



# VIRAL HEPATITIS PREVENTION BOARD MEETING

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VHPB

## BURDEN AND PREVENTION OF VIRAL HEPATITIS IN PORTUGAL

# Economic aspects of viral hepatitis and liver disease in Portugal

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# Introduction

- The aim of this presentation is to determine the profile of patients with liver disease, and the costs of their hospital admissions to the 97 public hospitals of the National Health Service of Portugal, serving now a population of about 10,5 million inhabitants;
- For that aim we use databases of hospital admissions and of mortality ;



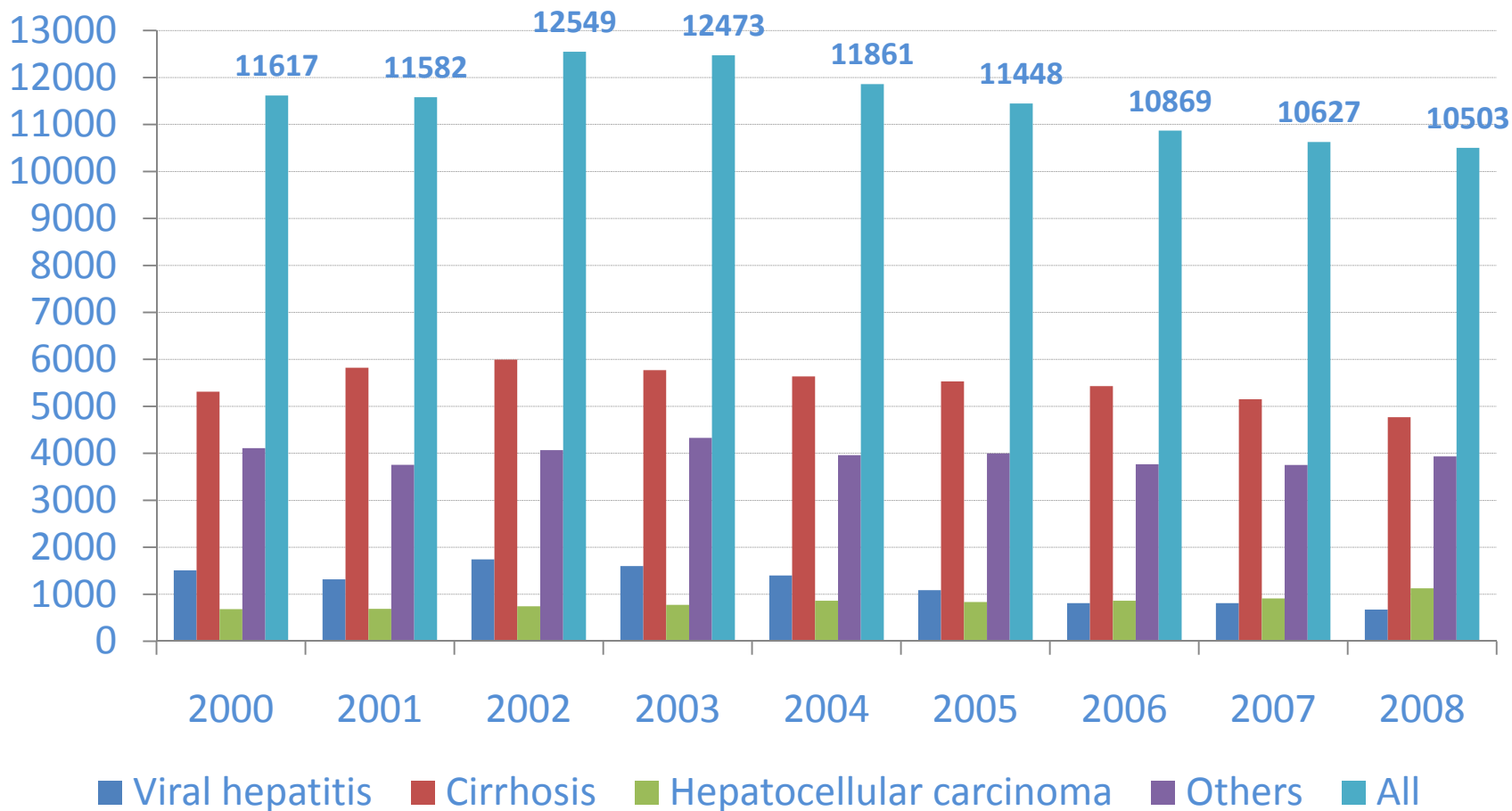
# Materials and Methods

- The study is descriptive and retrospective, based on the Diagnosis-Related Groups (DRG- version AP21 );
- We used the International Classification of Diseases, Ninth Revision, Clinical Modification, (ICD-9-CM), and evaluated the following variables: gender, age, mortality, length of stay, overall costs, costs per day and per episode of hospital admission, and costs related to liver transplant;
- The population of Portugal, and information about deaths were obtained from the “National Institute of Statistics”(INE)”.



