



Level of Preparedness in Responding to Influenza Outbreaks: A Survey of Nursing Homes, Miami-Dade County

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Background

Florida's 2002 vital statistics annual report states influenza and pneumonia constituted the eighth leading cause of death with a total of 3,271 deaths. Of these deaths, 88.0% were among persons ≥ 65 years of age. For the same year, Miami-Dade County had a total of 371 deaths due to influenza and pneumonia with 85% of these deaths among persons ≥ 65 years of age.

Since an influenza-like illness (ILI) is not a reportable disease unless it becomes an outbreak and reported by a facility or provider, local health departments will not be aware of its occurrence in the community. Therefore, by the time a facility is aware of an ILI cluster and notifies the health department, the containment of a possible ILI cluster from an influenza outbreak may be limited. For this reason, nursing homes need to be prepared in advance to quickly respond to a possible ILI outbreak as their close environment increases the elders' susceptibility to preventable illnesses. A survey of nursing homes in Miami-Dade County, Florida was conducted to assess their current level

of preparedness in preventing influenza outbreaks.

Methods

A list of all licensed nursing homes in Miami-Dade County was obtained from the Florida Health Stat Database.¹ On September 22, 2003, a self-administered four-page questionnaire was mailed with an accompanying cover letter to the 53 nursing homes. The medical director, nursing director, infection control practitioner, or administrator was asked to complete the questionnaire and return it in a self-addressed, stamped envelope or fax to Office of Epidemiology and Disease Control (OEDC), Miami-Dade County Health Department (MDCHD). A reminder letter was mailed to non-respondents two weeks after initial mailing. Those facilities that did not respond to the second attempt received several phone calls by an OEDC investigator.

Data analysis was performed using Epi-Info 2002 and SAS 9.0.

A nursing home facility was classified into one of four levels of preparedness by the following guidelines:

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Definitions:

Well prepared - if a facility has the following items:

1. Standing orders for influenza or pneumococcal vaccination
2. Protocol for isolating and cohorting residents for suspect influenza outbreak
3. Knowledge of how to contact the health department
4. A written policy for the administration of influenza antiviral medications
5. Ongoing surveillance monitoring new respiratory symptoms and ILIs

Somewhat prepared - items 2, 3, and 5

Lightly prepared - any of three items excluding items 2, 3, and 5 in combination.

Not prepared - two items or less



Results

Of the 53 surveys sent to nursing homes, 37 facilities responded (69.8% response rate). Of the 16 non-returned surveys, 9 (56.3%) did not respond, 5 (31.3%) declined, and 2 (12.5%) were unavailable.

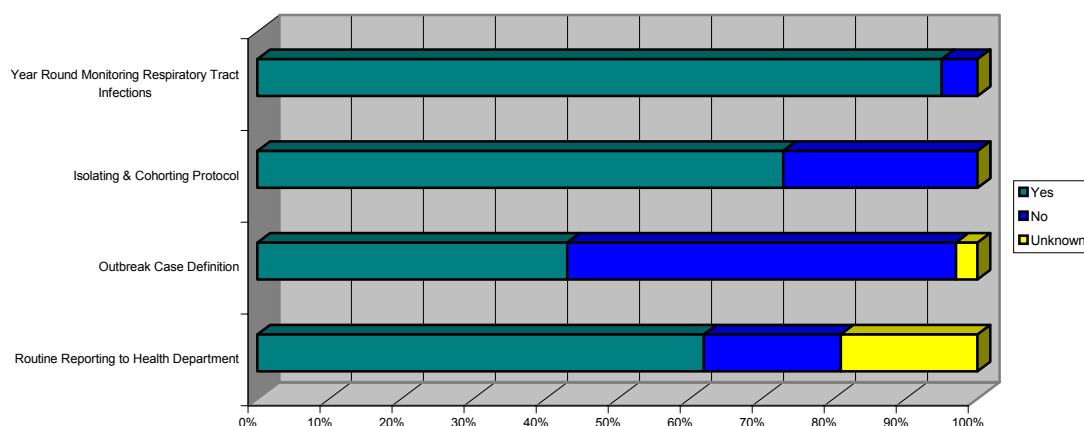
Twenty-six (70.3%) facilities have infection control practitioners (ICP). Of these facilities, 22 (61.6%) have one ICP, 3 (8.3%) reported to have two to five,

and 1 (3.8%) facility did not specify. All responding nursing homes offer infection control training to their employees. Policies and procedures for influenza outbreak management were available in 23 (62%) of responding facilities (see Table 1). Figure 1 showed the management of an ILI clusters. All responding facilities (100%) reported having a method to monitor respiratory tract infections and, in particular, 32 (86.5%) facilities reported monitoring year round.

