

Vaccinatie: wat en wanneer?

2019 Najaarssymposium KARVA

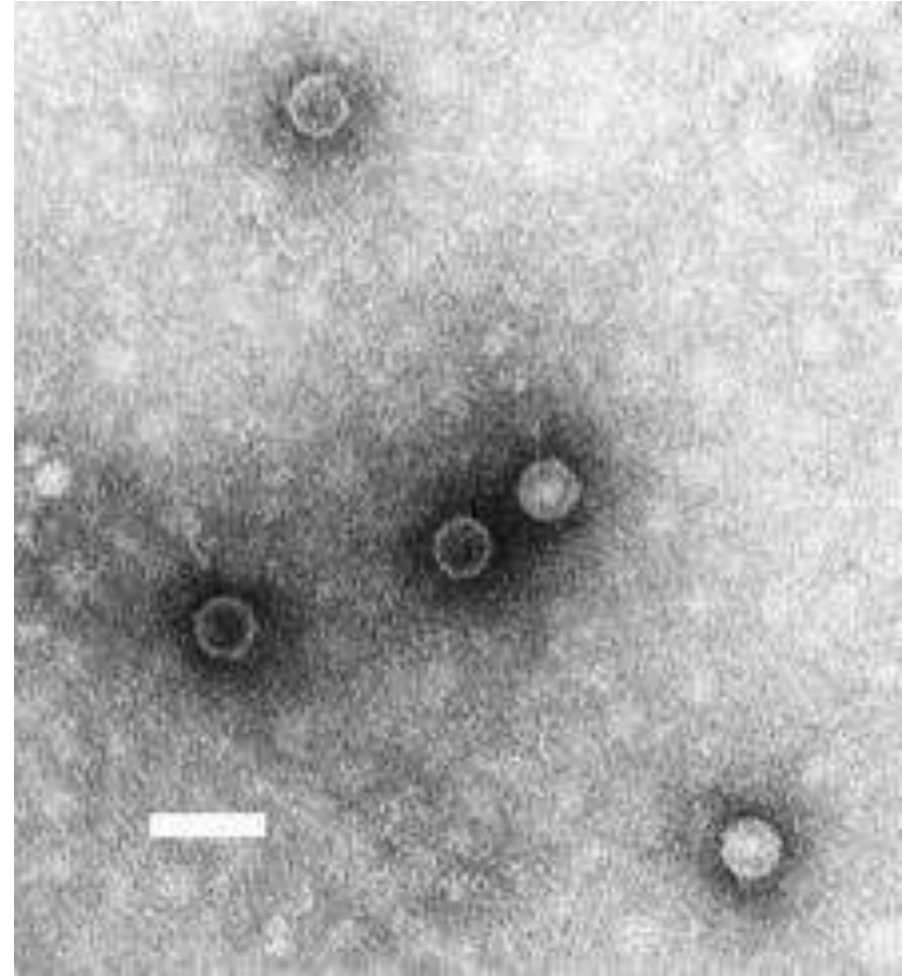


Vlaams Vaccinatieschema

Vaccinatie tegen	8 weken	12 weken	16 weken	12 maanden	15 maanden ⁽¹⁾	5-7 jaar	10-13 jaar ⁽⁴⁾	14-16 jaar
Pollomyelitis								
Difterie (kroep)								
Tetanus (klem)								
Pertussis (kinkhoest)								
Haemophilus Influenzae B (hersenvliesontsteking)								
Hepatitis B (geelzucht)								
Pneumokokken ⁽¹⁾ 13-serotypes								
Rotavirus ⁽²⁾								
Mazelen								
Bof (dtkoor)								
Rodehond (rubella)								
Meningokokken type C of ACWY ⁽³⁾ (hersenvliesontsteking)								
Humaan Papillomavirus ⁽⁴⁾							 	

-  gratis
-  niet gratis
-  combinatievaccin: 1 spuitje

POLIO





**World Health
Organization**

**CERTIFICATE
OF
ERADICATION**

WILD POLIOVIRUS TYPE 3

Geneva, Switzerland

We, the members of the
Global Commission for
the Certification of Poliomyelitis Eradication,
conclude today, 17 October 2019,
that