## Liver disease

### Evolution of nº of discharges 2000-2008



**Discharges by hepatocellular carcinoma increased 65%**



## Liver disease

Nº of discharges, % by disease categories and rate/10<sup>5</sup> Inhab - 2008



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Disease Categories	Nº of discharges	%	Rate/100000 Inhab
<b>Viral hepatitis</b>	<b>674</b>	<b>6,4</b>	6,7
HBV	210	2,0	2,1
HCV	386	3,7	3,8
<b>Cirrhosis</b>	<b>5896</b>	<b>56,1</b>	<b>58,2</b>
Alcoholic cirrhosis	4053	38,6	40,0
Nonalcoholic cirrhosis	716	6,8	7,1
<b>Hepatocellular carcinoma</b>	<b>1127</b>	<b>10,7</b>	11,1
<b>Others</b>	2806	26,7	27,7
<b>All</b>	<b>10503</b>	<b>100</b>	103,6

Others includes:

Alcoholic liver damaged, unspecified (989);

Hepatic coma (784);

Hepatitis, unspecified (407)

Hepatoptosis (345).



## Liver disease

### Nº of discharges by sex - 2008

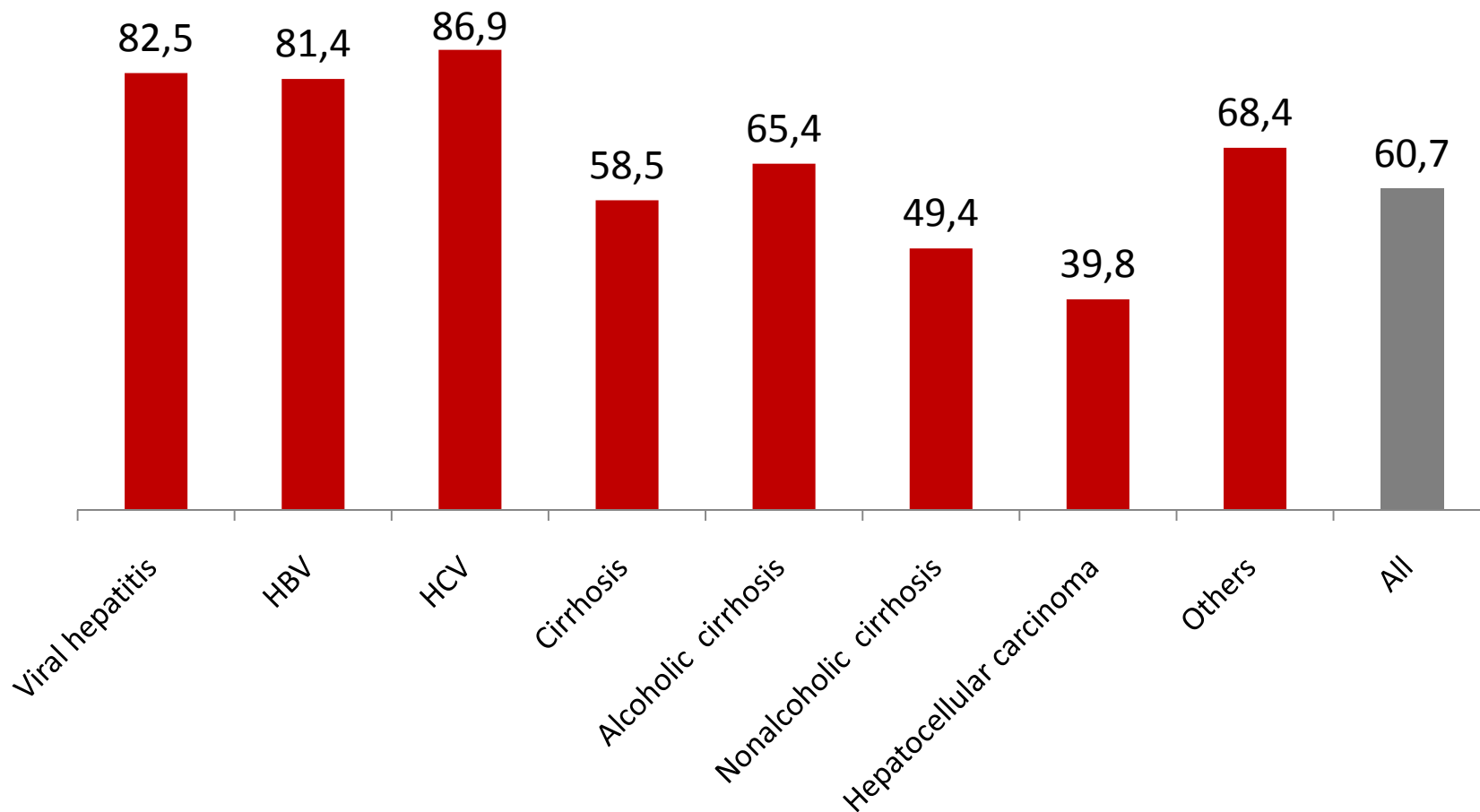


Disease Categories	Man	Woman	Rate Man/Woman
Viral hepatitis	453	221	2,0
HBV	142	68	2,1
HCV	271	115	2,4
Cirrhosis	3573	1196	3,0
Alcoholic cirrhosis	3156	897	3,5
Nonalcoholic cirrhosis	417	299	1,4
Hepatocellular carcinoma	894	233	3,8
Others	2469	1464	1,7
All	7389	3114	2,4



## Liver disease

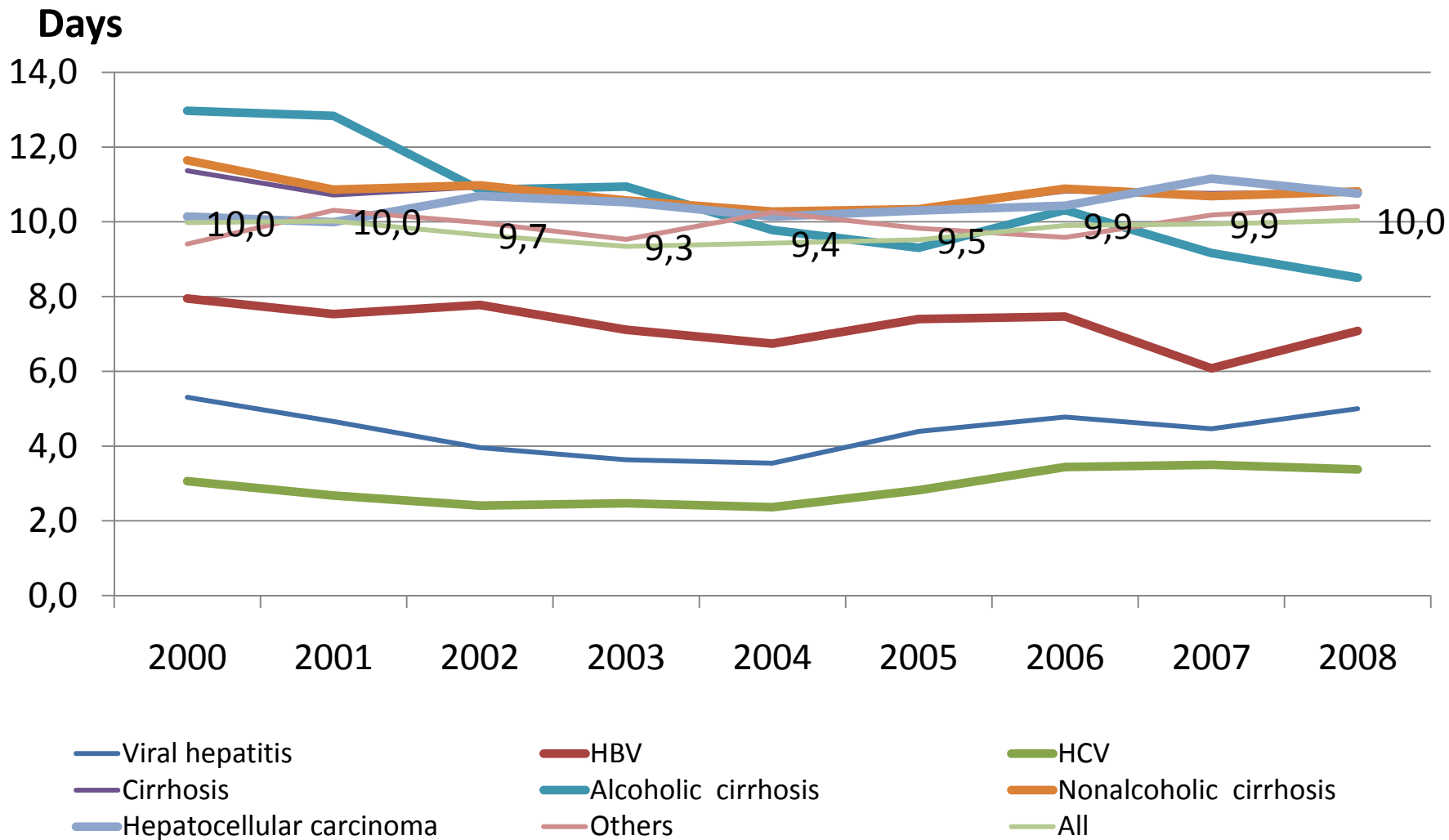
Proportion (%) of nº of discharges in age group 20-64 years - 2008





