



*Impact of universal vaccination programmes on  
the epidemiology of hepatitis B in Italy  
(SEIEVA results)*

*Milano*

*November 17, 2011*

*Dr. Alfonso Mele*

*Istituto Superiore di Sanità*



# Main modes of HBV transmission before vaccination era

- Vertical and horizontal transmission
- Sexual transmission
- Reused syringes/needles



## Prevalence of HBV markers in two samples of 7-12 yrs old children enrolled in Naples 8 yrs apart

	1980	1988	Value
HBsAg	2.1%	0.8%	< 0.05
Any HBV marker	11.7%	6.8%	< 0.05

*D'Argenio et al. Public Health. 1989*

*Alfonso Mele  
Istituto Superiore di Sanità*



## Prevalence of HBV markers of hepatitis B in two national samples of Italian recruits enrolled 9 yrs apart.

Year	Total no. tested	HBsAg* positive	anti-HBc* positive
		%	%
1981	5,005	3.4	16.8
1990	4,993	1.6	5.8

\* HBsAg, hepatitis B surface antigen; anti-HBc, hepatitis B core antibodies.

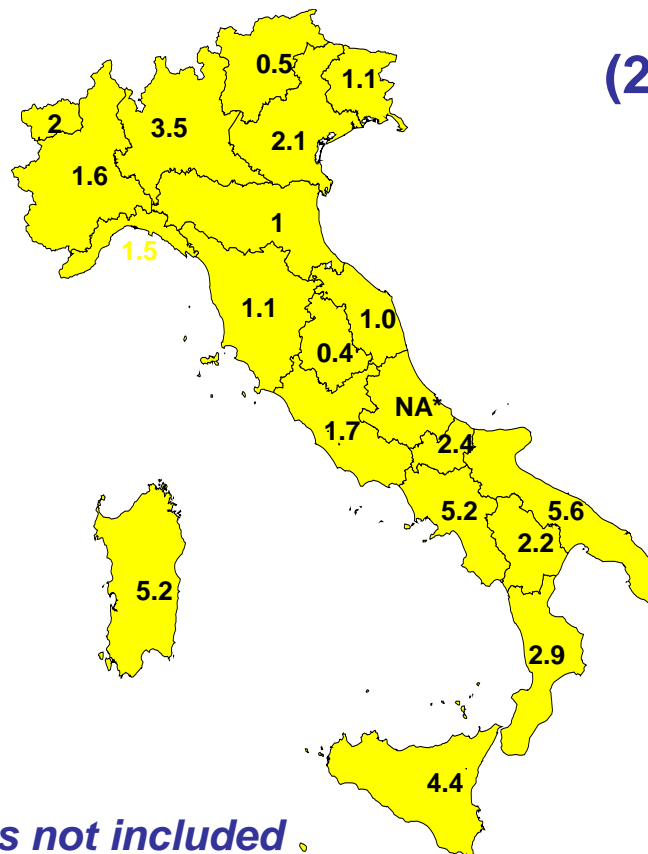
*D'Amelio, AJE 1992*

*Alfonso Mele  
Istituto Superiore di Sanità*

# HBsAg Prevalence of pregnant women by region

1984-1986

(2.4%)



NA\* Not Available

Mothers  $\leq 14$  e  $\geq 55$  yrs not included

Stroffolini T, I.J.G., 1988

Alfonso Mele  
Istituto Superiore di Sanità



# Summary

At the end of eighties Italy was a country at medium endemicity of HBV with about 2 million of chronic carriers