**indigenous wild poliovirus type 3
has been eradicated worldwide.**

Professor David Salisbury, Chair
WHO European Region

Professor Yagoub Al-Mazrou
WHO Eastern Mediterranean Region

Professor Rose Leke
WHO African Region

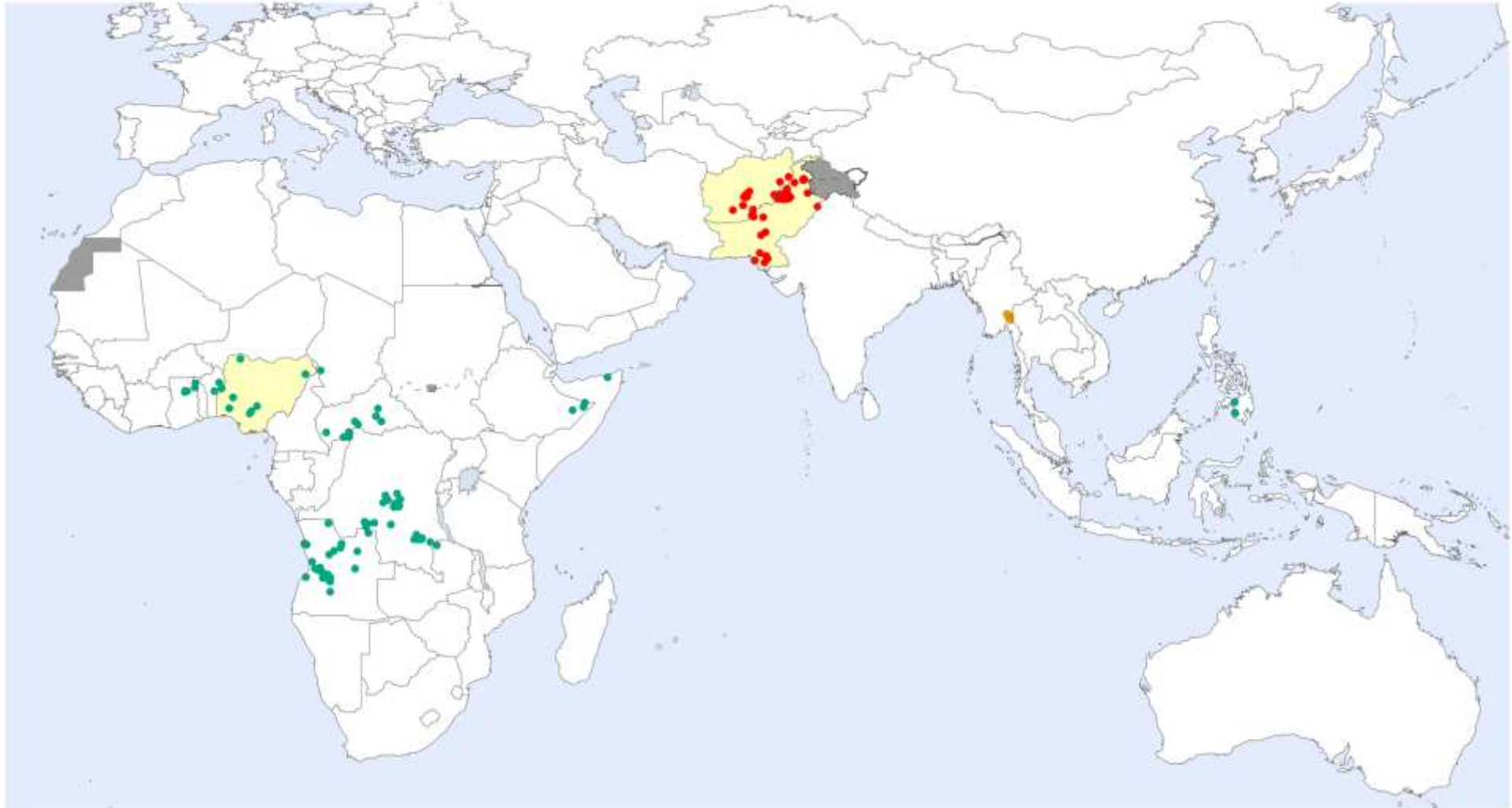
Professor Mahmudur Rahman
WHO South-East Asian Region