# Liver disease

## Evolution of average length of stay (ALOS) 2000-2008



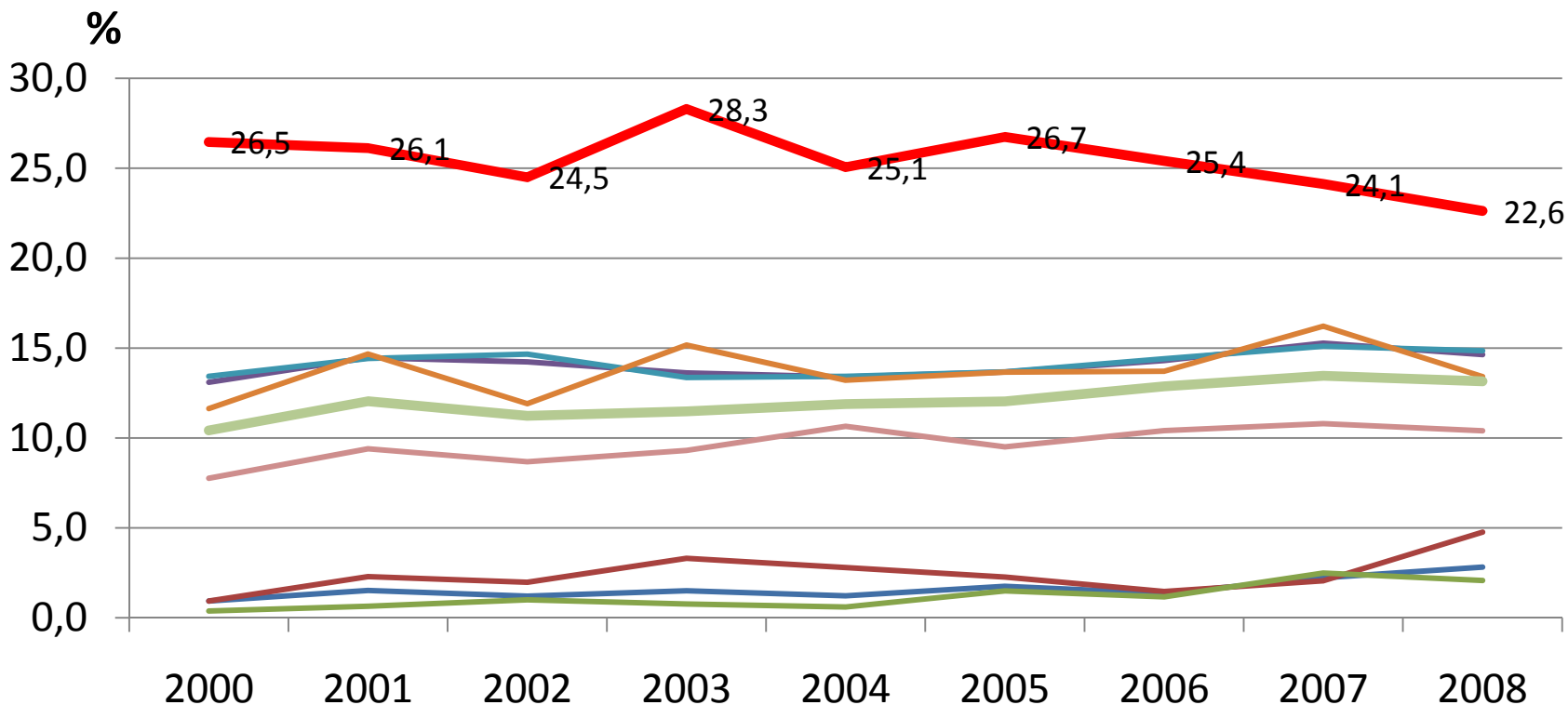




# Liver disease

## Evolution of lethality rate (%)

### 2000-2008



- Viral hepatitis
- Cirrhosis
- Hepatocellular carcinoma
- HBV
- Alcoholic cirrhosis
- Others
- HCV
- Nonalcoholic cirrhosis
- All

