Immunization Programme and Prevention/control of HepB European Region of WHO

EUROHEP. NET Meeting
21 April 2005
Dr Nedret Emiroglu, WHO/EURO

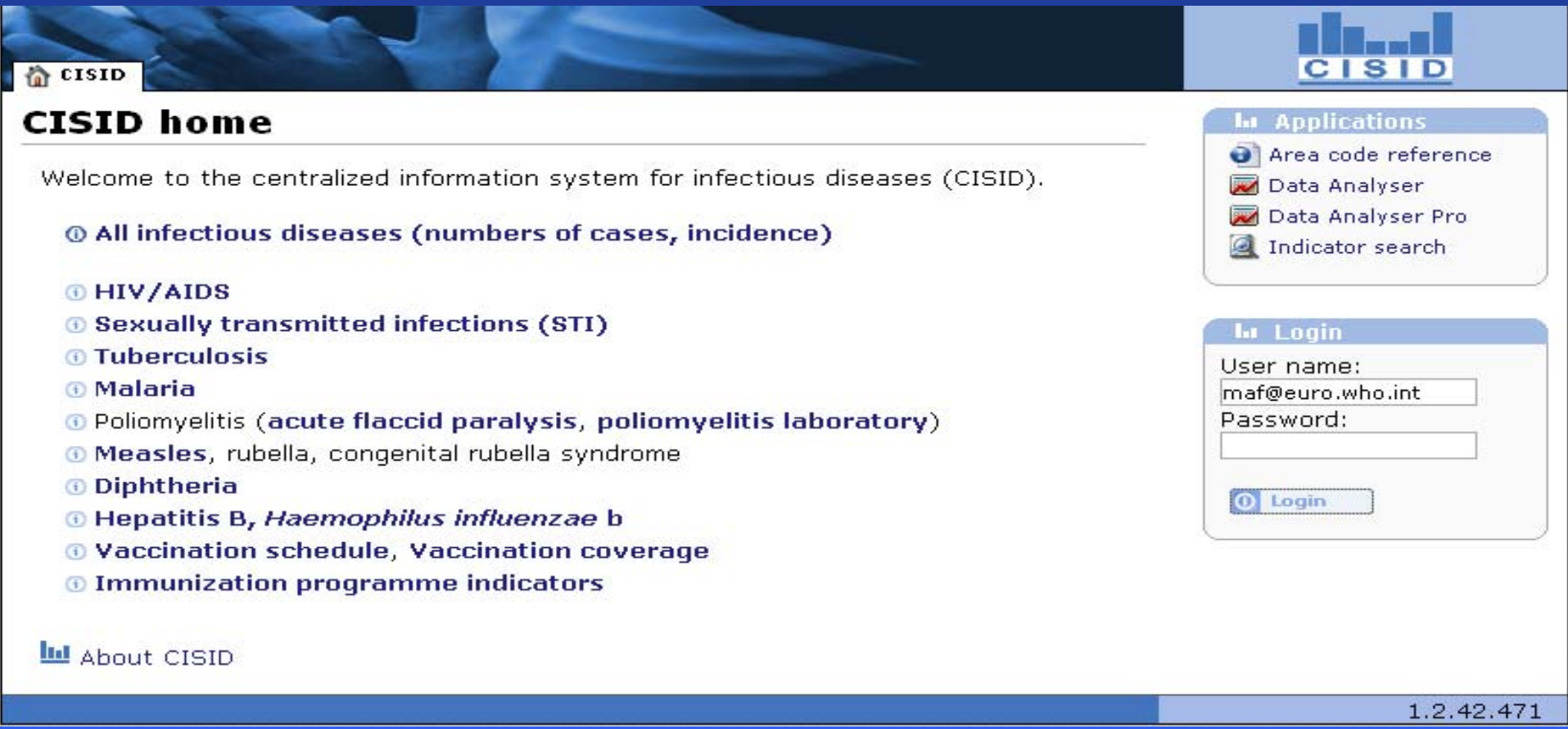
VPI Mission

To reach and maintain high levels of child immunization, at the appropriate age and at the recommended doses, to protect them against death and illness from vaccine-preventable diseases, paying special attention to children in "hard-to-reach"/vulnerable groups.

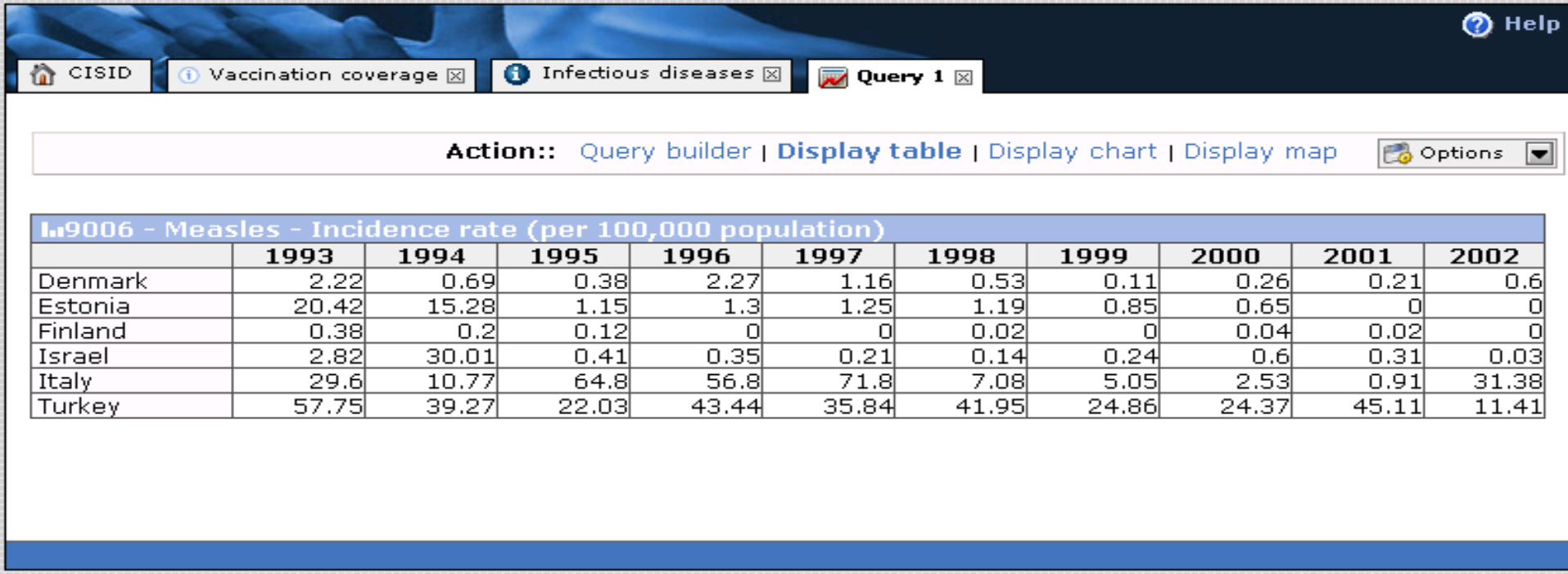
VPI Priority areas

1. Strengthening national routine immunization systems
2. Promoting quality and safety of immunization practices
3. Introducing new and under used vaccines
4. Eliminating endemic measles and rubella and preventing Congenital Rubella Infections
5. Sustaining polio-free status and controlling diphtheria
6. Surveillance of Vaccine Preventable Diseases
7. Strengthening regional laboratory network (polio, measles, rubella)

Centralized Information System for Infectious Disease CISID



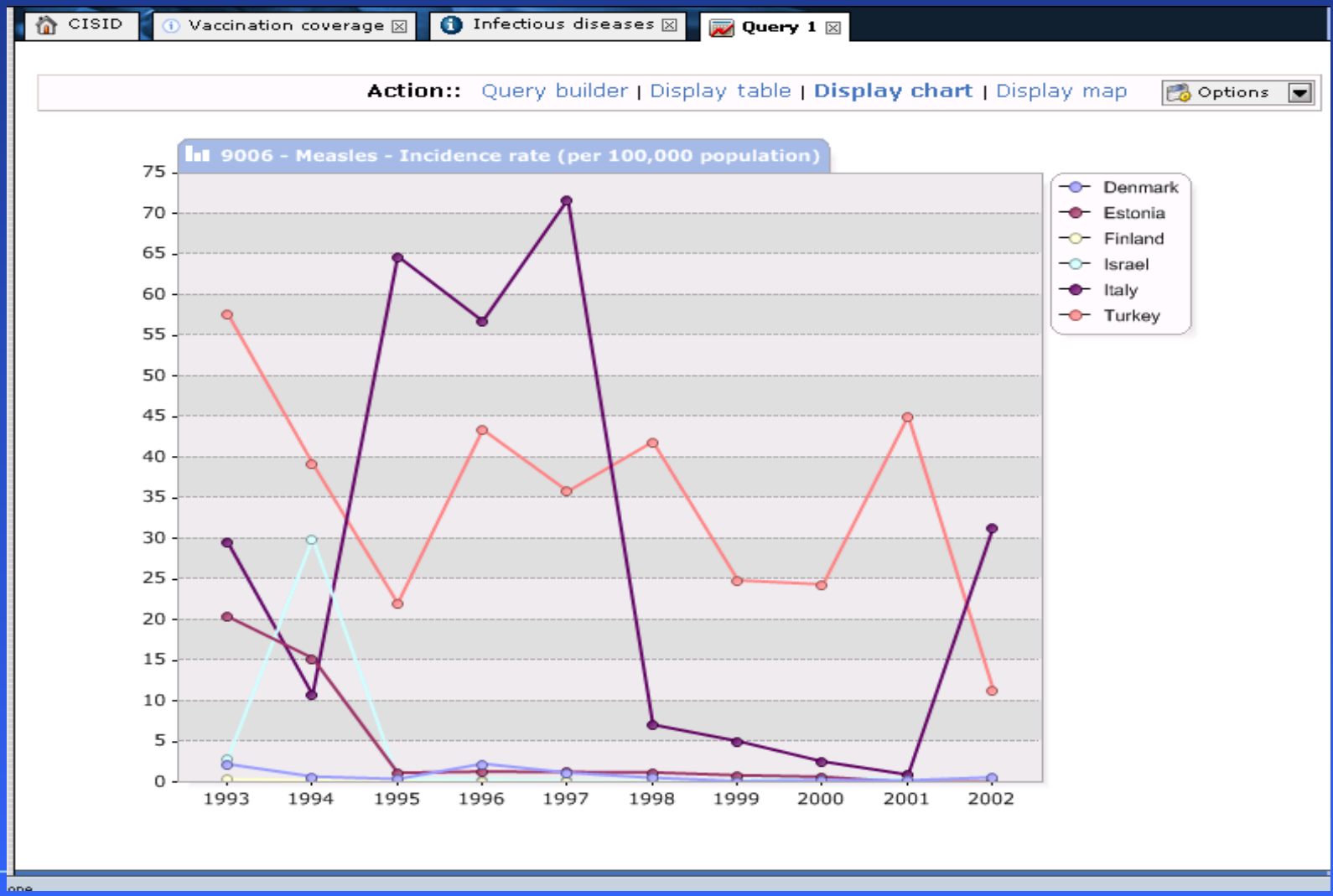
CISID Example



9006 - Measles - Incidence rate (per 100,000 population)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	2.22	0.69	0.38	2.27	1.16	0.53	0.11	0.26	0.21	0.6
Estonia	20.42	15.28	1.15	1.3	1.25	1.19	0.85	0.65	0	0
Finland	0.38	0.2	0.12	0	0	0.02	0	0.04	0.02	0
Israel	2.82	30.01	0.41	0.35	0.21	0.14	0.24	0.6	0.31	0.03
Italy	29.6	10.77	64.8	56.8	71.8	7.08	5.05	2.53	0.91	31.38
Turkey	57.75	39.27	22.03	43.44	35.84	41.95	24.86	24.37	45.11	11.41

CISID Example



WHO European Region
Vaccine Preventable Disease Control Initiatives

21 June 2002

CERTIFICATE

WORLD HEALTH ORGANIZATION
EUROPEAN REGION

REGIONAL COMMISSION FOR THE CERTIFICATION OF POLIOMYELITIS ERADICATION

THE COMMISSION CONCLUDES, FROM EVIDENCE PROVIDED BY THE NATIONAL CERTIFICATION COMMITTEES OF THE 51 MEMBER STATES, THAT THE TRANSMISSION OF INDIGENOUS WILD POLIOVIRUS HAS BEEN INTERRUPTED IN ALL COUNTRIES OF THE REGION. THE COMMISSION ON THIS DAY DECLARES THE EUROPEAN REGION POLIOMYELITIS-FREE.

