

Seasonal Influenza Immunization: Protecting Patients and Healthcare Workers

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Outline of Presentation

- **Don Wright's interest in flu and HCW**
- **Impact of influenza**
- **The under-vaccination problem**
 - **Patients**
 - **Health care personnel**
- **Possible solutions**



Why is Don Wright talking about influenza?

- Initial training in Family Medicine
- Additional training in Occupational Medicine
- Director: Office of Occupational Medicine/OSHA
- HCW – Intersection Public Health and Occupational Health





Impact of Influenza-United States

- 5% to 20% of the population are infected every year.
- Approximately 36,000 annual influenza-associated deaths on average
- Persons 65 years of age and older account for more than 90% of deaths



Impact of Influenza-United States

- Highest rates of complications and hospitalization among young children and person 65 years and older
- Average of more than 200,000 influenza-related excess hospitalizations annually
- 57% of hospitalizations among persons younger than 65 years of age



Impact of Influenza in Health Care Personnel (HCP)

- In one randomized controlled trial of influenza vaccination of HCP, 26% of unvaccinated HCP had documented serologic evidence of influenza infection
- Of these, 42% could not recall having any respiratory infection¹

¹Wilde et al., JAMA 1999;281:908—13



Inactivated Influenza Vaccine Effectiveness

- 70%-90% effective among healthy persons younger than 65 years of age
- 30%-40% effective among frail elderly persons
- 50%-60% effective in preventing hospitalization
- 80% effective in preventing death



Impact of Influenza Vaccination of HCP on patients

- Over 12 years in one hospital, vaccination coverage increased from 4% to 67%
 - Laboratory-confirmed influenza cases among HCP decreased from 42% to 9%
 - Nosocomial cases among hospitalized patients decreased 32% to 0 ($p < 0.0001$)¹
- Two randomized controlled trials evaluated impact of HCP influenza vaccination on residents in nursing homes^{2,3}
 - They estimated > 40% decrease in overall mortality among residents in the setting of high employee vaccination levels, regardless of patient vaccination levels.

¹Salgado et al., *Inf Cont Hosp Epi* 2004;25:923-8

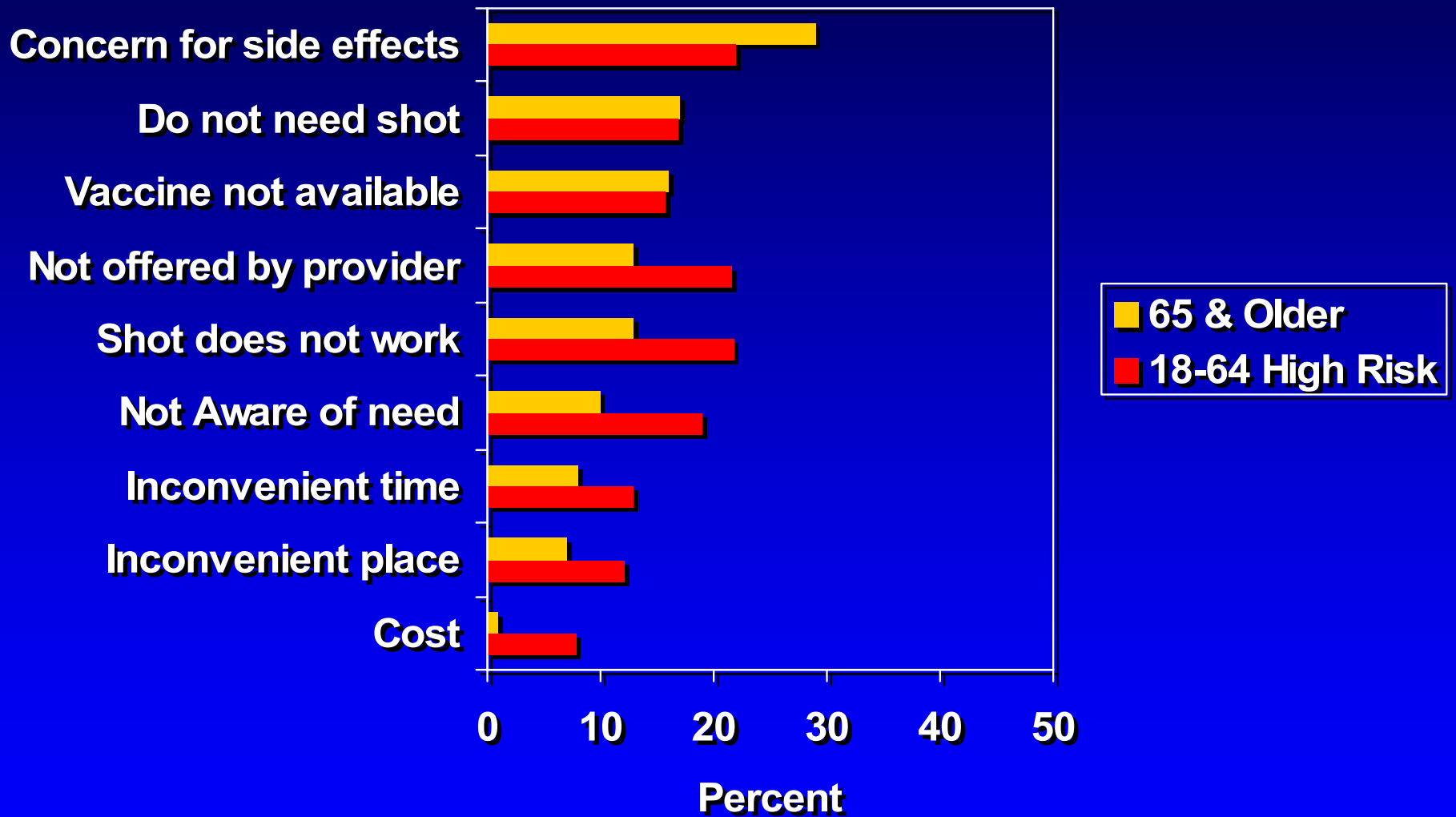
²Carman et al., *Lancet* 2000;355(9198): 93--7

