize the clinical and environmental components of the coverage. The result of this study may be used as a basis for a future peer-reviewed scientific publication.

METHODOLOGY:

SETTING: Study was conducted at New York State Department of Health (NYSDOH) Immunization department

DURATION: Study duration was one year from June 2006- July 2007.

STUDY DESIGN:

Prospective observational

DATA COLLECTION:

We solicited inputs from individuals and professional organizations, by conducting literature research on Flu immunization in New York State (NYS) and in other places, to provide data that is relevant and comparable for the study. We identified the suspected causes of poor immunization rates among adults and the disparity among heath care workers by studying the pilot project at LTCF nursing home. We also incorporate and adapt cultural sensitive HICPAC and ACIP materials into adult immunization media campaign, policy development / program planning/management skills. We collect and summarize the data from LTCF nursing homes facility checklist relevant to statewide implementation of adult immunization program initiatives. Finally author evaluated feedback from New York State LTCF nursing homes reports and incorporating recommendations for state wide campaign.

RESULTS:

Geo location was 34%, facility size 15 %, size and location 15%, size and low coverage is 13% (Chart - I). Range of employment and residents is shown in Chart 2, and region-wide residents and employees ratio in (Chart - III). The average total immunization rates show that residents are more immunized than employees, ie 77.4% as compare to 45.67% (Chart - II) respectively, policy 42.2%, non policy 50.29% as far as strategies are concerned (Chart IV). It was observed that 97.7% can improve immunization by vaccine available

CHART-I
SELECTION CRITERIA

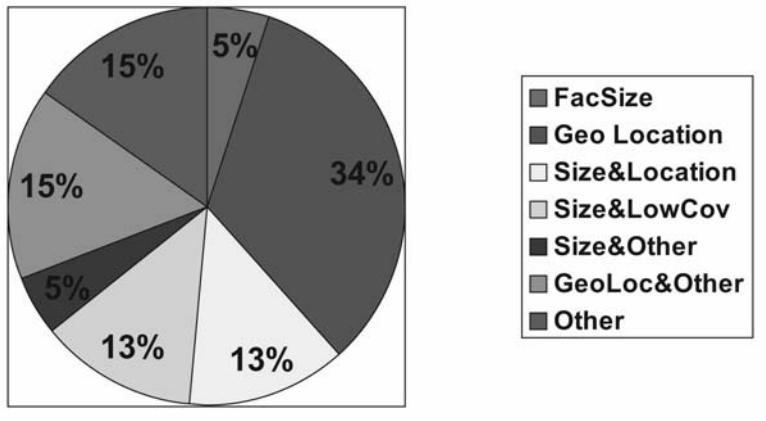
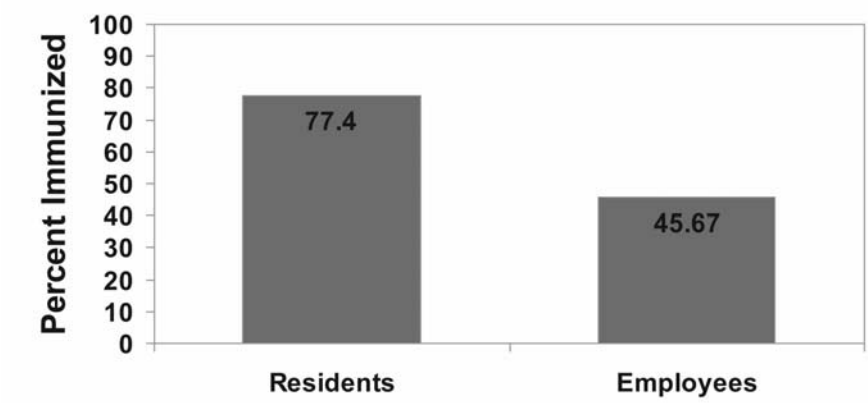


CHART-II
PERCENT OF PERSONS RECEIVING INFLUENZA IMMUNIZATION



to staff at no cost, 95.5% withstanding orders from staff, 90.9% if immunization offered to all shifts, 88.6% for standing orders for residents, 15.9% individual counseling, and 13.6% for gifts and 15.9% for others.