SIR JOSEPH SMITH, CHAIRMAN
DR GEORGE F. DEKKER
PROFESSOR MARGARETA KÖTTGEN
PROFESSOR SERGEY G. DROZDOV
PROFESSOR ISTVÁN DÖMÖK
DR DONATO GRECO
DR WALTER DÓWDLA
PROFESSOR BURGHARD STÜCK

COPENHAGEN, 21 JUNE 2002

Measles elimination and CRI prevention

Objectives by 2010:

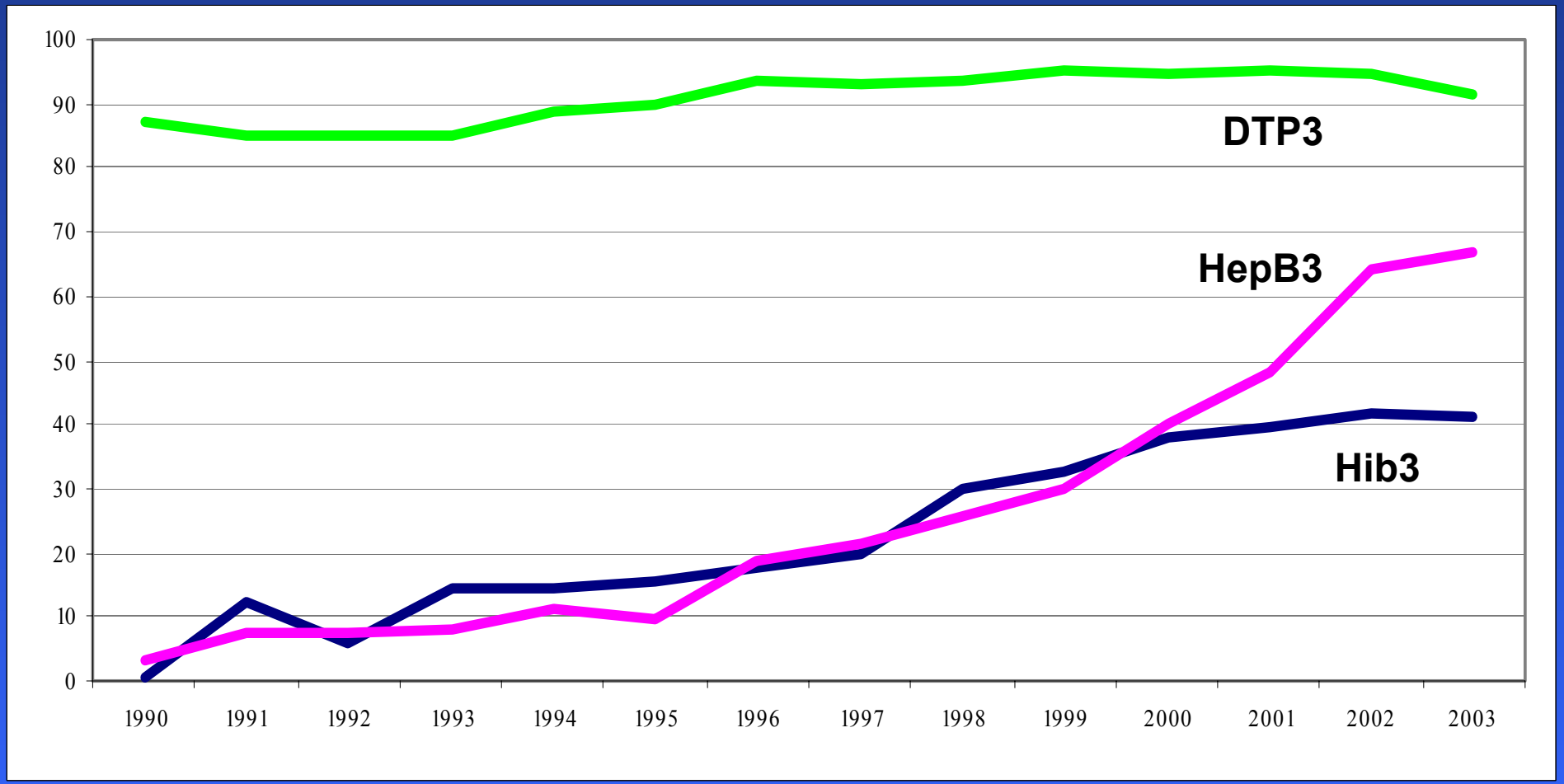
- Interrupt transmission of measles and rubella
- Prevent CRI (<1 CRS case per 10^5 live births)

- Opportunity to strengthen routine immunization services, to boost national programme to a sustainable level
- Strengthened laboratory based surveillance through network

- Political commitment and ownership at all levels
- Advocacy and social mobilization
- Resource mobilization

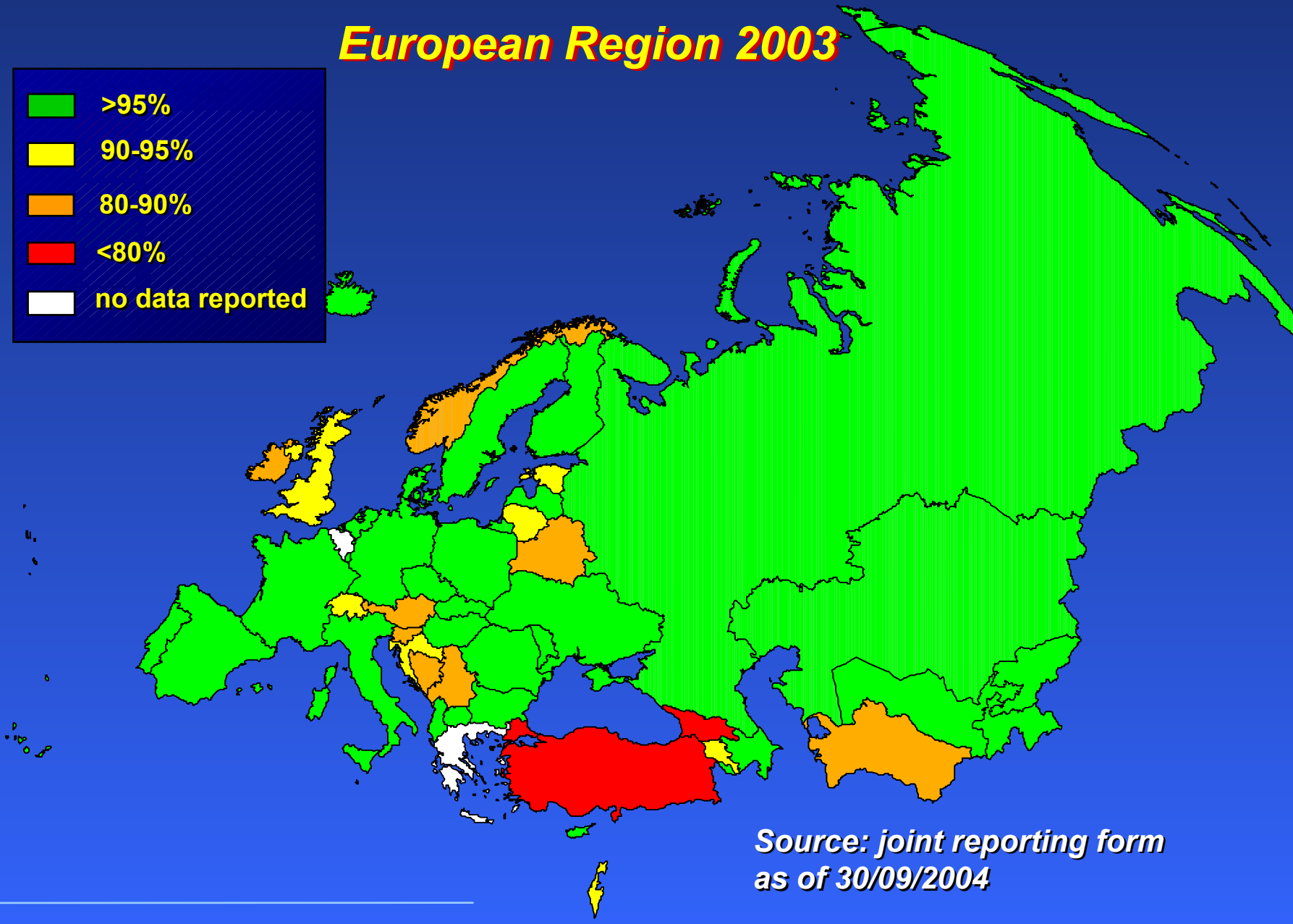
WHO European Region Immunization Programme