³Potter, et al., *J Infect Dis* 1997;175:1--6



Objective 14.29 Annual Influenza Vaccination, Adults	2006, NHIS	2010 Target
a. Noninstitutionalized adults aged ≥ 65 years	64% (67% Q1 2007)	90%
c. Noninstitutionalized high-risk adults 18-64 years	25% 18-49 yrs 44% 50-64 yrs	60%
g. Health care workers aged 18-64 years	42%	60%

Reasons Given for Not Receiving Influenza Vaccination



Physician Perception of Barriers for Influenza Vaccination

Barrier	Influenza vaccination*
Urgent concerns dominate visit	43
Not knowing patient immunization history	12
Patient concern about vaccine safety	58
Inadequate reimbursement	26
Identifying eligible patients	13
Lack of patient-oriented vaccine information	20

*Percent of physicians

Szilagyi. *Prev Med* 40:152-61, 2005

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Meta-Analysis of Interventions that Increase Use of Adult Immunization

Intervention	Odds Ratio*
<i>Organizational change</i> <i>(e.g., standing orders, separate clinics devoted to prevention)</i>	16.0
Provider reminder	3.8
Provider education	3.2
Patient financial incentive	3.4
Patient reminder	2.5
Patient education	1.3

*Compared to usual care or control group, adjusted for all remaining interventions



Stone E. Ann Intern Med 136:641-51, 2002



MMWRTM

Morbidity and Mortality Weekly Report

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Influenza Vaccination of Health-Care Personnel

**Recommendations of the Healthcare Infection Control
Practices Advisory Committee (HICPAC) and the Advisory
Committee on Immunization Practices (ACIP)**



Influenza Vaccination of Health-care Personnel

- Only 42 percent of U.S. health-care personnel were vaccinated in 2006

MMWR 2006;55 (RR-2). February 24, 2006.



Reasons for Accepting Vaccination Among Health-care Personnel

Reason	Physician %	Nurse %	Technician or Aide %	Admin. Worker %	Medical Student %
Fear of getting influenza	77	77	60	71	75
Fear of transmission to patients	78	59	60	36	64
Vaccine is safe	77	56	42	38	63
Vaccine is effective	70	55	47	36	59
Vaccine was free	44	54	49	62	76
Close contact with high risk person at home	45	56	42	43	9
Convenient	28	38	44	45	53