*Alfonso Mele*  
*Istituto Superiore di Sanità*

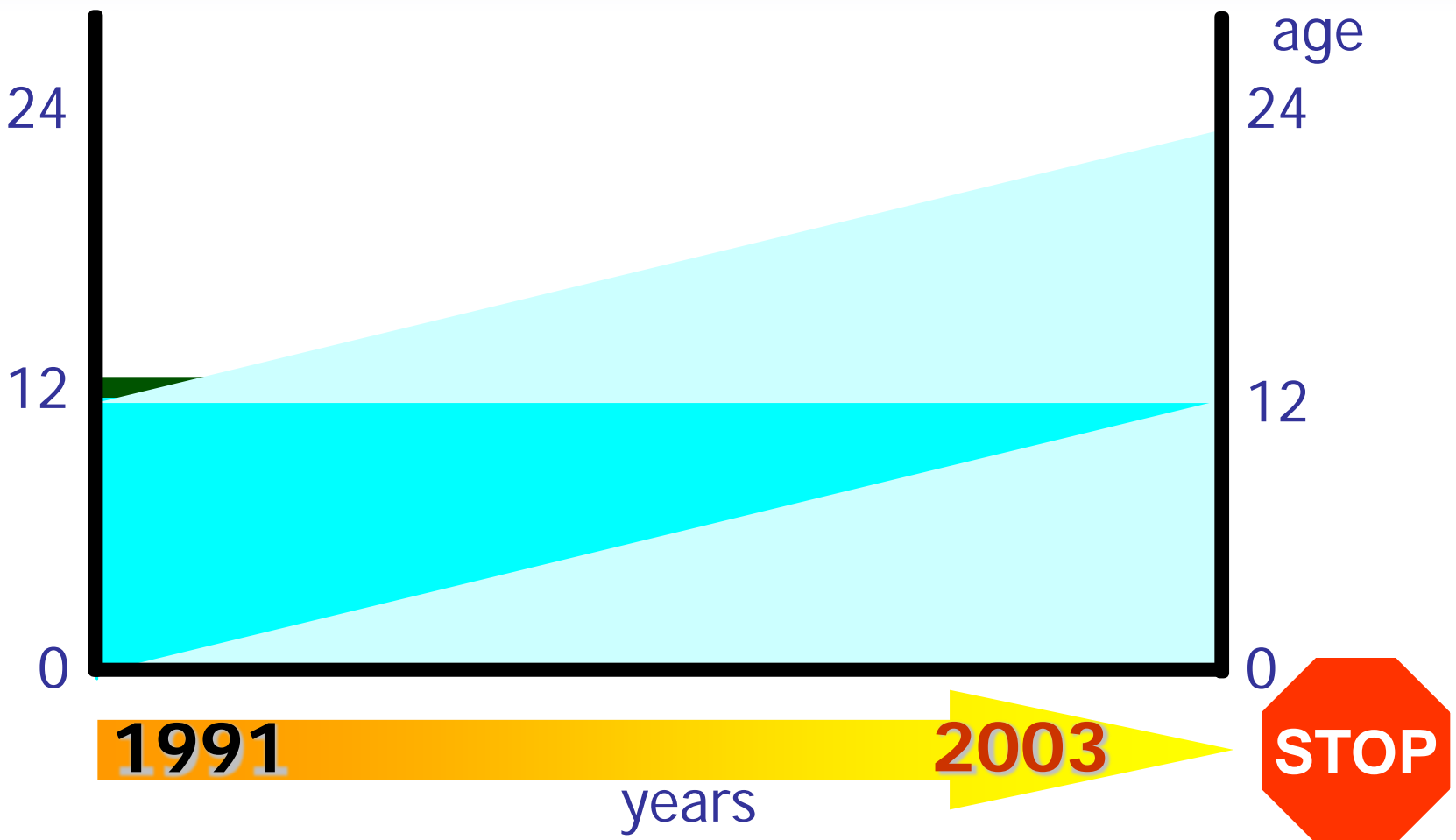


# Vaccination in countries at intermediate endemicity: Italy

1983: