



\* Season Influenza  
Vaccine

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# \* By the end of this lecture you should....

- \* Understand more about the influenza virus and its potential for illness
- \* Review the science of the development of the seasonal vaccine and the principles of vaccination
- \* Appreciate the barriers for increasing vaccination rates in HCW
- \* Learn how peer vaccination can improve vaccine uptake





# \*Types of Influenza Virus

**Influenza A** - Subtypes based on the two proteins on the surface of the virus Haemagglutinin (18)

Neuroaminidase (11)

**Influenza B** No subtypes...strains and lineages



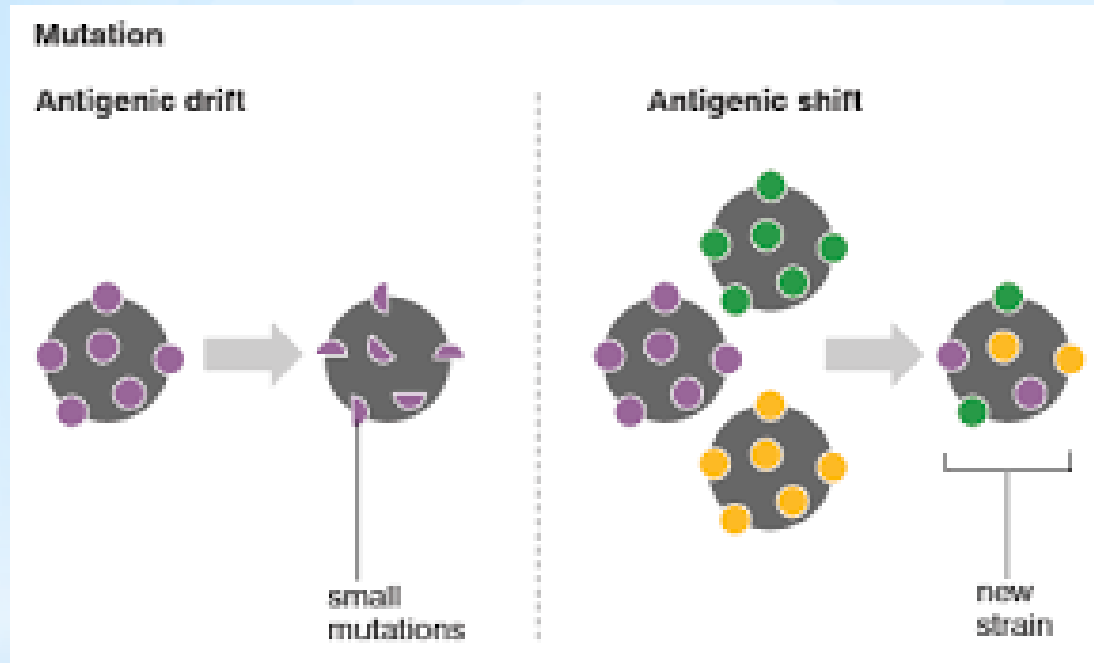
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**man flu** (*mæən flu*): An illness that causes the male of the species to be helpless and sicker than any other family member. In females; *a cold*.

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# Antigenic Shift and Drift



# \* Conventional Nomenclature WHO 1979

Antigenic Type ABC

Host of origin - Swine, Chicken

Geographical origin Denver Taiwan

Strain number 15, 7

Year of isolation 2009

For Influenza A the antigen description in brackets  
(H1N1)



## Components of 2015-2016 Flu Vaccine

A/California/7/2009 (H1N1)

A/Switzerland/9715293/2012 (H3N2)

B/Phuket/3073/2013





# \* Principles of Vaccination

*Flu vaccines cause antibodies to develop in the body about two weeks after vaccination. These antibodies provide protection against infection with the viruses that are in the vaccine.*