Reasons for Rejecting Vaccination Among Health-care Personnel

Reason	Physician %	Nurse %	Technician or Aide %	Admin. Worker %	Medical Student %	Other %
Vaccine shortage	57	40	58	53	34	48
Concern about side effects	17	34	36	25	23	28
Never get influenza	14	25	27	18	23	22
Inconvenience	26	9	4	7	34	13
Forgot	18	8	5	2	11	8

Christini AB, et al. Infect Control Hosp Epidemiol 2007;28:171-7



Literature review

Hofman F, Ferracin C, Marsh G, Dumas R. *Infection* 2005;34:142-147

- Literature review of 32 studies performed 1985-2002
 - US, Canada, Europe
- Vaccination rates 2.1% - 82%
- Ideas encouraging influenza vaccination
 - To protect oneself (33-93%) - strongest motivation
 - To protect patients (2-98%) -secondary motivation
 - Free and convenient (11-58%)
 - Being previously vaccinated
 - Following the example set by peers



Literature review

Hofman F, Ferracin C, Marsh G, Dumas R. *Infection* 2005;34:142-147

- Ideas preventing influenza vaccination
 - Fear of adverse events (8-54%)
 - Misconception that vaccination can cause influenza (10-45%)
 - Not at risk (6-58%)
 - Times/locations of vaccination were unsuitable (6-59%)
 - Doubt that influenza is a serious disease (2-32%)
 - Lack of vaccine efficacy (3-32%) - except physicians
 - Fear of injections (4-26%)
- 2 main barriers:
 - Misperception of influenza, its risks, the role of HCW in its transmission to patients, and the importance and risks of vaccination
 - Lack of (or perceived lack of) conveniently available vaccine



Common Themes

- Reasons for accepting influenza vaccination
 - Protect self
 - Protect patients
 - Convenience
 - Peer influence
 - Prior experience
- Reasons for rejecting influenza vaccination
 - Concerns about vaccine safety or efficacy
 - Not at risk (healthy immune system)
 - Lack of understanding of transmission of influenza
 - Fear of needles
 - Not convenient