Vaccination of high risk groups

1991: Vaccination of infants and adolescents

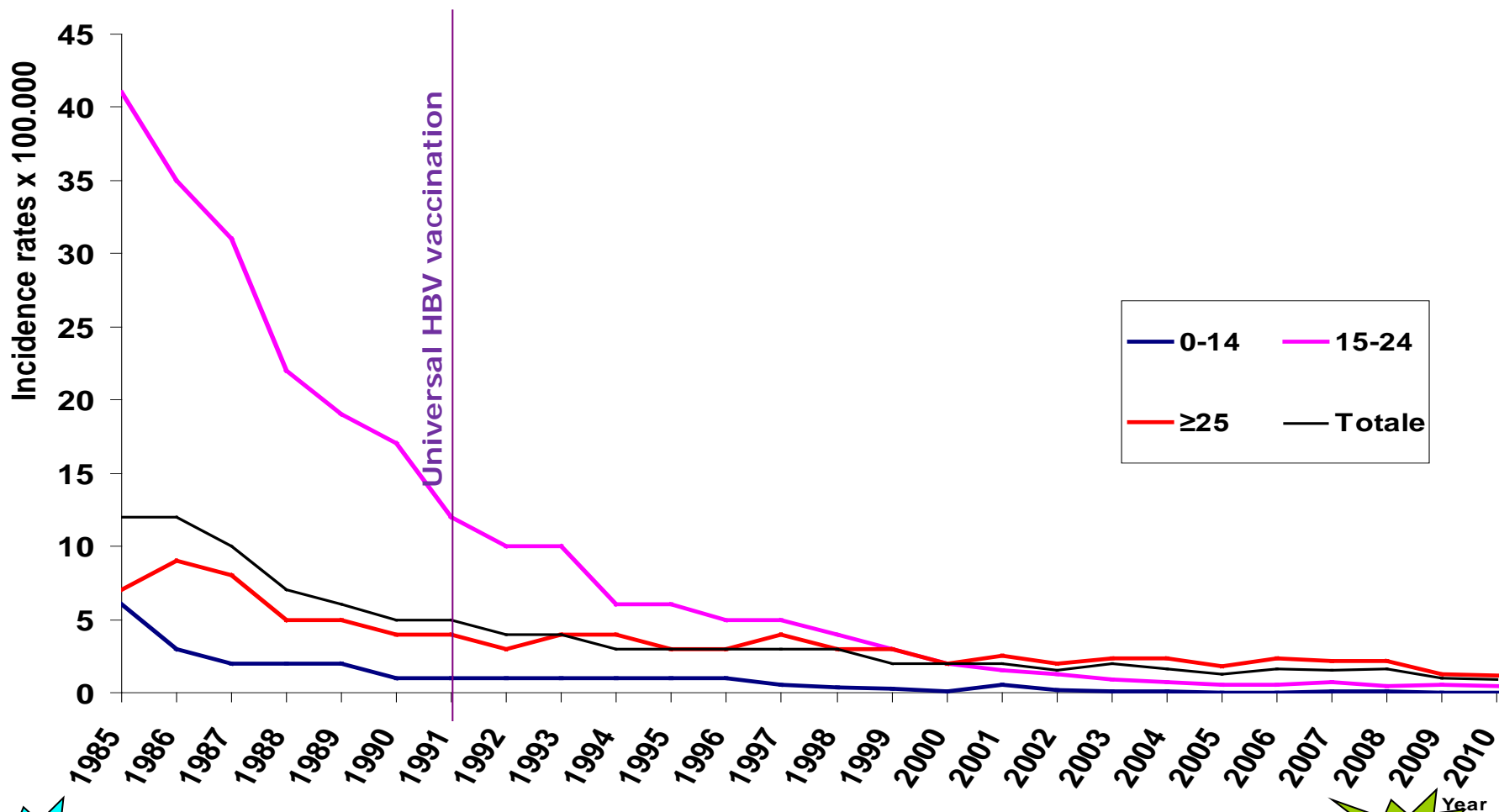
# Italian strategy for hepatitis B vaccination