# \*Risks and Benefits

## Risks

Common

Sore Arm

Uncommon

Guillan-Barre Syndrome

1 extra case amongst 100,000 vaccinated

Febrile seizures 1 extra case amongst 1,000 vaccinated

## Benefits

Common

60-70% vaccine efficacy

Stats for 2014/15 Season

Confirmed influenza cases hospitalised: 1,009

Confirmed influenza cases admitted to ICU: 69

Notified influenza cases that died: 66

Estimated excess deaths in those aged 65 years and older: 726



\* *‘Healthcare workers are an important priority group for influenza vaccination. Vaccination of the health care worker not only protects the individual, but also maintains health care services during influenza epidemics and protects vulnerable patients’*

\* WHO Strategic Advisory Group of Experts 2012 recommendations



# \*Why?

- \* Healthcare workers have an additional exposure risk for influenza compared to the general population
- \* HCW can transmit influenza virus to patients who are at increased risk of severe complications e. g. pneumonia
- \* Vaccination of HCW is safe and effective in reducing their own risk of developing disease, may reduce absenteeism and may prevent transmission of virus to patients
- \* Vaccination of HCW is likely to reduce morbidity and or mortality in patients
- \* Vaccination rates in HCW remain low in many places



- \* Recommended by DOH since 2001
- \* In 2012 uptake was as low as 18%
- \* HSE Target (2013) - 75%
- \* HSE Target (2015) - 40%



| Total immunised excluding Tusla and contractors |                      |                    |  |         |                             |                                   |       |
|---|----------------------|--------------------|--|---------|-----------------------------|-----------------------------------|-------|
|   | Management/<br>Admin | Medical/<br>Dental | Health &<br>Social Care<br>Professionals | Nursing | General<br>Support<br>Staff | Other Patient<br>&<br>Client Care | Total |
| No. Eligible staff<br>2015/2016                 | 676                  | 431                | 832                                      | 1871    | 518                         | 765                               | 5093  |
| No. Immunised                                   | 245                  | 144                | 230                                      | 416     | 167                         | 214                               | 1416  |
| % Immunised<br>2015/2016                        | 36%                  | 33%                | 28%                                      | 22%     | 32%                         | 28%                               | 28%   |
| % Immunised<br>2014/2015                        | 31%                  | 22%                | 25%                                      | 17%     | 24%                         | 18%                               | 21%   |

| Total immunised Connolly Hospital   |                       |                     |   |         |                               |  |       |
|-------------------------------------|-----------------------|---------------------|---|---------|-------------------------------|--|-------|
|                                     | Management &<br>Admin | Medical &<br>Dental | Health &<br>Social Care<br>Professionals<br>* | Nursing | General<br>Support<br>Staff † | Other<br>Patient &<br>Client Care<br>§ | TOTAL |
| No. Eligible<br>staff <sup>  </sup> | 170                   | 165                 | 154   | 455     | 148                           | 129                                    | 1221  |
| Total<br>vaccinated                 | 51                    | 77                  | 63  | 113     | 52                            | 34                                     | 390   |
| Total<br>2015/16                    | 30.0%                 | 46.7%               | 40.9%   | 24.8%   | 35.1%                         | 26.4%                                  | 31.9% |
| Final<br>2014/15                    | 28.8%                 | 42.6%               | 38.3%   | 25.6%   | 33.6%                         | 17.5%                                  | 30.4% |

*HPSC Report - Seasonal Influenza Vaccine uptake by Hospital (n=48) in 2014-2015*

| Hospital  | % Total Staff Vaccinated |
|---|--------------------------|
| National Rehabilitation Hospital, Dún Laoghaire, Co. Dublin | 47.5                     |
| Beaumont Hospital   | 43.8                     |
| Coombe Women's Hospital                                     | 41.7                     |
| Naas General Hospital                                       | 41.1                     |
| St Vincent's University Hospital                            | 37.7                     |
| Children's University Hospital, Temple Street               | 36.7                     |
| Rotunda Hospital  | 35.0                     |
| St Luke's Hospital, Dublin                                  | 34.6                     |
| St Michael's Hospital, Dun Laoghaire                        | 33.4                     |
| St James's Hospital   | 32.1                     |
| Adelaide & Meath & National Children's Hospital, Tallaght   | 31.9                     |
| Connolly Hospital, Blanchardstown                           | 30.4                     |
| St Columcille's Hospital, Loughlinstown                     | 28.8                     |
| Royal Victoria Eye & Ear Hospital, Dublin                   | 27.2                     |
| National Maternity Hospital, Holles Street                  | 23.3                     |

\* How are Connolly doing nationally?