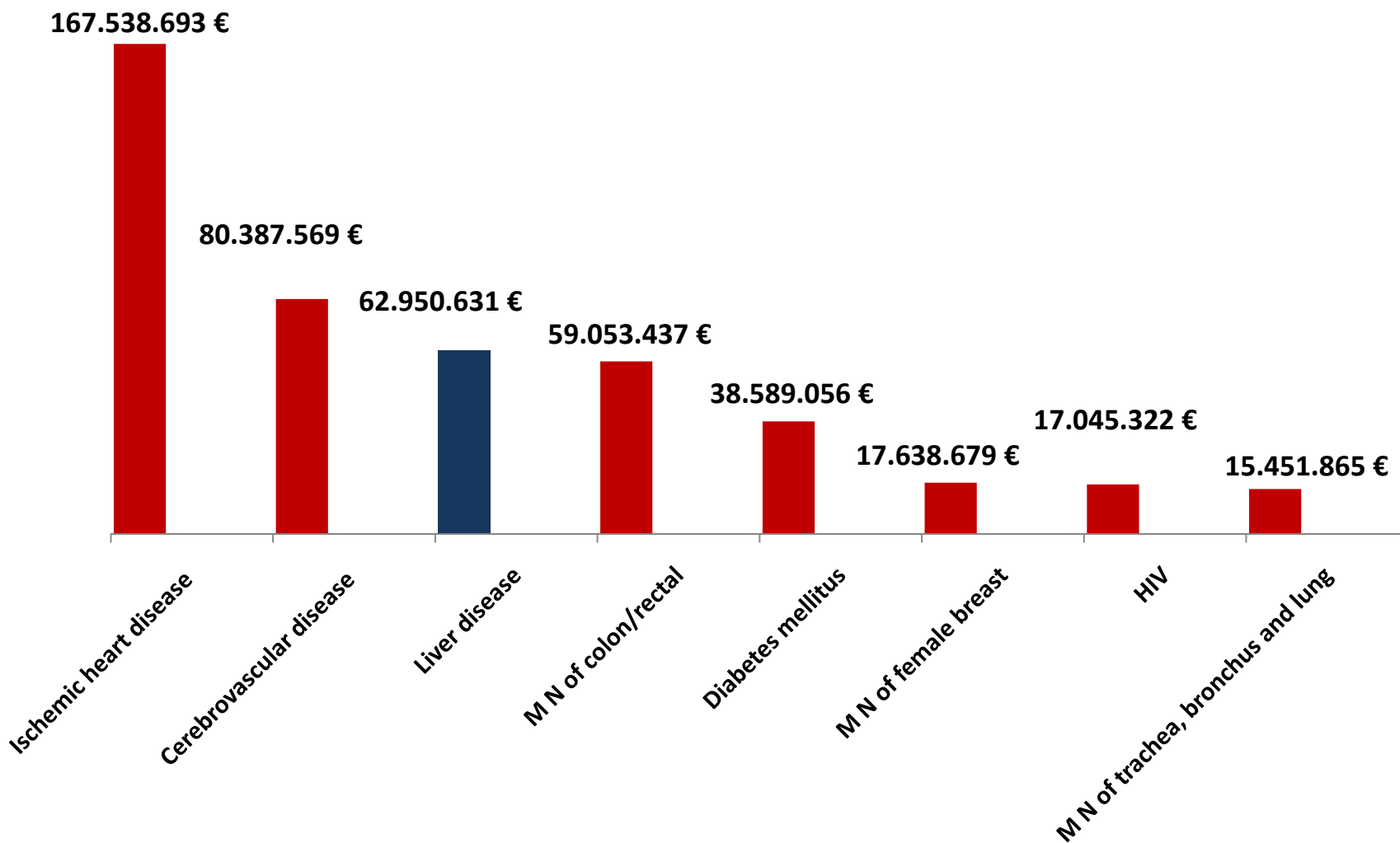
## Liver disease

### Direct costs of hospital admission - 2008

Disease Categories	Direct costs	%	Direct costs/10 <sup>5</sup> Inhab
<b>Viral hepatitis</b>	2.647.742 €	4,2	25.217 €
HBV	820.639 €	1,3	7.816 €
HCV	1.515.620 €	2,4	14.434 €
<b>Cirrhosis</b>	<b>32.138.385 €</b>	<b>51,1</b>	306.080 €
