

OVERVIEW of *HBV*:

➡ INFECTIONS

➡ ROUTE of TRANSMISSION

➡ VACCINATION

by

MERAL A ÇIBLAK

SELİM BADUR

Istanbul School of Medicine, İstanbul University, TR

TURKEY

An outline map of Turkey is shown in the background, with the landmass in light blue and the surrounding sea in a darker blue. The map includes the Anatolian peninsula and the island of Crete.

POPULATION	~72 million
Urban Population	59,01 %
Rural Population	40,99 %

Ages 0-14	29.7 %
Ages 20-24	9.9 %
Ages 25-45	29.3 %
OVER 45	31.1%

Turkey

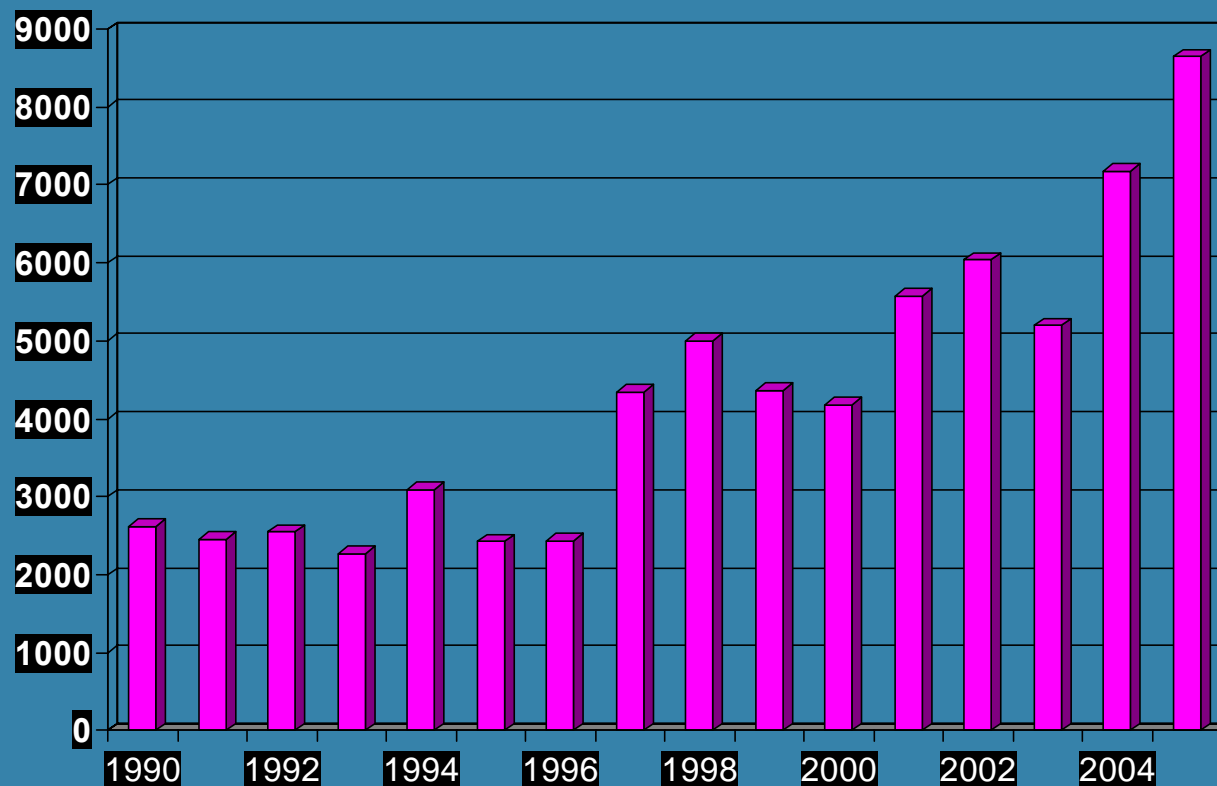
A Country of "Intermediate Endemicity" for HBV Infections

- 3-8 % of population is (+) for HBsAg
- 1/3 of the population is (+) for Anti-HBs

Characteristics of HBV Infections in Turkey

- HDV co/superinfection
- Precore Mutants
- Genotype D (>99 %)

Number of Hepatitis B Cases



Data from MoH, Turkey

AETIOLOGICAL CLASSIFICATION OF HOSPITALIZED ACUTE VIRAL HEPATITIS CASES IN TURKEY (ADULTS)

CITY	STUDY GROUP	N	HBV (%)	HAV (%)	HCV (%)	HEV (%)
ANKARA	<i>Kurt, 1995</i>	1022	76.0	17.1	6.8	NA
BURSA	<i>Mistik, 1998</i>	135	55.2	42.3	2.2	NA
DİYARB.	<i>Geyik, 1998</i>	148	61.1	22.9	2.0	14.8
İSTANBUL	<i>Özgüneş, 1998</i>	720	68	26	1.4	NA
İZMİR	<i>Okan, 2000</i>	518	61.3	28.1	2.0	NA
TOTAL		4471	60.4	27.5	5.5	0.5

AETIOLOGICAL CLASSIFICATION OF HOSPITALIZED ACUTE VIRAL HEPATITIS CASES IN TURKEY (CHILDREN)