# \* Determinants of influenza vaccination uptake amongst Hospital HCWs

- \* Age
- \* Belief in vaccine efficacy
- \* Belief in prior prevention of illness by vaccine
- \* Knowledge of illness not a predictor
- \* No gender difference

IMJ 2006 Jul-Aug;99(7):200-3





I never get sick



The vaccine made me sick




I still got sick



I hate pain





I don't trust  
the vaccine





VACCINES = BAD



\* Anti vaccinationists



\* Edward Jenner



I hope that some day the practice of producing cowpox in human beings will spread over the world - when that day comes, there will be no more smallpox.

(Edward Jenner)

\* ...antivaccinationists tend towards complete mistrust of government and manufacturers, conspiratorial thinking, denialism, low cognitive complexity in thinking patterns, reasoning flaws and a habit of substituting emotional anecdotes for data.....

GA Poland, RM Jacobsen NEJM 2011





**Love them. Protect them.**

***Never inject them.***

**There are NO safe vaccines!**

Shaken Baby Syndrome

Chronic Ear Infections

Death

SIDS

Seizures

ADD

Allergies

Asthma

Autism

Diabetes

Meningitis

and polio are caused by adverse reactions to vaccine poisons.

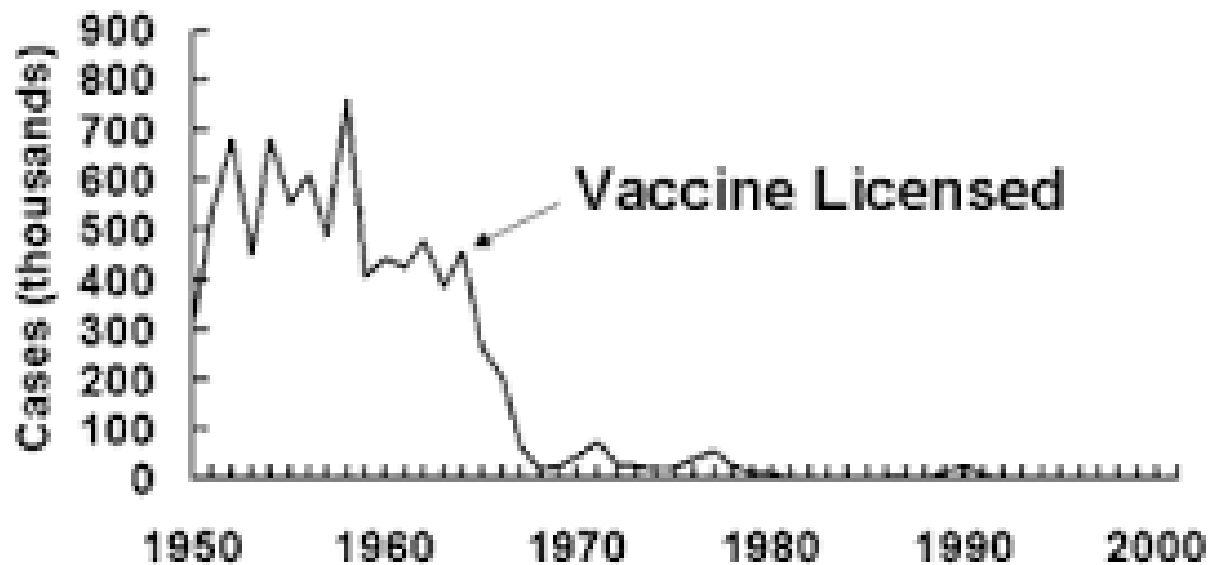


Go to: [VaccineTruth.com](http://VaccineTruth.com)

or call Vaccination Liberation: 1-888-249-1421



## Measles—United States, 1950-2001



E's case is unique. He was persuaded with an untrue more flamboyant with en suing a giant drugs

His first vaccinations six weeks and eight no record of any night, at the age of early stopped breathe, according to an r from his parents rvice report.

n of the trauma his om this illness was ards he could not ything other than said.

