ADOLESCENT HEALTH PROGRAMMES
AND THEIR CONTRIBUTION TO
THE SUCCESS OF VACCINATION

The Netherlands

Ljubljana, 15 March 2007

Rudy J.F. Burgmeijer MD, MPH
Medical Information & Drug Safety Officer
Netherlands Vaccine Institute
Bilthoven

NVI: Over 100 years of vaccine know-how and experience in the public domain
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NVI: Over 100 years of vaccine know-how and experience in the public domain
1. THE HEPATITS SITUATION IN THE NETHERLANDS
2. THE NATIONAL IMMUNISATION PROGRAMME (NIP)
3. HOW THE NIP IS COMPOSED
4. HOW THE NIP IS FINANCED
5. THE ORGANISATION OF THE NIP
6. IMMUNISATIONS OUTSIDE THE NIP
7. MONITORING OF THE NIP
8. THE GOOD AND THE BAD THINGS OF THE DUTCH NIP
1. In 2003 319 notifications of acute hepatitis B and 1,445 notifications of chronic hepatitis B were received.

2. On average 28 people die from hepatitis B each year (primary cause of death).

3. 2/3 Of the new cases are born in The Netherlands, 1/3 outside The Netherlands.

4. 80% of all new diagnosed cases are caused by sexual contact.

5. The relative contribution of heterosexual people is increasing.

6. The relative contribution of young women (15-19 years) is increasing.
7. The prevalence of chronic hepatitis in the general population is 0.4% (70,000 people)

8. The prevalence of chronic hepatitis in high risk groups is 0.8%
NOTIFICATIONS OF HEPATITIS B IN THE NETHERLANDS, 1950-2005


NVI: Over 100 years of vaccine know-how and experience in the public domain
(PER 100,000 INHABITANTS)

NVI: Over 100 years of vaccine know-how and experience in the public domain
29 JANUARY 2007
PROF. DR. HARRY JANSEN:

‘IN THE NETHERLANDS MORE PEOPLE DIE FROM HEPATITIS B THAN FROM AIDS. THE HBV-VACCINATION SHOULD BE INCORPORATED IN THE NIP’
7 MARCH 2007
HEALTH COUNCIL:

‘POPULATION-BASED IMMUNISATION AGAINST HEPATITIS B IS NOT NECESSARY IN THE NETHERLANDS’
HEPATITIS B-IMMUNISATION IN THE NIP

1. NEONATES OF HBsAg-POSITIVE MOTHERS

2. INFANTS OF PARENT(S) BORN IN AN ENDEMIC COUNTRY

NVI: Over 100 years of vaccine know-how and experience in the public domain
### Age Injection 1 | Injection 2 | Injection 3
--- | --- | ---
0 months | | HBV<sup>1</sup>
2 months | DTPa-IPV-Hib(-HBV)<sup>2</sup> | Pnc<sub>7</sub><sup>3</sup>
3 months | DTPa-IPV-Hib(-HBV)<sup>2</sup> | Pnc<sub>7</sub><sup>3</sup>
4 months | DTPa-IPV-Hib(-HBV)<sup>2</sup> | Pnc<sub>7</sub><sup>3</sup>
11 months | DTPa-IPV-Hib(-HBV)<sup>2</sup> | Pnc<sub>7</sub><sup>3</sup>
14 months | MMR<sup>4</sup> | MenC
4 years | DTPa-IPV<sup>5</sup> | |
9 years | Td-IPV<sup>6</sup> | MMR<sup>4</sup>

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1 HBVax-PRO ® 10 µg (SPMSD) and HBlg; only for neonates of HBsAg-positive mothers
2 Infanrix ®-Hexa (GSK); only for infants with an indication for HBV-vaccination; all other children get PEDIACEL ® (SPMSD).
3 Prevenar ® (Wyeth)
4 ‘BMR-vaccin’ (NVI) or M-M-R-II ® (SPMSD) or Priorix ® (GSK)
5 TRIAXIS POLIO ® (SPMSD)
6 ‘Difterie Tetanus Poliomyelitis-vaccin’ (NVI)
### HISTORY OF THE IMMUNISATION POLICY FOR NEONATES OF HBsAg-POSITIVE MOTHERS

