



# Epidemiology of Hepatitis B in Germany

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lessons learnt and the way forward”

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# Sources of information

## **Notification system**

annual incidence  
demographics  
risk factors  
vaccination status

## **Serosurveys**

seroprevalence

## **Blood donors' data**

seroprevalence  
incidence

## **National Bureau of Statistics**

morbidity, mortality

# Notification of hepatitis B in Germany

- mandatory since 1980 (West), 1983 (East)
- 2001: new Infectious Disease Law  
introduces specific case definition
- clinicians and laboratories report to local  
health department
- local health department merges information
- information is passed on to state, then to  
national level

# Case definition

## Clinical picture + laboratory findings

(acute infection)

HBs-Ag confirmed

HBc-IgM

HBV-DNA

**=reference definition**

### Also reportable

- laboratory findings positive, symptoms absent
- laboratory findings positive, symptoms unknown

# Advantages of the new surveillance system (2001)

- standardised case definition
- reporting of
  - risk factors\*
  - travel history
  - vaccination status
  - hospitalisation data

\* enhanced surveillance of hepatitis B and C (in collaboration with HepNet, a German network of competence)  
[[www.kompetenznetz.hepatitis.de](http://www.kompetenznetz.hepatitis.de)]



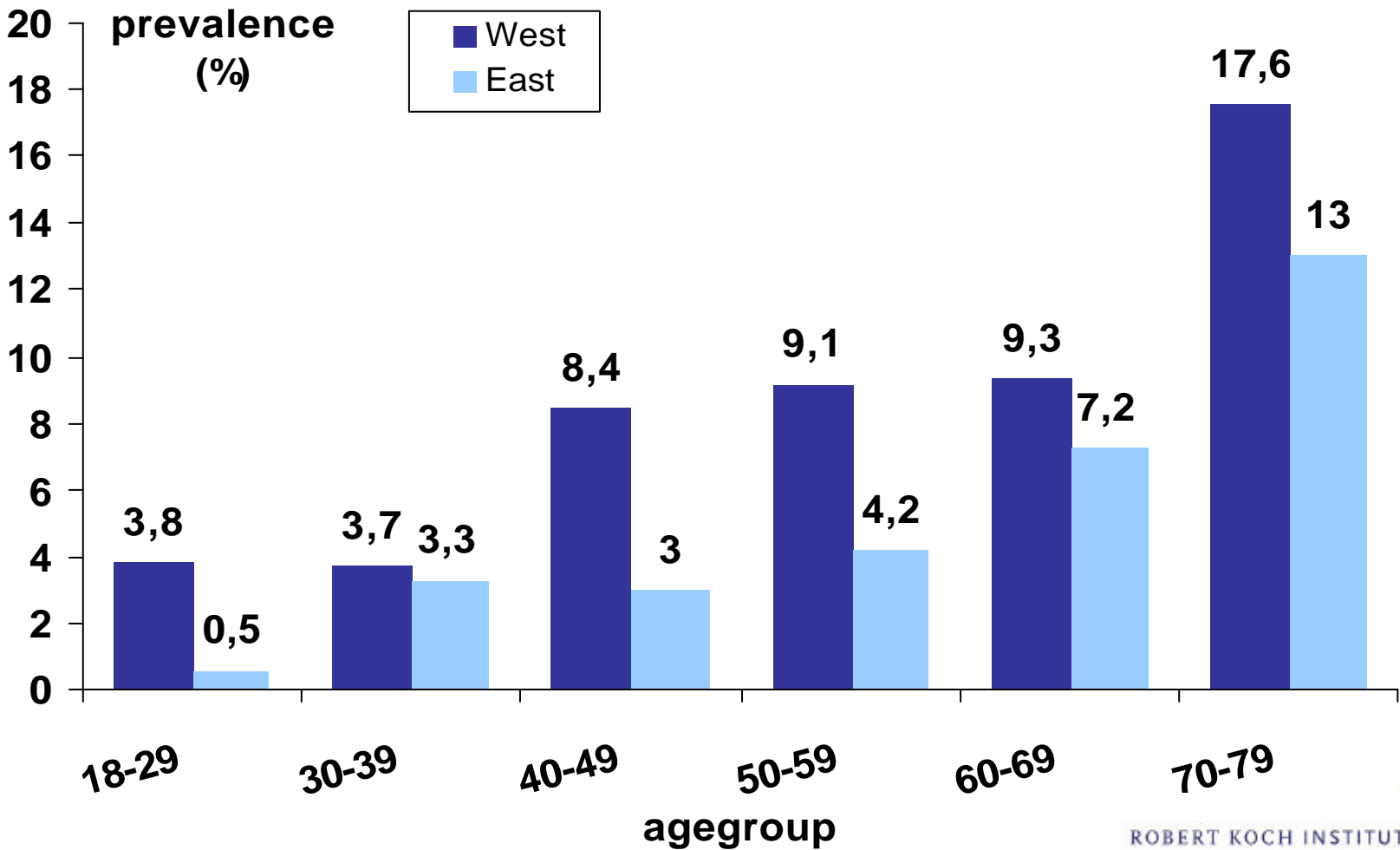
# Serosurveys in general population

Author	Year	Sample size	Prevalence (%) (95% CI)
Thefeld	1990-92	7430	<b>anti-HBc</b> <b>6.1</b>
			West              6.5
			East               5.2
Thierfelder	1998	6748	<b>anti-HBc</b> <b>7.0</b> (7.0-7.6)
			West              7.7 (7.0-8.4)
			East               4.3 (3.2-5.3)
			<b>HBs-Ag</b> <b>0.6</b> (0.4-0.8)
Jilg	1993-96	5305	<b>anti-HBc</b> <b>8.7</b> (7.9-9.5)
			<b>HBs-Ag</b> <b>0.6</b> (0.4-0.8)