<b>Alcoholic cirrhosis</b>	<b>26.818.930 €</b>	<b>42,6</b>	255.418 €
Nonalcoholic cirrhosis	5.319.455 €	8,5	50.661 €
<b>Hepatocellular carcinoma</b>	<b>9.737.184 €</b>	<b>15,5</b>	92.735 €
<b>Others</b>	18.427.319 €	29,3	175.498 €
<b>All</b>	<b>62.950.631 €</b>	<b>100</b>	599.530 €



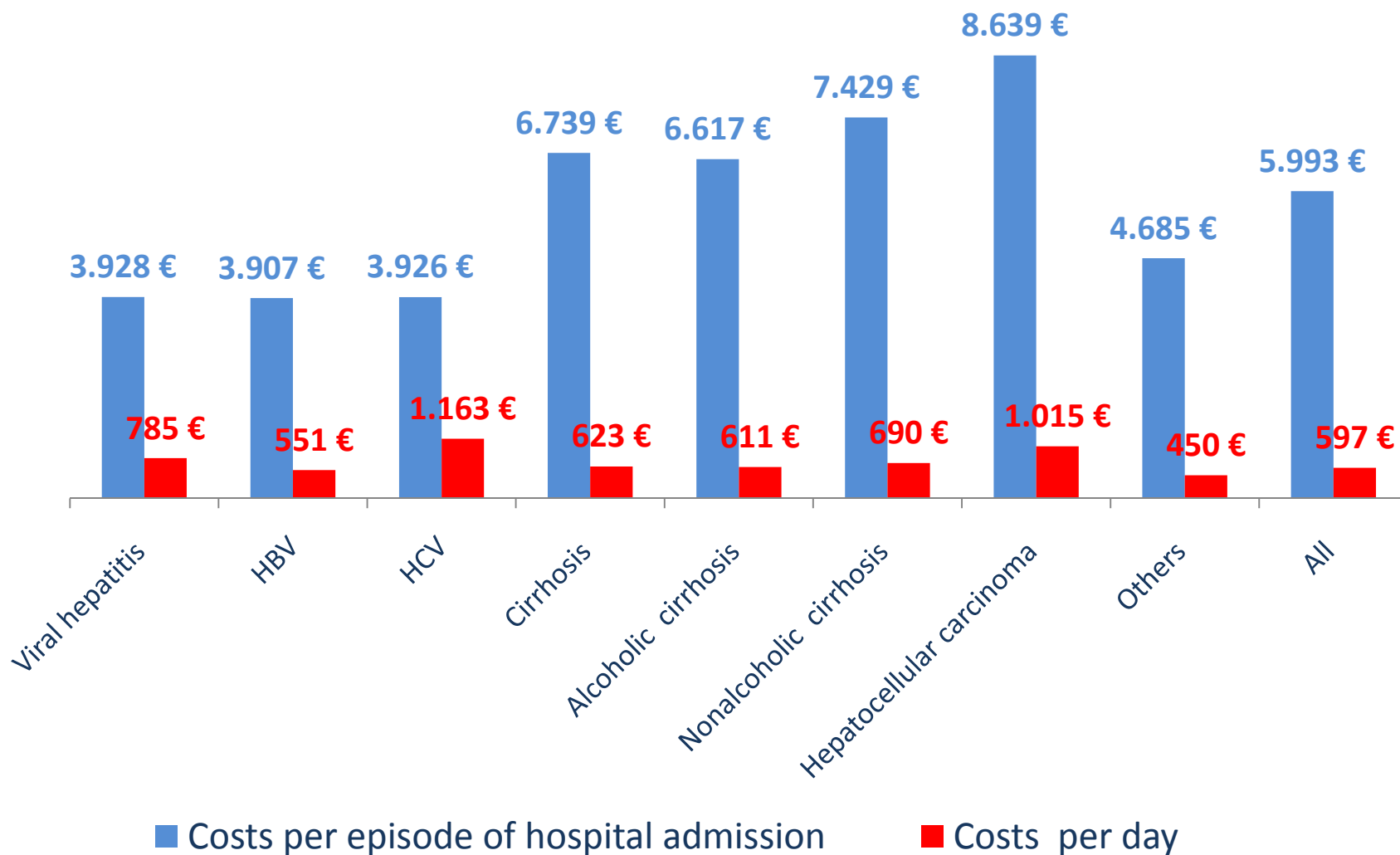
## Direct costs of hospital admission, for several diseases 2008