Dr Arlene King
WHO Region of the Americas

Dr Nobuhiko Okabe
WHO Western Pacific Region

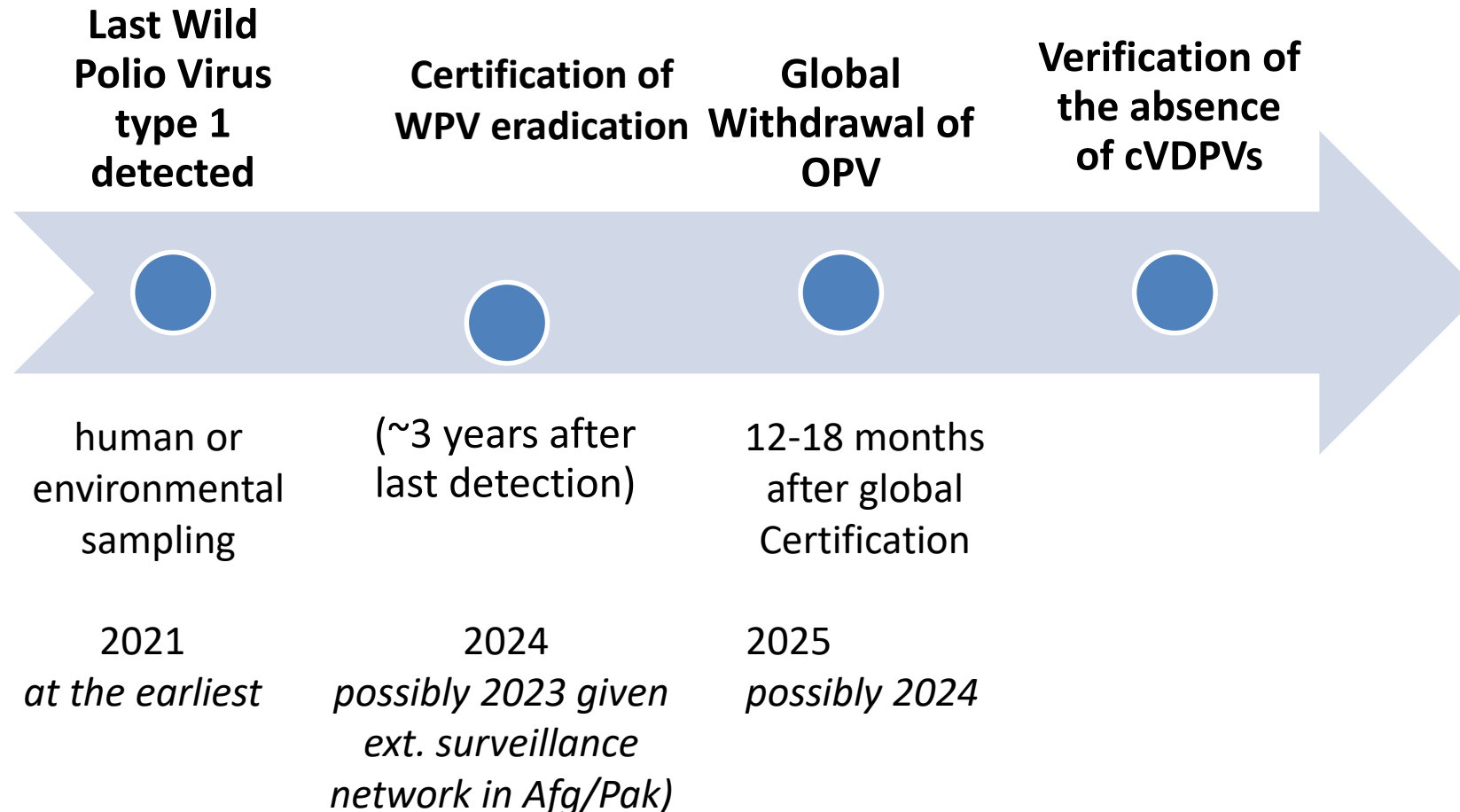
Wild Polio Virus & cVDPV Cases¹

Past 6 Months²



¹Excludes viruses detected from environmental surveillance ; ²Onset of paralysis: 06 May 2019 – 05 Nov 2019

Next Steps



FIRST-IN-HUMAN STUDY in ANTWERP: OUTCOME AT A GLANCE

- Generally safe and well tolerated; no SAE
- Clear evidence of replication in gut and humoral immunogenicity
- Shed virus has no meaningful increase in neurovirulence as compared to administered candidates
- Deep sequencing data consistent with expectations; no changes detected in domain V that are anticipated to increase virulence



The safety and immunogenicity of two novel live attenuated monovalent (serotype 2) oral poliovirus vaccines in healthy adults: a double-blind, single-centre phase 1 study



Pierre Van Damme*, Ilse De Coster*, Ananda S Bandyopadhyay, Hilde Revets, Kanchanamala Withanage, Philippe De Smedt, Leen Suykens, M Steven Oberste, William C Weldon, Sue Ann Costa-Clemens, Ralf Clemens, John Modlin, Amy J Weiner, Andrew J Macadam, Raul Andino, Olen M Kew, Jennifer L Konopka-Anstadt, Cara C Burns, John Konz, Rahnuma Wahid, Christopher Gast



Summary

Background Use of oral live-attenuated polio vaccines (OPV), and injected inactivated polio vaccines (IPV) has almost achieved global eradication of wild polio viruses. To address the goals of achieving and maintaining global eradication and minimising the risk of outbreaks of vaccine-derived polioviruses, we tested novel monovalent oral type-2 poliovirus (OPV2) vaccine candidates that are genetically more stable than existing OPVs, with a lower risk of reversion to neurovirulence. Our study represents the first in-human testing of these two novel OPV2 candidates. We aimed to evaluate the safety and immunogenicity of these vaccines, the presence and extent of faecal shedding, and the neurovirulence of shed virus.

Published Online
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[http://dx.doi.org/10.1016/S0140-6736\(19\)31279-6](http://dx.doi.org/10.1016/S0140-6736(19)31279-6)
See Online/Comment
[http://dx.doi.org/10.1016/S0140-6736\(19\)31294-2](http://dx.doi.org/10.1016/S0140-6736(19)31294-2)
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*Contributed equally

“Container Village” for New OPV Clinical Trial



Polio- reisadvies

- Alle reizigers (van alle leeftijden) **die langer dan 4 weken** in een van de volgende landen zullen verblijven, moeten **minstens 4 weken** en **maximaal 12 maanden** voor het **verlaten** van deze landen gevaccineerd worden tegen polio. Het bewijs van toediening van het vaccin moet worden gedocumenteerd in het [Internationaal Certificaat van Inenting of Profylaxie](#). Dit is het 'gele' boekje (op pagina 4 en 5, waar het vaccinatiebewijs voor verplichte vaccins wordt aangebracht).
- Afghanistan
- Indonesië
- Myanmar
- Nigeria
- Pakistan
- Papua Nieuw Guinea
- Somalië

Voor reizigers die langer dan **4 weken in één van de volgende landen verblijven**, is dit extra vaccin aanbevolen, maar niet verplicht:

