

Managing Influenza Outbreaks in LTC

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Objectives

- Describe the impact of influenza in LTC populations
- Discuss the key role of vaccination in preventing influenza outbreaks
- Identify the importance of active influenza surveillance in LTC settings
- Discuss key practical steps in the management of influenza outbreaks.



Influenza

A Serious LTC Disease

Seasonal Influenza

- Average 226,000 hospitalizations annually
- Rates higher in older adults
 - 560 influenza-related hospitalizations per 100,000 persons

Fiore, et al. MMWR 59(RR-8);Aug 6, 2010

Seasonal Influenza

- 3,349 to 48,614 influenza associated deaths annually
- 90 % of influenza deaths occur in those over 65 years of age
- Risk is greatest in oldest old (\geq 85 yrs)
 - 16 times more likely than those 65-84

MMWR 59(33):1057-62 Aug 27, 2010

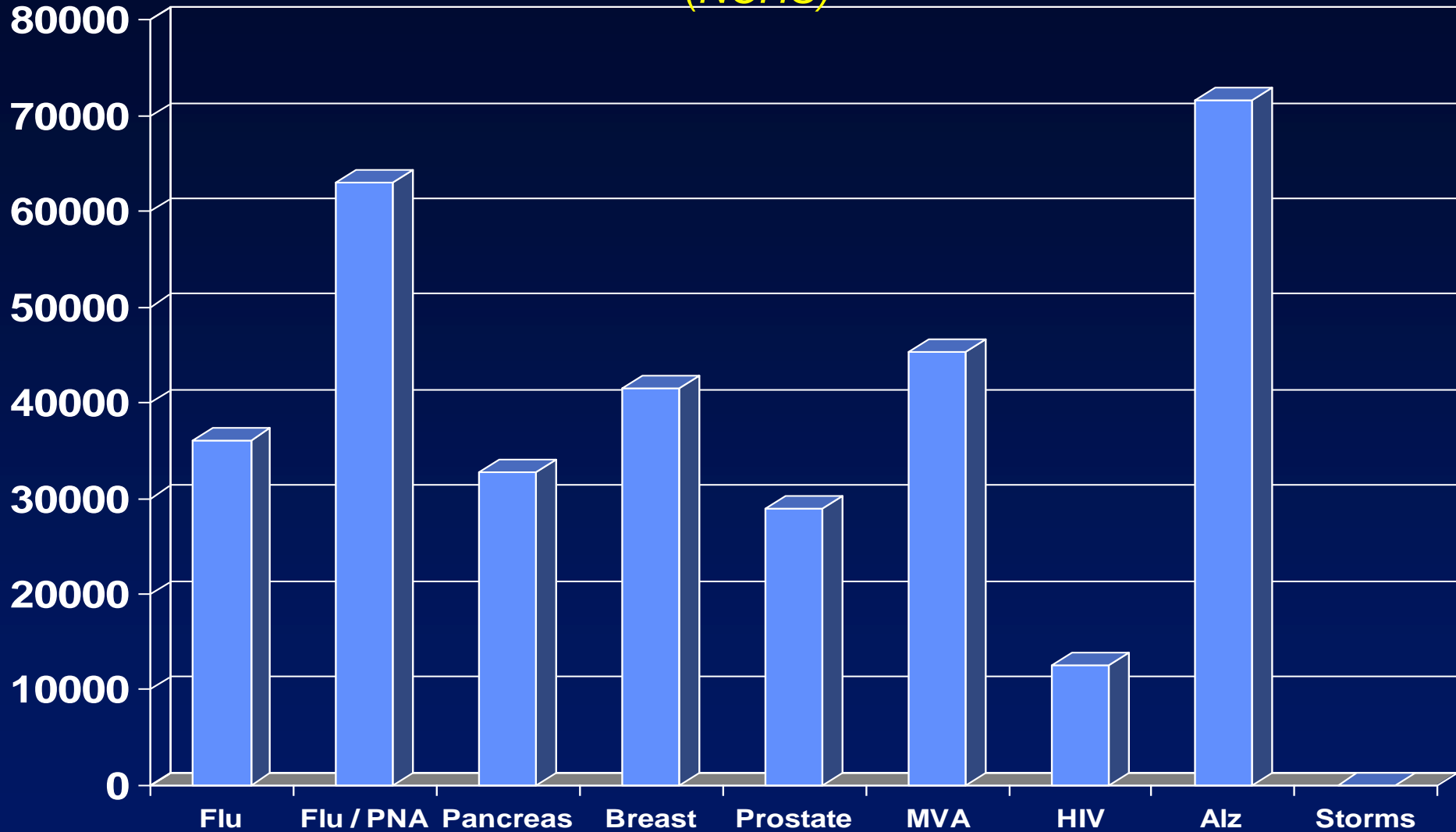
Fiore, et al. MMWR 58;2009

Seasonal Influenza

- Nursing facility outbreaks common
 - Close contact
 - Frail population
 - Reduced immune response to vaccination
- Nursing facility outbreaks often unrecognized
 - Adequate testing not available
 - Disease masquerades as anything else
- Case fatality rates
 - 5 - 55%

Causes of Death 2005

(NCHS)



Vaccination

Why bother?

Prevention

- Vaccination remains the most effective means of reducing influenza and pneumococcal disease.
 - Primary prevention
 - Low cost
 - Few side effects
- Antivirals, while useful, have major limits to their impact