R almost eight reaction was or the next nine on devotedly as led with his nd significant

a issue only in M was 10 and clinic at Wake- he Royal Free, gation factory R damage.

s show how E development said, until he he lost speech became "quite his eyes were ted and [he]

M's mother, have given me accounts of an extreme reaction to the injection experienced by M. There are descriptions of M screaming after having the injection, followed by six hours of convulsions, screaming and projectile vomiting . . . One note in an 'auditory processing assessment report' dated October 31, 2002 records E alleging that, following the MMR, M had remained in 'a persistent vegetative state for six months'."

She claimed that from the time of his vaccination M had suffered from "autistic enterocolitis", a novel condition not accepted by medical opinion but cited by Wakefield in his spurious research. Other ailments itemised with incredulity in Baker's judgment include loss of sensation in M's hands and feet, adverse effects of "electromagnetic energies", apparent brain seizures, meningitis, "leaky gut syndrome", Lyme disease, uncontrollable sneezing, a shut-down of his urinary system, "tumours" in his gums, chronic blood poisoning, uncontrollable temperatures, a "black shadow sitting on his left sinuses", stabbing pains in his groin, rheumatoid arthritis, heavy metal poisoning and "black gunge oozing from every orifice".

E embarked upon often costly remedies, including tin-foil wrapping on electrical equipment in M's room, cranial osteopathy, reflexology,

range of diets being supplied to M included biotic, six vitamin supplements, mineral supplements, five treatments, fatty acids, amino enzymes and a range of home remedies," Baker writes.

In his view, E subjected his child to unnecessary tests and interventions and/or lied about purported ailments. She denied M the chance to grow more independence. She alluded to pain of a dental abscess to go to a dentist for a year, then planned to lose his lost teeth to Wakefield. And she accused the conspiracy theories: that some of doctors, scientists (and lawyers) conceal alleged horrific injuries to children; judges deny fair compensation; social workers wish to remove children from their parents.

"E's allegations of multiple conspiracies are a fantasy," E wrote. "I merely observe that, if the assertion about conspiracies is true, it would amount to gross malfeasance in public office and the biggest scandal in public care and social services in modern times."

The judge took time off to read the report "about 30 minutes", he reported. By choice, it started in the court lounge. M seemed happy and healthy. His ability to speak was limited. He was with his advocate's assist

# the peace prize



- \* 300 cases
- \* 100 hospitalisations
- \* 3 deaths

McBrien J and Murphy J  
Ped Infect Diseases 2003



# \* Measles Outbreak Dublin 2000

- \* People would be more likely to accept if they:
  - \* Think they are susceptible
  - \* Think influenza is a serious disease
  - \* Believe vaccine is effective (reduce susceptibility or reduce severity)
  - \* Believe vaccine is safe
  - \* Believe benefits outweigh costs

# \* Health Belief Model



# \* Recommendations

- \* Leadership
- \* Records and Data Collection
- \* Accessible Clinics
- \* Deal with staff resistance to Influenza Vaccination





Comhairle na nDochtúirí Leighis  
Medical Council



CENTERS FOR DISEASE  
CONTROL AND PREVENTION



Irish College of  
General Practitioners

\* Endorsement of seasonal  
influenza vaccination by  
influential bodies









# \* Records and Data Collection

- \*?Mandatory Vaccination
- \*?Mandatory Declination
- \*?Mandatory Disclosure of Vaccination Status





## \* ?Mandatory Vaccination



# \* Records and Data Collection

? Mandatory Disclosure

- \* staff are not obliged to inform management if they were vaccinated or not....
- \* 'staff members thought that it may be an invasion of privacy to inform hospital management if they received the vaccine...