DISCUSSION:

Influenza causes substantial mortality and morbidity annually, particularly in high risk groups such as the elderly, young children, immune compromised individuals and individuals with chronic disease. Reasons for influenza are seasonal globally causes 250,000 to 500,000 deaths. In the United States, 36,000 deaths are occurring each year.[1] The patient care and burden of cost is $ 44.6 billion. The annual direct cost is $ 7.0 billion while annual indirect cost is 111 million.and increasing numbers of up to the 24 million health care visits. There are 314,000 hospitalizations and $37.5 billion in economic cost from influenza and pneumonia [2]. The most efficient way of preventing influenza outbreak is the vaccination of health care workers. Nationally, 40% of the health care workers are covered with influenza vaccine, influenza transmission and outbreak. In hospitals and nursing homes, HCP can acquire infection from patients and patients can get infection from HCP. Trivalent inactivated influenza vaccine can prevent influenza among 70-90% adults if the circulating virus and vaccine are antigenically. Similarly, a vaccine of HCP is beneficial in terms of increase working capacity and decreasing absenteeism. Further influenza vaccination reduces the risks of secondary bacterial infections, decreases the rates of admission in hospitals in elderly patients of more then 65 years of age with other illnesses, like renal diabetes, etc. [3] A live attenuated

influenza vaccine (LAIV) has the similar benefits. It reduces severe side effects of vaccines like acute high-grade fever, decrease use of antibiotics. Influenza vaccination of HCP is important for prevention of influenza out breaks in LTC facilities. Studies show that staff vaccination is contributing to reducing the number of nosocomial influenza cases. One of the national objectives for 2010 is to achieve a HCP vaccination coverage level of 60%. Barriers for immunization of flu vaccine are fear of vaccine side effects, insufficient time, or inconvenience, medical contraindications, fear of needles, previous receipts of vaccines are perceived to be less susceptibility of infection.[2,3] Studies shows the health care personnel are more likely to work through, or return to work sooner during illness. Thus, increasing the likelihood of transmitting the virus to patients.[3,4,5].

ROLE OF HEALTH CARE FACILITIES: Health care facilities have an important role to play in maximizing influenza vaccination rates in health care workers. Every facility should develop and implement comprehensive influenza vaccination programs for employees. To facilitate health care worker influenza immunization APIC recommends the following:

- All heath care facilities should have a written policy statement which should emphasize annual vaccination of workers in order to prevent spread infections to the vulnerable patients.
- Educate the health care workers about low risk of immunization vaccine.
- Increase efforts to increase demand of influenza vaccine, and reduce barriers like access to vaccines and cost of the vaccine.
- Monitor annual immunization rates and provide feedback.
- Identify early cases of influenza in communities by effective influenza surveillance of system.
- Other strategies include vaccine clinics at work sites, mobile vaccination during all work shifts, use either TIV or LAIV.[4,5]

CHART-III
PERCENT OF PERSONS RECEIVING INFLUENZA IMMUNIZATION

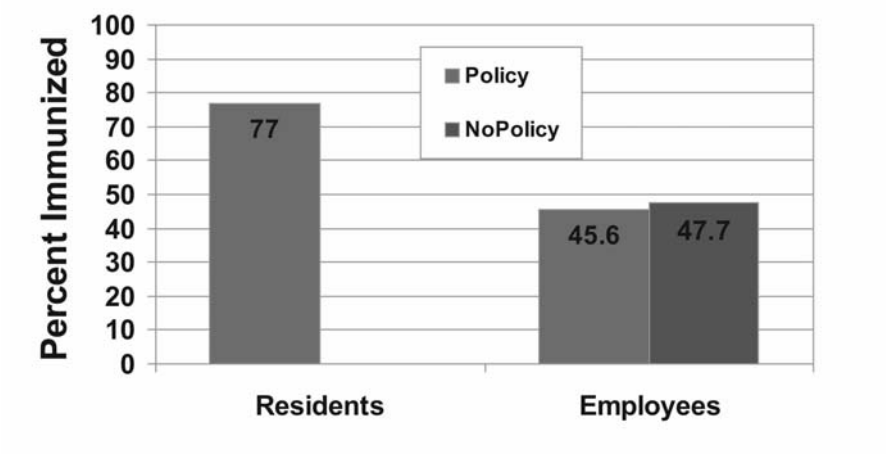
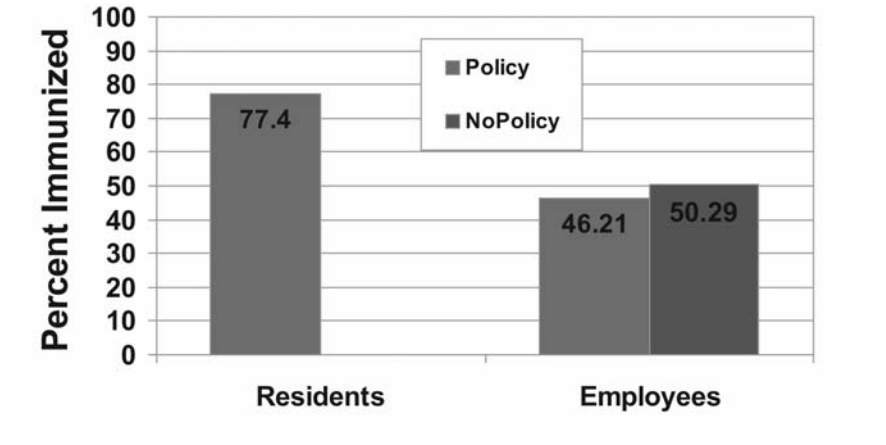