DTP3, HepB3 and Hib3 coverage WHO European Region, 1990-2003



DTP3 immunization coverage

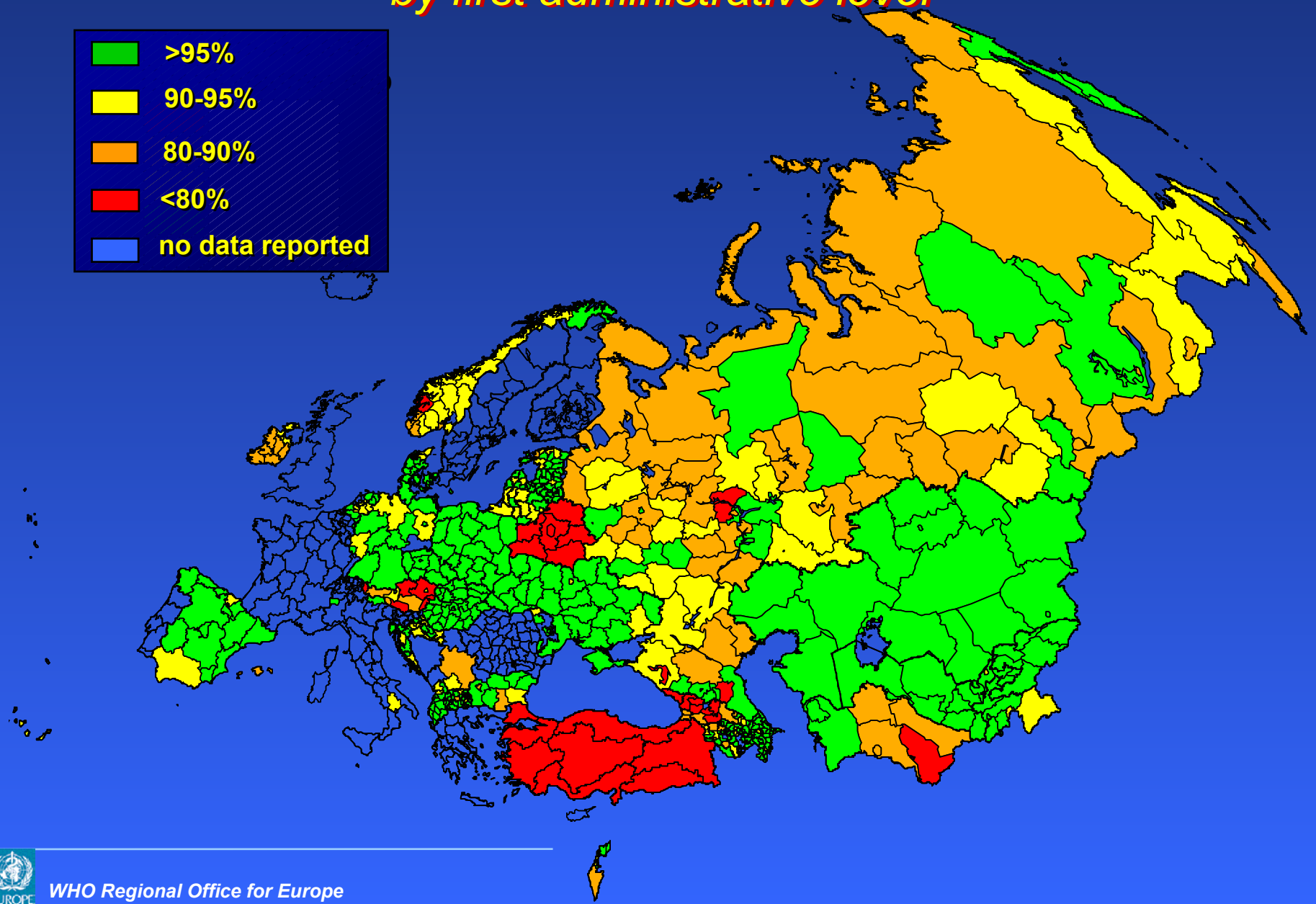
European Region 2003



Source: joint reporting form as of 30/09/2004

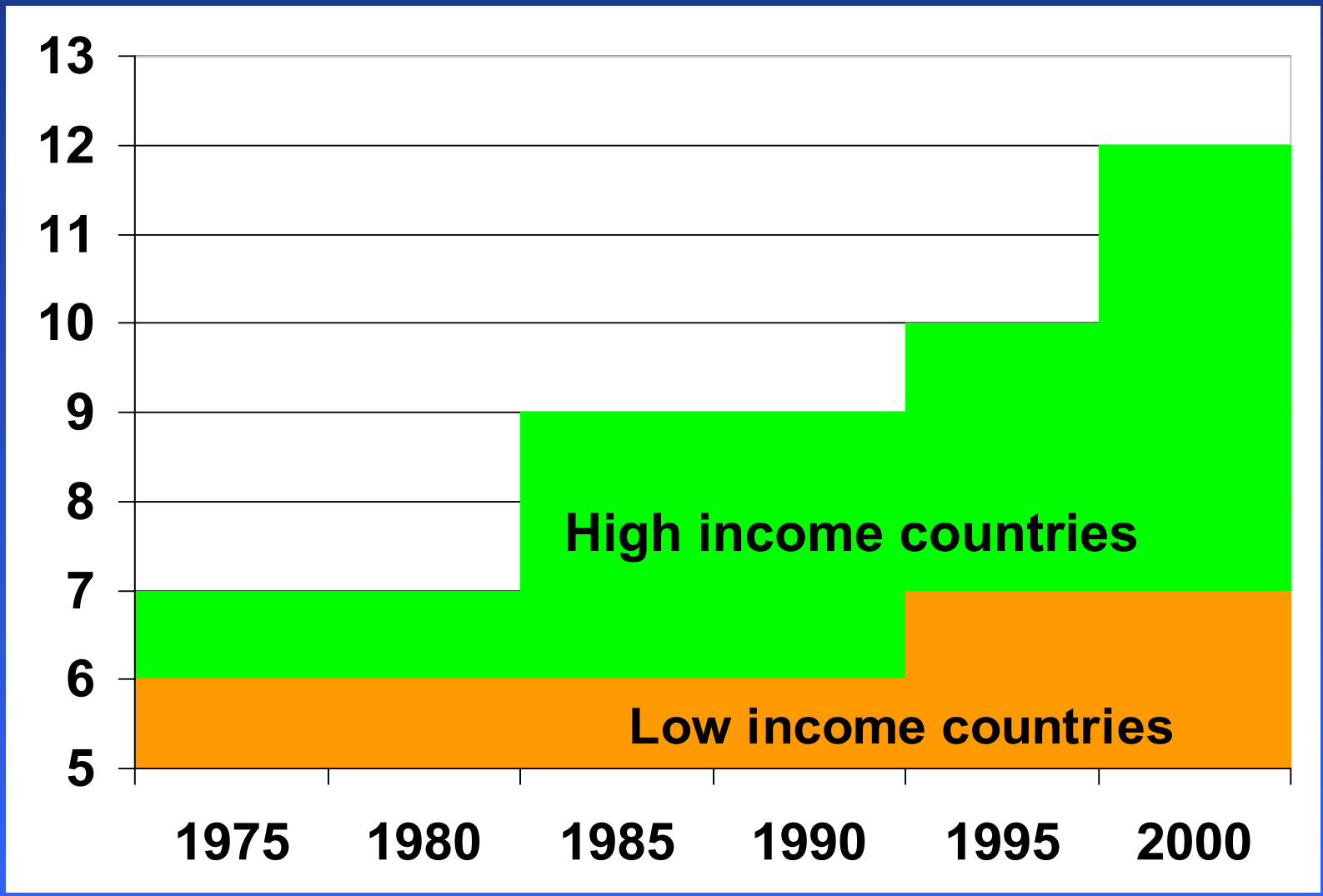
DTP3 vaccine coverage in 2003

by first administrative level



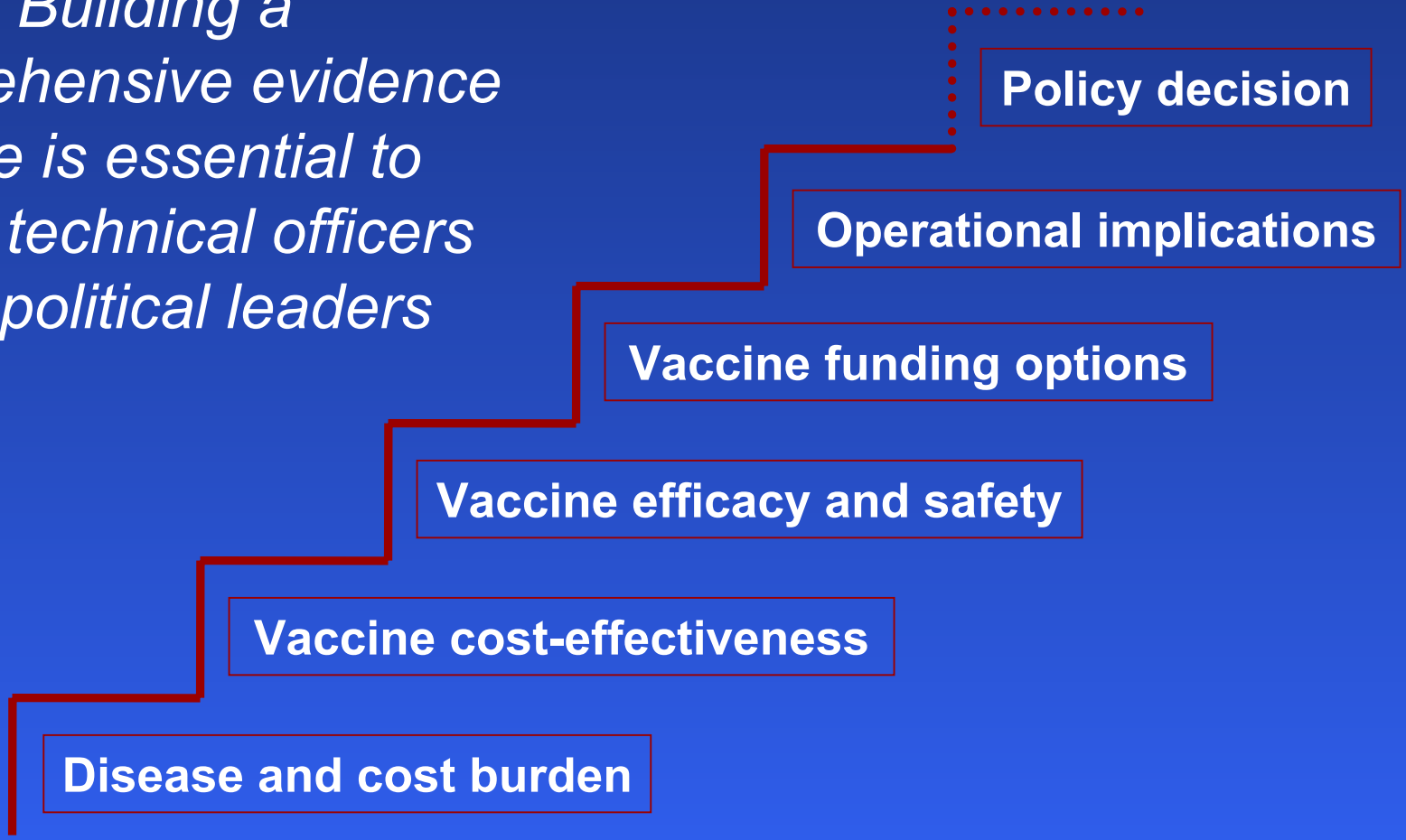
WHO European Region
New and Underused Vaccines

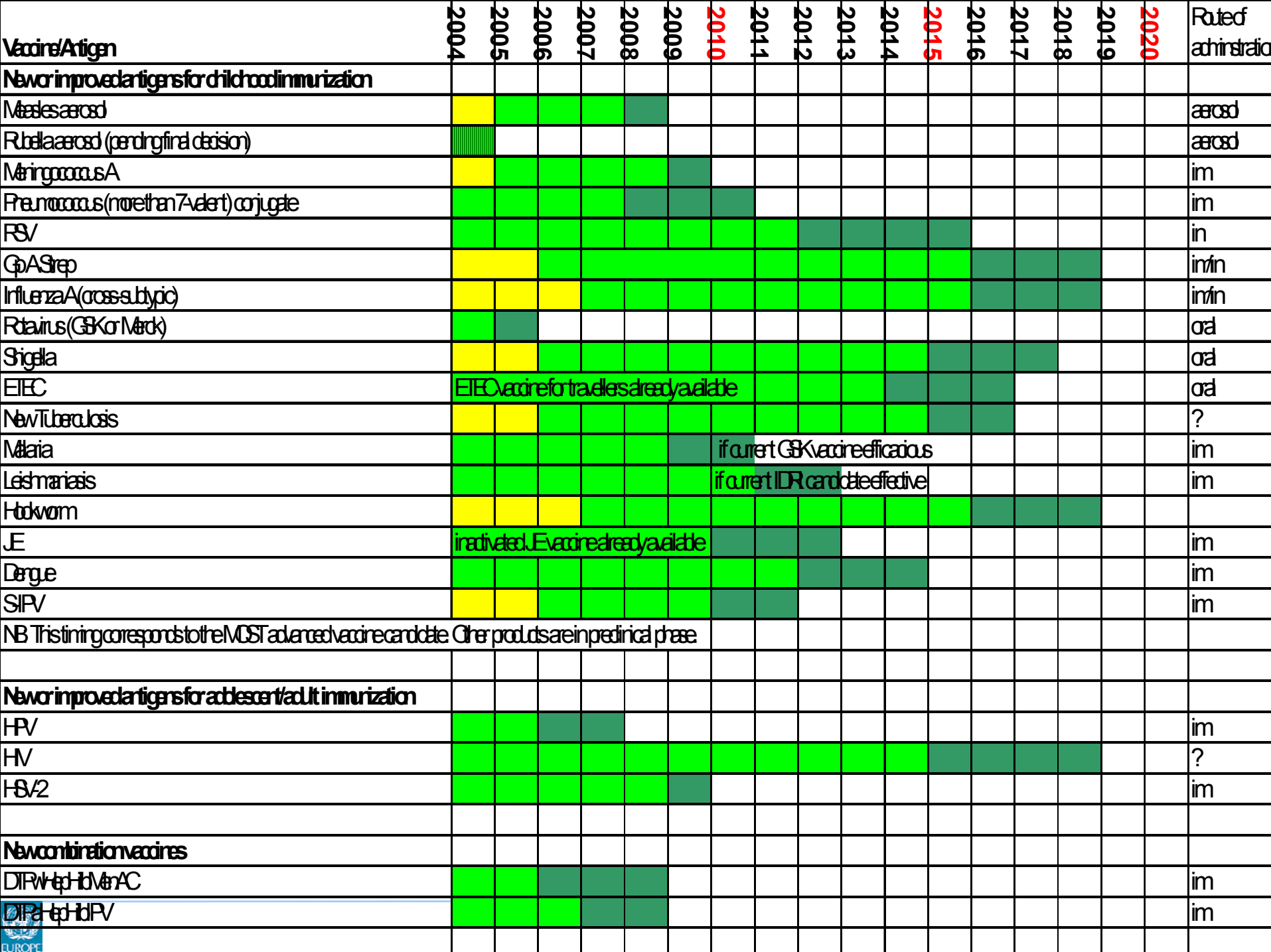
Number of routine childhood antigens used in low income and high income countries



Decision-making process for new vaccine introduction

Building a comprehensive evidence base is essential to guide technical officers and political leaders




Vaccine/Antigen
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Route of administration
New or improved antigens for childhood immunization
Measles aerosol
aerosol
Rubella aerosol (pending final decision)
aerosol
Meningococcus A
im
Pneumococcus (more than 7-valent) conjugate
im
RSV
in
GpA Strep
im/in
Influenza A (cross-subtypic)
im/in
Rotavirus (GSK or Merck)
oral
Shigella
oral
ETEC
ETEC vaccine for travellers already available
oral
New Tuberculosis
?
Malaria
if current GSK vaccine efficacious
im
Leishmaniasis
if current IDR candidate effective
im
Hookworm
JE
inactivated JE vaccine already available
im
Dengue
im
SIPV
im
NB. This timing corresponds to the MOST advanced vaccine candidate. Other products are in preclinical phase.
New or improved antigens for adolescent/adult immunization
HPV
im
HIV
?
HSV-2
im
New combination vaccines
DTPwHepHibMenAC
im
DTPaHepHibIPV
im

HEPATITIS B IN THE WORLD: the burden
(6-2000, WHO HQ estimation)

- > 6,000 million global population
- > 2,000 million with HBV serological markers
- 4-5 million new HBV cases each year (°2000)
- >370 million HBV carriers (vs. 216 mill in 1984)
- 450 million HBV carriers (2004, *)
- 65 million expected liver deaths from carrier pool
- > 1,000,000 deaths per year
- ± 900,000 new infections/yr in the WHO Euro Region (°1994)

* Wands JR. N Engl J Med 2004; 351: 1567-1570

WHO point of view

- Universal vaccination of all infants as an integral part of the national immunization program is the highest priority in all countries
- whenever feasible and according to the local epidemiology, countries should incorporate prevention of perinatal HBV transmission
  - by beginning vaccination of all infants at birth
  - screening pregnant women and provide PEP to exposed infants

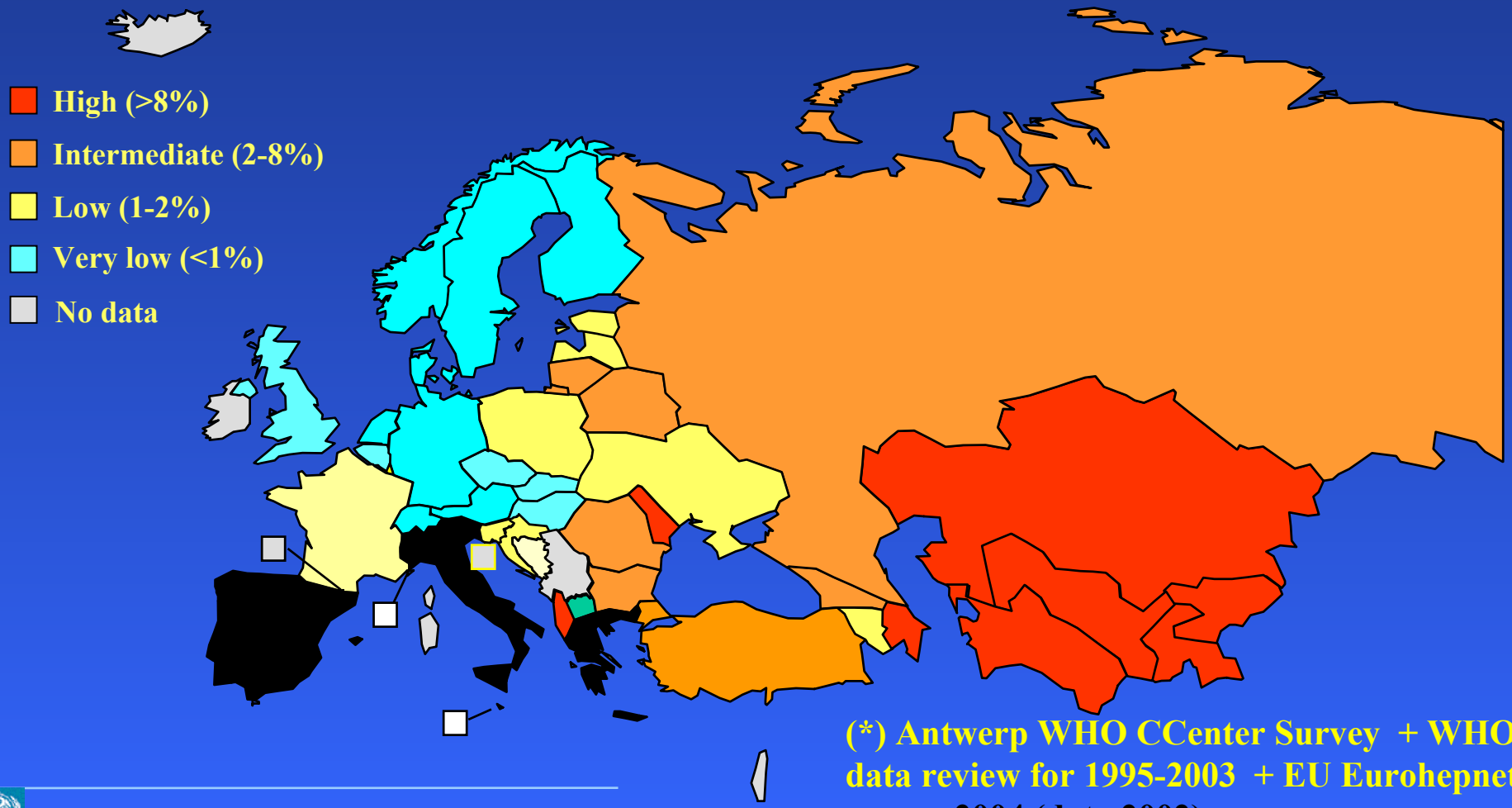
WHO European Region
Hepatitis B

Epidemiology of HBV in Europe and importation of hepatitis B

- From low to high endemic regions
- endemicity increases from:
  - west to east
  - north to south

Albania	2000	0-14 y.	4%
Bulgaria	2000	Pregnant women	4%
Croatia	2000	Blood donors	0.4%
Estonia	2000	Pregnant women	0.8%
Georgia	1999	Blood donors	3%
Kyrgyzstan	1999	Blood donors	7%
Latvia	1999	Military recruits	3.6%
Moldova	1999	Pregnant women	9.7%
Turkmenistan	2000	Pregnant women	8-15%
Ukraine	1999	General pop.	9%
Uzbekistan	1999	Pregnant women	8.2%

Viral Hepatitis B endemicity: Estimated prevalence of HBsAg carriers (*)