 - Antiviral resistance (*between 07-08 and 08-09 resistance from 11% to 100% Seasonal H1 and adamantines 100%*)
 - Cost
 - Side effects
 - Secondary prevention strategy

*What if the vaccine doesn't
match what's out there?*

Within-Season Estimate of the Effectiveness of TIV Marshfield Wisconsin 2007-2008

MMWR 2008;57(15):393-398.

- Study of the effectiveness of the mismatched 2007-08 vaccine
- Patients with respiratory illness
- Jan 21, 2008 – March 28, 2008
- *Vaccine still provided some level of protection*
 - 44% Vaccine Efficacy
 - Despite mismatch with circulating strains

*Healthcare Worker
Immunizations*



Patient A



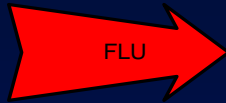
Patient B



**Patient
Immunization**



Patient A



HCW's

Strategies to
Stop
Transmission of
Flu in Healthcare
Facilities



HCW's



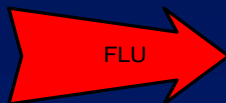
Fellow HCW's



**Healthcare Worker
Immunization**



HCW's



Patient


Antiviral Agents

Does HCW Immunization Improve Resident Health?

- Multiple studies showing benefit to HCW immunizations
- Reduction in influenza like illness
- Resident mortality is reduced when HCW get vaccinated
 - 40% mortality reduction in 2 trials
 - Regardless of vaccine status of residents

HCW Immunization Rates

- Despite ACIP recommendations, Healthy People 2010 goals, and positions of professional organizations, national rates of HCW immunizations remain disappointingly low.
 - 37-46%
 - 54% last year, but in setting of pandemic

MMWR 2010;59(12):357-362.

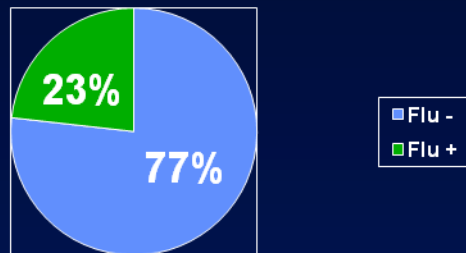
Median HCW Immunization Rates Wisconsin Nursing Facilities



