Childhood and Adolescent Immunisation in the UK

March 15th 2007

Dr Roger Harrington

Edward Jenner

- 1749 – 1823.
- Born Berkeley, Gloucestershire.
- Apprenticed to John Hunter FRCS at St George's Hospital, London, in 1770.

St George's Hospital

Edward Jenner and smallpox

- Became impressed by the fact that someone who had suffered from cowpox could not become infected, either by accidental or intentional exposure to smallpox.

- He concluded that cowpox not only protected against smallpox but could be transmitted from one person to another as a mechanism of protection.

- In 1796, he took the material from the fresh cowpox lesions on the hand of a dairymaid and inoculated an 8 year old boy.

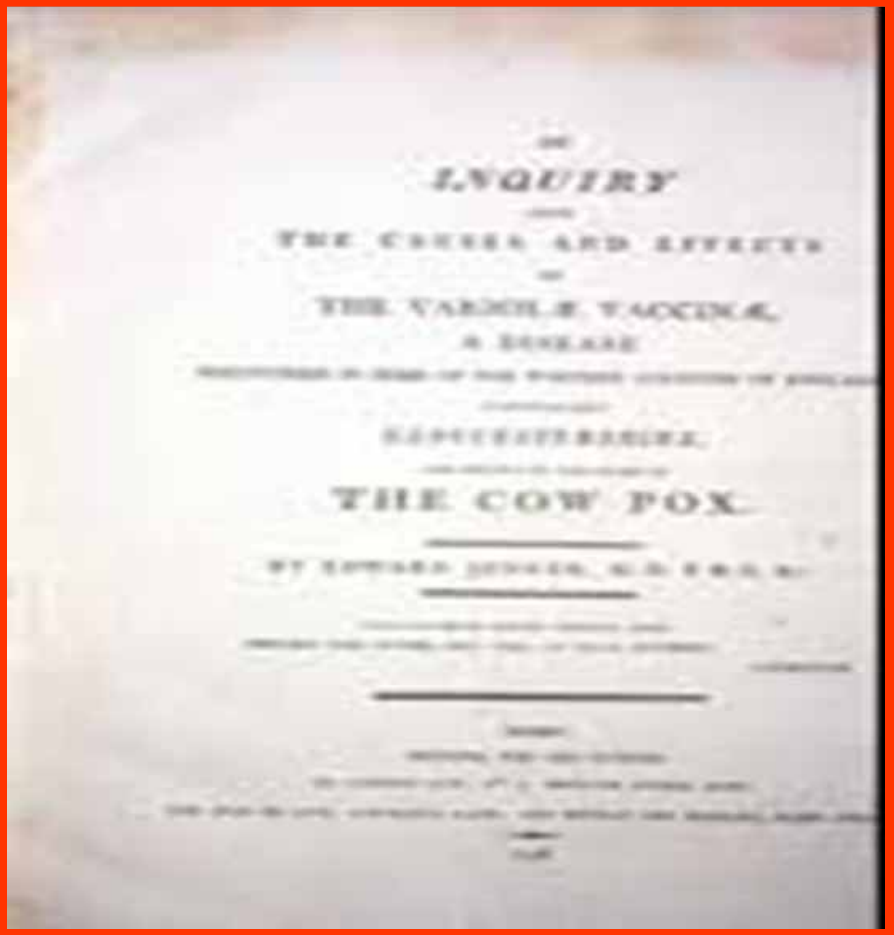
- The boy became slightly ill over the next 9 days but was well by the 10th day.

- 6 weeks later, he inoculated the boy again, this time with smallpox matter.

- No disease developed and protection was complete.

- In 1798 he published all his research in

"***An Inquiry into the Causes and Effects of the Variolae Vaccinae; a Disease Discovered in some of the Western Counties of England, particularly Gloucestershire, and Known by the Name of The Cow Pox".***



Routine childhood immunisation programme in the UK

- Diphtheria
- Tetanus
- Pertussis
- *H. influenzae* type b (Hib)
- Polio
- Meningococcal serogroup C (MenC)
- Measles
- Mumps
- Rubella
- Pneumococcus

Schedule

- Two months
  - Dip / tet / pert / polio / Hib
  - Pneumococcal (PCV)
- Three months
  - Dip / tet / pert / polio / Hib
  - MenC

- Four months
  - Dip / tet / pert / polio / Hib
  - MenC
  - PCV
- Twelve months
  - Hib / MenC

- ~ 13 months
  - MMR
  - PCV
- Three years four months – five years
  - Dip / tet / pert / polio
  - MMR

- 13 – 18 years
- Tet / dip / polio

Reaching children and adolescents

- Child is born > registered on local child health system.
- Health visitor discusses immunisation with parent(s).
- Consent obtained.
- Child brought to the Primary Health Care Team for immunisations.

