Effective immunisation implementation strategies in Adults

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Immunisation Coalition

- Influenza as a test case
  - Because it changes every year
  - Because adults “have choice”
  - Influenza affects adults

Other vaccines programs

- Age specific
  - E.g. ADT at 50
- Recording last dose is important
  - E.g. pneumococcal
- Can achieve life time protection
  - E.g. Hep A/B etc
- Adults don’t always see immunisation providers

The global **annual** attack rate of **influenza** is estimated at 5%–10% in adults and 20%–30% in children. Worldwide these epidemics are estimated to result in about 3-4 million cases of severe illness and about **250,000 to 500,000 deaths**

In a non pandemic year
about 90%
of seasonal flu **deaths** are in seniors.

Recent studies have shown failure of vaccination programs in elderly

While vaccine effectiveness estimates vary, flu vaccination reduces the risk of flu illness by between 40% and 60% among the overall population during seasons when most circulating flu viruses are well-matched to the flu vaccine. In general, current flu vaccines tend to work better against influenza B and influenza A(H1N1) viruses and offer lower protection against influenza A(H3N2) viruses

Above the age of 75 years, pooled estimates were **unable** to demonstrate any significant effectiveness (of vaccination) across all seasons against influenza

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Reasons for vaccine failure

- poor match
- weak vaccine
- immune senescence

Season changes with normal drift

No distinct influenza season

POOR MATCH

In the making of vaccine they are usually cultured in egg

Growth in eggs is part of the production process for most seasonal flu vaccines. While all influenza viruses undergo changes when they are grown in eggs, changes in influenza A(H3N2) viruses tend to be more likely to result in antigenic changes compared with changes in other influenza viruses. These so-called "egg-adapted changes" are present in vaccine viruses recommended for use in vaccine production and may reduce their potential effectiveness against circulating influenza viruses

WEAK VACCINE

Peak immune response about 11 year old

Need stronger anti-body response in elderly

IMMUNE SENESCENCE

-Increase the dose of the antigen

-Make the vaccine cause more immune response

-Live vaccine

-Decrease circulating viral load

-Vaccinate just before the outbreak

-Add extra strains to the vaccine

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relative Vaccine Effectiveness (rVE) of IIV3-HD vs. IIV3,

against influenza-like illness,
rVE 18.3%, (95% CI: 7.0 to 28.3%
against hospital admissions,
rVE 19.4%, (95% CI: 6.7 to 30.4%
against pneumonia
rVE 22.4%, (95% CI: 5.0 to 36.5%
cardiorespiratory events
rVE 12.0%, 95% CI: 4.9 to 18.6%
death following a hospital admission for influenza
rVE 22.2%, 95% CI: -18.2 to 48.8%).

INCREASE THE DOSE OF THE ANTIGEN

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The biggest issue with the use of adjuvants for human vaccines, particularly routine childhood vaccines, is **the toxicity and adverse side-effects** of most of the adjuvant formulations

Although MF59-adjuvanted vaccine is transiently more reactogenic than nonadjuvanted vaccine, there is **no evidence that it increases risks** for serious adverse events, including those with an autoimmune disorder

ADJUVANT

Trivalent adjuvanted vaccine is a more appropriate choice than standard quadrivalent vaccine for older people.

ADJUVANT

The priority for adjuvanted vaccine should be for those aged 75 years and above as this age group appear to derive little benefit from the standard vaccine.

ADJUVANT

Given the low influenza vaccine effectiveness seen in the over 65 year olds in seasons dominated by A(H3N2), the **use of aTIV** in those aged 65 years and over would be both more effective and cost-effective than the non-adjuvanted vaccines currently in use

ADJUVANT

Herd immunity, more potent vaccine, seasonal changes, live vaccines, timing issues (and actual availability)

- Infrastructure
  - Private and public
- National register
- Community Acceptance
  - Safety
  - Consistent advice

THANKYOU