- \* For an effective response to a flu outbreak in the hospital.....should the manager know the vaccination status of a member of staff in a given unit/
- \* Ethically.....should an unvaccinated HCW care for a patient with influenza?



# Tackling Inaccessibility

1. Optimise existing programmes and strive for equal access for all HSE employees:
  - \* Education
  - \* Local delivery
  - \* Timely information on uptake
2. Consider tailoring the message for different audiences
3. Arrange for local champions and set up peer to peer vaccination options



# \* National Peer Vaccination Programme

- \* Team Members - Public Health, Occ Health, ONMSD
- \* Led by Dr Kevin Kelleher - Ass Nat Dir, Health & Wellbeing (Public Health & Child Health) and Dr Lynda Sisson, National Clinical Lead for Occupational Health



# \* Programme Development Plan

- \* Programme Governance - Dr Sisson/Dr Kelleher
- \* Sharing of DNE, CHB programme/consent/PPs
- \* Communication to Senior management of CHOs and Hospital Groups and nursing unions
- \* Formation of Teams led by Public Health to include Management, OH, Inf Control
- \* Development of implementation programme and consent form
- \* Development of Medication Protocol
- \* Development and rollout of training programmes nationally through the summer months





# \*Next Steps

- \* Further Peer Vaccinators identified
- \* Training by Office of Nursing and Midwifery Planning and Development
- \* Local clinics run and promoted by Peer Vaccinators
- \* Consents and stats by OH



MORRIS  
CASE

# SWINE FLU CAN BE AVOIDED.

## SPREAD THE WORD. NOT THE GERMS.

Take these three simple measures to help you and your colleagues avoid catching swine flu:

- Avoid crowded places and public transport.
- Wear your face mask and use antiseptic gel/soap.
- Regularly clean keyboards, touchpad devices, telephone receivers or door handles.

And if you think you've got it - please stay at home and call your GP or NHS Direct.

re



**SWINE FLU:**  
an acute and highly  
contagious respiratory disease  
of swine caused by the  
orthomyxovirus thought to be  
the same virus that caused the  
1918 influenza pandemic

**SWINE FLU  
INFORMATION**  
0800 1 513 513  
[www.nhs.uk](http://www.nhs.uk)  
[www.direct.gov.uk/swineflu](http://www.direct.gov.uk/swineflu)



**IMPORTANT  
INFORMATION  
ABOUT  
SWINE FLU**

This leaflet contains important information to help you and your family - **KEEP IT SAFE**

## H1N1 PREVENTION (Swine Flu)



### Wash Your Hands...

|  |  |
|--|--|
| <p>After Using the Bathroom</p> <p>Before Eating or Handling Food</p> <p>After Handling Garbage</p> <p>After Blowing Your Nose or Coughing</p> <p>After Touching Someone Who is Sick</p> <p>When Your Hands Look Dirty</p> | <p>With Warm Water and Soap</p> <p>Wash Your Hands For At LEAST 20 Seconds</p> <p>Rinse Carefully and Pat Dry With a CLEAN Towel or Paper Towel</p> <p>Or</p> <p>Use An Alcohol-Based Hand Sanitizer - Apply and Rub Hands Until Dry</p> |
|--|--|



# \* Responsibilities of Clinicians

- \* Many HCWs do not see the link between being immunised and protecting vulnerable patients
- \* Professional Responsibility to explore and dismiss concerns about vaccine safety
- \* Counter anti-vaccinationist false and injurious claims with scientific thinking
- \* Enhance education of our patients and colleagues and persuade them to get vaccinated
- \* Acknowledge that not participating in vaccine programs may do significant harm to the public health



**The problem with today's world is that everyone believes they have the right to express their opinion AND have others listen to it.**

**The correct statement of individual rights is that everyone has the right to an opinion, but crucially, that opinion can be roundly ignored and even made fun of, particularly if it is demonstrably nonsense!**

Discovering Reason

**- Professor Brian Cox**



***‘Science is not a democracy in which the side with the most votes or the loudest voice gets to decide what is right’***



\*Thank you

\*Questions??