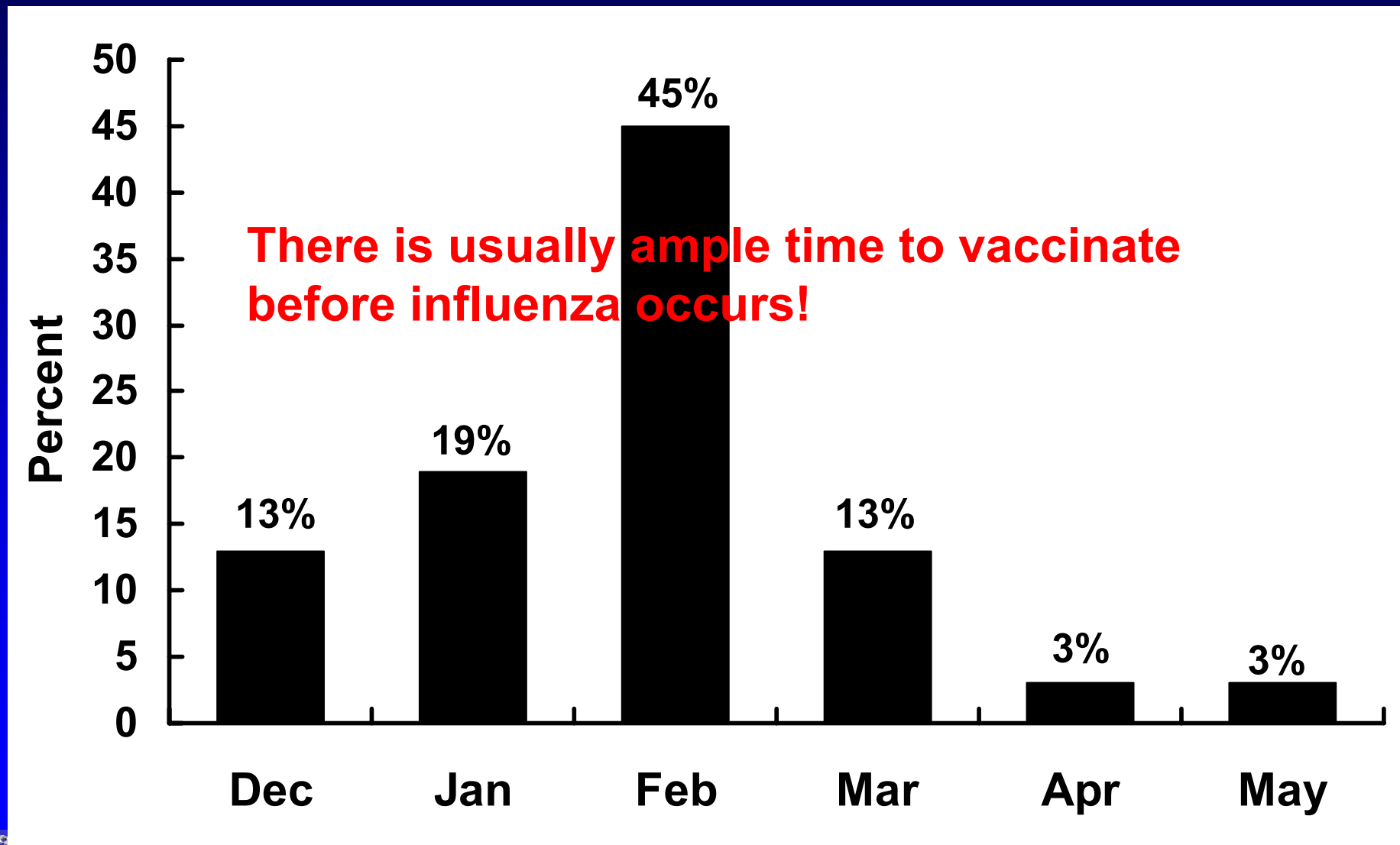


Notable Differences

- Differences in motivators, barriers and beliefs by
 - Category of healthcare worker
 - Type of institution
 - Age
 - Level of knowledge about influenza and vaccine
 - Level of trust



Month of Peak Influenza Activity United States, 1976-2006



HHS Initiative for Influenza Vaccination of Health Care Personnel: Components

- **Two components**
 - **Improving HHS health care employee influenza vaccination, with focus on**
 - **Federal Occupational Health**
 - **Indian Health Service**
 - **U.S. Public Health Service Commissioned Officers**
 - **NIH Clinical Center**
 - **CDC**
 - **Promoting influenza vaccination to non-federal health care organizations and HCP**



HHS Initiative for Influenza Vaccination of Health Care Personnel: HHS Employees

- **Three focus areas**
 - **Developing office and agency specific strategies to improve HCP vaccination levels**
 - **Measuring employee vaccination rates**
 - **Disseminating a toolkit containing**
 - **Standard presentation**
 - **Relevant articles**
 - **Posters**
 - **Fact sheets, questions and answers**
 - **Vaccine information statements**
 - **Links to other resources**
 - **Toolkit will be available on HHS OPHS website**



HHS Initiative for Influenza Vaccination of Health Care Personnel: Outreach

HHS will also promote Influenza Vaccination of Health Care Personnel (HCP) nationwide

**Healthy People 2010 target:
60% of all HHS HCP will be vaccinated annually
By 2010**

HHS plans to partner with many other organizations to promote HCP influenza vaccination, including the Summit

Potential Partners include:

- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Obstetricians and Gynecologists
- American College of Occupational and Environmental Medicine
- American College of Physicians
- American Hospital Association
- American Medical Association
- American Nurses Association
- American Society of Health-System Pharmacists
- Association for Professionals in Infection Control and Epidemiology, Inc.
- National Black Nurses Association
- National Hispanic Nurses Association
- National Foundation for Infectious Diseases
- **National Influenza Vaccine Summit**
- National Medical Association
- National Hispanic Medical Association
- National Medical Association



Other Standards and Recommendations

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO)¹
 - New standard, effective 1/1/07: Influenza immunization offered to staff and licensed independent practitioners.
- Infectious Diseases Society of America (IDSA)²
 - January 2007- Recommendation that U.S. adopt policy to include mandatory annual influenza vaccination among healthcare workers
- American College of Physicians (ACP)³
 - October 2007 - Recommendation that annual influenza vaccine should be required for every health care worker with direct patient care activities.

¹<http://www.jcrinc.com/26813/newsletters/12882/>, accessed 11/11/07;

²Pandemic and Seasonal Influenza Principles for U.S. Action, January 2007;

³<http://www.acponline.org/college/pressroom/hcw.htm>, accessed 11/13/07.



Influenza



From www.flu.com.au