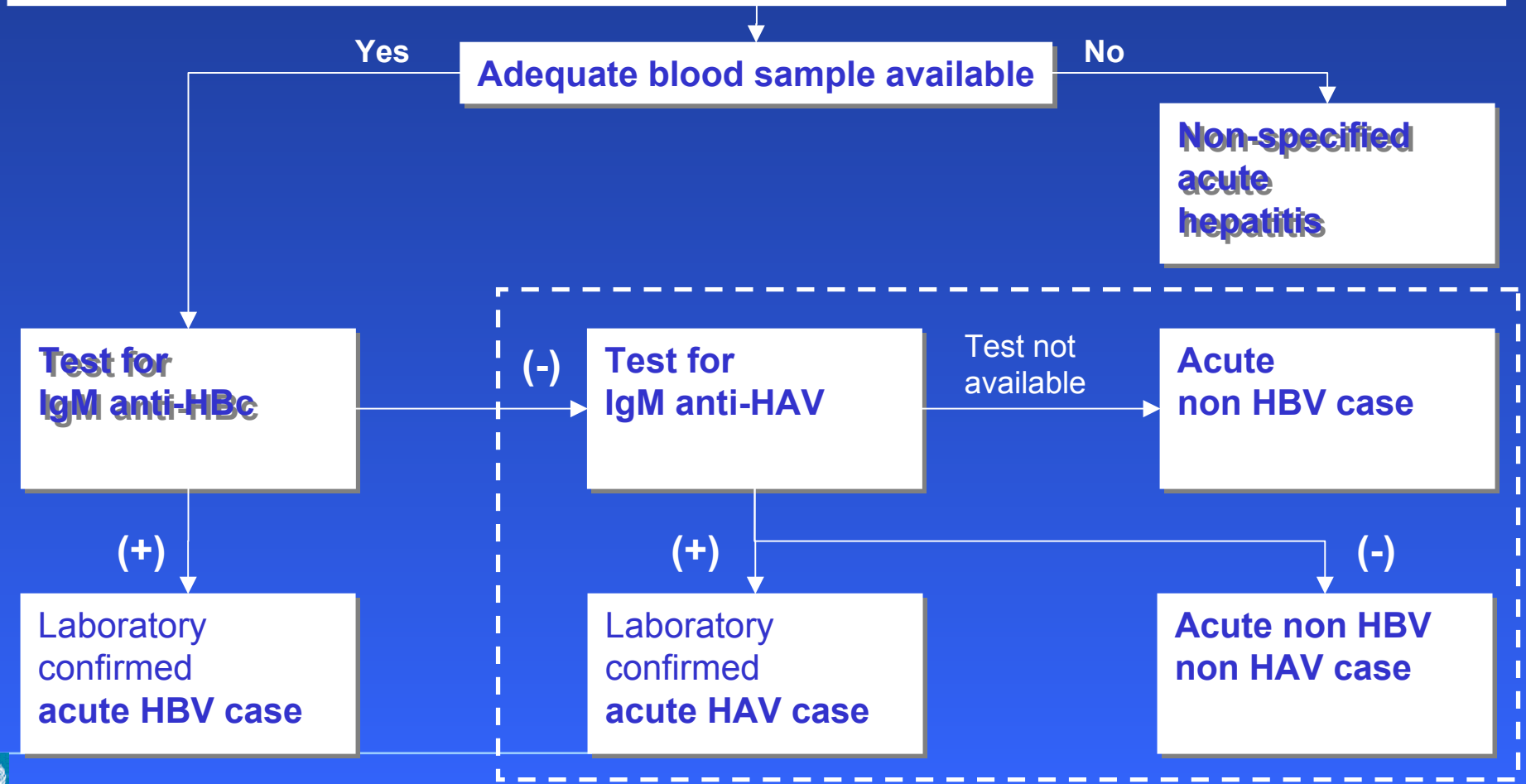
(*) Antwerp WHO CCenter Survey + WHO data review for 1995-2003 + EU Eurohepnet survey 2004 (data 2002)

Acute Hepatitis B Case Classification Flowchart

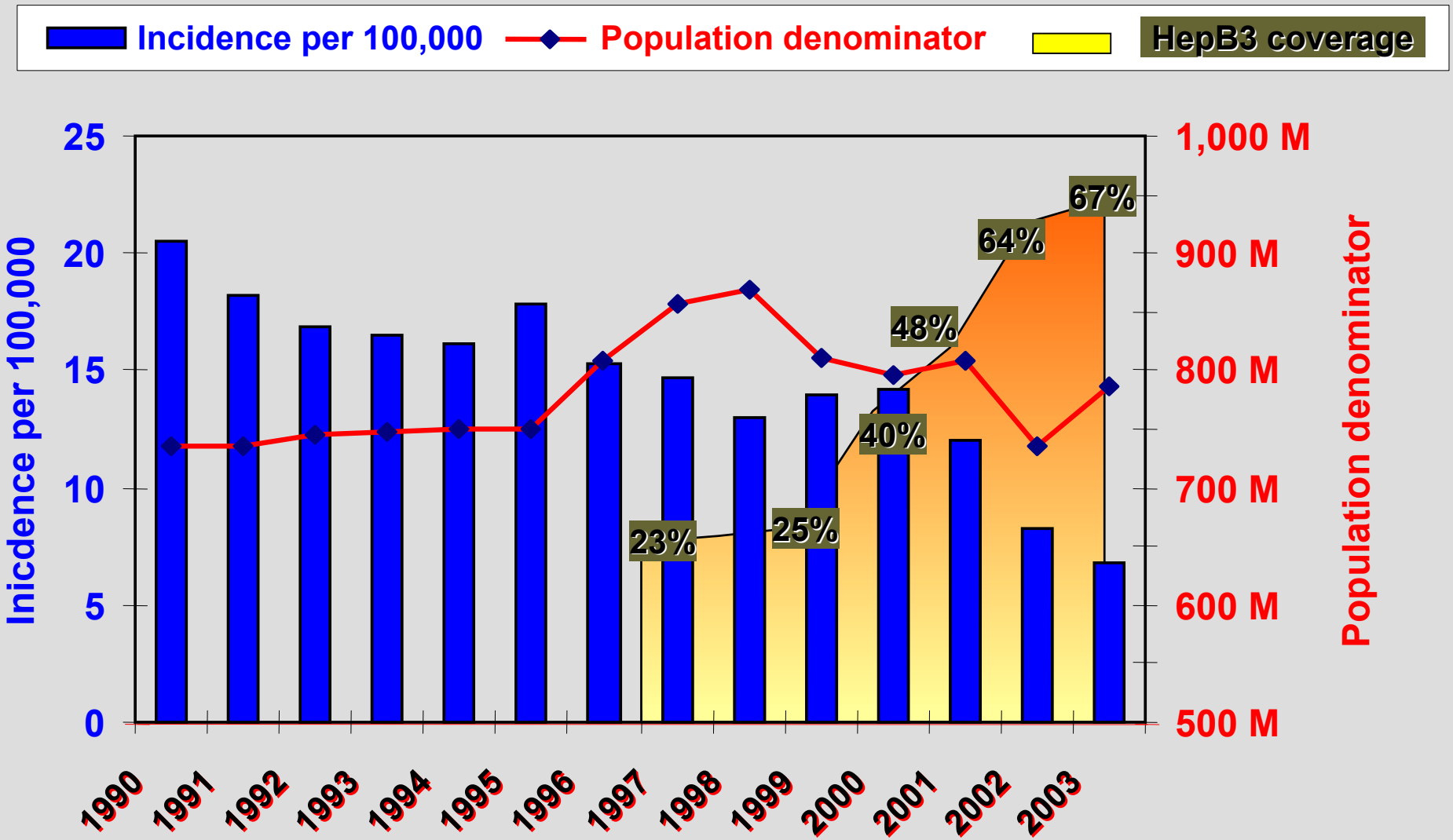
SUSPECTED CASE OF ACUTE HEPATITIS B

-***Inclusion criteria:*** *Acute jaundice illness AND at least one of the following signs : right upper quadrant tenderness or >2.5 times the upper limit of serum alanine aminotranferase*

-***Exclusion criteria:*** *Suspected case of acute hepatitis epidemiologically linked to a confirmed hepatitis A case*