Table 1. Influenza Outbreak Management Policy: Inclusion of Influenza Antiviral Medications, Nursing Homes, Miami-Dade, September 2003

	N	%
Administration of antiviral medication (n=23)		
Yes	18	78.3
No	5	21.7
Initiation of antiviral medication by outbreak type (n=18)		
Suspect	1	5.6
Laboratory confirmed	2	11.1
Both	12	66.7
Unknown	3	16.7
Distribution of antiviral medication (n=18)		
Residents		
Prevention	14	77.8
Treatment	14	77.8
Employees		
Prevention	12	66.7
Treatment	12	66.7

Figure 1. Management of ILI* cluster among 37 Nursing Homes, Miami-Dade, September 2003



*ILI stands for Influenza-Like Illness



Twenty-three (62.2%) of responding facilities reported to distribute influenza information via written materials, 4 (10.8%) verbally, 3 (13.5%) by posters, 3 (8.1%) through presentations, and 2 (5.4%) facilities did not specify. Thirty-four (91.9%) of the responding facilities require employees to *offer* the influenza and pneumococcal vaccine to residents, 2 (5.4%) facilities did not require it, and 1 (2.7%) did not specify.

Figure-2 Current Level of Preparedness for Influenza Outbreak Prevention among 37 Nursing Homes, Miami-Dade County

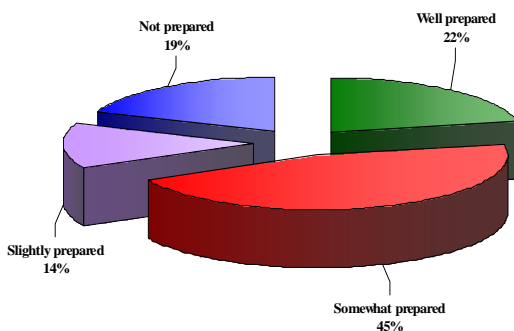
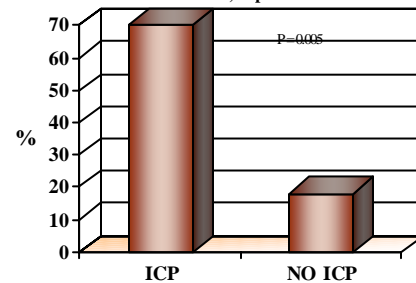


Figure 2 showed 50% of nursing home are *somewhat prepared* and only 22% are *well prepared*. No significant associations were found between nursing home with ICP, admission size and preparedness status. Nursing homes with ICP were more likely to use durable vaccination consent (indicates consent from resident/relative upon admission to receive influenza vaccine every year) compared to nursing home without ICP (see Figure 3)

Figure 3. Association Between Having an ICP* and Percent of Durable Vaccination Consent*, Nursing Homes, Miami-Dade, September 2003

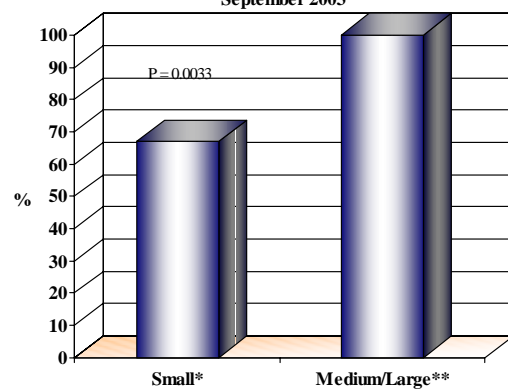


*ICP stands for Infection Control Practitioner

*Durable vaccination consent indicates consent from resident/relative upon admission to receive influenza vaccine every year

All nursing homes (100%) with admission size above 100 in 2002 had protocol to evaluate residents' vaccine status, significantly higher than the 67% level at nursing home with admission size less than 100 (P=0.00033, see Figure 4).

Figure 4. Association Between Admission Size and Evaluation of Resident Vaccination Status, Nursing Homes, Miami-Dade, September 2003



*Small represented 100 or less admission in 2002

**Medium/Large represents more than 100 admission in 2002



Discussion

In our study, we had hypothesized that 50% of the Miami-Dade County nursing homes would be *well prepared* to prevent pneumonia and influenza outbreaks. However, we found that most nursing homes are currently *somewhat prepared* and only 22% are *well prepared*. It may be that nursing homes have not updated or looked into establishing new measures for the prevention and control of a possible influenza outbreak.

Having knowledge of preparedness level allows the local health department to initiate further actions to strengthen the communication with these facilities and their ICPs. With this interaction, the MDCHD can provide further guidance in updating or adopting additional preventive measures to decrease influenza transmission in the community. In addition, the MDCHD can play a crucial role in educating the nursing homes and informing them of strategies the facility can establish in order to increase their vaccination rate, update policies or procedures, and guide them of measures they can take while waiting on laboratory results.