CITY	STUDY GROUP	N	HBV (%)	HAV (%)	HCV (%)
ADANA	<i>Şahin, 1998</i>	338	35.8	38.6	0.5
ANKARA	<i>Uysal, 1998</i>	364	7.7	87.9	0.3
İSTANBUL	<i>Sıdal, 1990</i>	160	24.0	66.0	10.0
<i>TOTAL</i>		<i>912</i>	<i>22.4</i>	<i>63.1</i>	<i>2.1</i>

AETIOLOGICAL CLASSIFICATION OF CHRONIC HEPATITIS IN İSTANBUL (%)

YEAR	HBV	HCV	HBV + HDV	HBV + HCV	OTOI M-	CRYPTO-	DRUG
1991-1994 n=296	56	23	6.8	3	1.5	0.7	0.7
1994-1997 n=527	46.5	35	4.5	3	1.5	0.2	0.2
1998-2001 n=1104	56.9	38.1	2.9	0.7	1.9	0	0

Ökten A, 2005, İstanbul

AETIOLOGICAL CLASSIFICATION of CIRRHOSIS IN İSTANBUL (%)

YEAR	HBV	HCV	HHDV	HBV+ HCV	ALCO	CRYP	MISC
1990-1993 n=436	56.5	25.2	14.6	3.7	12.6	22.7	8
1994-1997 n=393	42.6	34.5	15.7	1.2	10.9	16.8	12.8
1998-2001 n=573	45.9	31.3	19.6	3.2	12.4	16.4	12.1

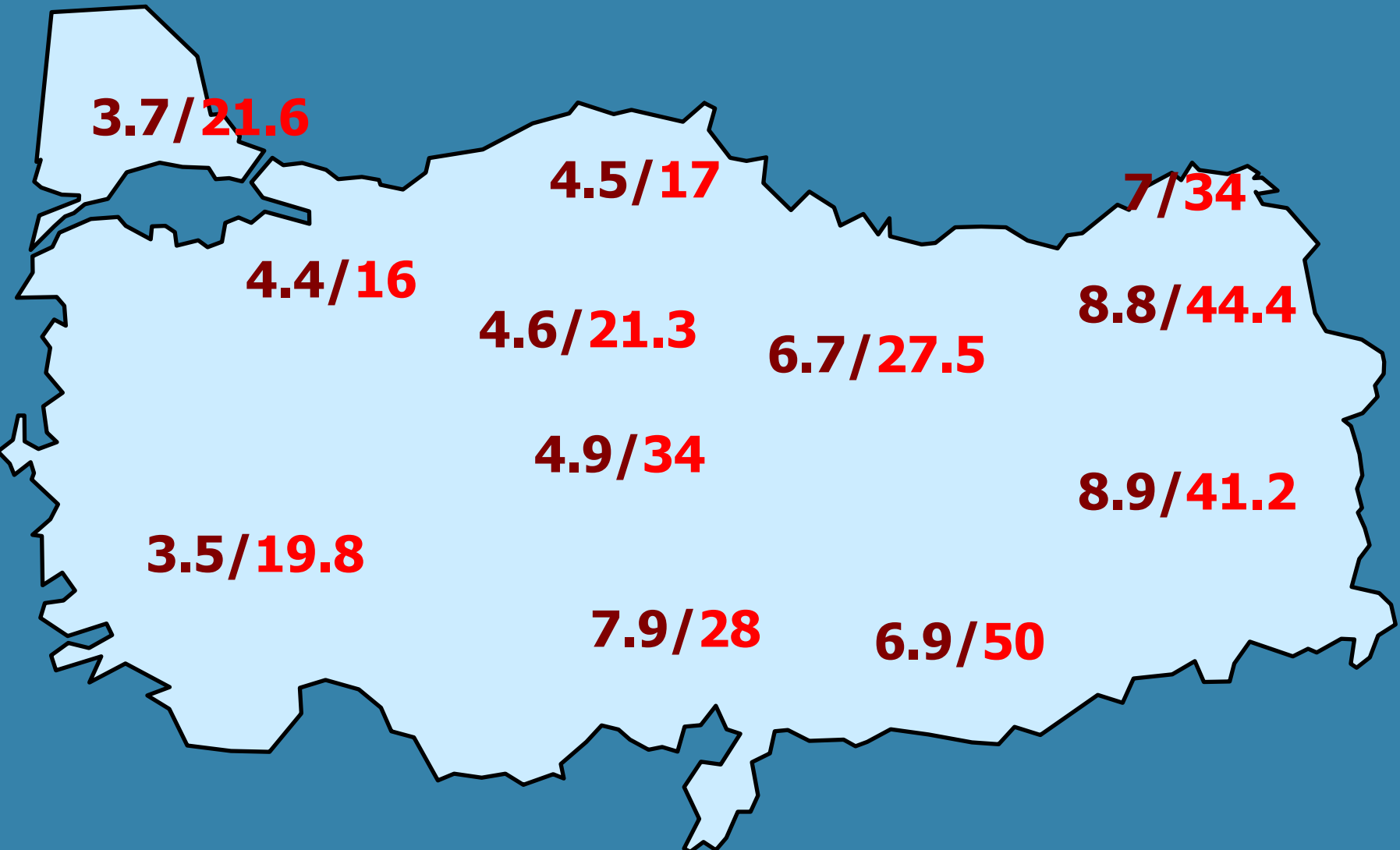
Ökten A, İstanbul, 2005

COMPARISON of AETIOLOGICAL CLASSIFICATION OF HEPATOCELLULAR CARCINOMA

	Low Risk Countries (America-Europe) (%)	Turkey (%)	High Risk Countries (Africa-Asia) (%)
HBV	<15	56	60
HCV	60	21	<10
ALCOHOL	<15	16	11-30
CRYP.	-	13	-