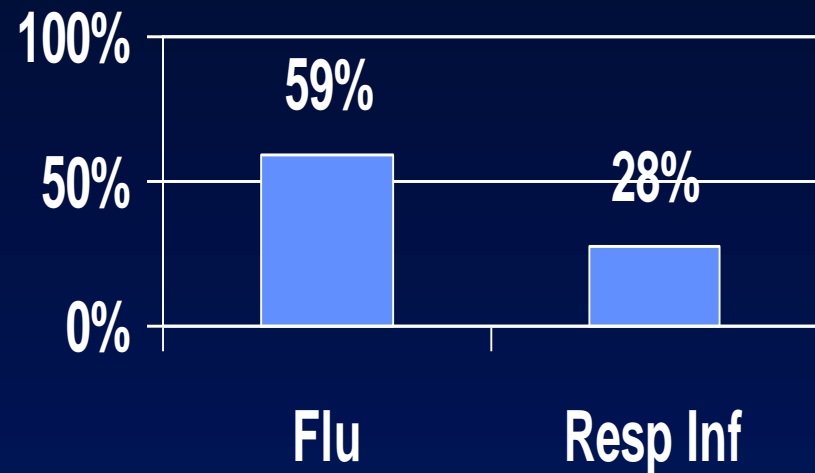
- National HCW immunization rate remain low (35-54%)
- Only 30% of the 393 Wisconsin NF achieved an 80% immunization rate

Study of Influenza Prevalence in HCW

BMJ 1996;313:1241-2.



Percent Staff w / Flu

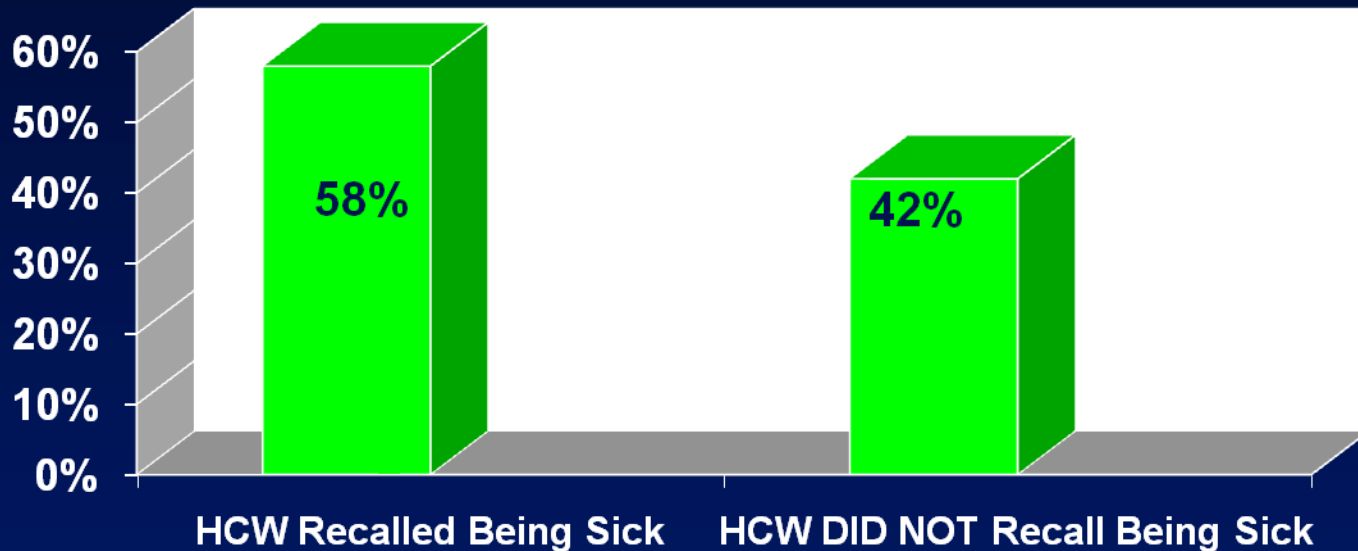


Percent Flu + Staff w / No
Recollection of Infection

- 1993-1994 Glasgow
- 518 subjects, influenza A/B antibodies w/paired serum samples
- Survey questionnaire

Effectiveness of Influenza Vaccine in Health Care Professionals: A Randomized Trial

Wilde JA, McMillan JA, Serwint J, et al. *JAMA* 1999;281(10):908-913.



- Randomized trial of flu vaccine versus placebo in HCW
- Percentage of asymptomatic carriage in placebo group with flu

Why Vaccinate Healthcare Workers?