<table>
<thead>
<tr>
<th>Programme</th>
<th>Period in use</th>
<th>Dose of HBlg</th>
<th>Vaccine and dosage</th>
<th>Schedule</th>
<th>Serology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre- and perinatal screening programme (PPS)</td>
<td>1-11-1989 till 1-1-2003</td>
<td>300 IE</td>
<td>HBVAX-DNA ® 10 µg or ENGERIX-B ® 20 µg</td>
<td>2-3-4-11 mo</td>
<td>No</td>
</tr>
<tr>
<td>Municipal Health Authority Amsterdam</td>
<td>1-11-1989 till today</td>
<td>300 IE</td>
<td>HBVAX-DNA ® 10 µg or ENGERIX-B ® 20 µg</td>
<td>0-1-6 mo</td>
<td>7/8 mo</td>
</tr>
<tr>
<td>PPS (HBlg) and NIP (vaccine)</td>
<td>1-1-2003 till 1-7-2005</td>
<td>300 IE</td>
<td>HBVAXPRO ® 5 µg</td>
<td>2-4-11 mo</td>
<td>No</td>
</tr>
<tr>
<td>Advice 1 of the Health Council, 2003</td>
<td>Never implemented</td>
<td>150 IE</td>
<td>‘paediatric dose should be used’</td>
<td>0-1-6 mo</td>
<td>12 mo</td>
</tr>
<tr>
<td>Advice 2 of the Health Council, 2003</td>
<td>1-1-2006 till 1-6-2006</td>
<td>150 IE</td>
<td>HBVAXPRO ® 5 µg</td>
<td>0-2-4-11 mo</td>
<td>13/14 mo</td>
</tr>
<tr>
<td>Advice of the Health Council, 2005 and 2007</td>
<td>1-6-2006 till today</td>
<td>150 IE</td>
<td>HBVAXPRO ® 5 µg Infanrix ® hexa 10µg</td>
<td>0 mo 2-3-4-11 mo</td>
<td>13/14 mo</td>
</tr>
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</table>

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FINANCING

NIP:
- EXTRAORDINARY HEALTH CARE EXPENSES ACT

OTHER:
- HEALTH CARE INSURANCE
- SUBSIDISATION (GOUVERNMENT, COUNCIL)

NVI: Over 100 years of vaccine know-how and experience in the public domain
1901

Dr. Plantenga at work at the first Well Baby Clinic in The Hague

Well baby clinic 1901
NVI: Over 100 years of vaccine know-how and experience in the public domain

Source: Koppius PW. Leerboek voor moederschapszorg en kinderhygiëne 1st Ed.. Assen: Van Gorcum, 1957
NVI: Over 100 years of vaccine know-how and experience in the public domain
Left: Distribution of the 1,200 well baby clinics (WBC). Right: Distance from the parent’s home to the nearest WBC

NVI: Over 100 years of vaccine know-how and experience in the public domain
THE SCHOOL HEALTH CARE SYSTEM

- CHILD- AND SCHOOL HEALTH CARE (BUT NOT THE NIP!) IS THE RESPONSIBILITY OF THE MUNICIPALITIES

- THE NIP IS THE RESPONSIBILITY OF THE GOVERNMENT (MINISTRY OF HEALTH)

- THE NUMBER OF CONTACTS OF THE SCHOOL DOCTOR OR NURSE IS LIMITED (2-3 BETWEEN 9 AND 18 YEARS)

- IMMUNISATIONS ARE NOT PART OF THE SCHOOL HEALTH CARE SYSTEM (except the immunisations of the NIP for 9 year old children)
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<tr>
<th>Age</th>
<th>Injection 1</th>
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<td>DTPa-IPV-Hib(-HBV)</td>
<td>HBV&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>2 months</td>
<td>DTPa-IPV-Hib(-HBV)</td>
<td>Pnc&lt;sub&gt;7&lt;/sub&gt;&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>3 months</td>
<td>DTPa-IPV-Hib(-HBV)</td>
<td>Pnc&lt;sub&gt;7&lt;/sub&gt;&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>4 months</td>
<td>DTPa-IPV-Hib(-HBV)</td>
<td>Pnc&lt;sub&gt;7&lt;/sub&gt;&lt;sup&gt;3&lt;/sup&gt;</td>
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<tr>
<td>11 months</td>
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<td>14 months</td>
<td>MMR&lt;sup&gt;4&lt;/sup&gt;</td>
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3 Prevenar ® (Wyeth)
4 ‘BMR-vaccin’ (NVI)
5 TRIAXIS POLIO ® (SPMSD)
6 ‘DTP-vaccin’ (NVI)