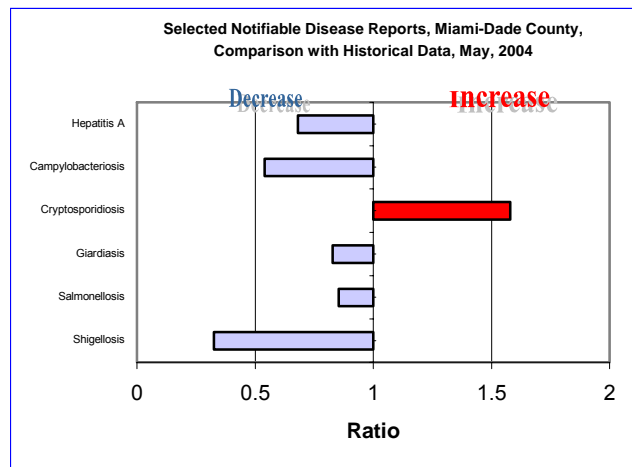
Reference

1. Florida Health Stat Data.
Floridahealthstat website:
<http://floridahealthstat.com/qs/owa/facilitylocator.faclocator>

Acknowledgements

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*Ratio of current month total to mean of 15 month totals (from previous, comparable, and subsequent month periods for the past 5 years).



To report diseases or for information:

Office of Epidemiology and Disease Control
Childhood Lead Poisoning
Prevention Program (305) 623-3565
Hepatitis (305) 324-2490
Other diseases and outbreaks
(305) 324-2413

HIV/AIDS Program (305) 324-2459
STD Program (305) 325-3242
Tuberculosis Program (305) 324-2470
Special Immunization Program
(786) 845-0550

Nights, weekends, and holidays
(305) 377-6751



Monthly Report

Selected Reportable Diseases/Conditions in Miami-Dade County, May 2004

Diseases/Conditions	2004 this Month	2004 Year to Date	2003 Year to Date	2002 Year to Date	2001 Year to Date	2000 Year to Date
AIDS ^{*Provisional}	115	599	463	486	596	601
Animal Rabies	0	0	0	0	0	0
Campylobacteriosis	8	47	49	39	39	36
<i>Chlamydia trachomatis</i>	322	1715	1759	1874	1449	1323
Ciguatera Poisoning	0	0	0	0	0	0
Cryptosporidiosis	2	4	5	3	7	1
Cyclosporiasis	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0
<i>E. coli</i> , O157:H7	0	1	0	0	0	1
<i>E. coli</i> , Non-O157	0	0	0	1	0	0
<i>E. coli</i> , Other	0	0	0	0	0	0
Encephalitis (except WNV)	0	0	0	1	0	0
Encephalitis, West Nile Virus	0	0	0	0	0	0
Giardiasis, Acute	17	106	61	71	93	12
Gonorrhea	113	618	789	857	717	882
Granuloma Inguinale	0	0	0	0	0	0
Hepatitis A	7	13	16	55	58	30
Hepatitis B	0	16	17	11	21	32
HIV ^{*Provisional}	188	752	706	873	719	800
Lead Poisoning	21	104	80	96	78	168
Legionnaire's Disease	2	3	0	0	0	0
Leptospirosis	0	0	0	0	0	0
Lyme disease	0	1	1	0	1	3
Lymphogranuloma Venereum	0	0	0	0	0	0
Malaria	3	8	5	5	10	3
Measles	1	1	0	0	0	0
Meningitis (except aseptic)	1	1	0	0	0	0
Meningococcal Disease	0	8	3	8	9	11
Mumps	0	0	0	0	0	1
Pertussis	0	2	1	1	1	3
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	28	117	152	96	67	47
Shigellosis	7	77	132	77	33	38
<i>Streptococcus pneumoniae</i> , Drug Resistant	6	31	42	60	71	81
Syphilis, Infectious	14	80	81	77	78	60
Syphilis, Other	66	380	452	448	240	353
Tetanus	0	0	0	0	1	0
Toxoplasmosis	0	1	4	10	6	0
Tuberculosis ^{*Provisional}	N/A	N/A	104	93	57	105
Typhoid Fever	0	1	1	1	0	0
<i>Vibrio cholera</i> Type O1	0	0	0	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	0	0	0	0
<i>Vibrio</i> , Other	0	0	1	0	0	0

* Data on AIDS are provisional at the county level and are subject to edit checks by state and federal agencies.

** Data on tuberculosis are provisional at the county level.