Angola

Benin

Cameroon

Centraal Afrikaanse Republiek

China

Democratische Republiek Congo

Ethiopië

Filippijnen

Ghana

Mozambique

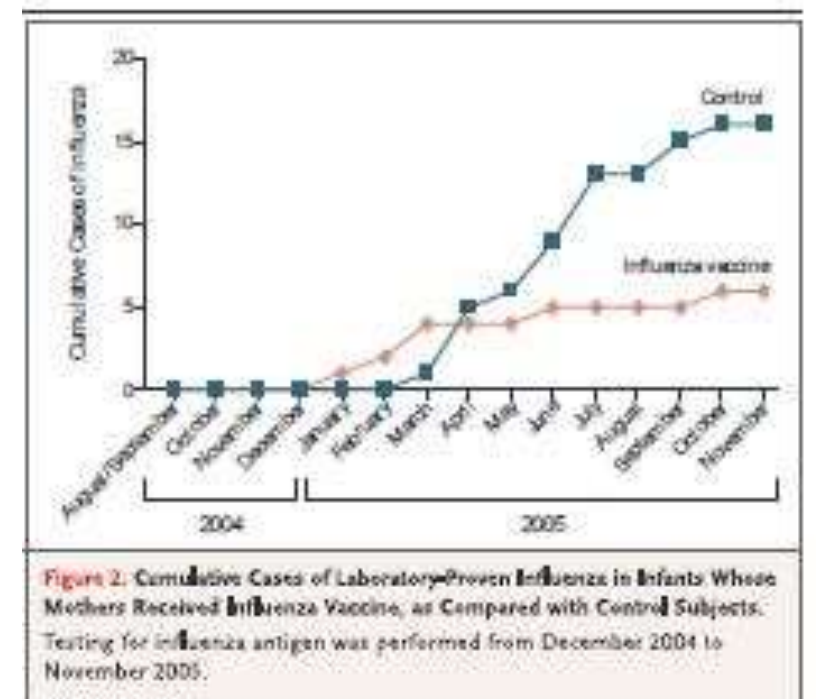
Niger

GRIEP-vaccinatie: van 15 OKTOBER TOT 15 DECEMBER



Zwangeren en influenza

- Influenza tijdens ZS =
 - Risico voor foetus: abortus, doodgeboren, prematuriteit
 - **Vroege infectie: spina bifida, schisis, limb reduction**
 - Risico voor vrouw: **JA**
- Vaccin tijdens ZS = veilig
- Galvao, ISRN Rev Med 2013
 - ILI: IRR 0,64 (ma)-0,71 (kind)
 - ILI+T°>38: IRR 0,57 (ma)-0,72(kind)
 - Prematuriteit: OR 0,60-0,86
 - Kindsterfte: OR 0,61(pre)-0,55 (post birth)



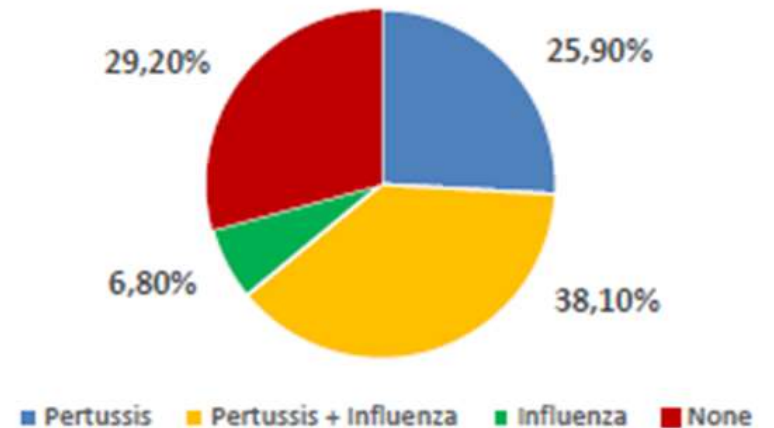
Griep- en kinkhoestvaccinatie bij zwangeren

- Griepvaccinatie:
 - In 1°, 2°, of 3° trimester van de zwachp
- Kinkhoestvaccinatie:
 - Tussen week 24 en 32 van 'elke' zwachp

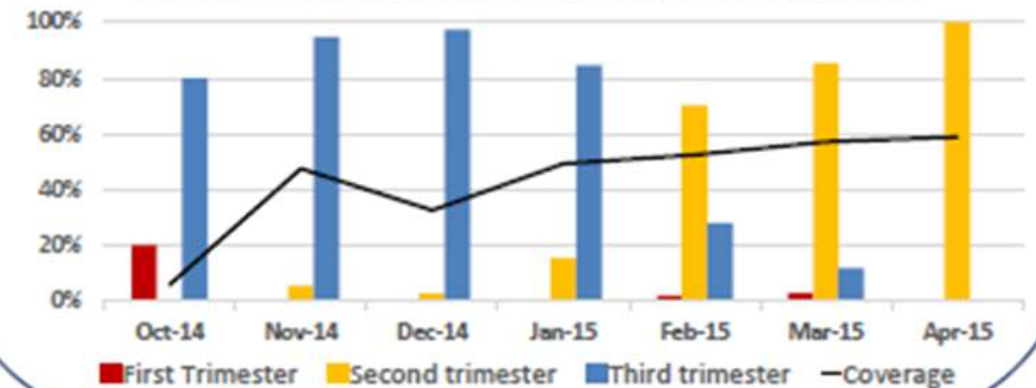
RESULTS

823 surveys were collected from women (mean age: 29.8 year). 75.1% had Belgian nationality and 45.2% were primiparous.