Ökten A et al., İstanbul, 2005

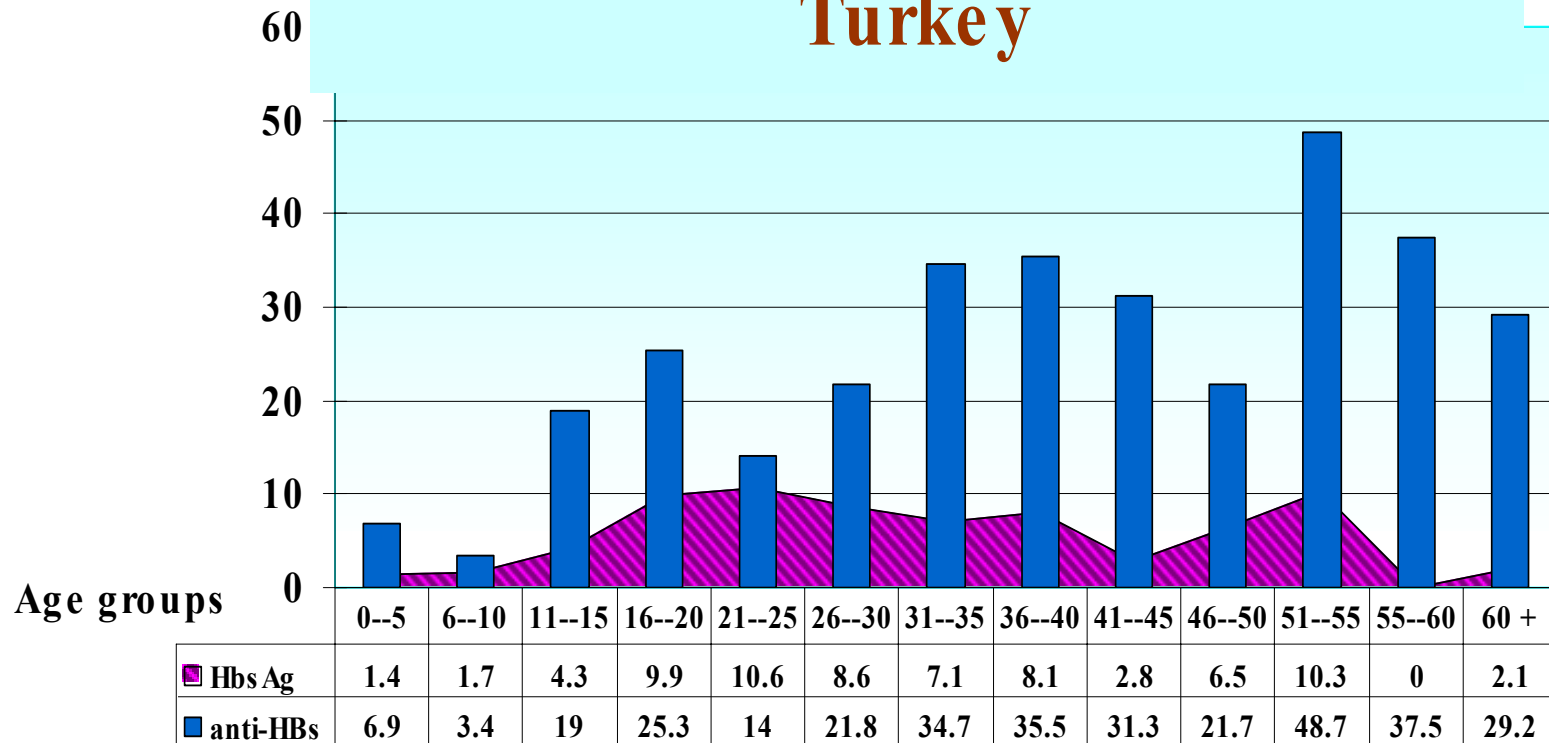
Regional Differences in HBsAg/Anti-HBs Positivity (%)



WHY REGIONAL DIFFERENCES?

- **Poor socio-economic status**
- **Traditional life-styles**
- **Infrastructure**
- **Lack of access to “sufficient” health services**