Patient Safety

Personal Safety

Protect contacts of the HCW



Future Directions

- HHS supporting mandatory HCW immunization
- JCAHO standard
- NQF Quality Measure 2010
- Mandatory HCW Vaccination Programs



F 334

Urban Myths and Legends

F334 Influenza & Pneumococcal Immunizations (483.25(n))

- (1) The facility must develop policies and procedures that ensure that
 - (i) Before offering the influenza immunization, each resident, or the resident's legal representative **receives education** regarding benefits and potential side effects of the immunization
 - (ii) Each resident **is offered** an influenza immunization October 1 through March 31 annually, unless the immunization is medically contraindicated or the resident has already been immunized during this time period

F334 Influenza & Pneumococcal Immunizations (483.25(n))

(1) *(continued)*

- (iii) The resident or the resident's legal representative has the **opportunity to refuse** immunization
- (iv) The resident's medical record includes **documentation** that indicates at a minimum the following
 - (A) That the resident or resident's legal representative was provided education regarding the benefits and potential side effects of influenza immunization
 - (B) That the resident either received the influenza immunization or did not receive the influenza immunization due to a medical contraindications or refusal

Intent

- Minimize the risk of residents acquiring, transmitting, or experiencing complications from influenza and pneumococcal pneumonia by assuring that each resident:
 - Is informed about the benefits and risks of immunizations
 - Has the opportunity to receive, unless medical contraindicated or refused or already immunized the influenza pneumococcal vaccine

Intent

- Assure documentation in the resident's medical record of the information / education provided regarding the benefits and risks of immunization and the administration or the refusal of or medical contraindications to the vaccine.

Definitions

- Medical Contraindication – a condition or risk that precludes the administration of a treatment or intervention because of the substantial probability that harm to the individual may occur.
- Precaution – a condition in a potential recipient that might increase the risk for a serious adverse reaction or that might compromise the vaccine's induction of immunity. The risk of this happening is less than expected with a contraindication

What You Need for F334

Resident Care Policies

- Physician approved vaccination policies
 - Standing Orders Programs recommended
- Assessment process
 - Identifying the candidates
 - throughout the season
 - Assessing for contraindications



What You Need for F 334

Resident Care Policies

- Documentation process
 - Immunization status
 - Chart level
 - Facility level
 - Education
- Educational process
 - Vaccine Information Statements (VIS)



What You Need for F 334

Resident Care Policies

- Consent
 - Ability to accept or refuse
 - May be verbal (written consent not required)
 - Recommend **opt out process**



What F334 Does NOT Require

- Written consent
- A specific physician order
- Resident or proxy signatures indicating education was provided

Some Key Strategies to Improve Immunization Programs

Eliminate Consent Forms

Consent

- The resident has the opportunity to accept or decline the immunization
 - Residents are simply offered the vaccine and may say yes or no
 - Can use opt out policies
- Written consent not a licensure requirement
- There is no other federal requirement for written informed consent

Consent

- Written consent not a recommendation
 - There is no organization which recommends consent forms for flu shots
- Not considered a standard of care
- Written consent is a **barrier** to improving immunization rates



Comparative Risk Example

Treatment	Type of Serious Risk	Risk
Warfarin	Serious bleeding	0.9-2.7% per year
Flu Shot	Serious Neurologic Disorder (<i>*assume a risk exists</i>)	< 4 / million doses



Eliminate Individual Physician Orders

Standing Orders

- 2002 CMS authorized use of standing orders programs
 - Removes requirement for a physician order to receive influenza or pneumococcal vaccines
 - Physician approved policy in place
 - Facility assesses for contraindications, provides education and administers vaccine to eligible residents

Standing Orders

- Standing order programs improve immunization rates by removing a barrier to vaccine receipt – the physician order
- Standing order programs are safe
 - Low risk procedure
 - Greater risk is being unvaccinated

Streamline Education

Education

- Goal is to understand risks
 - Substantial risk of not getting vaccine
 - Minimal risk to getting vaccine
- Provision of education critical to improve rates
 - Focus area when immunization rates are low

Education

- Education is best kept simple
- Vaccine information statements (VIS) meets requirement
- F 334 does not require facilities to have signatures indicating receipt of education
 - This is not a recommended strategy