## Liver disease

Costs per episode of hospital admission and per day - 2008





## Liver disease

### Costs per hospital admission related to liver transplant - 2008



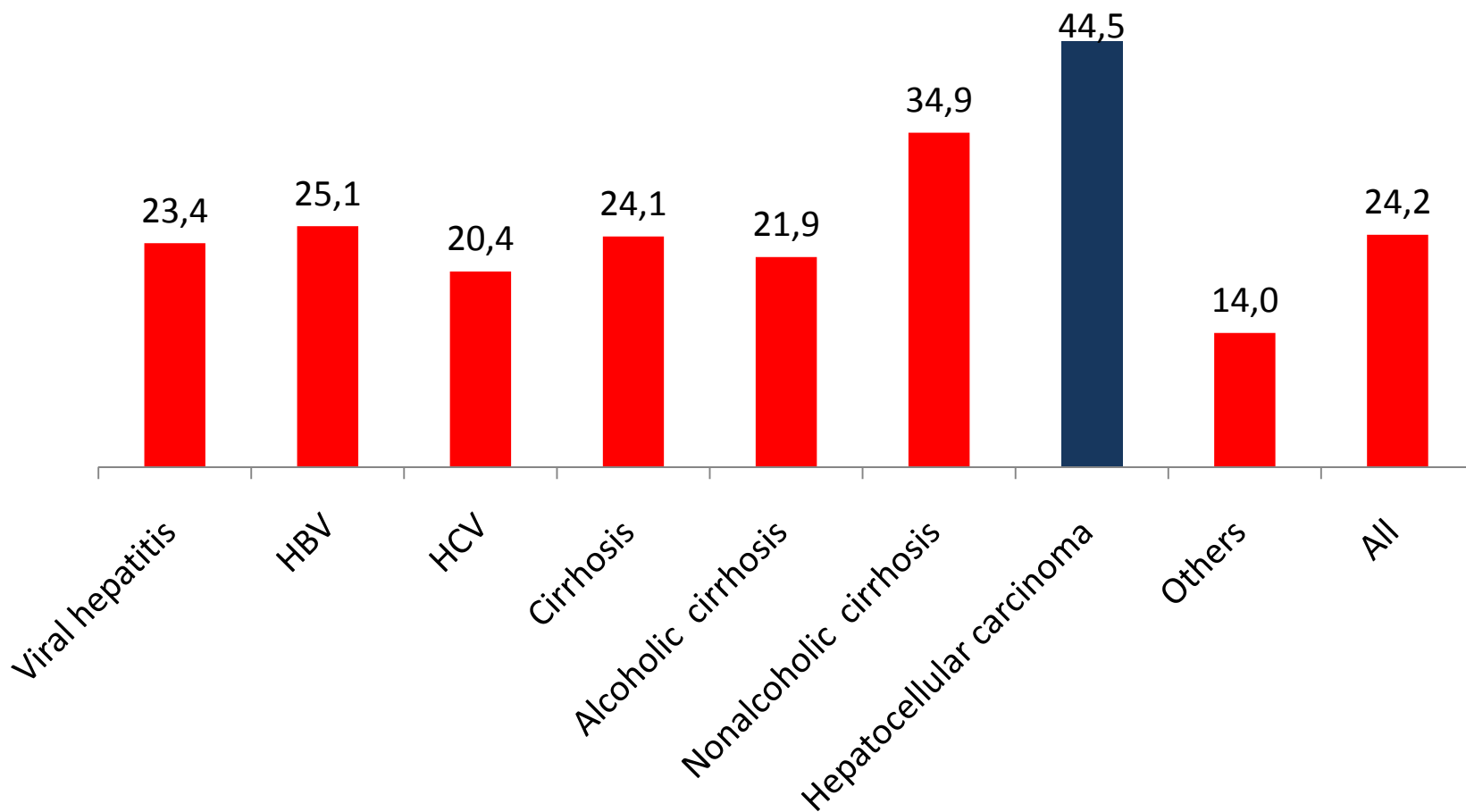
Disease Categories	Costs related to liver transplant	%
<b>Viral hepatitis</b>	618.619 €	4,1
HBV	206.206 €	1,4
HCV	309.310 €	2,0
<b>Cirrhosis</b>	<b>7.732.741 €</b>	<b>50,7</b>
<b>Alcoholic cirrhosis</b>	<b>5.876.883 €</b>	<b>38,5</b>
Nonalcoholic cirrhosis	1.855.858 €	12,2
<b>Hepatocellular carcinoma</b>	<b>4.330.335 €</b>	<b>28,4</b>
<b>Others</b>	2.577.580 €	16,9
<b>All</b>	<b>15.259.275 € *</b>	<b>100</b>