PERTUSSIS AND INFLUENZA VACCINATION COVERAGE



MONTHLY INFLUENZA COVERAGE + TRIMESTER OF VACCINATION



Maternal vaccination coverage in Flanders, Belgium



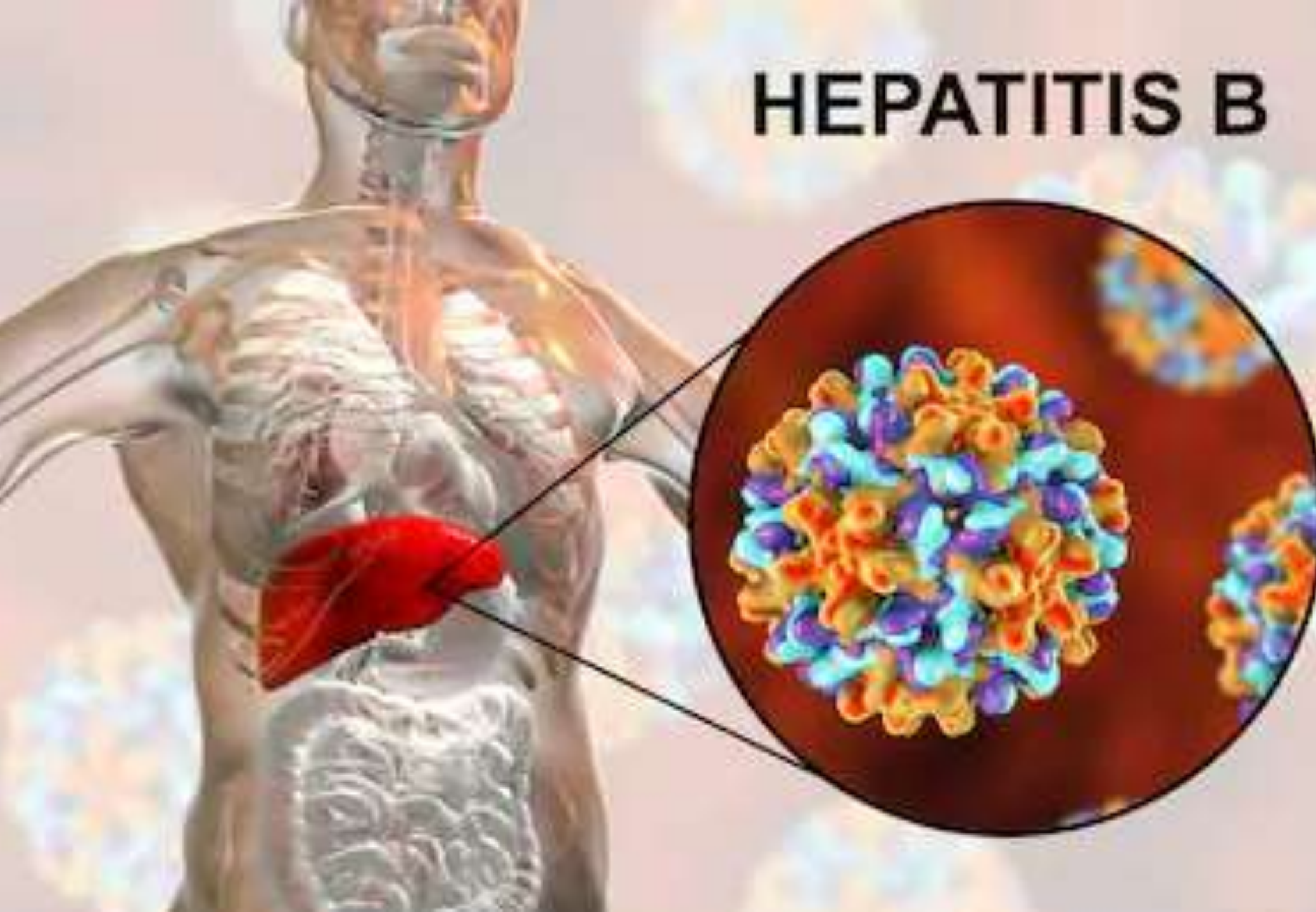
October 2014-May 2015

- Pertussis vaccination coverage during pregnancy: **64.0%**
 - Recommender: gynecologist (87.9%)
 - Provider: general practitioner (82.0%)
- Main reasons not to get vaccinated:
 - Not offered during pregnancy: 49.7%
 - Tdap vaccination during previous pregnancy: 19.9%
 - Vaccination discouraged by HCW: 7.8%
- Risk factors for non-vaccination:
 - Maternal level of education
 - Maternal work situation
 - Parity