CHART-IV
PERCENT OF PERSONS RECEIVING INFLUENZA IMMUNIZATION



Influenza is a single stranded, helically shaped, RNA, virus of the orthomyxo family. Basic antigen types A, B, and C are determined by the nuclear type A influenza is the subtype that are determined by the surface antigen heamagglutinin(H). Influenza causes moderate to severe illness and affects all age groups. Influenza B only effects human beings and influenza C rarely effects human beings. Hemagglutinin and neuraminidase antigens change with time. Changes occur as a result of point mutations in the virus genes or due to the exchange of a gene segment with another subtype of influenza virus. More changes in antigenecity lead to changes, which again cause formation of new subtypes and may result in pandemic. For example, major changes in H and N occurred in 1957 due to the genetic recombination between the influenza A virus that effect humans and birds. In 1968, H3N2 appeared and completely changed the type A strain to H2N2 that circulated throughout the world for 10 years. Antigenic drift may result in epidemic drift and can result in all three types. In the past 100 years, four occurrences of epidemic shifts have led to major pandemics. The major impact is observed in morbidity with high attack rates of hospitalization, especially for adults with respiratory diseases. Absenteeism from work and school is high and visit to health care providers increases.[5,6]

Following respiratory transmission the virus penetrates respiratory epithelial cells in the trachea and bronchi. Viral replication results in destruction of the host cells. Incubation period is usually 2 days; severity depends on previous immunologic status of individual and with antigenically related virus variant about 50% of the cases develop classical symptoms. With sharp onset of fever, malaise, sore throat, cough headache. Influenza can cause pneumonia secondary bacterial, rye syndrome, myocarditis; death rate is 0.5-1 per 1000 cases. Influenza causes more than 36,000 deaths per year, more

than 90% of deaths are among persons age 65 or higher.

A high mortality rate is observed during season is due to the influenza type A H3N2. Influenza causes higher number of attacks in nursing homes, with fatality rates high as 30% among children's from ages 0-4. Hospitalization rates are 100 per 100,000, children as high as 500 per 100,000. ACIP recommended the routine immunization of children from 6-12 months of age.

Clinical findings plus virus can be obtained from throat and nasopharyngeal secretions within three days of illness. It is a significant rise in influenza IgG by serologic assay; direct antigen testing for type A virus can be done.

Influenza occurs throughout the world. There is no chronic carrier state. In temperate climates, it occurs from December to March. Two types of influenza vaccine are available in the United States. One is trivalent inactivated influenza vaccine(TIV) and other is Live attenuated influenza vaccine (LAIV) which causes the replication in the nasopharyngeal mucosa virus retained cold adapted, temperature sensitive characteristics, no transmission of LAIV reported in the USA. 70-90% efficacy is shown by influenza vaccine among individuals 65 years of age or younger, and 30-40% efficacy among frail elderly persons. Vaccines are 50-60% effective in preventing hospitalization and 80% effective in preventing death. LAIV contraindications are children less than 5years of age, persons under 50 years of age, persons with chronic medical conditions, children and adolescents receive long term aspirin therapy immunosuppression, pregnant women, sever allergy from any Disease, history of Guillian bare disease, and moderate or severe acute illness.[5 ,6]

CONCLUSIONS:

Although residents are well immunized, overall HCW are under-immunized. Even though NYS has a PHL 21A requiring offering and documenting HCW immunizations, NYS rates were only slightly higher (46.2%) than the national rate of 43%. To remedy this we should expand the number of visits to collect data from all nursing homes, and analyze the impact of training and education of nursing home staff. We should also strengthen the public health law to mandate all healthcare workers receive influenza vaccination. Public health agencies need to reassess patient risk factors for infection and the risk of infection outside facility protective area. Overall, we need better data collection tools to assess questions that arose from the study and to further refine NYSDOH prevention and control

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