Concerns 148 liver transplant



## Liver disease

% of costs related to liver transplant, in direct costs, per hospital admission - 2008





## Disease categories with larger number of deaths 2006



Disease categories	Nº of deaths	Rate/100000 Inhab
Cerebrovascular disease	14495	136,9
Ischemic heart disease	7727	73,0
Pneumonia	5045	47,7
Diabetes mellitus	3732	35,3
Malignant neoplasm colon/rectal	3307	31,2
Malignant neoplasm of trachea, bronchus and lung	3215	30,4
Malignant neoplasm of stomach	2273	21,5
Malignant neoplasm of prostate	1642	32,1
Malignant neoplasm of female breast	1450	26,5
<b>Chronic hepatic disease and cirrhosis</b>	<b>1362</b>	<b>12,9</b>
<b>Hepatocellular carcinoma</b>	<b>691</b>	<b>6,5</b>

In the ranking of ten disease categories with larger number of deaths, Chronic hepatic disease and cirrhosis has in 10<sup>th</sup> place



## Disease categories with larger premature death Lost Life Years until 70 years of age 2006



Disease categories	LLY	Rate/100000 Inhab
Motor vehicle traffic accidents	26499	285,4
Cerebrovascular disease	18289	197,0
Malignant neoplasm of trachea, bronchus and lung	18215	196,2
Ischemic heart disease	18160	195,6
<b>Chronic hepatic disease and cirrhosis</b>	<b>14655</b>	<b>157,8</b>
Malignant neoplasm of colon/rectal	10548	113,6
Malignant neoplasm of stomach	10398	112,0
Malignant neoplasm of female breast	10178	217,2

In the ranking of eighth disease categories with larger number of LLY, Chronic hepatic disease and cirrhosis has in 5<sup>th</sup> place





# Conclusions

- The social and economic impact of liver disease, although not quantify exactly, is clearly substantial;
- The direct costs of inpatient are high;
- The average length of stay (10 days) and letality rate (13%) in the hospitals, are above the national values (6 days and 4% for letality rate);
- Discharges in man are four times more than in women;
- The proportion (%) of discharges in people with 20 until 64 years of age is high (active life). We can measure that as a high level of absentism as lost productivity;
- Large impact of premature death measured by Lost Life Years – LLY.

- **References**

- Rui Tato Marinho, José Giria, Miguel Carneiro Moura - Rising costs and hospital admissions for hepatocellular carcinoma in Portugal (1993-2005) - World J Gastroenterology 2007 March 14; 13(10): 1522-1527;
- W. Ray Kim, Robert S. Brown, Jr., Norah A. Terrault, and Hashem El-Serag - Burden of Liver Disease in the United States: Summary of a Workshop - Hepatology, July 2002