Vaccination of 12-years-old  
*Alfonso Mele*  
*Istituto Superiore di Sanità*



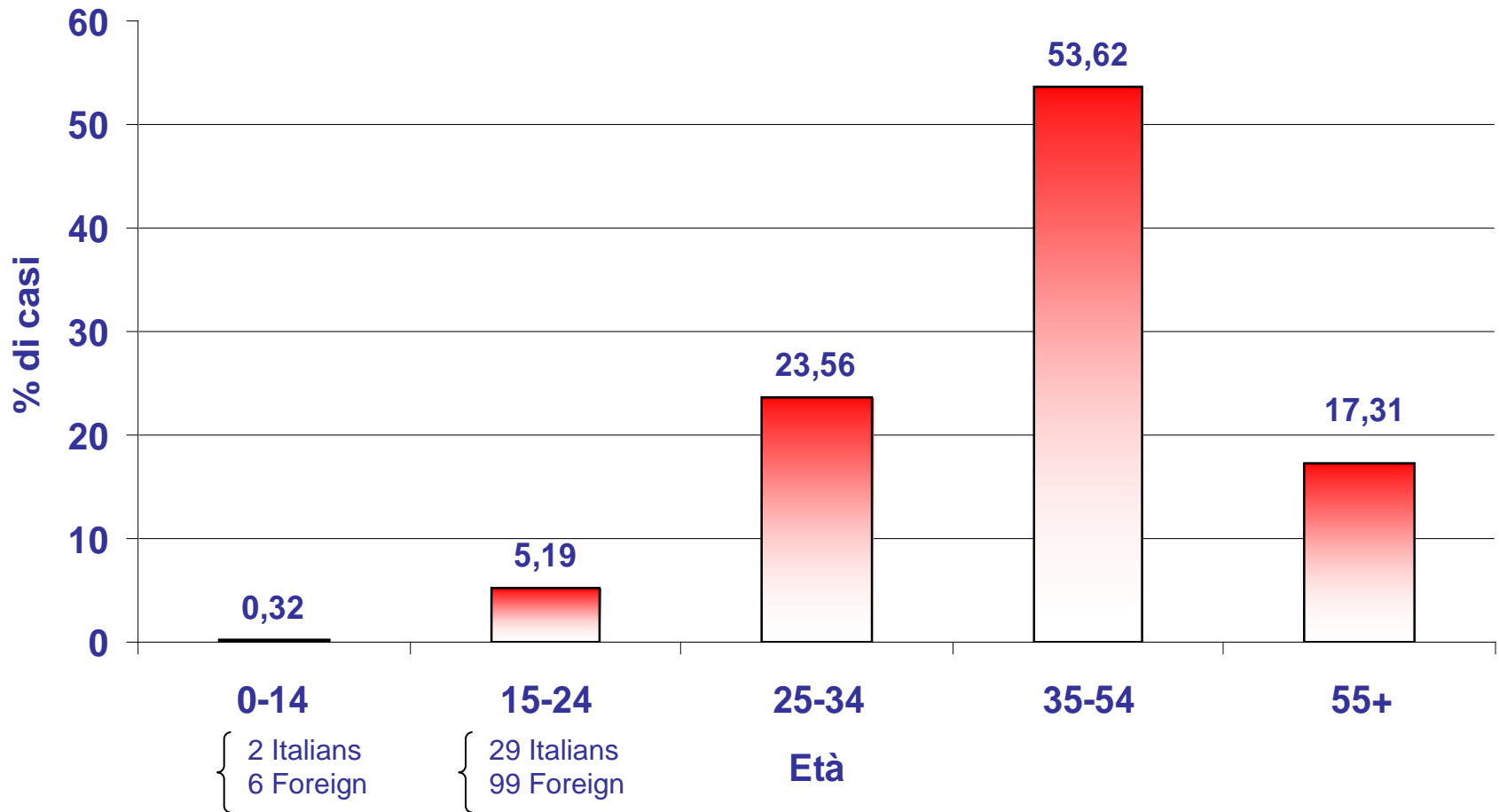
# Hepatitis B. Yearly trend in incidence rates SEIEVA 1985-2010