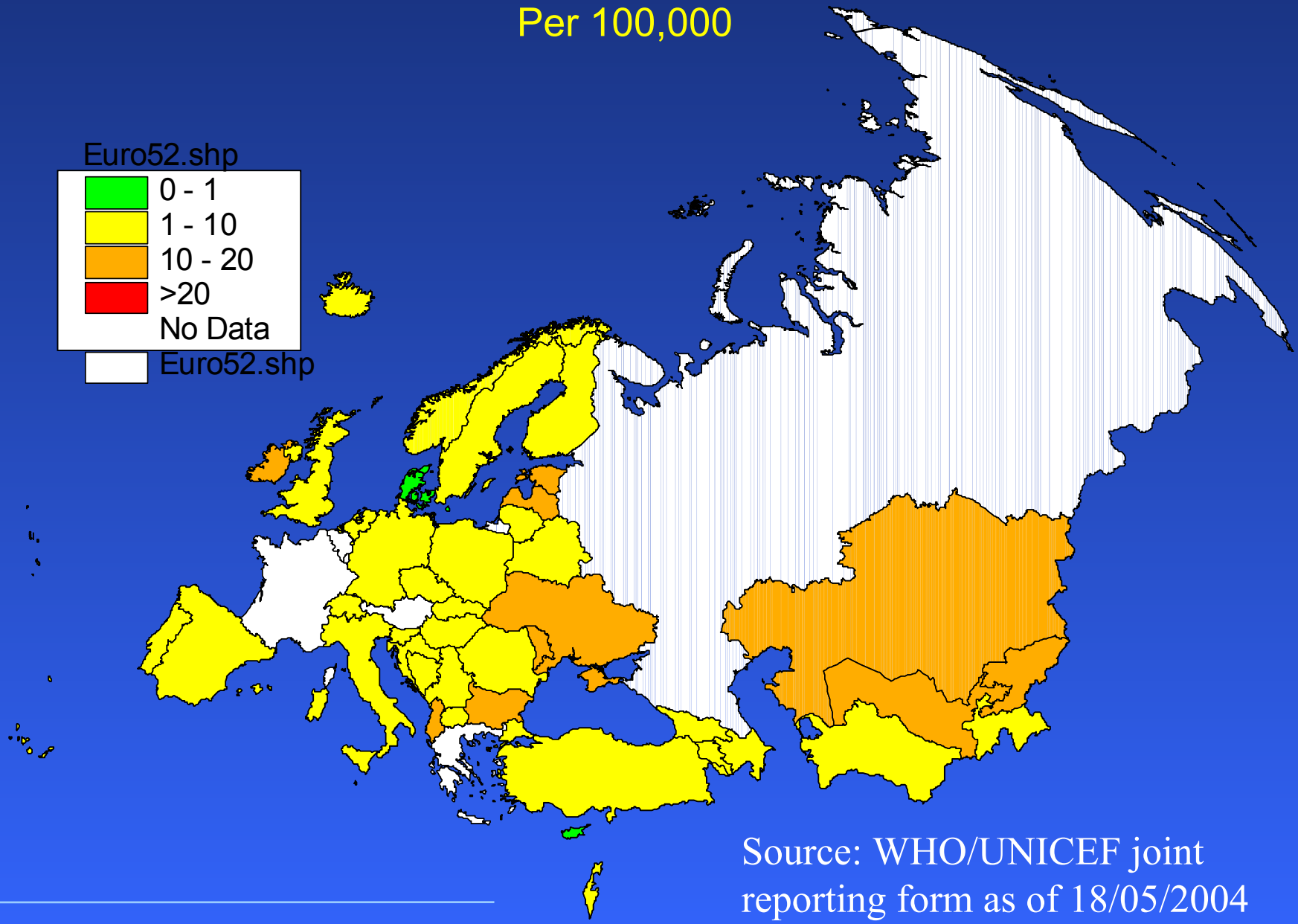


Incidence of Hepatitis B
WHO European Region 1990-2003



Incidence of HepB in the European Region in 2003

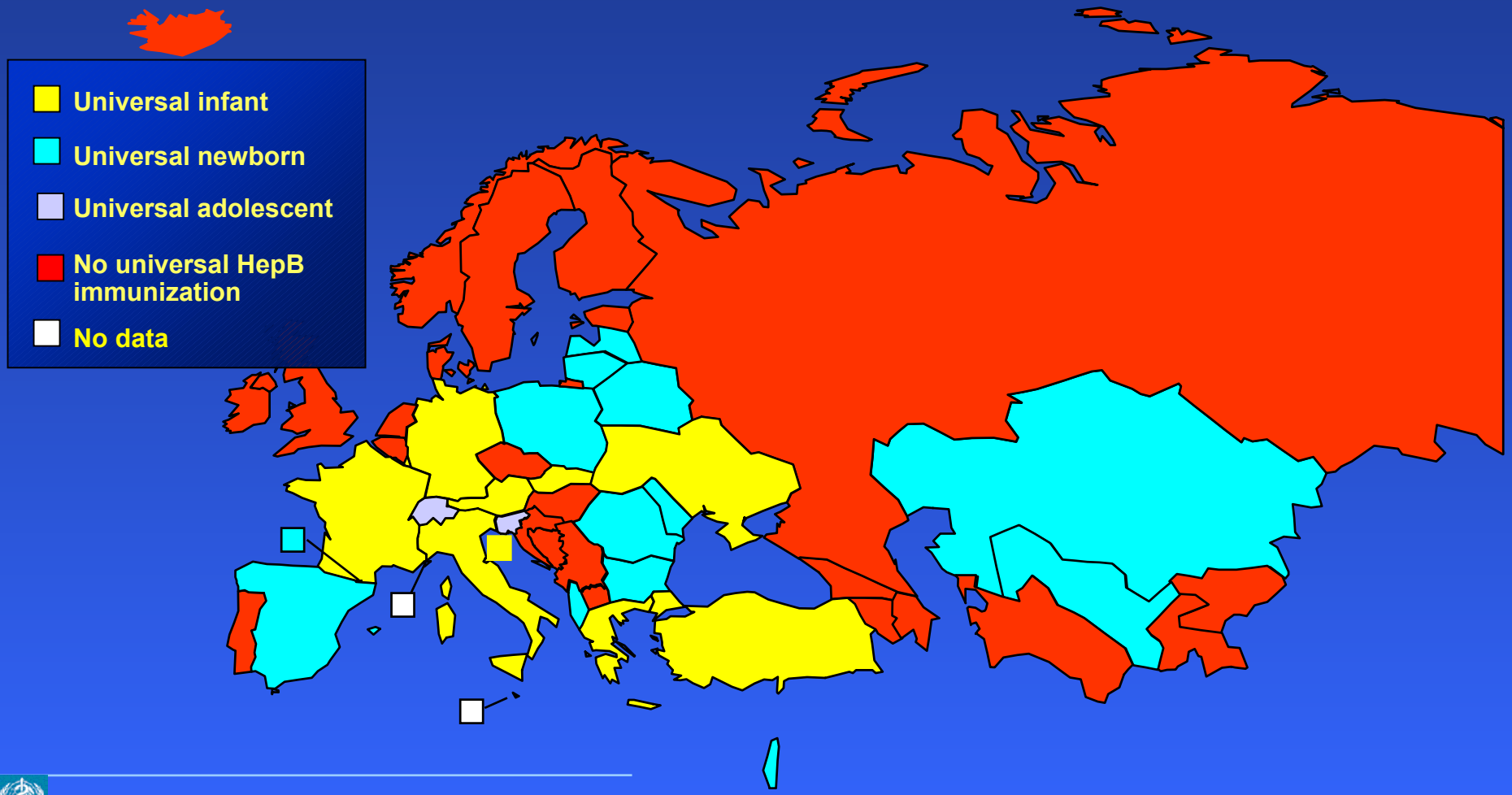
Per 100,000



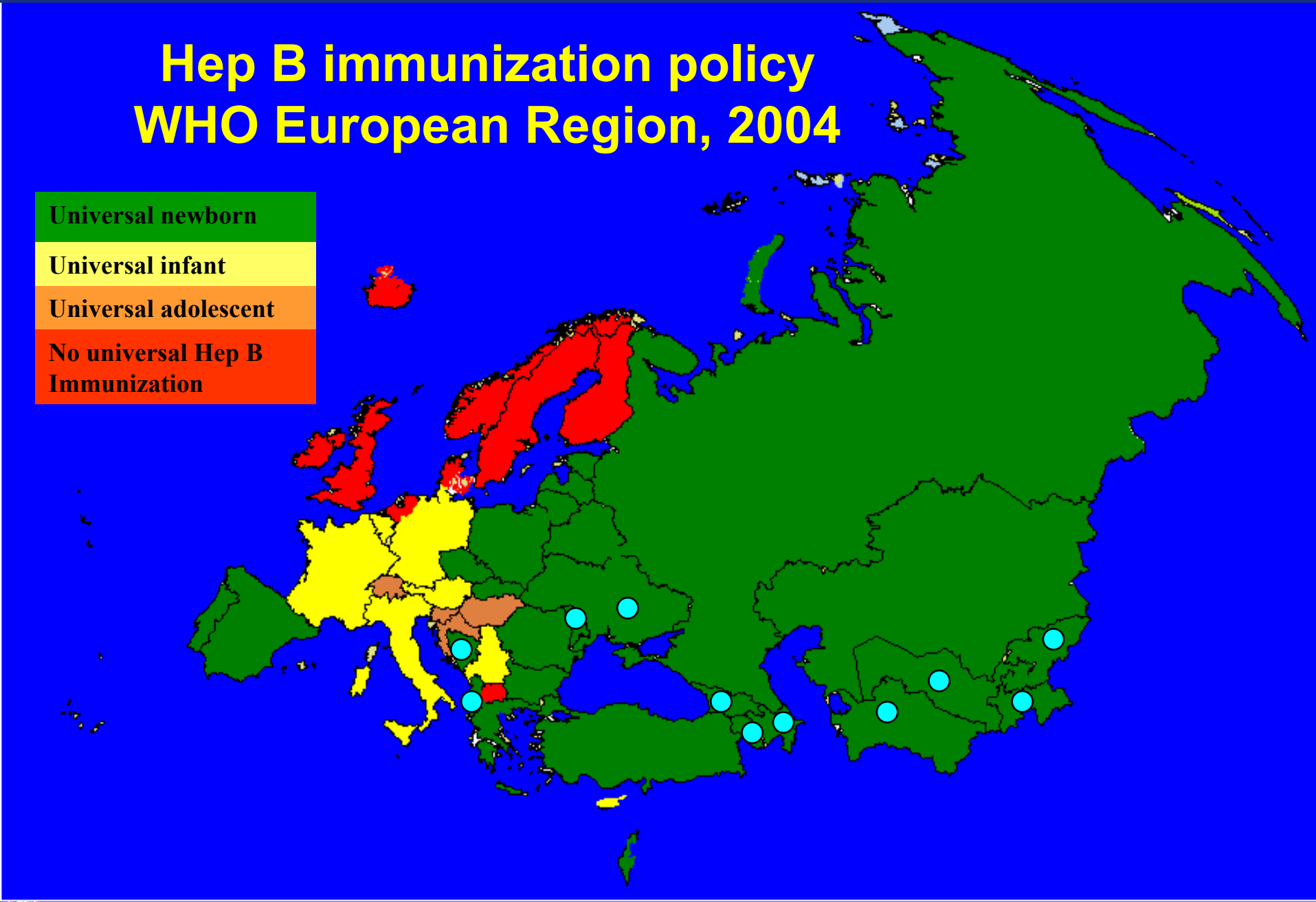
Source: WHO/UNICEF joint reporting form as of 18/05/2004

Hep B immunization policy

WHO European Region, 1998



Hep B immunization policy
WHO European Region, 2004



Evaluation of hepatitis B immunization programmes

- Immunization coverage
  - Routinely collected during immunization acitivities (hepB1, hepB3)
  - Representative surveys

  - Measure feasibility of the programme
  - Measure drop out rate
  - Compare with other immunization programmes
  - No information about disease impact!

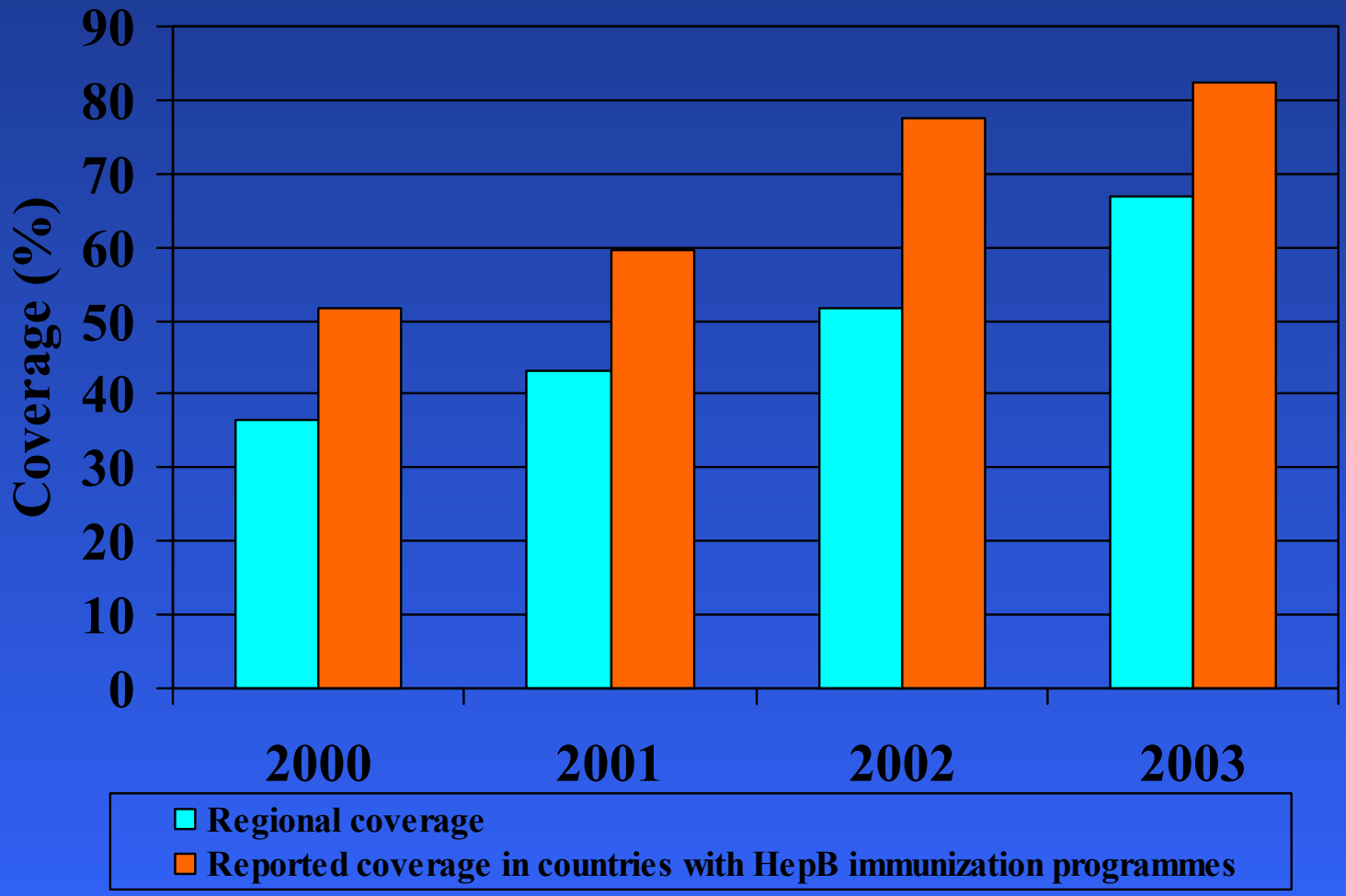
Evaluation of hepatitis B immunization programmes

- Serological surveys
  - More direct measure of impact on the disease (pre-vaccination versus post-vaccination)
  - Require accurate methodology and laboratory capacity

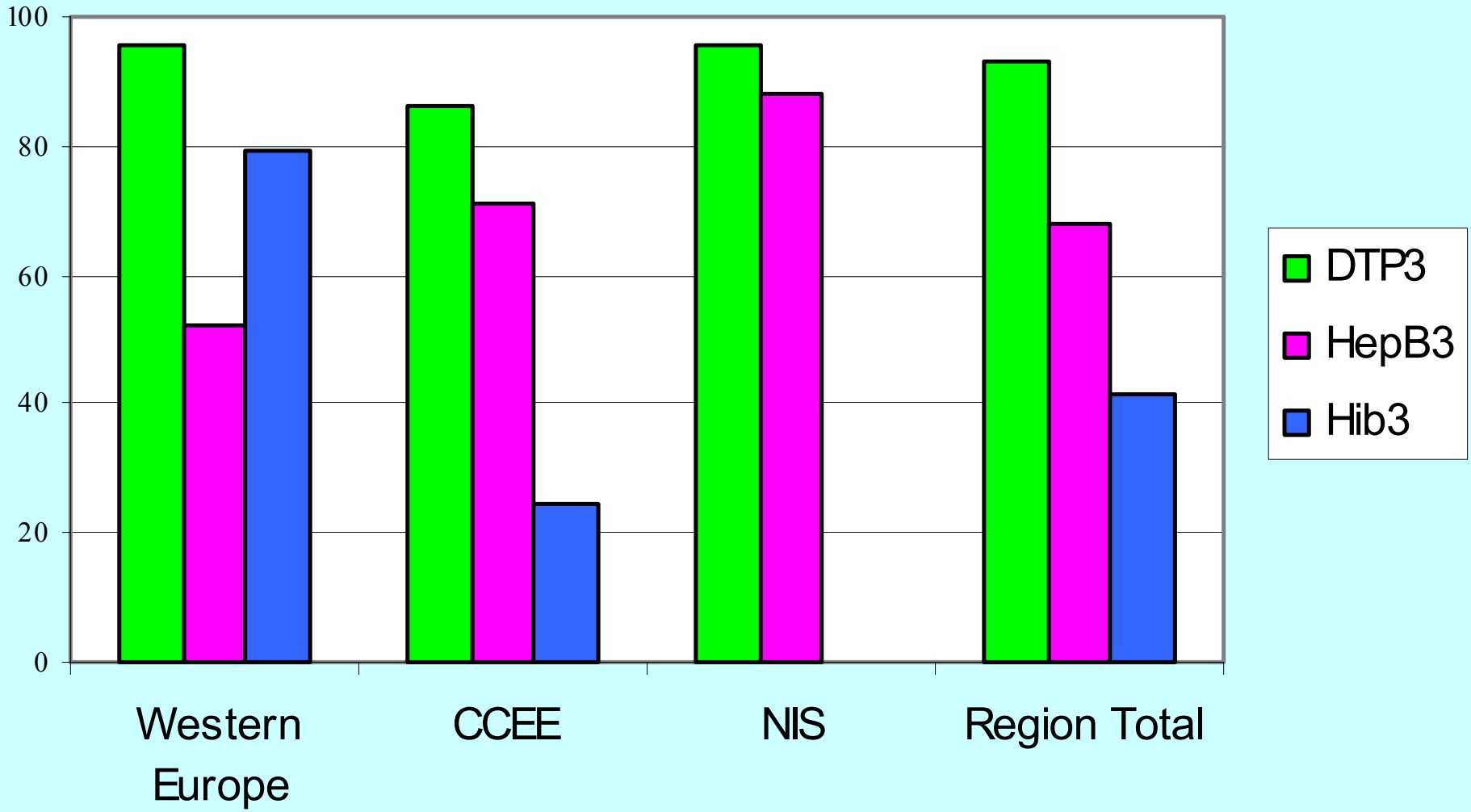
Evaluation of hepatitis B immunization programmes

- Surveillance for acute cases of hepatitis B
  - Provides direct measure of disease burden
  - Useful in countries with substantial incidence of acute infection in children and younger adolescents

