



# Immunisations within the family planning program in Hungary



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# Agenda



- Basic demographics – Hungary
- Protection of the foetus during pregnancy
- Short outline of our preconceptional program
  - Infection related risks:
    - Vaccination preventable
      - HBV – national ongoing screening for HBsAG carriage
      - rubella
      - varicella-zoster
- Personal experience within the PPPP



# Country background - Hungary

- Key demographics\*
  - Birth cohort: **94 647**
  - Population: **10 116 742**
  - Infant mortality: 5,7‰ (2007.)



\* National Statistics Yearbook – 2007.



# The protection of the foetus – care during pregnancy



- Four visits (minimum) at the gynecologist (by law)
  - 7-8 visits on average! – RR, weightgain, cytology
  - 6-7 visits by the field nurse at the home of the future mum
- Lab tests, screening programs
  - Hgb, WBC, Plt, Wa, blood sugar, urine test
  - Blood group and RH factor
  - AFP (alfa-foeto-protein)
  - HBsAg (prevalence below 1%, screening since 1994.)
  - Toxoplasma (regional)
- Dental checkup, repeated UH
- Genetic counselling for any risk + above 35 y
- Over 99% of deliveries at the hospital





# 3-steps family planning program

also in the presentation from **Erika Erős**



## 1<sup>st</sup> step:

- checkup of general and reproductive health
  - family history, case history

## 2<sup>nd</sup> step:

- preparations for conception – 3 months period
  - multivitamin, measurement of basal temperature
  - avoidance of unnecessary drug, alcohol, tobacco use
  - **counselling for preventable infectious risks**

## 3<sup>rd</sup> step:

- protection of early pregnancy
  - advices and education on nutrition
  - counselling on the avoidance of known occupational hazards



# Infections with a potential for foetal injury

- „TORCH complex” – traditional approach
  - toxoplasma, **rubella**, CMV, HSV
- Other, potential infectious hazards:
  - HIV
    - minor problem, presently voluntary testing possible
  - HPV B19, **HBV**, **VZV**, **syphilis**, gonorrhoea, ...
- To assess the actual situation
  - Cord blood testing is insufficient in itself and not informative enough
  - Paralell testing of infant + mother sera is necessary (repeatedly)

# Vaccine preventable foetal infections

- **Basics:**
  - Fetal infection is always part of the maternal infection
  - There is no isolated fetal infection
  - Maternal infection can be misleadingly mild
  - Maternal susceptibility
    - Can be tested prior to conception
    - Immunisation can be carried out prior to pregnancy