Age Distribution of HBV Infections, Turkey



Şahin, 1998, Adana
Yousefi, 1999, Ankara
Pahsa, 1999, İstanbul

Tansuğ, 1999, İzmir
Emiroğlu, 2000, Şırnak

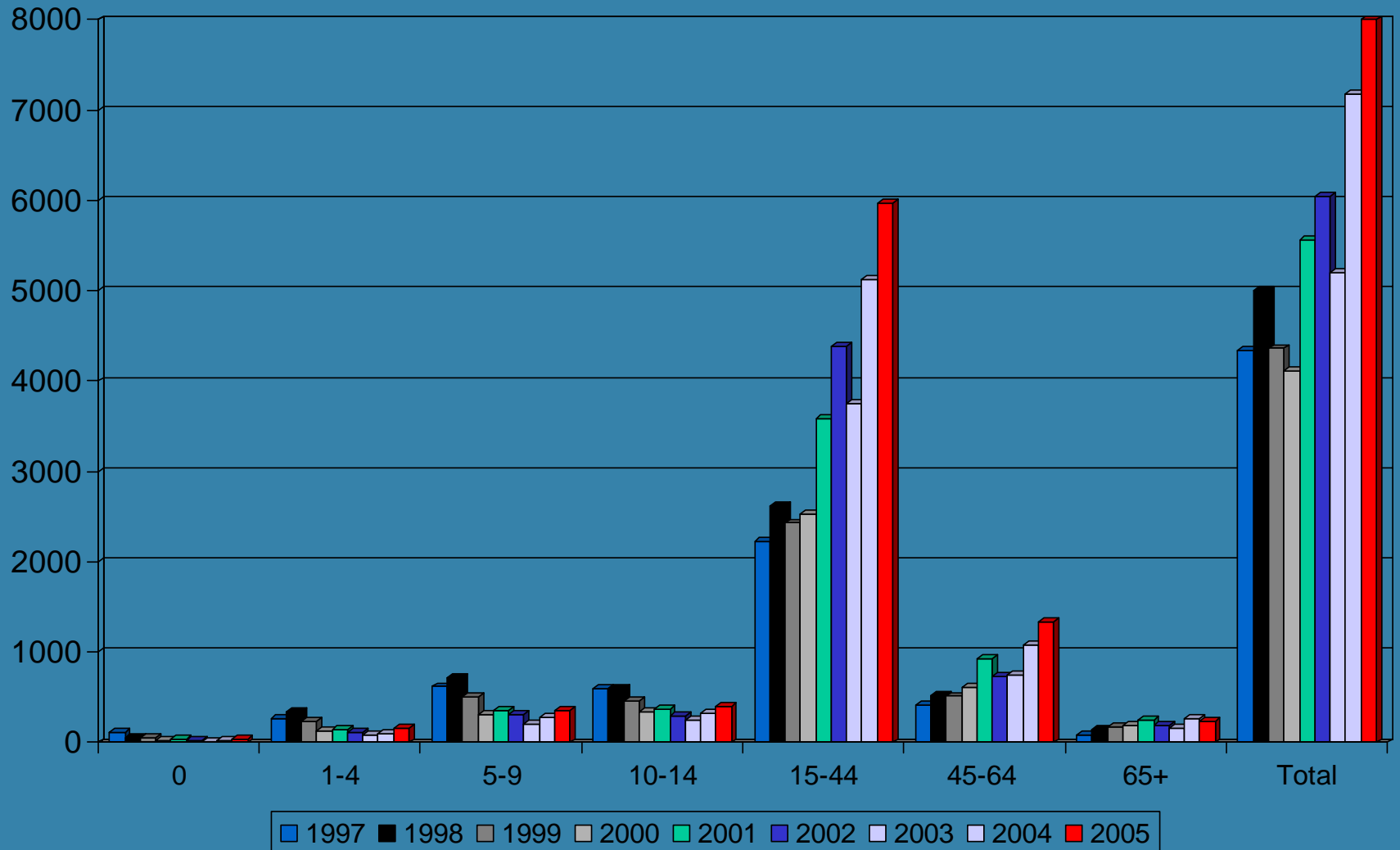
Anti-HBc Positivity in Various Age Groups

Age Group	Number	Anti-HBc Positivity (%)
0-1	57	1.8
2-5	132	0.8
6-10	178	1.7
11-14	147	6.8
15-19	203	11.8
<i>Total Number</i>	<i>717</i>	<i>5.4</i>

HBV Seropositivity in Children at a Children's Shelter

Age Group	Number	HBV Seropositivity (%)
0-6	32	25
7-12	45	63
13-22	40	60

Age Distribution of HBV Cases, Turkey (1997-2005)



Routes of Transmission for Acute HBV Cases

Probable Route	USA (%)	FR (%)	TR ¹ (%)	TR ² (%)
<i>Unknown</i>	26	31.5	44.4	38.1
Sexual	55	34	9.2	1.03
IVDU	12	25	0.2	-
Close Contact	4	4	7.5	8.2
Surgical Intervention	2	2	22.1	38.1
Others	1	2.5	15.2	14.4

1 Mistik, 1997

2 Birengel, 2003

HBsAg Positivity in Pregnant Woman in Various Regions, Turkey, 1990s

City	Study Group	N	HBsAg (+) %
Kayseri	<i>Abacı IM et al.,1995</i>	400	3.8
İstanbul	<i>Çepni İ et al.,1996</i>	4078	4.4
İzmir	<i>Erensoy S et.al, 1996</i>	760	4.2 (HBeAg %15)
Denizli	<i>Kaleli İ et al.,1997</i>	312	7.7 (HBeAg % 8.3)
Sivas	<i>Poyraz Ö et al., 1999</i>	95	6.3 (HBeAg % 1.1)