Other routes to reach children and adolescents

- Some child health clinics are run – especially in inner cities.
- Staffed by nurses and clinical medical officers.

Other routes to reach children and adolescents

- School-leaving immunisation carried out by school nurses in schools – state (93% of children) or private (7%).

- If a child has had a serious reaction to an earlier vaccination, the procedure may be done in a hospital with full resuscitation facilities.

Targeted BCG vaccination programme

- Introduced in 2005.

- Targeted at risk groups: -

  (i) Infants living in an area where the incidence of TB is 40/100,000 or greater.

Targeted BCG vaccination programme

(ii) Infants whose parents / grandparents were born in a country where the incidence of TB is 40/100,000 or greater.

(iii) Previously unvaccinated new immigrants from high prevalence countries for TB.

Vaccinators

- Could be any health care professional (doctor/nurse) *who has been trained.*
- Health visitor.
- School nurse.

Vaccinators

- Practice nurse.
- GP.
- Community paediatrician.
- Clinical medical officer.

Training of vaccinators

- Responsibility of the employer – PCT / GP practice.
- Lecture / observation of the practical skills required.
- Training in resuscitation.

Training of vaccinators

- Then supervised by trainer in carrying out immunisation procedures.
- NO national requirement for certificate of competence / updating – except 12-18 months update in BLS.

Financial considerations

- Under the new GP Contract of April 2004, childhood immunisation became a “directed enhanced service”.
- GP practices required to maintain a register of all children up to age 5 years.
- To liaise with and inform parents.
- To undertake to immunise children with relevant immunisations.

- To ensure all staff have necessary skills and training.
- To provide appropriate resuscitation equipment on site.
- To audit the rates of immunisation.
- To record the current immunisation status of every child.
- To record any adverse reactions

- For primary immunisations and pre-school boosters, there are lower (70%) and higher (90%) targets – with payments accordingly.

- Two year olds *Lower / Higher target* –
  £2,829 / £8,487.03
  (€4166 / €12500)
- Five year olds *Lower / Higher target* –
  £875.87 / £2,626.56
  (€1289 / €3867)

Costs of vaccines

• DTaP/IPV/Hib	• £19.94 (€30)
• MMR	• £4.00 (€6)
• PCV	• £34.50 (€51)
• MenC	• £15.00 (€22) - £19.00 (€28)
• Hib + MenC	• £39.87 (€59)

Total cost of the UK immunisation programme

??

Decisions on the introduction of new vaccines

- Joint Committee on Vaccination and Immunisation – JCVI – advises the UK's Health Departments.
- Meets 3 times a year.
- Provides independent scientific advice for whole programme.

Uptake rates

- Approximately 589,500 children in England in 2004-5.
- Overall coverage ~ 93%.
- Exception is MMR - 81%

Uptake rates – percentage of children immunised by their 2nd birthday in England

	Dip	Tet	Pol	Pert	Hib	MMR	Men C
2004-05	94	94	93	93	93	81	93
2005-06	94	94	94	94	94	84	93

Uptake rates – percentage of children immunised by their 2nd birthday in the UK

	Dip	Tet	Pol	Pert	Hib	MMR	Men C
2004-05	94	94	94	94	94	82	93

Tuberculin skin tests and BCG vaccinations, England 2004-5 (thousands)

Total number of skin tests	Positive	Negative	Vaccinations
540.4	44.7 (8%)	495.7 (92%)	628.3

Strengths of the UK child and adolescent immunisation programme

- Based on primary care.
- Works well for *most* children.

Strengths of the UK child and adolescent immunisation programme

- “Incentive / bonus” payment for GPs.
- Good herd immunity achieved - (although coverage not quite at 95%) – evidenced by the MMR problems and mumps illness.

Challenges to the immunisation programme

- Low vaccination levels in poorer areas:
  - deprivation
  - ethnic diversity
  - high levels of mobility
- Immunisations not compulsory.

Challenges to the immunisation programme

- “Incentive / bonus” payment for GPs – may cause a reverse effect.
- Some GPs in deprived areas have stopped offering vaccinations because they know they will not achieve the targets.

Challenges to the immunisation programme

- UK media.
- MMR controversy / single vaccines.
- Pressure groups – “JABS”

Challenges to the immunisation programme

- Hepatitis A and B not included in the programme currently.
- However, UK now looking at a targeted hepatitis B vaccination programme.
- ? Include annual influenza vaccination for under-twos.

- ? Vaccination against cervical cancer – “Gardasil”.
- Whooping cough cases still prevalent – despite vaccination.
- Where should the current programme stop?

Conclusions

- Protection against lethal infections has come a long way since Edward Jenner’s original work.
- UK now has a comprehensive programme with, overall, good coverage rates comparable to other countries.

Conclusions

- However, there is still controversy.
- Who to target and how.
- Engaging ethnic minorities and the socially deprived.
- Cost issues in a system funded directly from taxation.