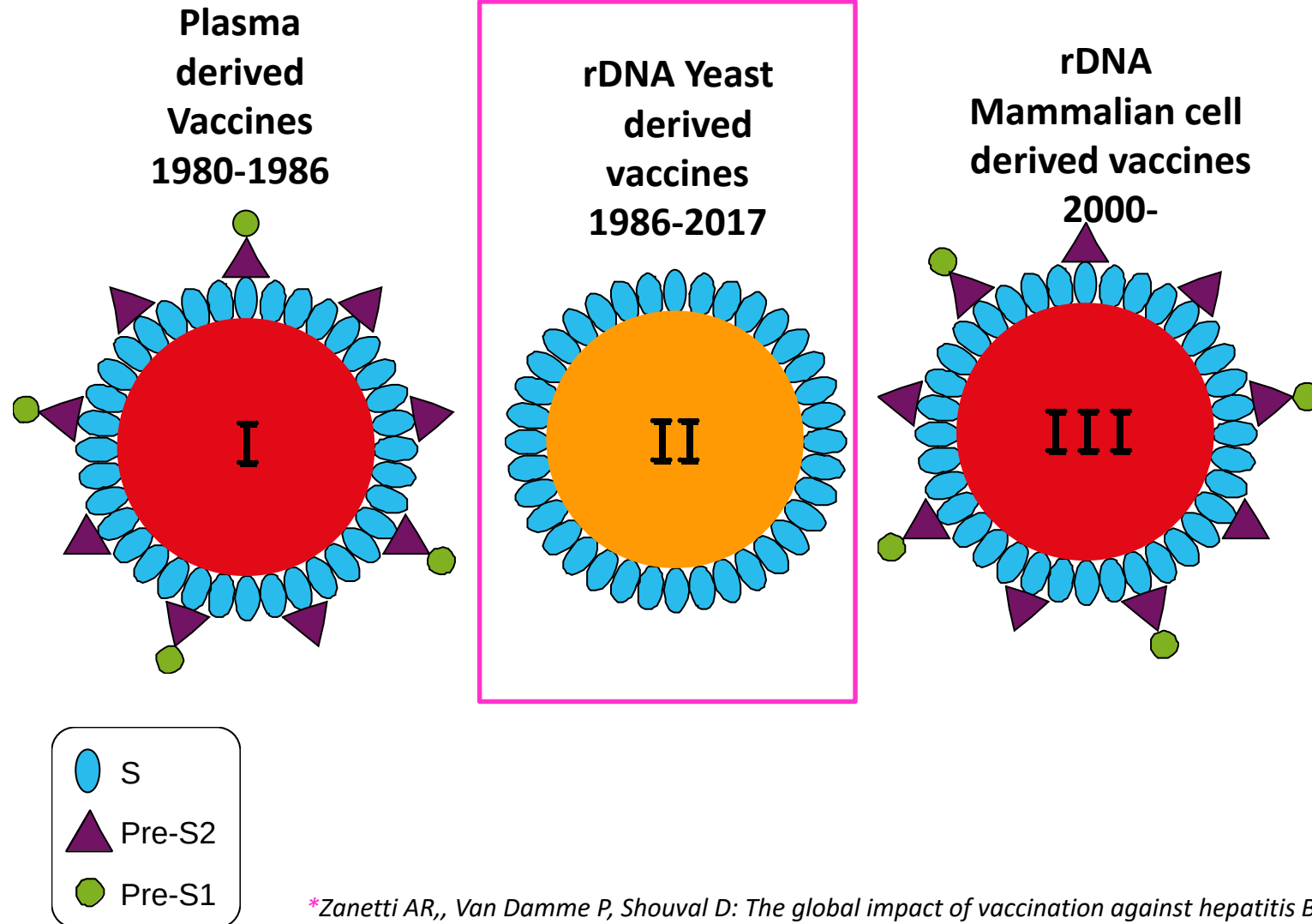
April 2016-August 2016

- Pertussis vaccination coverage during pregnancy: **69.2%**
 - Recommender: gynecologist (81.0%)
 - Provider: general practitioner (71.9%)
- Main reasons not to get vaccinated:
 - Not offered during pregnancy: 27.0%
 - Vaccination discouraged by HCW: 17.5%
- Risk factors for non-vaccination:
 - Size of hospital
 - Parity
 - Family income

HEPATITIS B



Three generations of HBV vaccines



*Zanetti AR,, Van Damme P, Shouval D: The global impact of vaccination against hepatitis B: A historical over view. Vaccine 2008;26:6266 courtesy: D. Shouval