# Rubella – short history

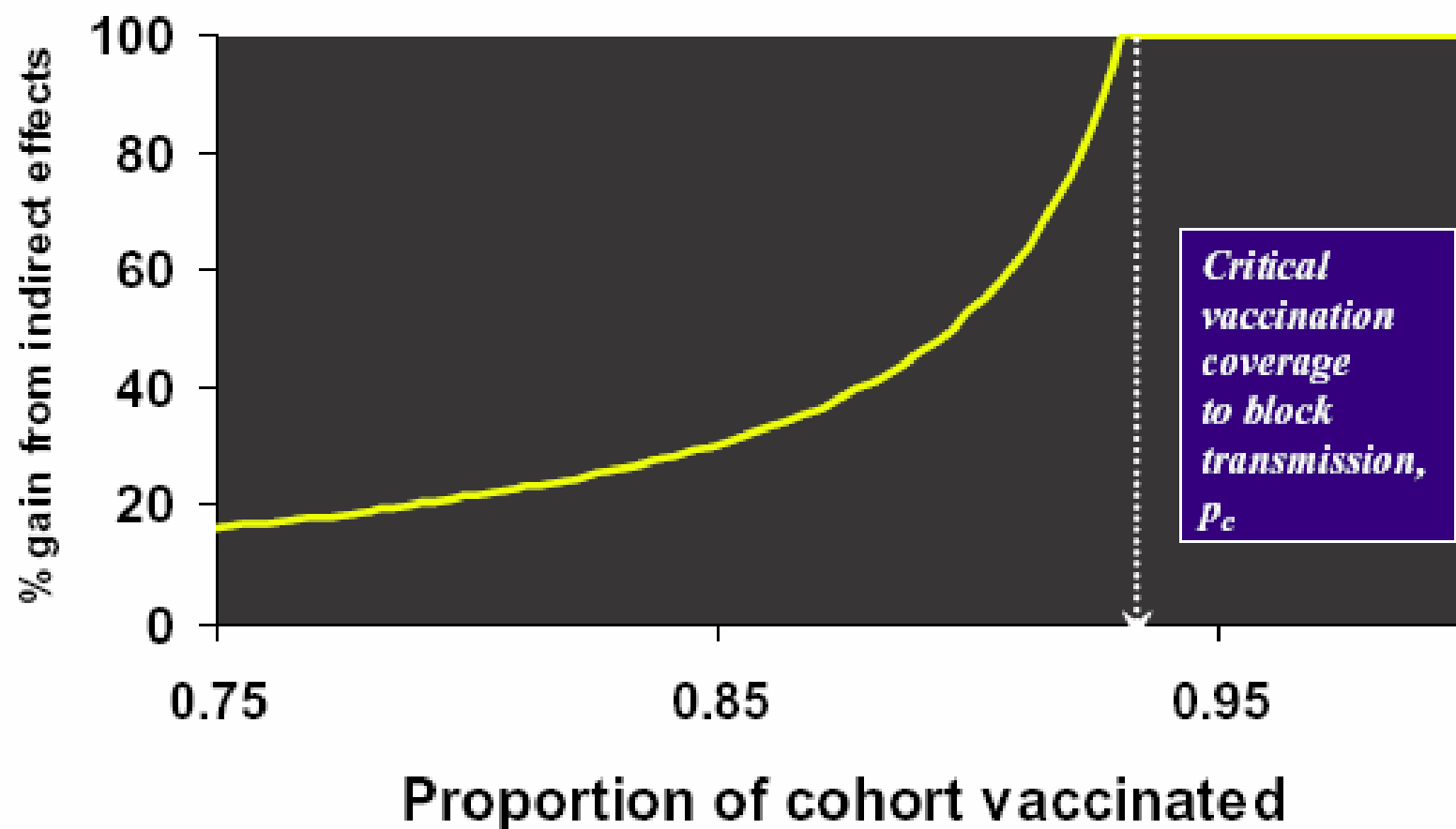
- 1941.-discovery of the connection between maternal disease and neonatal cataracts (Greg, AU)
- 1964.-Isolation of rubella vírus
- 1969.-Introduction of the live attenuated rubella vaccine
- 1970.-Introduction of rubella diagnostics in Hungary
- 1975.-CRS notification
- 1989.-**Routine immunisation against rubella**