HBsAg Positivity in Pregnant Woman in Various Regions, Turkey, 2000s

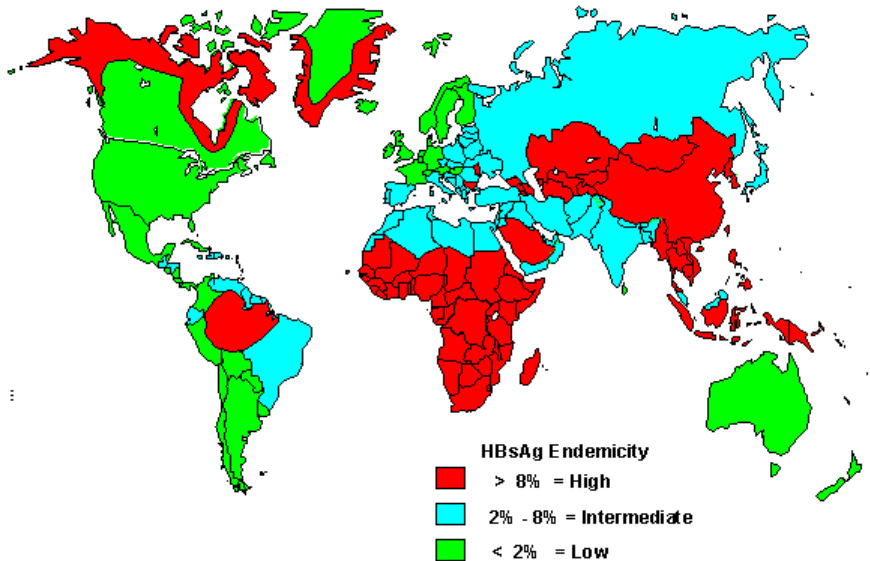
City	Study Group	N	HBsAg (+) %
Ankara	<i>Biri et al., 2001</i>	451	7
Diyarbakır	<i>Turhanoğlu M et al., 2001</i>	260	12.3 (HBeAg % 4.6)
İstanbul	<i>Karaca Ç et al., 2003</i>	460	4.7
Şanlıurfa	<i>Harma M et al., 2003</i>	136	7.3
Afyon	<i>Yılmaz M et al., 2004</i>	244	2.9
Mersin	<i>Börekçi G et al., 2004</i>	114	3.5

VACCINATION

- **EPI, 1991**
- **WORLD HEALTH ASSEMBLY, 1992**
- **WHO, 1994**

THE GOAL?

Geographic Pattern of Hepatitis B Prevalence, 1997

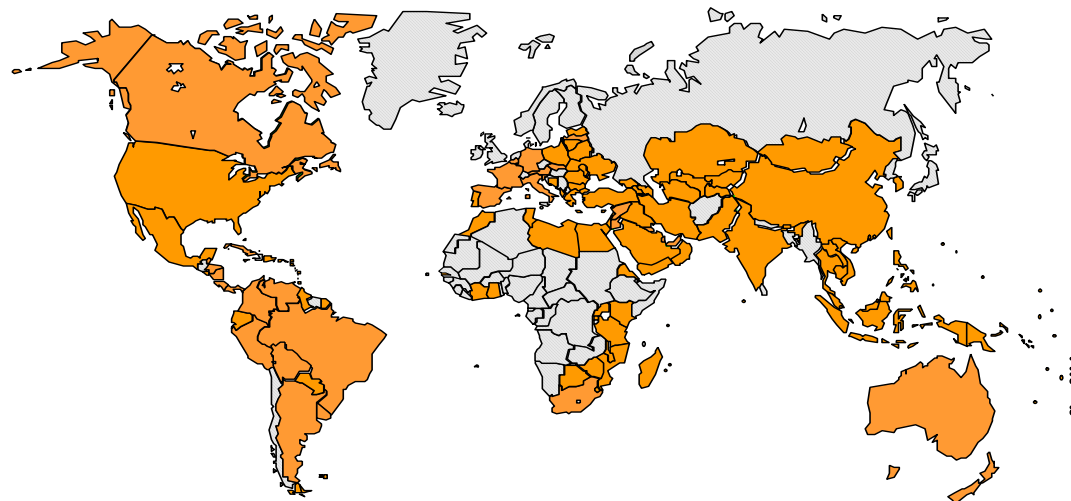


Data as of 06/04/98

Still a lot of high endemic regions to cover

168 countries in the world have a universal hepatitis B programme by the end of 2005

Fig 1. Global status of countries using HepB vaccine in their national immunization system, May 2002



Routine HepB implementation status

- Yes
- No

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.



MoH Recommendations for HBV Immunization (1998)

1. Alternative
(routine
immunisation)

- 1. DOSE
- 2. DOSE
- 3. DOSE

At birth
3th month
9th month

2. Alternative
(Infants born outside
Health facilities)

- 1. DOSE
- 2. DOSE
- 3. DOSE

3rd month
4th month
9th month

3. Alternative
(For infants >3
month)

- 1. DOSE
- 2. DOSE
- 3. DOSE

Anytime
1 mo.after the 1st
5 mo. after the 2nd

MoH Recommendations for HBV Immunization (2003)