Flu Shot MAR Stickers

FLUARIX PREFILLED SYRINGE

ADMINISTER 0.5ML INTRAMUSCULARLY X 1 DOSE

SHAKE WELL PRIOR TO ADMINISTRATION

LOT: aflua524aa EXP: 5/31/2011

WRITTEN EDUCATION ON RISK/BENEFIT OF
VACCINE PROVIDED TO RESIDENT OR POA

DIAGNOSIS: INFLUENZA PROPHYLAXIS|

Tool for documenting necessary information on medical record



Declination Forms

Declination Forms

- Form that individuals sign in order to refuse vaccine
 - Greater risk of harm is being unvaccinated
 - Can be used to ensure refusal is done as part of informed consent
- Particularly helpful with healthcare workers

UPMC EMPLOYEE INFLUENZA VACCINE DECLINATION FORM

RECEIVED FLU VACCINE

I have received the Flu shot at _____, 2008 (date)

Signature (Employee)

Printed Name

Date

ALLERGIC TO THE FLU VACCINE

I am allergic to the flu vaccine. I have had the following allergic reaction to the vaccine in the past.

Date of Reaction: _____ Treating physician: _____

Signature (Employee)

Printed Name

Date

DECLINED FLU VACCINE

I have been offered the flu vaccine this season, and I am declining it. I understand why getting the flu vaccine is important, especially because:

- The flu vaccine does not give me the flu,
- The flu vaccine may help me from getting sick with the flu,
- The flu vaccine may help prevent me from giving the flu to my family,
- The flu vaccine may help prevent me from giving the flu to my co-workers,
- The flu vaccine may help prevent me from giving the flu to my patients,
- Influenza (the flu) can cause serious illness in residents.

I am refusing the flu vaccine because

I have read this declination form and understand the implications of my not receiving the flu vaccine. I understand I may receive the flu vaccine later in the season if I change my mind and if supplies are available. I also understand that in the event of a flu outbreak I may be required to follow infection control directives necessary to reduce the impact of the outbreak. These further directives could include any or all of the following:

- I may be required to take antiviral medications to limit spread of the flu,
- I may be required to continuously wear a mask while at work until directed otherwise,
- I may be required to stay home from work until the outbreak has subsided,
- I may be required to follow additional directives as determined by the outbreak situation.

Signature (Employee)