## Percentage gain from the indirect effects of herd immunity

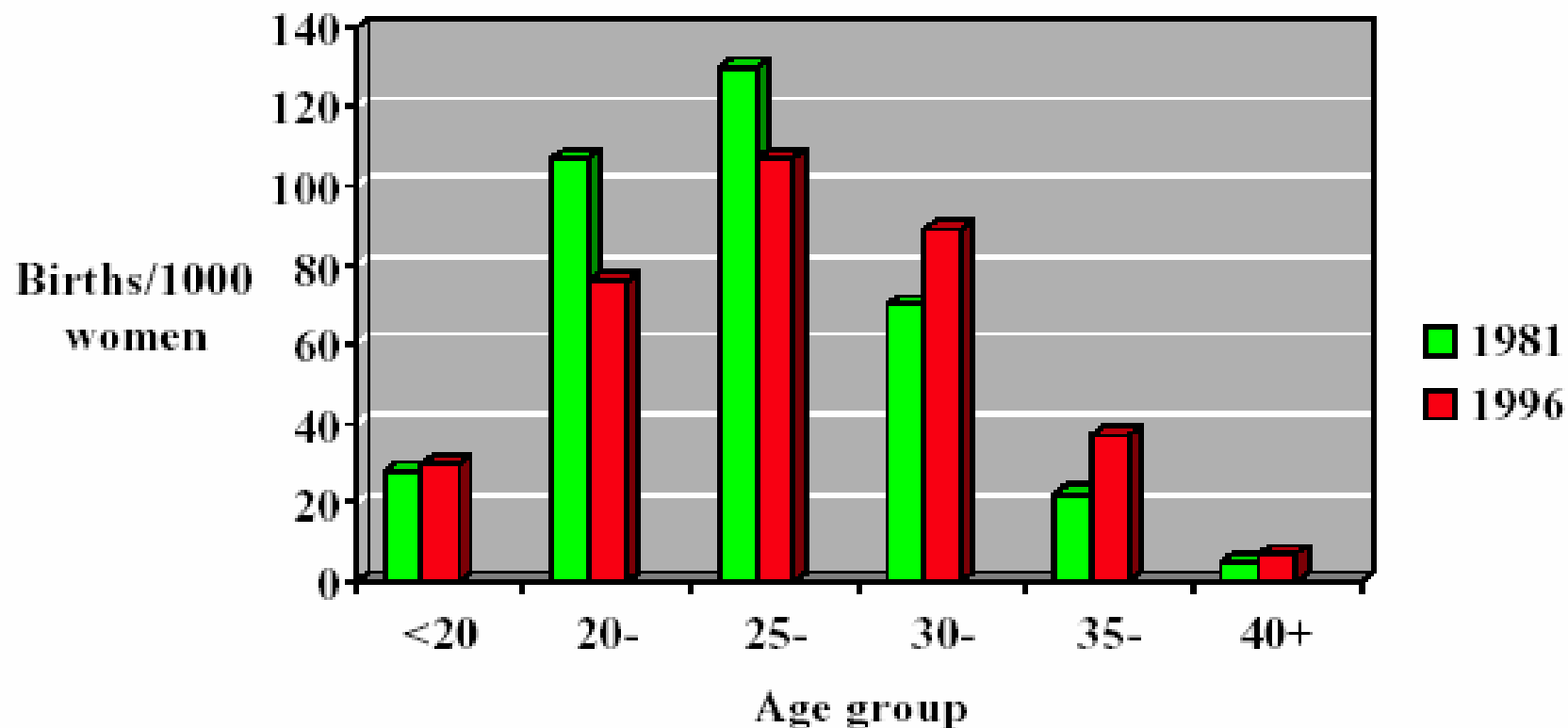


# Typical question to the vaccinologist:

- Pregnant woman has met a child with suspected rubella exanthem. What should be done?
  - **1.step:** It is unlikely to be a case of rubella because of nearly 100% MMR coverage.
    - If the child is available, should be tested
  - **2. step:** Is the pregnant woman susceptible?
    - If yes, second testing is also recommended



# Demography - age specific birth rates in the UK 1981 & 1996: Rubella immunization



# Rubella – Hungary+

- Prior to routine immunisation:
    - Generally 15-20 % of the population is susceptible when there is no epidemic
    - After an epidemic, 6-8%
  - Mo-Ru, then MMR immunisations:
    - Virus circulation stops
    - 1999-2001
      - Seroepidemiology data - 15-40 year olds
      - 7-16% susceptible!!
      - Last reported case of CRS 2004 (imported case)
- +Dr. Mezey, I, OEK, 2004.

# Rubella tests - family planning program:

- 2003-2007.
  - 458 women tested, average age 29,5y (24-41y)
  - susceptibles
    - 43/458 (dr. Mihály, I Szt. László Hospital)
    - Approx. 10%
  - MMR (Priorix/GSK) offered
    - Seroconversion tested 23/43
    - 22/23 seroconverted

# VZV – in pregnancy



- 1. trimester:
  - congenital varicella sy. (cumulative risk approx. 10%)
  - No cure...
- 2.-3. trimester: maternal risk for progressive disease
  - pneumonitis 10x !! (antivirals should be offered!!)
- perinatal VZV: maternal varicella -2, +5 day to delivery
  - neonate: potential progressive disease (VZIG!)
- zoster:
  - no viraemia – no foetal risk

# VZV – family planning program

- 2003-2007
  - 172/458 women
    - no memory of prior varicella
  - 35/172 susceptible
  - <5% of all
- Varilrix(GSK) 1 or 2 doses
  - Depending on individual decision



# Summary



- History taking and testing (serology) for vaccine preventable infections prior to conception should be part of the family planning programs
- Immunisation of susceptibles is feasible and effective
- Family counselling for immunisation related issues promotes the acceptance of immunisation for the future baby







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Thank You for Your attention!

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