1. Alternative
(routine
immunisation)

- 1. DOSE
- 2. DOSE
- 3. DOSE

At birth
3th month
9th month

~~**2. Alternative**
(Infants born outside
Health facilities)~~

- ~~1. DOSE~~
- ~~2. DOSE~~
- ~~3. DOSE~~

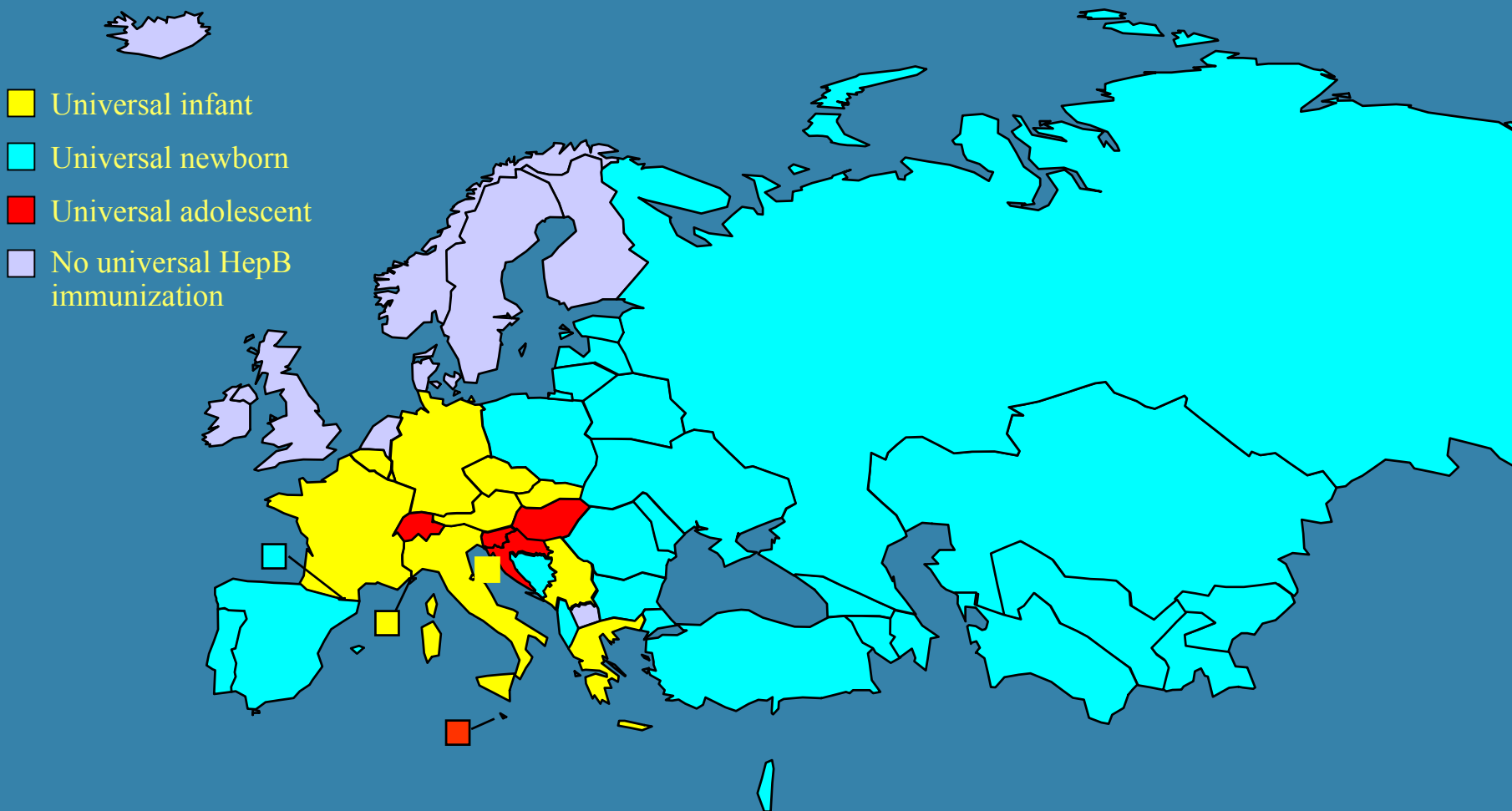
~~3rd month
4th month
9th month~~

3. Alternative