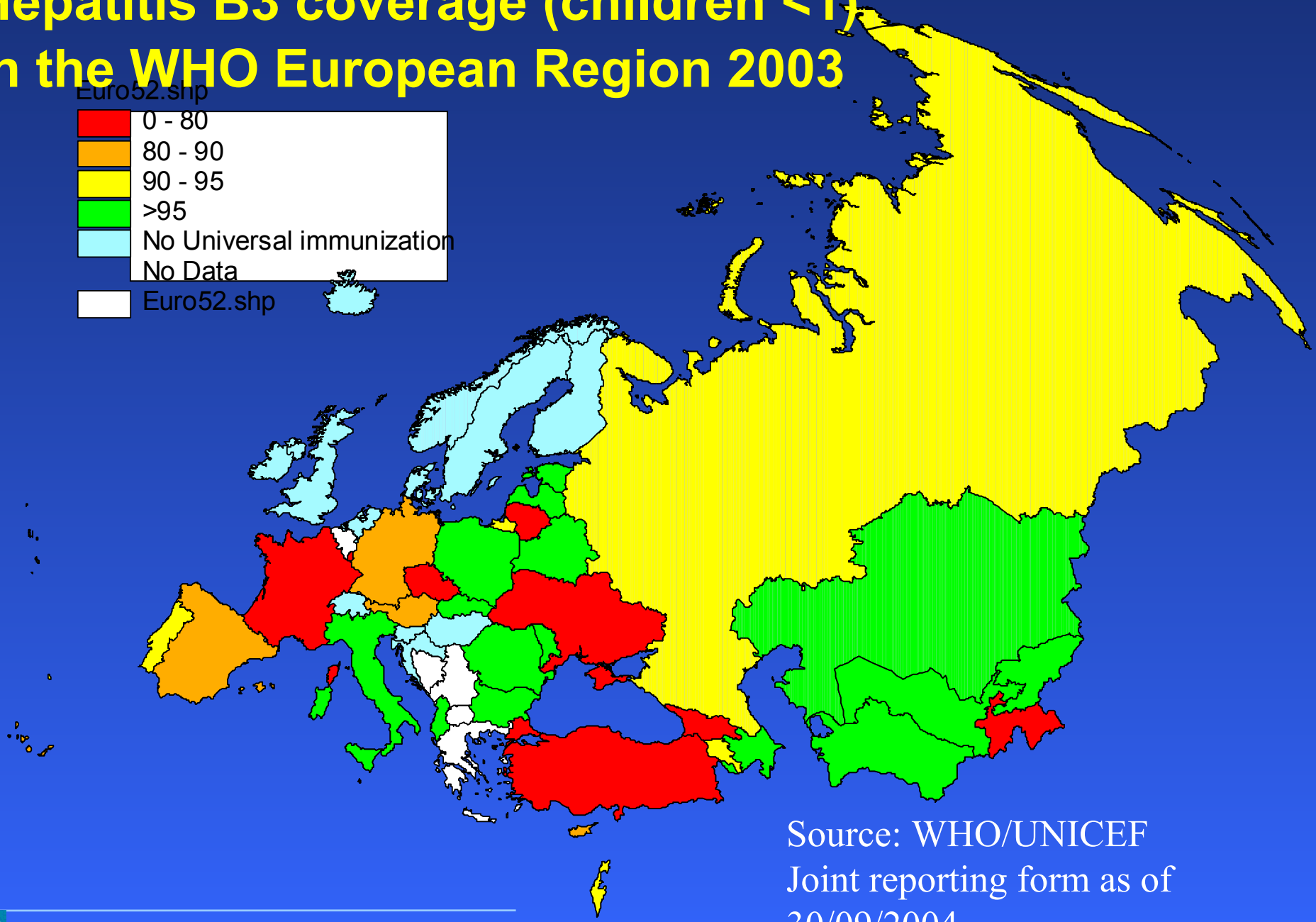
HepB3 coverage
WHO European Region, 2000-2003



DTP3, HepB3 and Hib3 coverage by sub-regions, WHO European Region, 2003

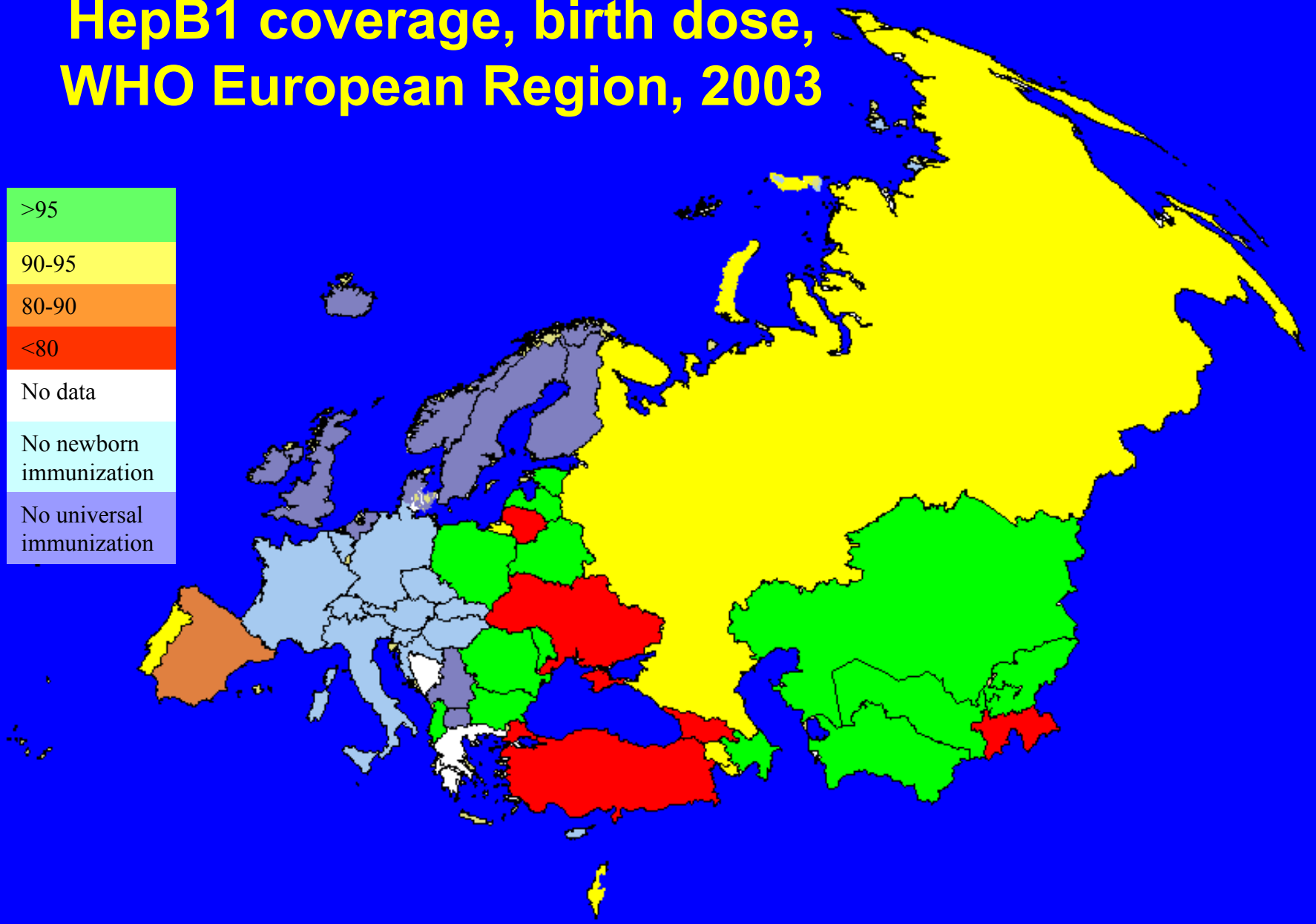


Hepatitis B3 coverage (children <1) in the WHO European Region 2003



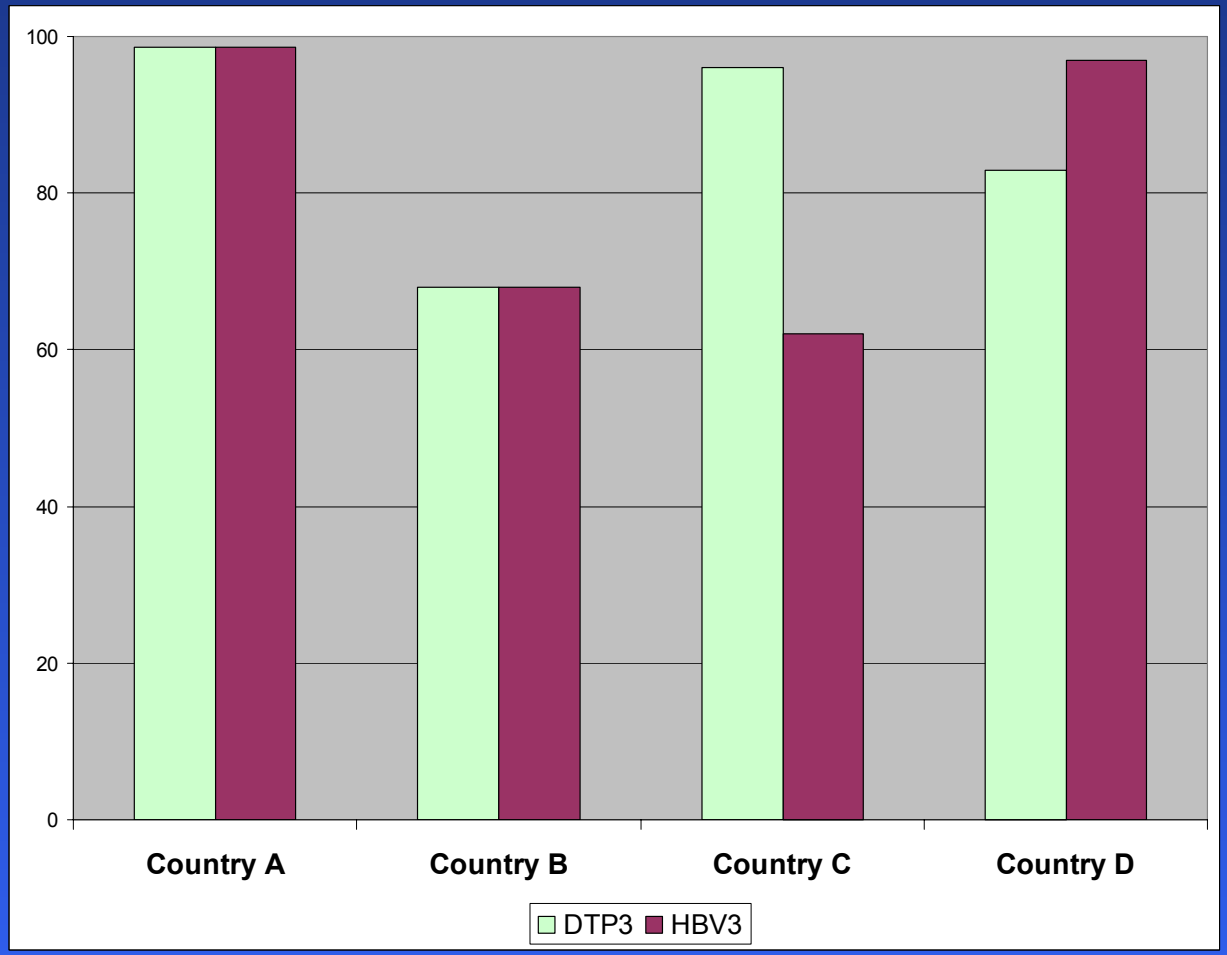
Source: WHO/UNICEF Joint reporting form as of 30/09/2004