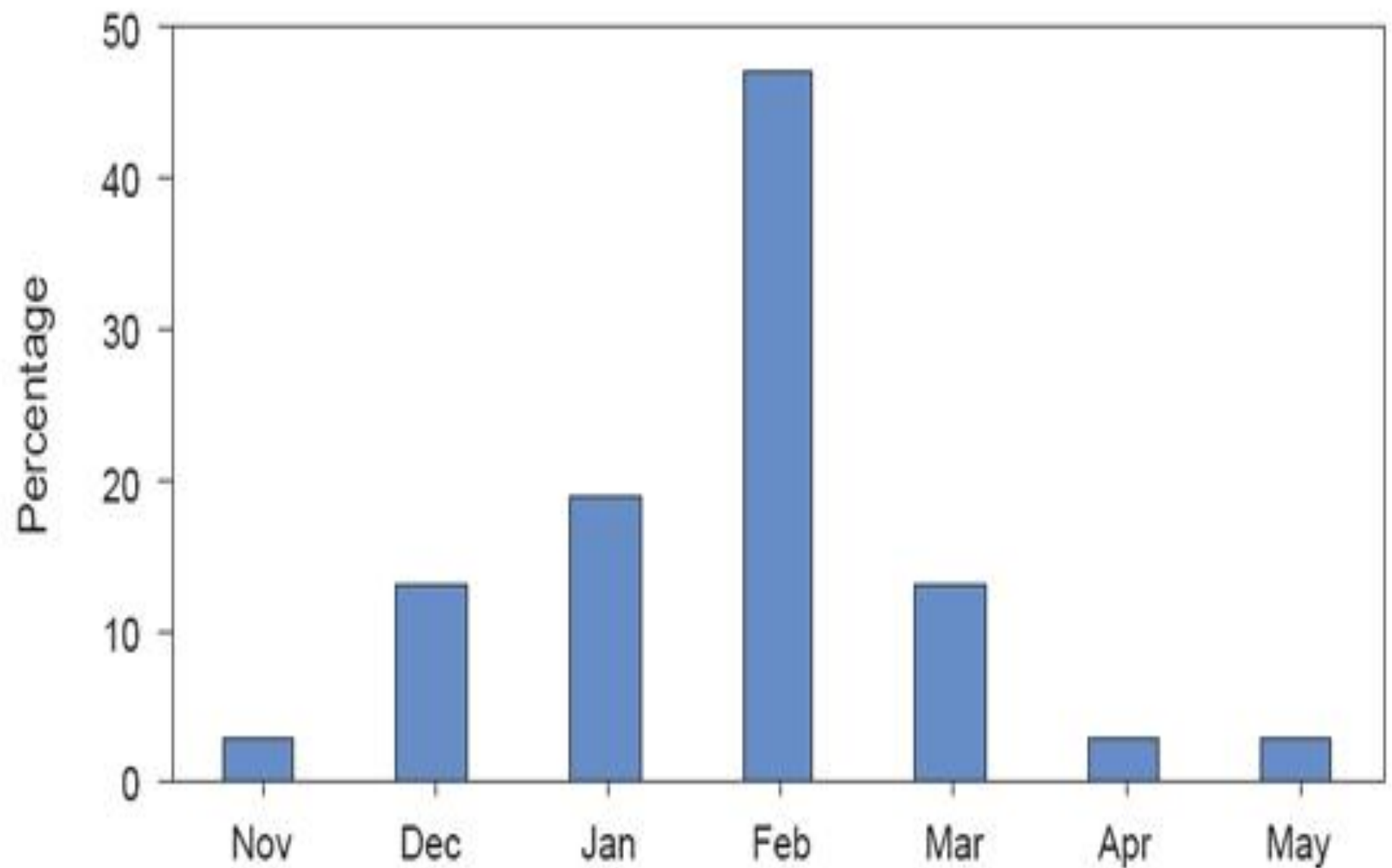
Printed Name

Date

Vaccinating Is Like Voting

Do It Early and Often

FIGURE 1. Peak influenza activity, by month — United States, 1976–77 through 2007–08 influenza seasons



Stop Waiting Till October!

- In past, many clinicians thought they should hold off on offering flu vaccine until October or November
 - Presumption was that the flu vaccine “wore off” before the end of the season
- No data to support this practice

Stop Waiting Till October!

- Literature review 2008
 - 14 studies of elderly patients reporting antibody levels to at least 16 weeks
- No evidence of rapid decline in influenza vaccine antibody levels among elderly subjects

Skowronski DM, et al. Rapid decline of influenza vaccine-induced antibody in the elderly: Is it real, or is It relevant? JID 2008;197:490-502.

Timing of Vaccination

- Waiting to start immunizing can result in missed vaccinations
- CDC position
 - Give flu vaccine as soon as it becomes available



Surveillance

Surveillance

- Flu occurs every year – expect it!
- LTCF cases are often undetected
 - Unless you are actively looking you won't see flu
- Look for ILI: Pick your definition and use it
 - Fever AND cough/sore throat
 - Fever AND respiratory symptoms
 - Fever AND myalgias/HA/cough/coryza/PNA

Surveillance

- Track what is going on in the community
 - PA HAN
 - CDC
 - Local Health Departments
 - News media
- Test
 - Rapid tests
 - EIA
 - PCR and Culture – Do Along With RTs or EIAs

Surveillance

- **Cluster:** Three or more cases of acute febrile respiratory illness (AFRI) occurring within 48 to 72 hours, in residents who are in close proximity to each other (e.g., in the same area of the facility).
- **Outbreak:** A sudden increase of AFRI cases over the normal background rate or when any resident tests positive for influenza. One case of confirmed influenza by any testing method in a long-term care facility resident is an outbreak.