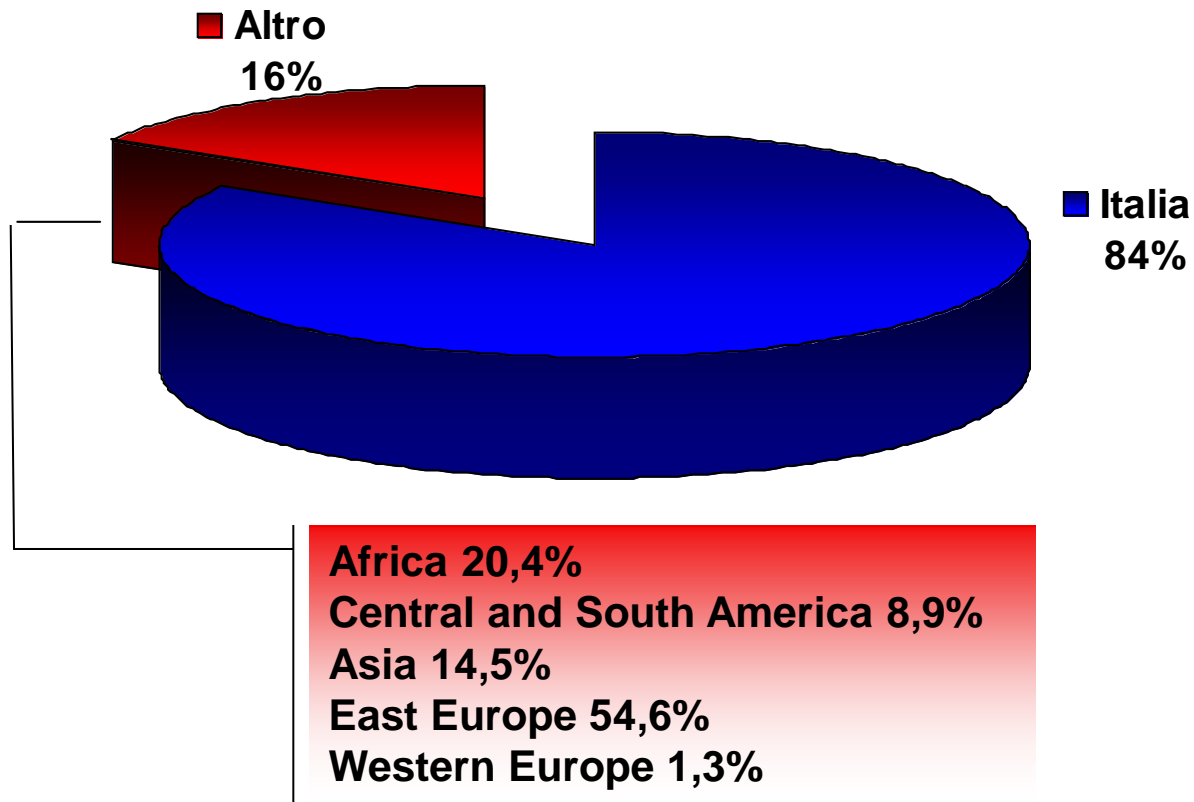
12

0.9

# Distribution of notified Hepatitis B cases by age SEIEVA 2006-2010



# Cases of notified acute hepatitis B by nationality SEIEVA 2006-2010



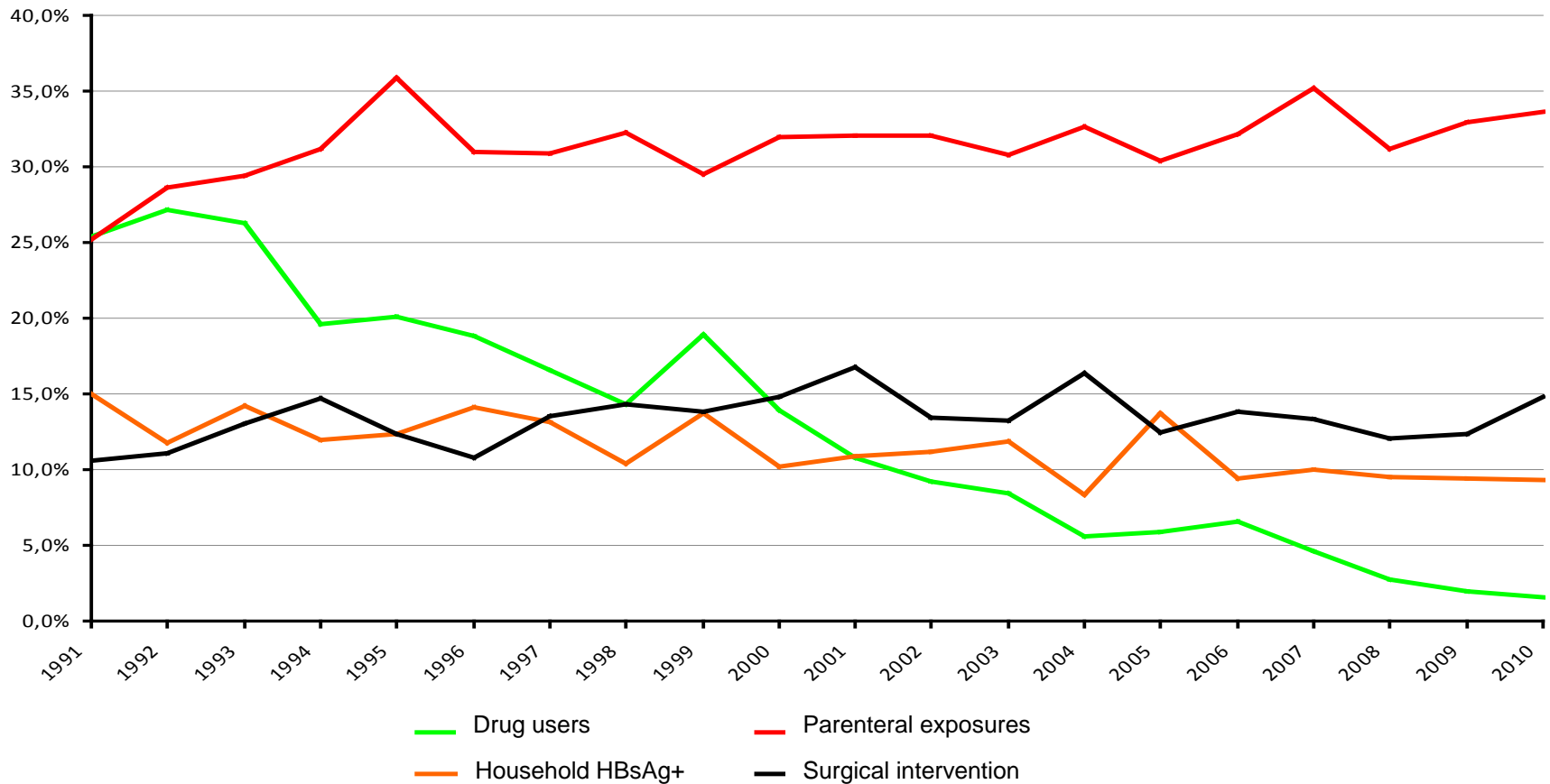


## Risk factors for acute hepatitis B SEIEVA 2006 - 2010

<b>Risk factors</b>	<b>O.R.</b>	<b>(C.I.)</b>	<b>P.A.R.</b>
I.V. drug users	2,2	(1,3 - 3,9)	2,1%
Surgical Intervention	1,7	(1,3 - 2,4)	5,5%
Other nosocomial exposures	1,8	(1,2 - 2,8)	4,2%
Other parenteral exposures	2,4	(1,9 - 2,9)	20,1%
Dental Therapy	1,5	(1,2 - 1,8)	9,4%
Household of HBsAg+	6,4	(3,8 - 10,5)	10,1%
Never/occasional condom use	3,2	(2,5 - 4,1)	13,8%