Enhancement of Immunogenicity of HBV Vaccines

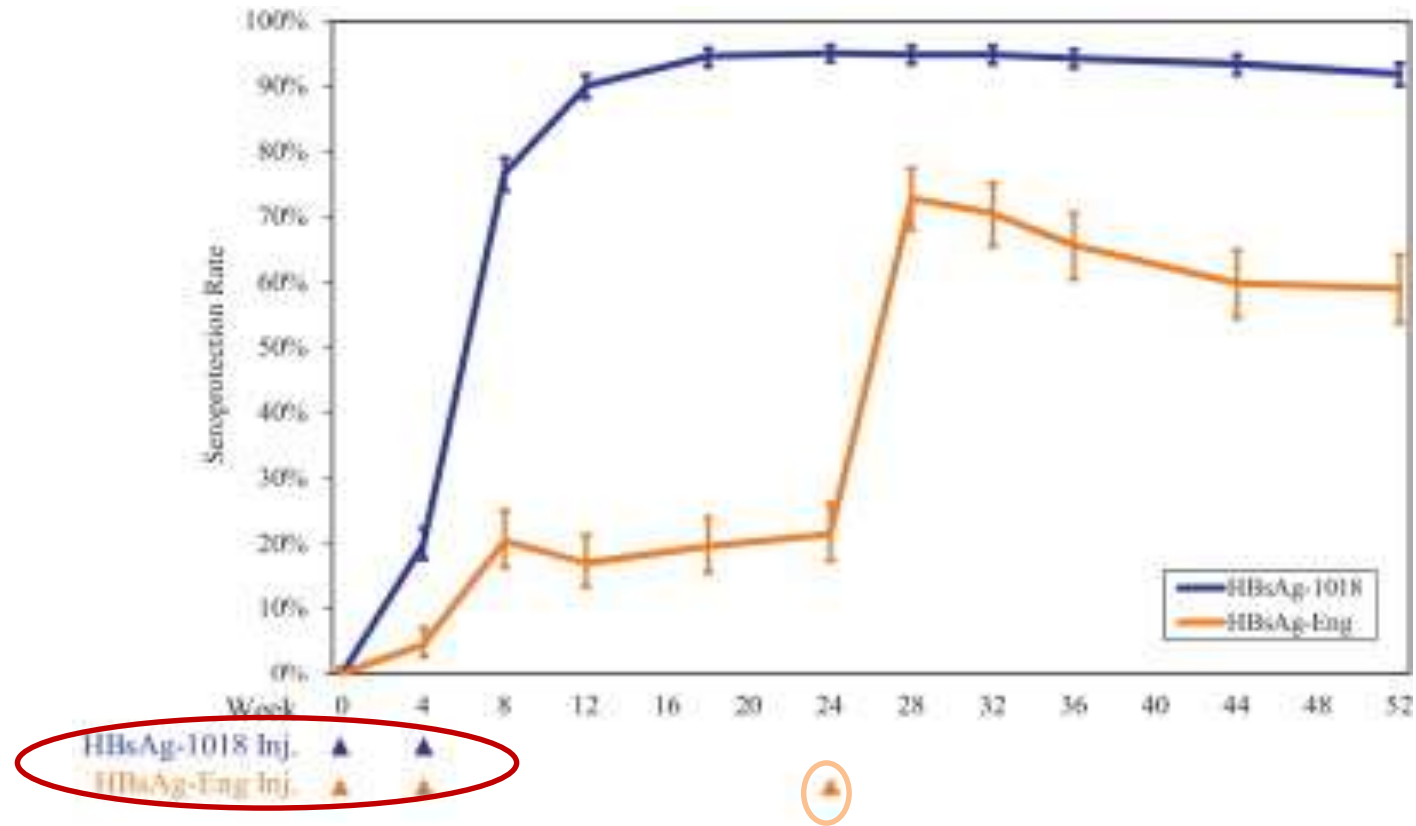
- New adjuvants* :
 - Fendrix GSK™ (MPL /A&QS21)
 - **Heplisav, Dynavax^R (CpG ODNs TLR 9)**
 - MF 59 (oil in water)
 - AgB/RC 529 (MPL ,Corixa, Berna Biotech)
 - Cytokines (*GM-CSF, IL-2, IL-4, IL-12, IFN α , TLR 9 ag*)
 - Miscellaneous (*Cationic lipid, Virosomes ,HBcAg*)
- Double or Triple antigen vaccines(Pre-S₁/Pre-S₂/S (with alum hydroxide)**:
 - **GenHevac B™ - France** (Discontinued)
 - **Hepagene™ - UK** (Discontinued)
 - **BioHep B/ Heplimmune/ Sci B Vac^R** (licensed in Israel)