Antivirals

- Used for Treatment AND Prophylaxis
 - Oseltamivir or zanamivir
- Renal Adjustment
 - CrCl < 30
 - Create list of creatinine clearances at the beginning of the flu season (Excel spreadsheet)
- Preprinted orders
 - Medical Director role
- Teamwork (Pharmacy/Medical Director/Nursing/Adm)

<http://cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

Immunize those who haven't had
flu shot!

Those who refused the flu shot
and who are now ill:
Educate!

Droplet precautions

- Mask upon entering room
- Mask if resident leaves room
- 3 foot spatial separation / curtain
- 5 days
- Private room if possible/cohorting
 - Prophylax roommate

Infection Control Practices

- Signage
 - Announces outbreak to visitors
 - Instructs visitors to avoid visiting if ill or at risk
- Make tissues and masks available
- Alcohol based hand gels and hand hygiene

Infection Control Practices

- Send sick staff home
 - 24 hours after fever off meds that will mask fever
 - Coming back try to assign to previously ill or recuperating
- Cancelling large group activities/restrict visitors *(children 10 days and adults 5 days)*

<http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>
#recommendations

Infection Control Practices

- Defer admissions
- Limit traffic between units
- Track the Outbreak
 - Line listing form

Communication

- Patients and families
 - What you know, what you are doing, who is involved, when you will update
- Physicians
- Staff

Communication

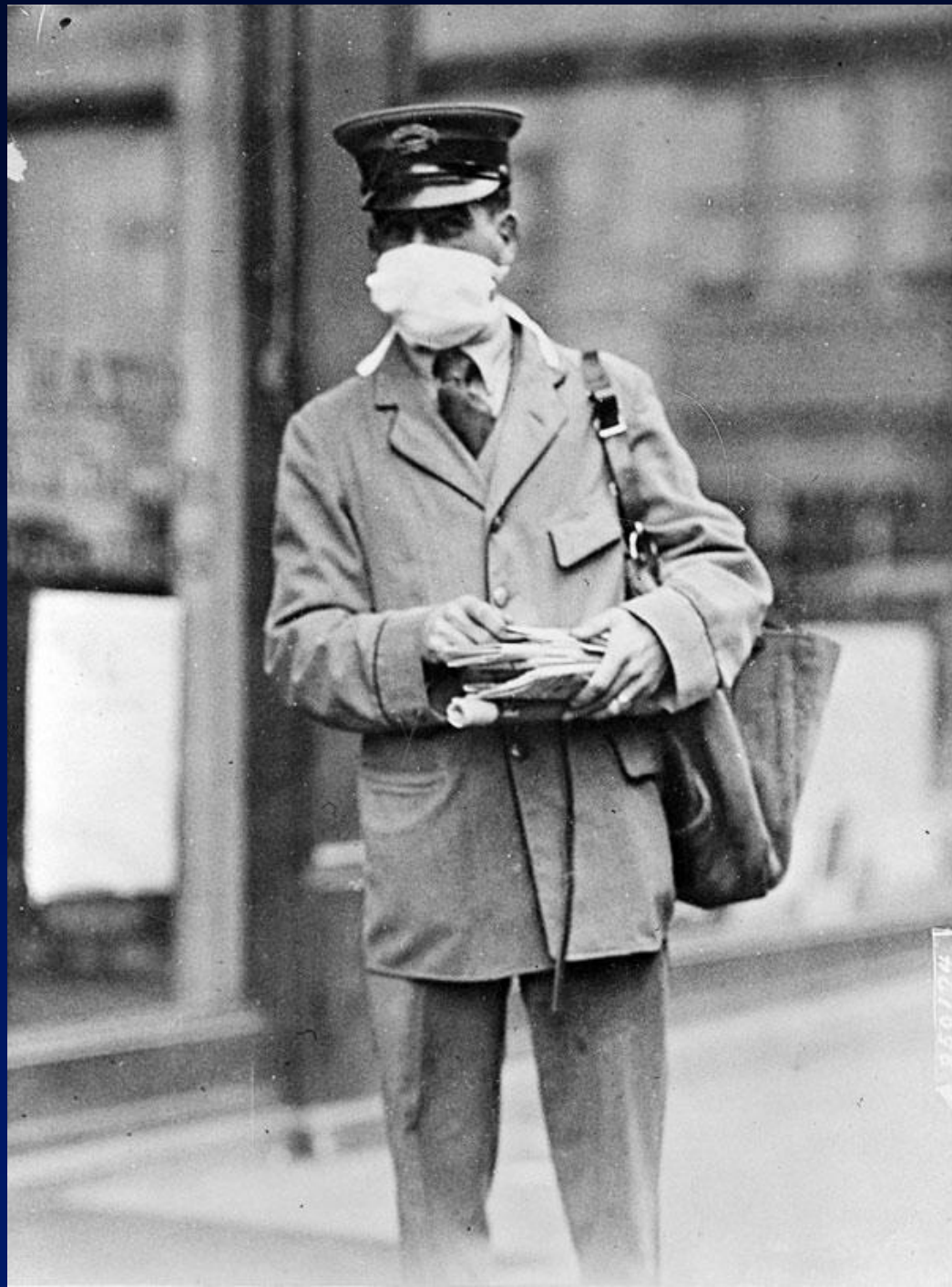
- Health Department
- DOH
- PSA via PA-PSRS
- DPW if in AL / Personal Care