HepB1 coverage, birth dose, WHO European Region, 2003



WHO European Region
Country Examples

DTP3 and HepB3 coverage examples of country performance, 2003



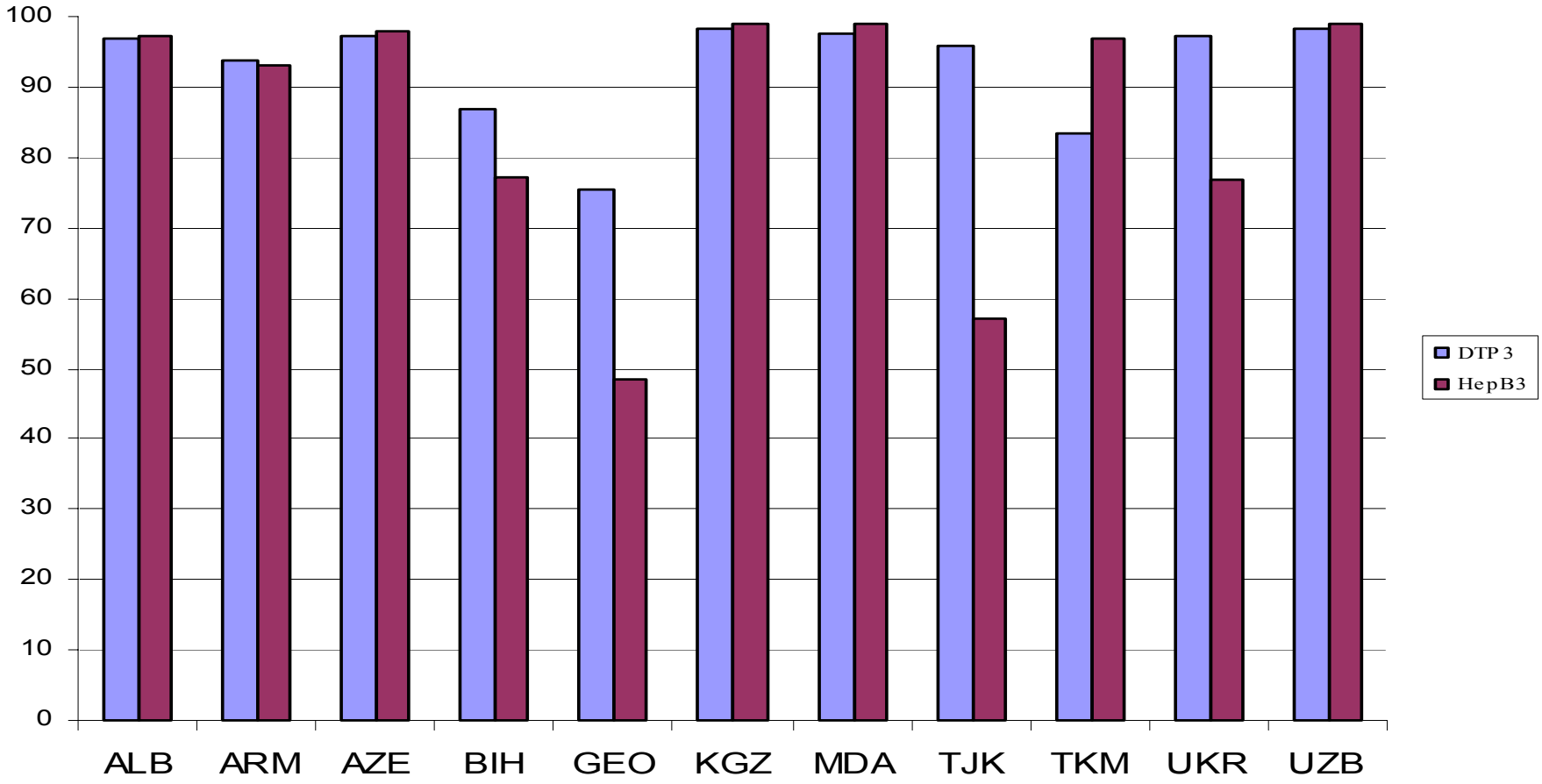
Good performance

Poor performance

HepB not fully integrated

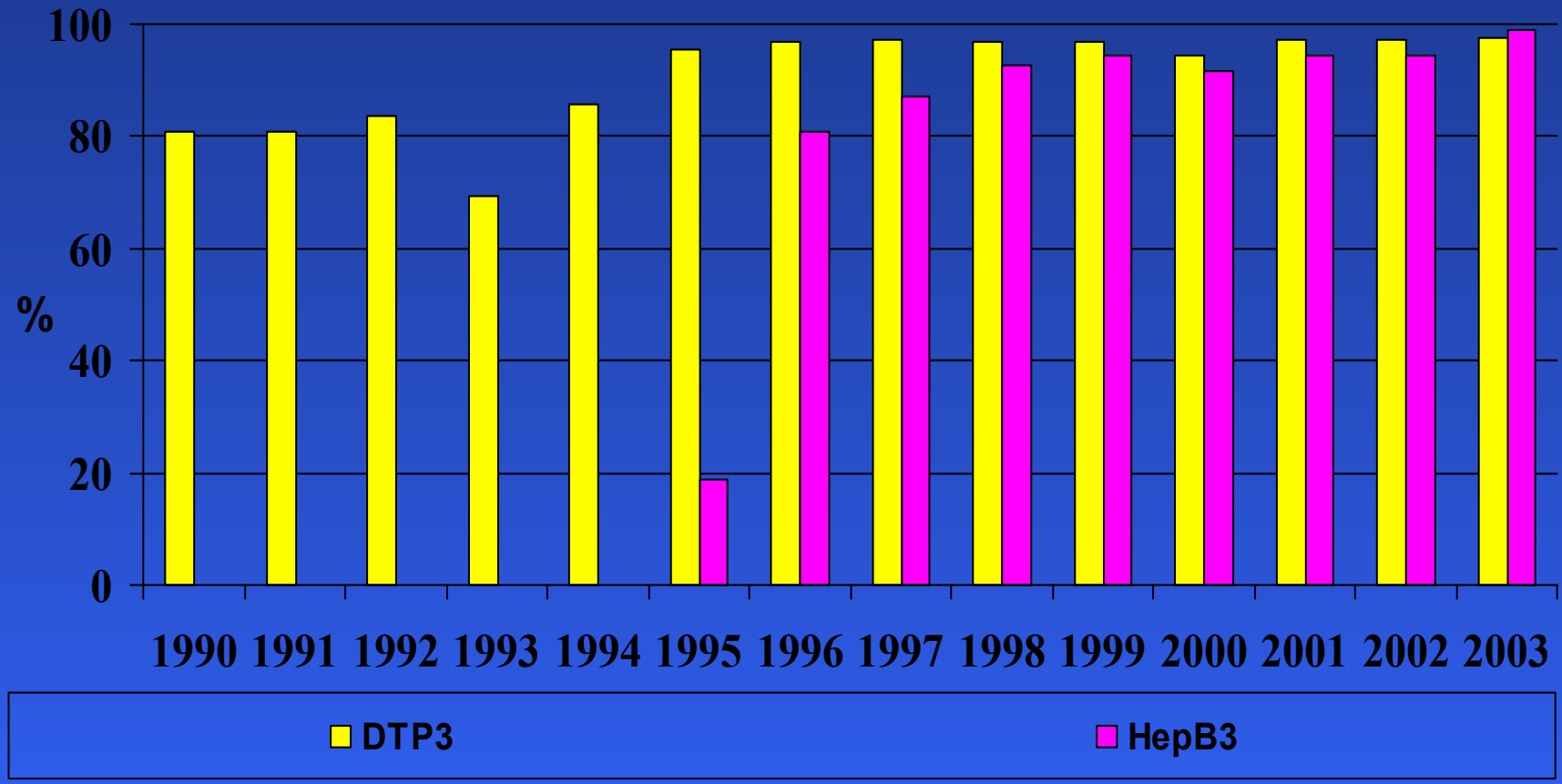
Problems with DTP3

HepB3 versus DTP3 reported coverage in GAVI countries in 2003



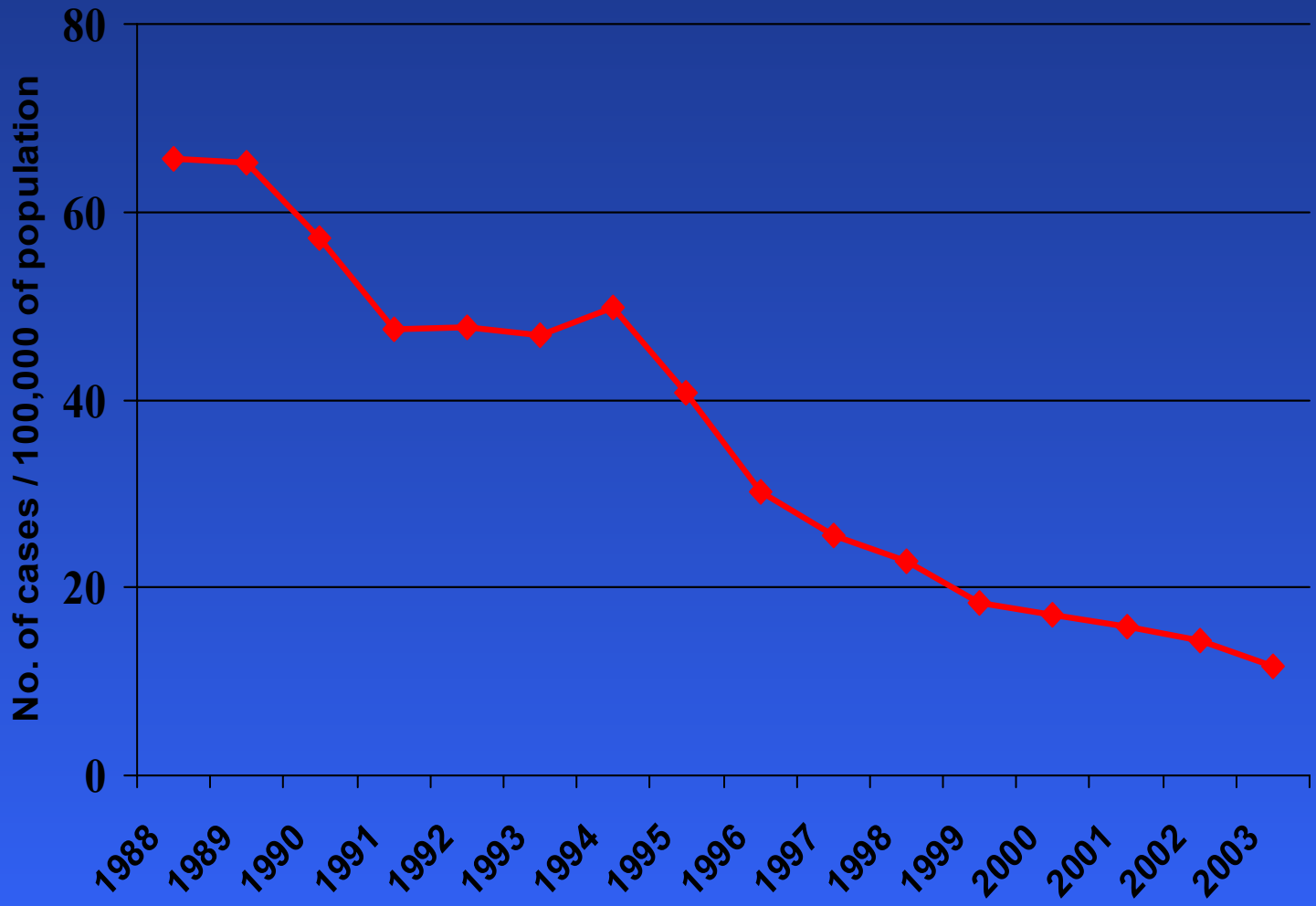
BIH: HepB3 data for Rep. of Srpska only

Vaccination coverage with DTP3 and HepB3 at 1 year of age
Republic of Moldova, 1990-2003