*Leroux-roels G 2015; Med Microbiol Immunol 204;69

Wen Y et al. Emerging Microbes and Inf 2016 , 5,e25

**Shouval D et al. Med Microbiol Immunol. 2015;204:57

Immunogenicity of an hepatitis B vaccine with a Toll-like receptor 9 hepatitis B *agonist adjuvant (HBsAg-1018) compared to a licensed vaccine in healthy adults 40–70 years of age



The future: personalized & predictive!

- **Gene expression dynamics** at day 0 – predicts the vaccine response
 - Tailored vaccines to genetic background!
 - Need for big data analysis – bio-informatics!
- **Therapeutic vaccines:**
 - Cancer vaccines
 - Vaccines for chronic diseases
- **Combination** of therapeutic antibodies and preventive vaccines

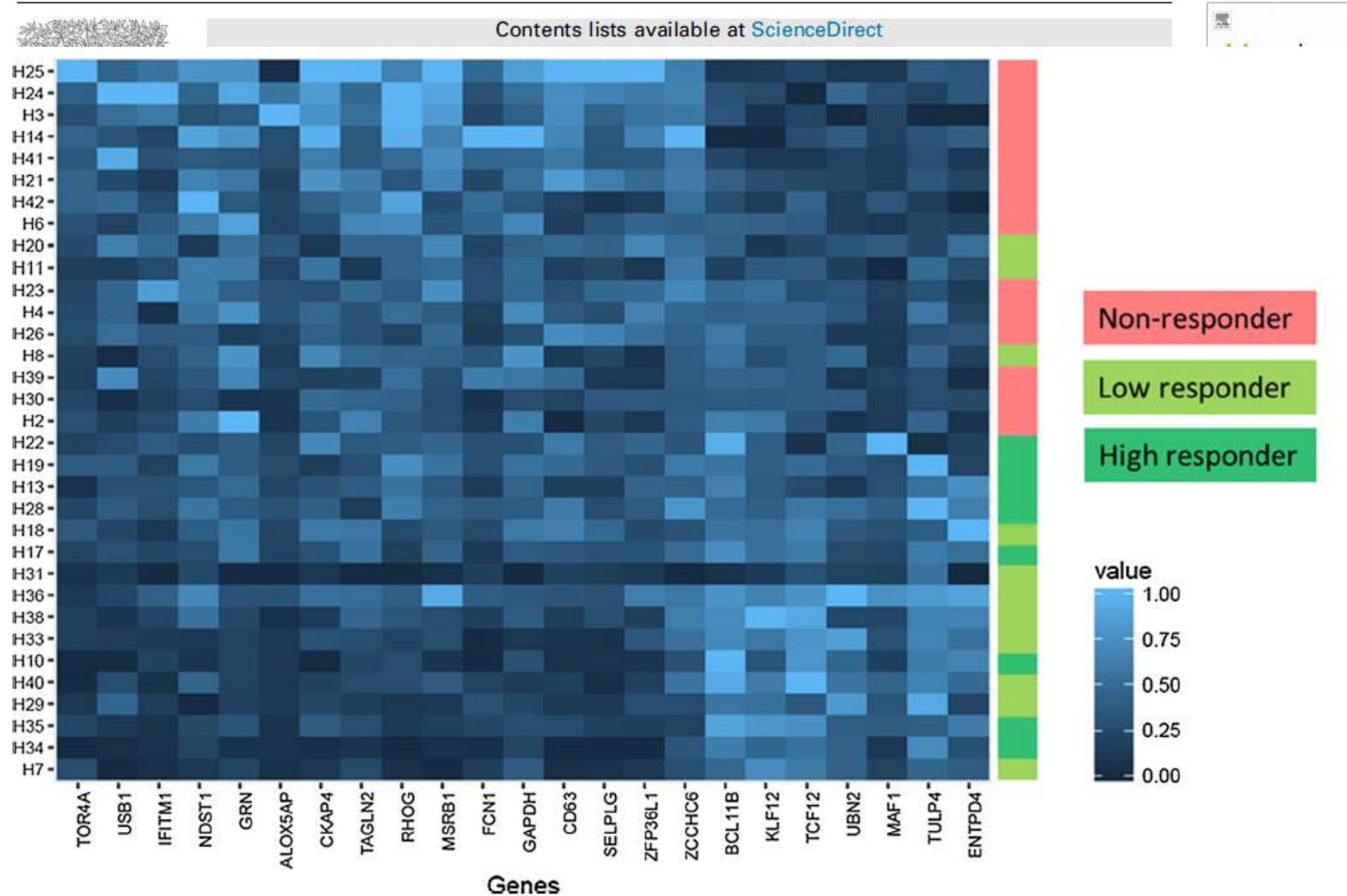
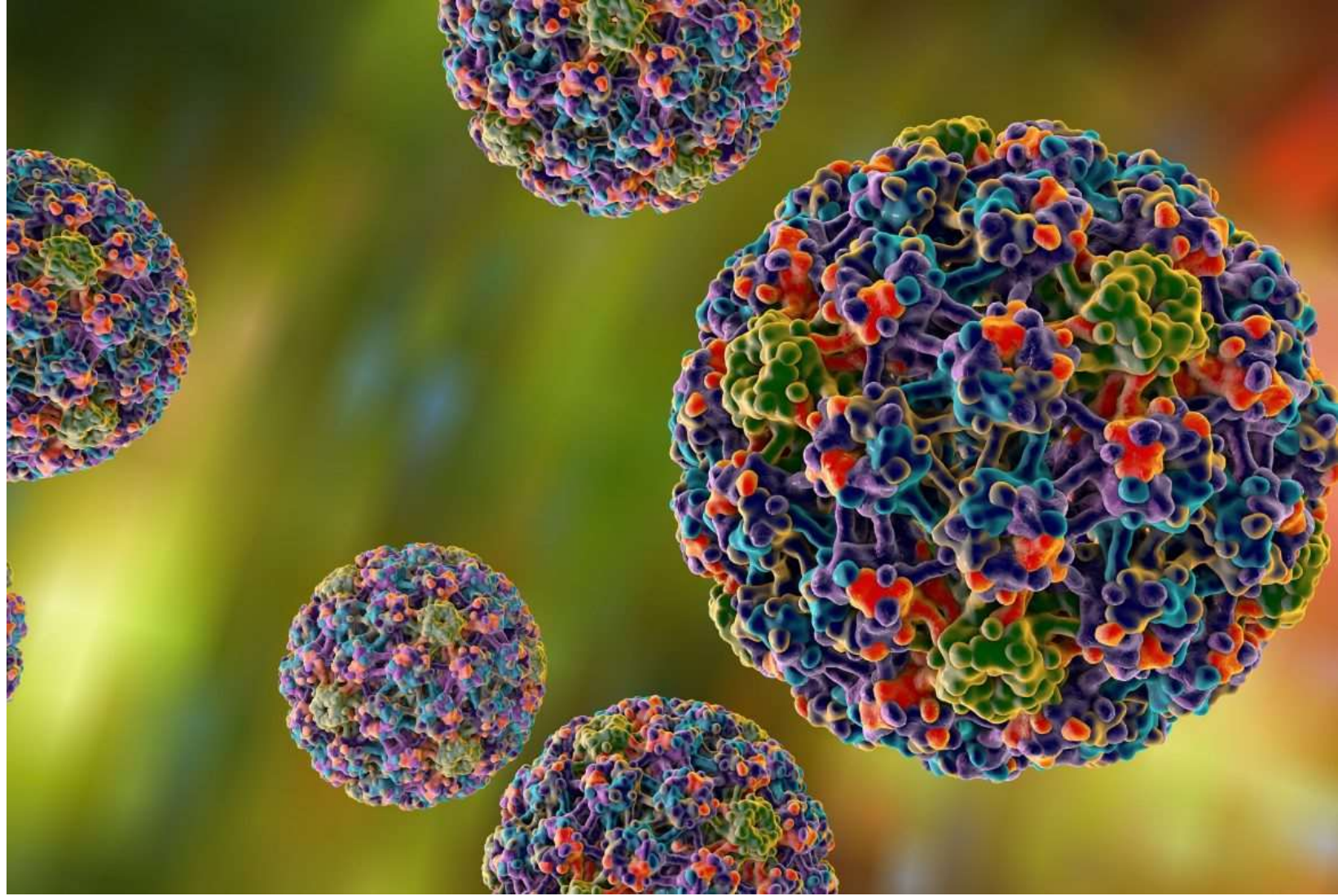


Fig. 1. The gene expression levels of the resulting 23 DEGs in responders versus non-responders at day 0, before vaccination. The responders data were divided in a high responders group with anti-HBs titer > 100 IU/L and a low responders group with anti-HBs titer > 10 IU/L and < 100 IU/L.

HPV-vaccinatie



Gratis HPV-vaccinatie van jongens sinds 1 september 2019

- 2 dosissen met 6 m interval
- Jongens in het 1^o jaar secundair onderwijs