Follow Up

- Infection Control Team review
 - Number of confirmed and suspected cases
 - Duration
 - Procedural review
- Staff & Physician F/U
 - Vaccination status
- Family F/U

New York City Letter Carrier
October 1918

Courtesy of the National Archives



References

- Sand KL, Lynn J, Bardenheier B, Seow H, Nace DA. Increasing influenza immunization for long-term care facility staff using quality improvement. *J Am Geriatr Soc.* 2007;55:1741-1747.
- Nace DA. Improving immunization rates in long-term care: Where the forest stops and the trees begin. *JAMDA* 2008;9(9):617-621.
- Nace DA, Hoffman EL, Resnick NM, Handler SM. Achieving and sustaining high rates of influenza immunization among long-term care staff. *JAMDA* 2007;8(2):128-33
- Rakita RM, et al. Mandatory influenza vaccination of healthcare workers: A 5-year study. *Infect Control Hosp Epidemiol* 2010;31(9):881-888.



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- Bardenheier BH, Shefer A, McKibben L, Roberts H, et al. Factors predictive of increased influenza and pneumococcal vaccination coverage in long-term care facilities: the CMS-CDC standing orders program Project. *JAMDA* 2005;6(5):291-9.
- Potter J, et al. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. *JID* 1997;175:1-6.
- Carman WF, et al. Effects of influenza vaccination of health-care workers on mortality of elderly people in long-term care: a randomised controlled trial. *Lancet* 2000;355:93-97.

References

- Stefanacci RG. Creating Artificial Barriers to Vaccinations. JAMDA 2005;6(5):357-358.

Resources

- American Medical Directors Association
 - <http://www.AMDA.com>
 - Immunization in the LTC Setting: LTC Physician Information Toolkit Series, 2010
 - Critical Issues in Infection Control: LTC Physician Information Toolkit Series, 2002
- Society of Healthcare Epidemiologist of America
 - <http://www.Shea-online.org>
- Infectious Diseases Society of America
 - <http://www.IDSociety.org>



Resources

- CDC
 - <http://www.cdc.gov/flu>
 - <http://www.cdc.gov/hepatitis/Settings/GlucoseMonitoring.htm>
- Influenza Vaccination Information for Healthcare Professionals
 - http://www.flu.gov/professional/hospital/hcworkers_vaccine.html
- American Academy of Allergy, Asthma, and Immunology
 - Administering Influenza Vaccine to Egg Allergic Recipients
 - http://www.aaaai.org/professionals/administering_influenza_vaccine.pdf



Resources

- Immunization Action Coalition
 - [www.Immunize.org](http://www.immunize.org)
Information on *Mandatory Immunization Programs*
 - <http://www.immunize.org/honor-roll/>
- National Influenza Vaccine Summit
 - www.preventinfluenza.org