THE CONTRIBUTION OF SCHOOL HEALTH CARE TO THE NIP
TRAINING

NIP:
1. DOCTORS WITH EXTRA TRAINING IN INFANT HEALTH CARE*
2. DOCTORS SPECIALISED IN CHILD- AND SCHOOL HEALTH CARE**

OUTSIDE NIP:
1. DOCTORS SPECIALISED IN PREVENTION OF INFECTIOUS DISEASES**
2. DOCTORS WITH EXTRA TRAINING IN TRAVEL MEDICINE*

THE MAJORITY OF DOCTORS WHO VACCINATE OUTSIDE THE NIP (GPs, Paediatricians) HAVE NO (EXTRA) TRAINING IN VACCINOLOGY

* No official degree. ** Official degree and registration.
VACCINATIONS OUTSIDE THE NIP

1. BCG-VACCINATION (TARGET GROUPS)*

2. ANNUAL INFLUENZA CAMPAIGN (TARGET GROUPS)*

3. CERTAIN CHRONICAL ILL PATIENTS (INDIVIDUAL INDICATION)*

4. VACCINATIONS FOR OCCUPATIONALLY EXPOSED PERSONS*

5. VACCINATIONS FOR THE MILITARY*

6. VACCINATIONS FOR TRAVELERS**

* Laid down by law or regulations and 100% reimbursement
** Reimbursement depending on health insurance policy
HEPATITIS B-IMMUNISATION OUTSIDE THE NIP

1. HETEROSEXUALS WITH MULTIPLE SEX CONTACTS*
2. HOMOSEXUAL MEN*
3. PROSTITUTES AND THEIR CLIENTS*
4. INTRAVENOUS DRUG USERS*
5. PEOPLE WITH HIGH OCCUPATIONAL RISK TO EXPOSURE
7. ASYLUMSEEKERS WITHOUT HISTORY OF HBV-VACCINATION
8. PEOPLE WHO EXPERIENCED ACCIDENTAL POSSIBLE EXPOSURE
9. PATIENTS ON HEMODYALISIS
10. HOSPITALISED PATIENTS WITH MENTAL ILLNESS
11. PATIENTS WITH DOWN’S SYNDROME
12. CERTAIN TRAVELLERS

* Projects of STD-AIDS Netherlands and the Municipal Health Authorities (for free and anonymous in STD-clinics)

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EFFECTIVENESS OF THE HBV-VACCINATION POLICY

- In 2001 20-25% of the neonates were exposed to an unacceptable risk because they did not receive the HB Ig and/or the vaccine doses in time.

- In 2004 the National Institute for Public Health (RIVM) has started an evaluation of the current policy, including a study of the cost-effectiveness of the target group policy.

- The incidence of HBV-infections is rising again.

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29 JANUARY 2007
PROF. DR. HARRY JANSEN:

‘The Netherlands is almost the only country in Europe where universal HBV-vaccination has not been implemented in the NIP. Only risk groups are vaccinated, notwithstanding the high costs and difficulties of reaching those groups result in a limited effect’
VACCINE COVERAGE

- INFANTS (4x DTPa-IPV-Hib + 4 x Pnc, 1x MMR + 1x MenCc) > 95%
- TODDLERS (4 y) (SAME AS INFANTS + 1x DTPa-IPV) > 90%
- SCHOOLCHILDREN (9 y) (SAME AS TODDLERS + 1x Td + 1x MMR) > 90%
THE BAD THINGS OF THE DUTCH NIP

1. IT STOPS AT THE AGE OF 9
2. VERY SLOW DECISION MAKING
3. NO INTEGRATION WITH OTHER IMMUNISATION PROGRAMMES AND INDIVIDUAL VACCINATIONS (e.g. HEPATITIS B!)
4. NOT COMPULSORY (?)
THE GOOD THINGS OF THE DUTCH NIP

1. PERFECT ORGANISATION

2. VERY HIGH COVERAGE

3. GOOD MONITORING SYSTEMS (e.g. sero-epidemiology, adverse events, registration of vaccinations)

4. CARRIED OUT WITHIN THE SETTING OF CHILD HEALTH CARE (doctors and nurses with some training in vaccinology)

5. RESPONSIBILITY OF THE GOVERNMENT

6. NOT COMPULSORY (?)