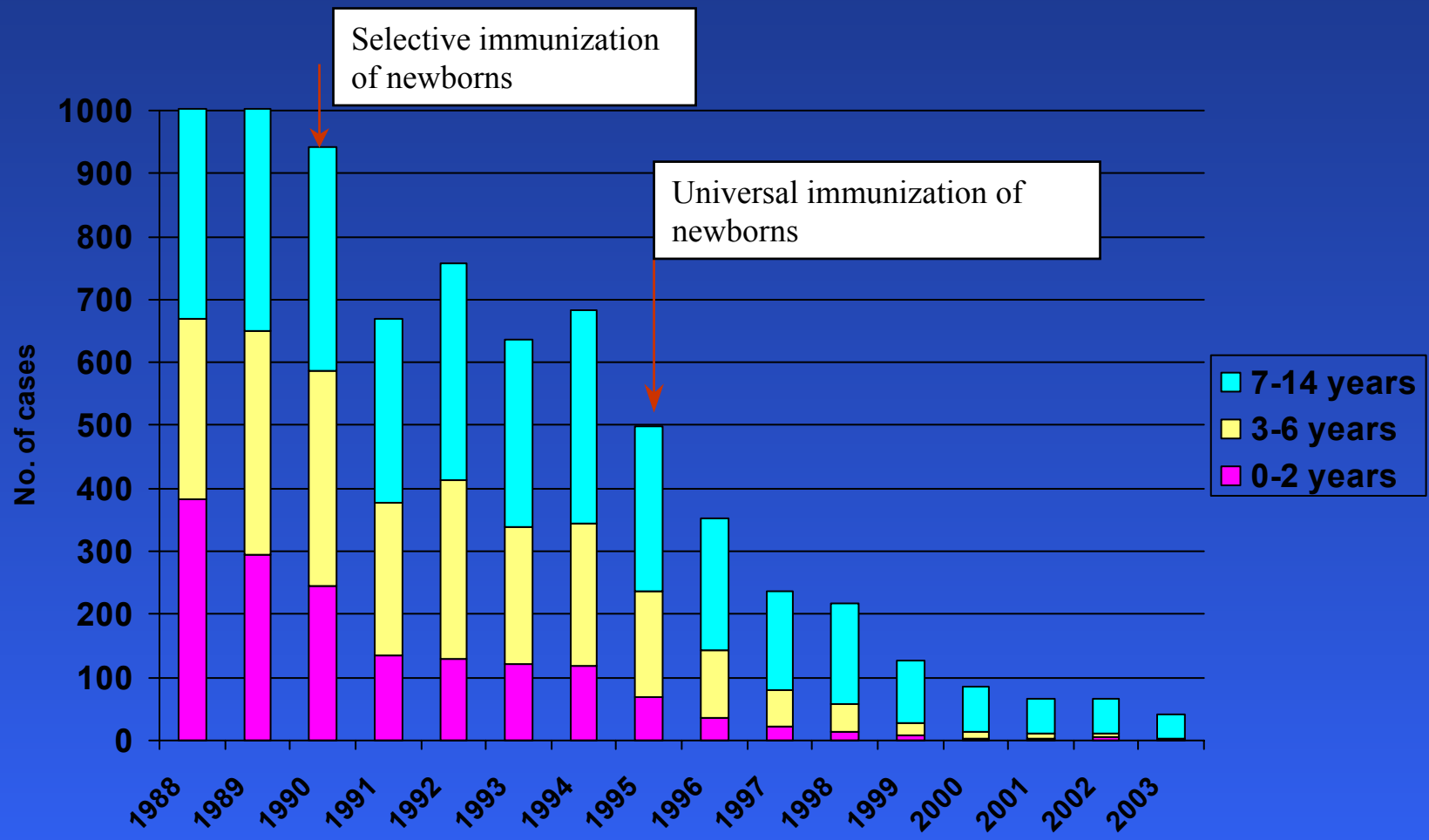


Total incidence rate of Hepatitis B

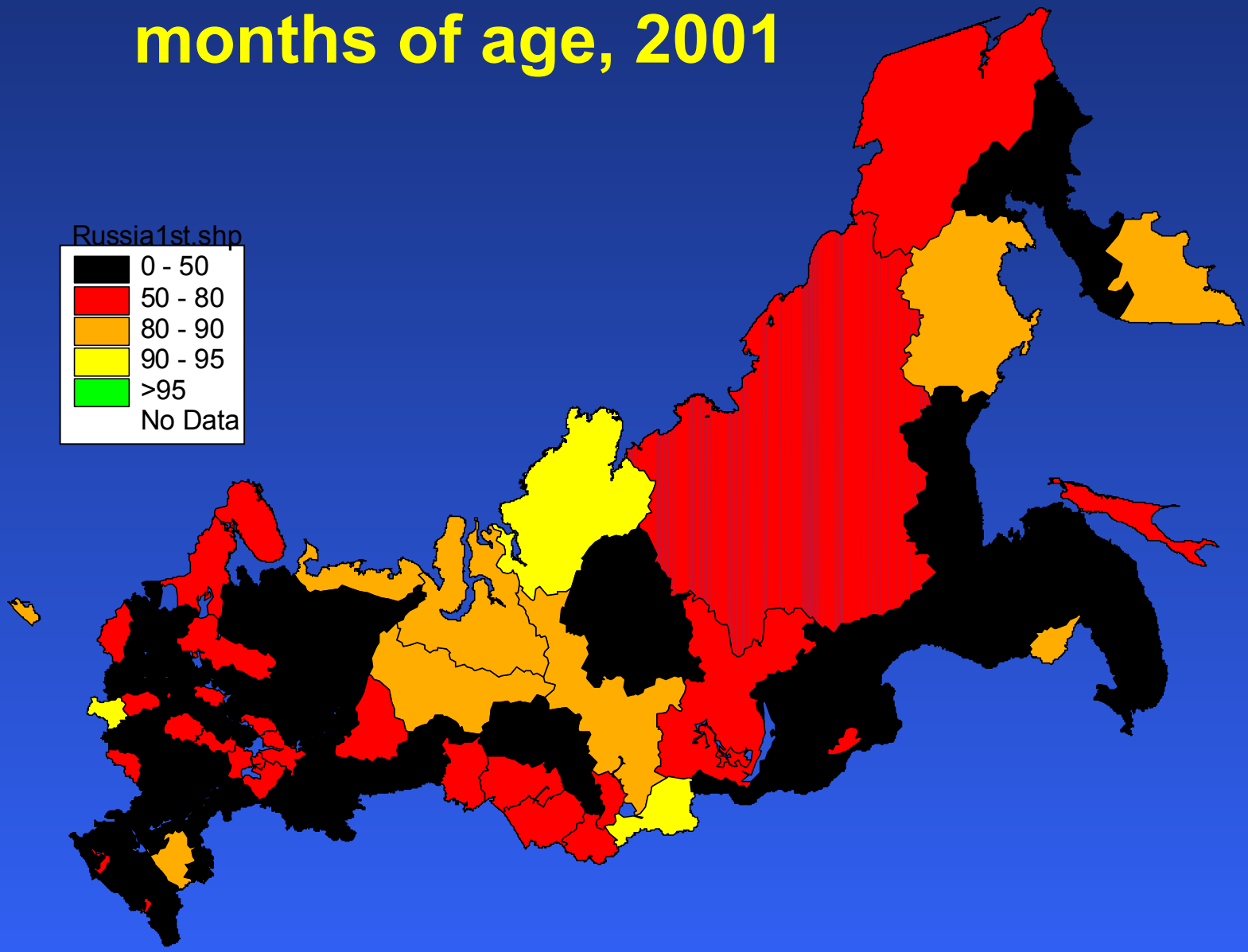
Republic of Moldova, 1988-2003



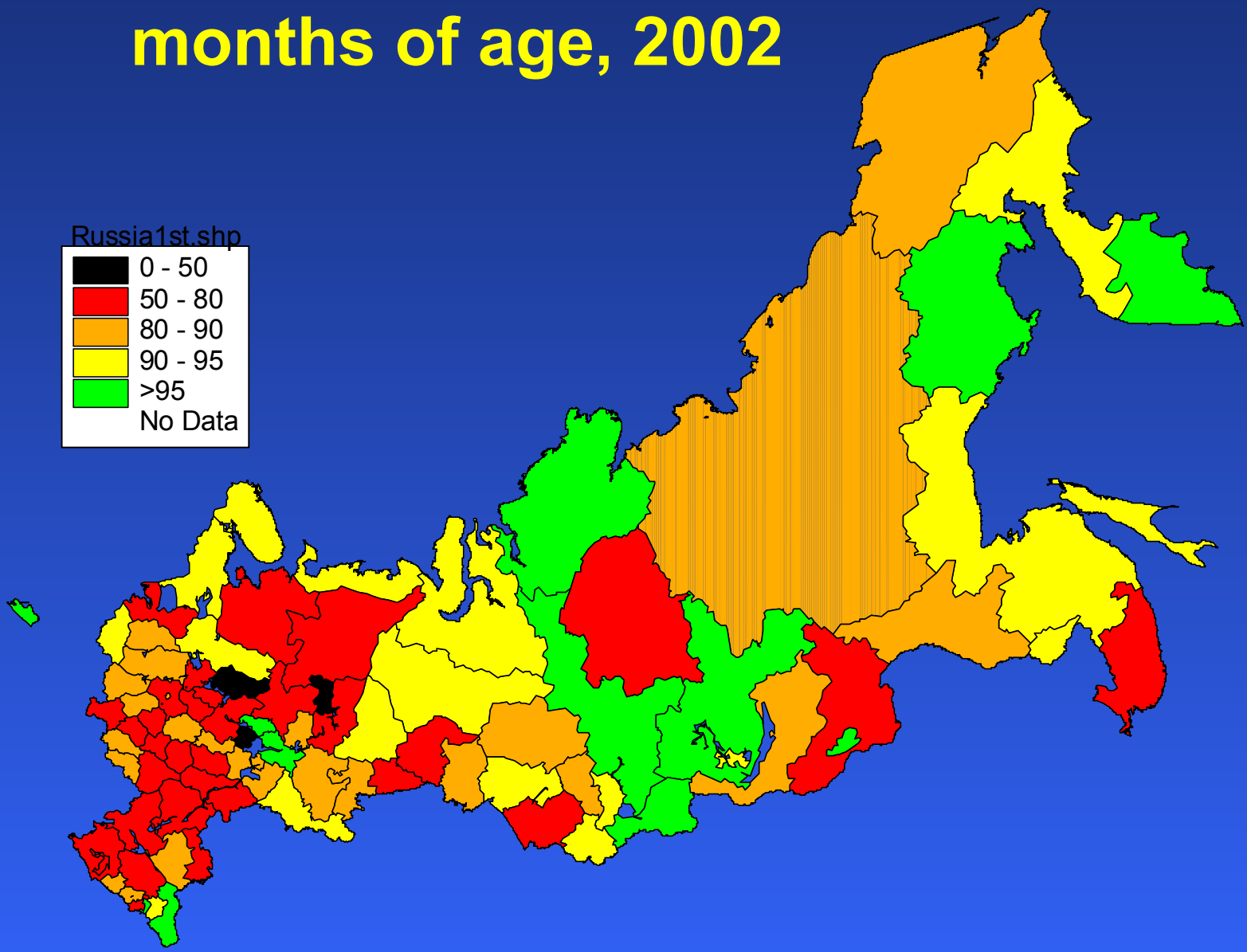
Age specific incidence of Hepatitis B among children - Republic of Moldova, 1988 - 2003



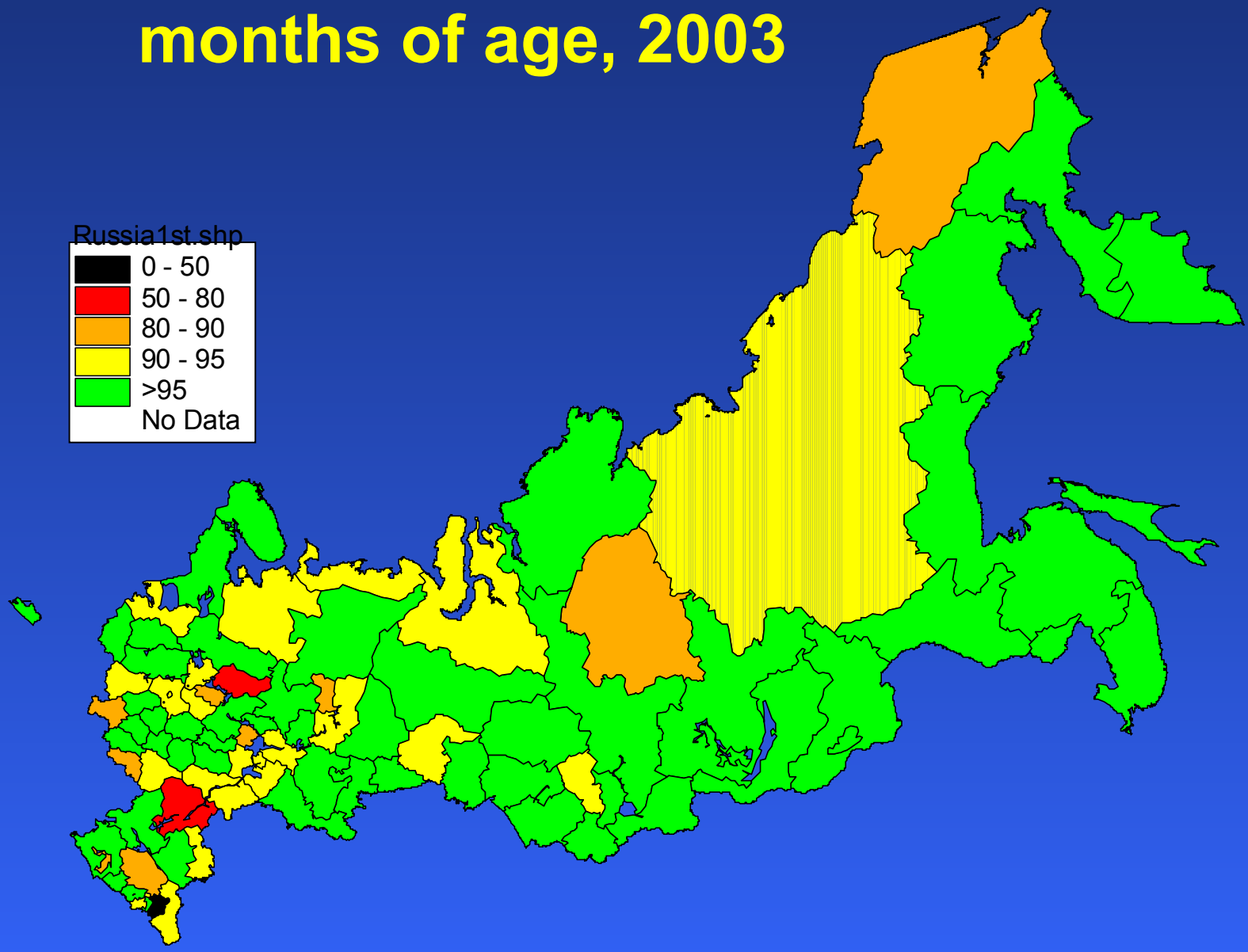
Hepatitis B3 coverage in Russia by 12 months of age, 2001



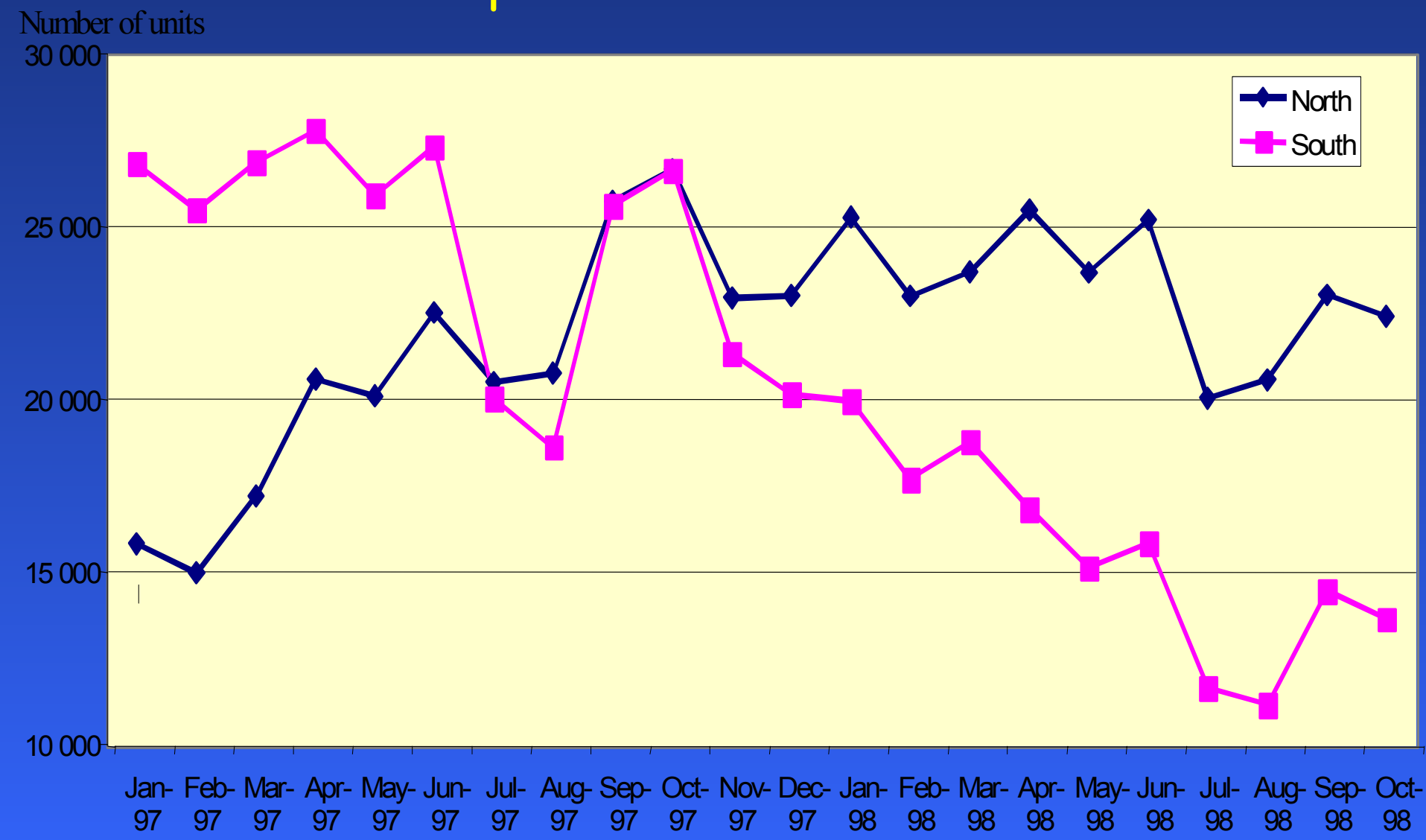
Hepatitis B3 coverage in Russia by 12 months of age, 2002



Hepatitis B3 coverage in Russia by 12 months of age, 2003



Sales of hepatitis B vaccine in Belgium: Comparision North vs South



Collaboration between WHO and ECDC

- Exchange of information, strong communication and representation in governing/technical bodies
  - ECDC Advisory Group to Director
  - ECDC/WHO Technical working groups
  - European Technical Advisory Group of Experts on Immunization (ETAGE)
- Joint policy and strategy development
- Joint planning for immunization and disease control initiatives
- Advocacy and communication
- Standardization of surveillance methods/tools, data collection
- Assessments and capacity building
- Secondment of staff

Vaccine Preventable Diseases and Immunization Programme

Challenges and Conclusions

Challenges….

New and remaining challenges exist:

- **Surveillance data show unequal vaccination coverage – outbreaks occurring**
- **Vulnerable groups and hard to reach groups exist in every country of the Region – inequities**
- **Low disease incidence – decreased attention to the importance of immunization**
- **Health sector reform and the impact on routine immunization services**
- **Anti vaccination lobby / media scare stories / allegations- with no scientific support, threatening public confidence**

Lessons learned

- Hepatitis B vaccine has successfully become part of routine immunization in most countries of the European Region

- Support from GAVI/VF enabled Hepatitis B immunization in 11 low-income countries

- Continuing need to improve quality of surveillance and accuracy of reported data

Lessons learned (cont.)

- Long-term political commitment and financial sustainability of immunization programmes are crucial for introduction of new and under-used vaccines

- Immunization systems in countries should be prepared to introduce currently available vaccines and new vaccines that will be available in the near future

  - evidence of disease burden
  - cost-effectiveness
  - strengthening immunization systems

The way forward….

- Hepatitis A and B – immunization and surveillance

•facilitate work undertaken by HEPNET

•fill the gap interim period

•expand to other MS

Facilitate introduction of new vaccines

•Hib

•Pneumo

•Meningo

•Varicella

•Rota

•HPV

•…. HIV/AIDS, Malaria….

Thank you!