(For infants >3
month)

- 1. DOSE
- 2. DOSE
- 3. DOSE

Anytime
1 mo.after the 1st
5 mo. after the 2nd

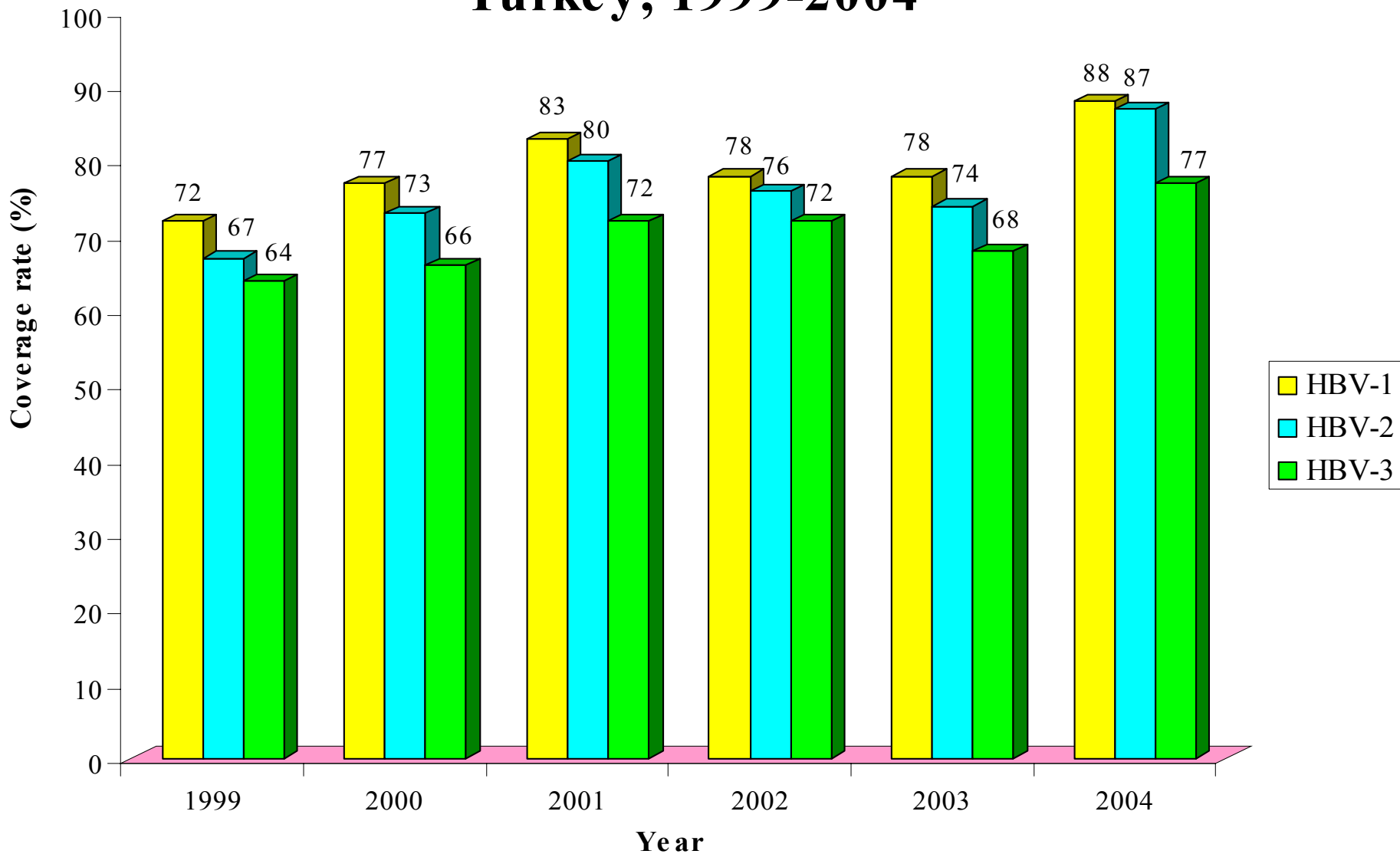
Hep B Immunization Policy WHO European Region, 2004



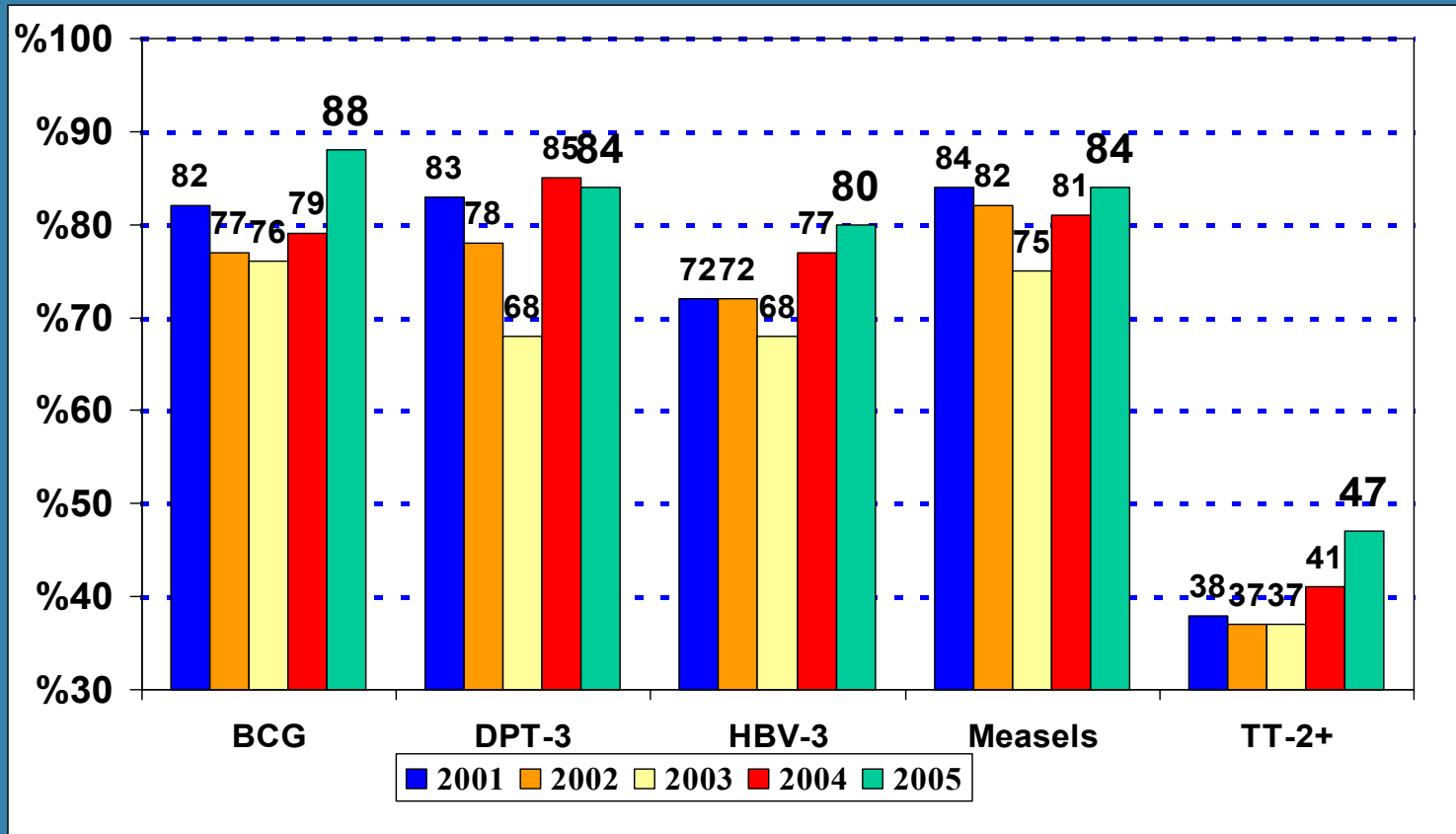
MoH Recommendations for HBV Immunization (2006)

