How well does the flu vaccine work?

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Target groups National Influenza Prevention Program (NPG)

- Persons aged 60 or over

- Children and adults with certain conditions, such as:
  - asthma or other chronic lung disease
  - chronic heart disorder
  - diabetes mellitus
  - chronic kidney disease
  - infection with HIV
  - immune compromised

- Persons with a mental handicap living in residential homes

Total ~37% of Dutch population
From: **ECDC (November 2018). Influenza vaccination and antiviral use in EU/EEA Member States**
Facts and fables

● Facts:
  – Influenza vaccines are reformulated each year to optimize the match between the vaccine and circulating viruses
  – VE can fluctuate over the years and is generally moderate

● Misconceptions:
  – Flu is not a serious problem
  – The vaccine is useless or does more harm than good
- 900,000 people had a symptomatic infection caused by the influenza virus
- 16,000 hospital admissions for complications (pneumonia) of influenza
- 9,500 excess deaths in epidemic period
How well does the flu vaccine work?

‘(Rational) believers’ versus ‘(rational) non-believers’
Influenza vaccination in the elderly: Is a trial on mortality ethically acceptable?

Ruud Andreas Fritz Verhees\textsuperscript{a,*}, Wybo Dondorp\textsuperscript{b}, Carel Thijs\textsuperscript{c}, Geert Jan Dinant\textsuperscript{a}, Johannes Andreas Knottnerus\textsuperscript{a}

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NTvG: 6 September 2018

A trial to study the effect of influenza vaccination in the elderly: ethical, feasible and badly needed
Miquel B. Ekkelenkamp, C.H. (Henri) van Werkhoven, Patricia C.J. Bruijning-Verhagen en Marc J.M. Bonten
Estimating influenza VE with TND

\[ VE = (1 - \frac{OR_{adj}}{OR}) \times 100\% \]
I-MOVE (Influenza Monitoring Vaccine Effectiveness)

- Development of validated methodologies for observational studies
- VE estimates every year, as early in the influenza season as possible based on existing surveillance systems

10-year average (2008/09 to 2017/18): VE 40%
B circulation in The Netherlands, 15 seasons

Graph compiled by Adam Meijer (RIVM)
Conclusion

- Influenza is an important public health problem with highest burden of disease compared to other infectious diseases

- Main preventive measure is an imperfect vaccine – better vaccines are needed

- In 2019 QIV instead of TIV