*Alfonso Mele*  
*Istituto Superiore di Sanità*

# Frequency of reported risk factors by year SEIEVA 1991-2010

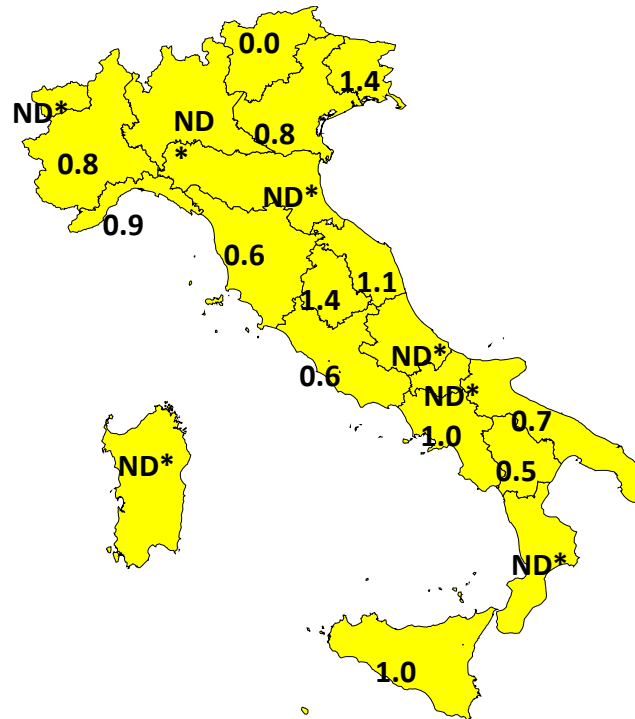


# Prevalence of

## HBsAg positive pregnant women\* by region

**N. 17.260**

**Years 2008-2009**  
**(0,9%)**



*ND\* Not Determined*

*\*women  $\leq 14$  and  $\geq 55$  years are excluded*



## Prevalence of HBsAg positive pregnant women by nationality

N°	14.307
% Immigrants	25,0%
% testated	97,6%
Prevalence (%) of HBsAg	0,9%
Prevalence (%) of HBsAg in Italians women	0,4%
Prevalence (%) of HBsAg in Immigrants women	2,7%
Prophylaxis (%) of newborns from mothers HBsAg+	100%



## Prevalence of HBV markers in Abbiategrasso (Mi) 2010-2011

Age	N.	Anti-HBc (%)	HBsAg (%)
18-34	379	7 (1.9)	4 (1.1)
35-44	385	24 (6.2)	3 (0.8)
45-54	395	58 (14.7)	3 (0.8)
55-64	331	75 (22.7)	7 (2.1)
65+	276	91 (33.0)	5 (1.8)
All ages	1766	255 (14.4)	22 (1.3)

*M. Zuin, in preparation*





# Currently HBV burden of disease in Italy

---

	<b>HBV</b>
Chronic carriers	600.000
Cirrhosis	100.000
Deaths/year	1.500

---



# Conclusion

The incidence of HBV infection in Italy dramatically declined in the last few decades. At the end of the 1980' there were about 2 milion chronic carriers in Italy.

Today the prevalence of chronic carriers is about 500,000.

Universal vaccination of infants and adolescents combined with improved social and economic condition contributed to this phenomen.



# Conclusion

The majority of newly reported cases are unvaccinated adults.

The most important risk factors for newly acquired infection are: sexual contacts with infected individuals, beauty treatments (i.e. pedicures, tattoos) iatrogenic exposure and intra-venous drug use.

Immigrants represent 16% of newly reported cases.