- **1st Dose** → At birth
 - **2nd Dose** → At the end of 2nd month
 - **3rd Dose** → At the end of 9th month
- and*
- **All Three Doses** → For 8th Graders (15 years of age)

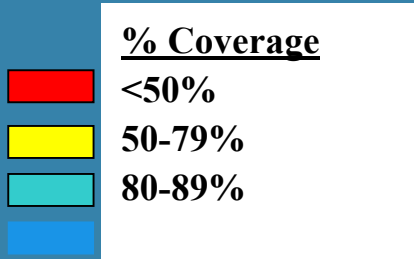
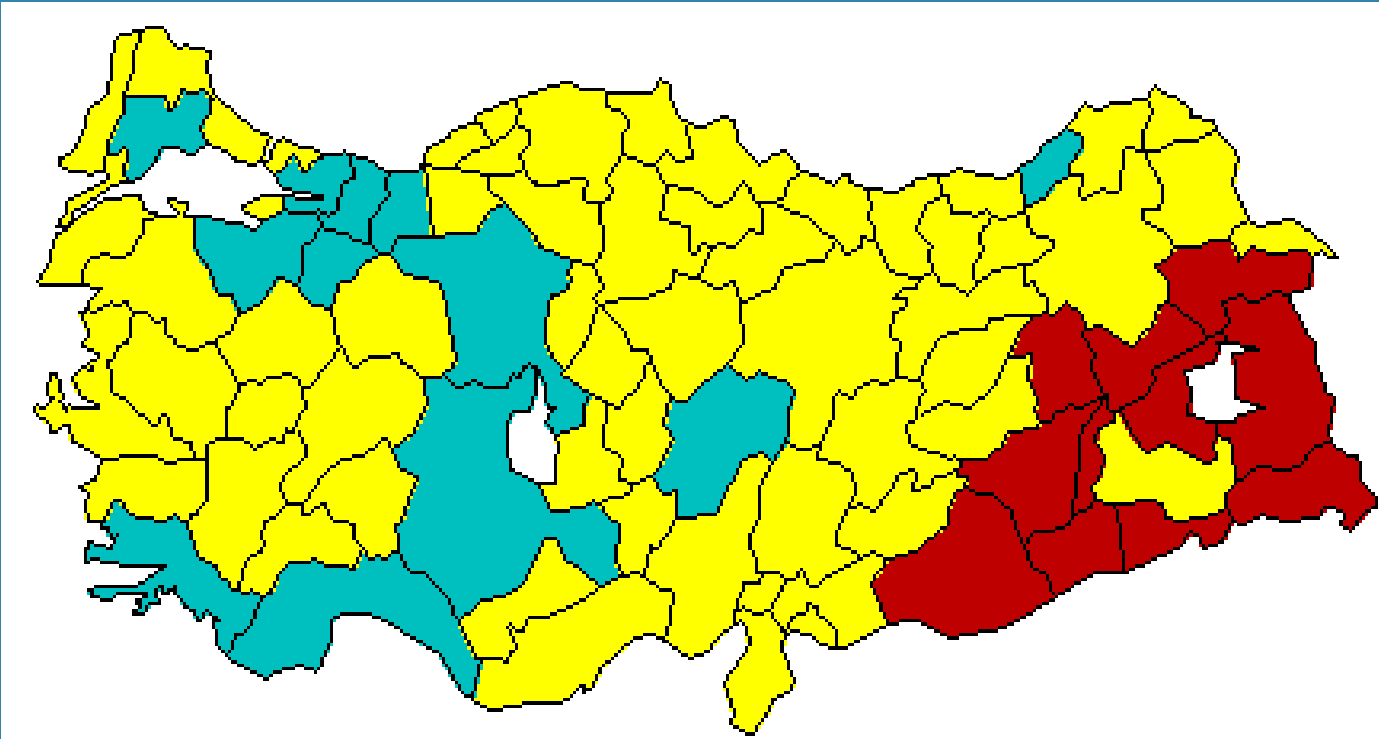
Hepatitis B Vaccination Coverage, 0 Age Group, Turkey, 1999-2004



0 Age Group Vaccination Rates 2001-2005, Turkey (MoH Vaccination)



Regional Rates for 3-dose-HBV Vaccination



FUTURE DIRECTION 