Thefeld W; Bundesgesundheitsblatt 1994  
 Thierfelder W; Eur J Epidemiol 2001  
 Jilg W; J Medical Virol 2001

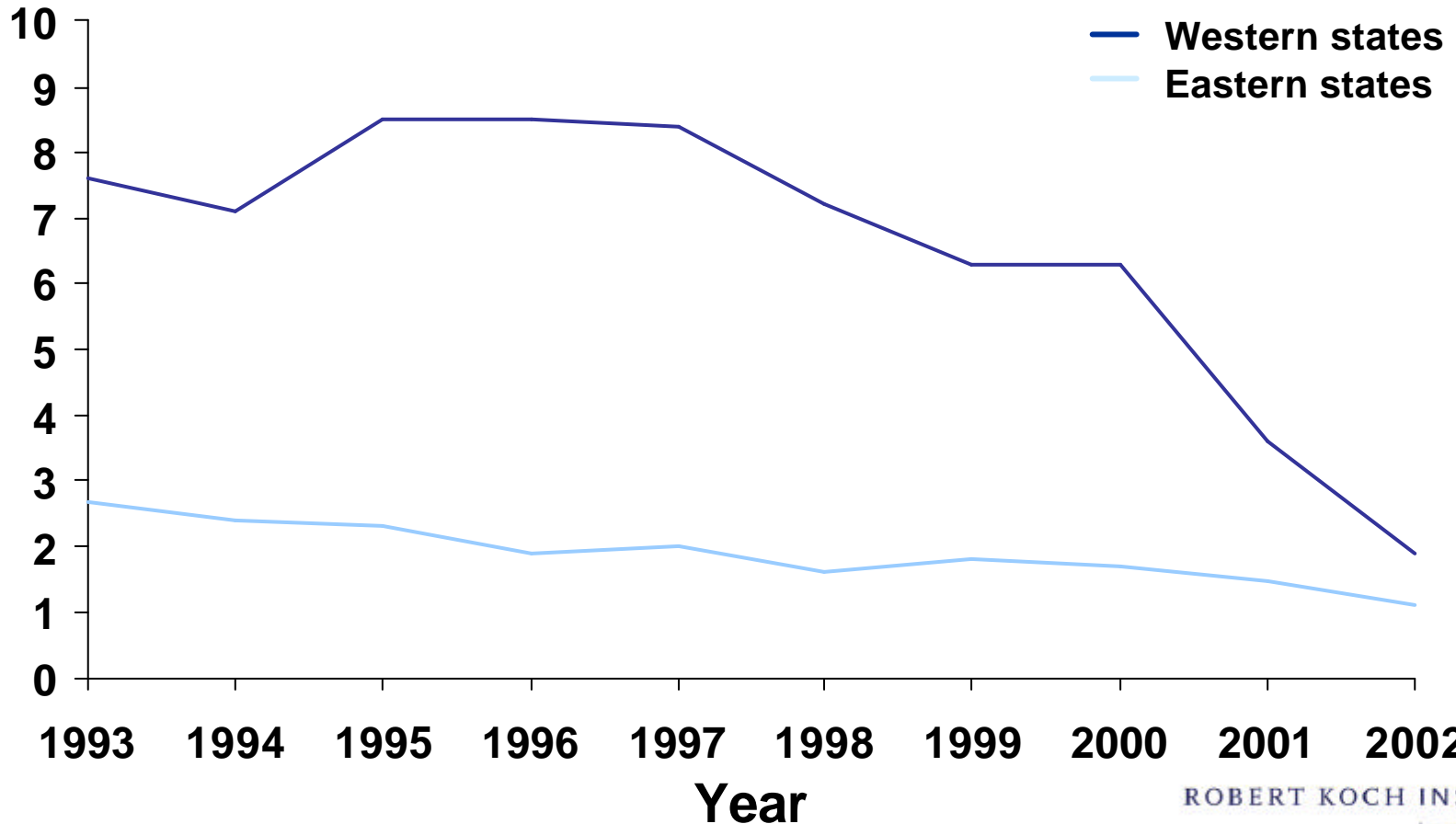


# Prevalence of anti-Hbc antibodies by age groups, Eastern and Western states, Germany, 1998 (n=6748)



# Incidences of hepatitis B in Eastern and Western states, Germany, 1993-2002 (Notification data)

Incidence

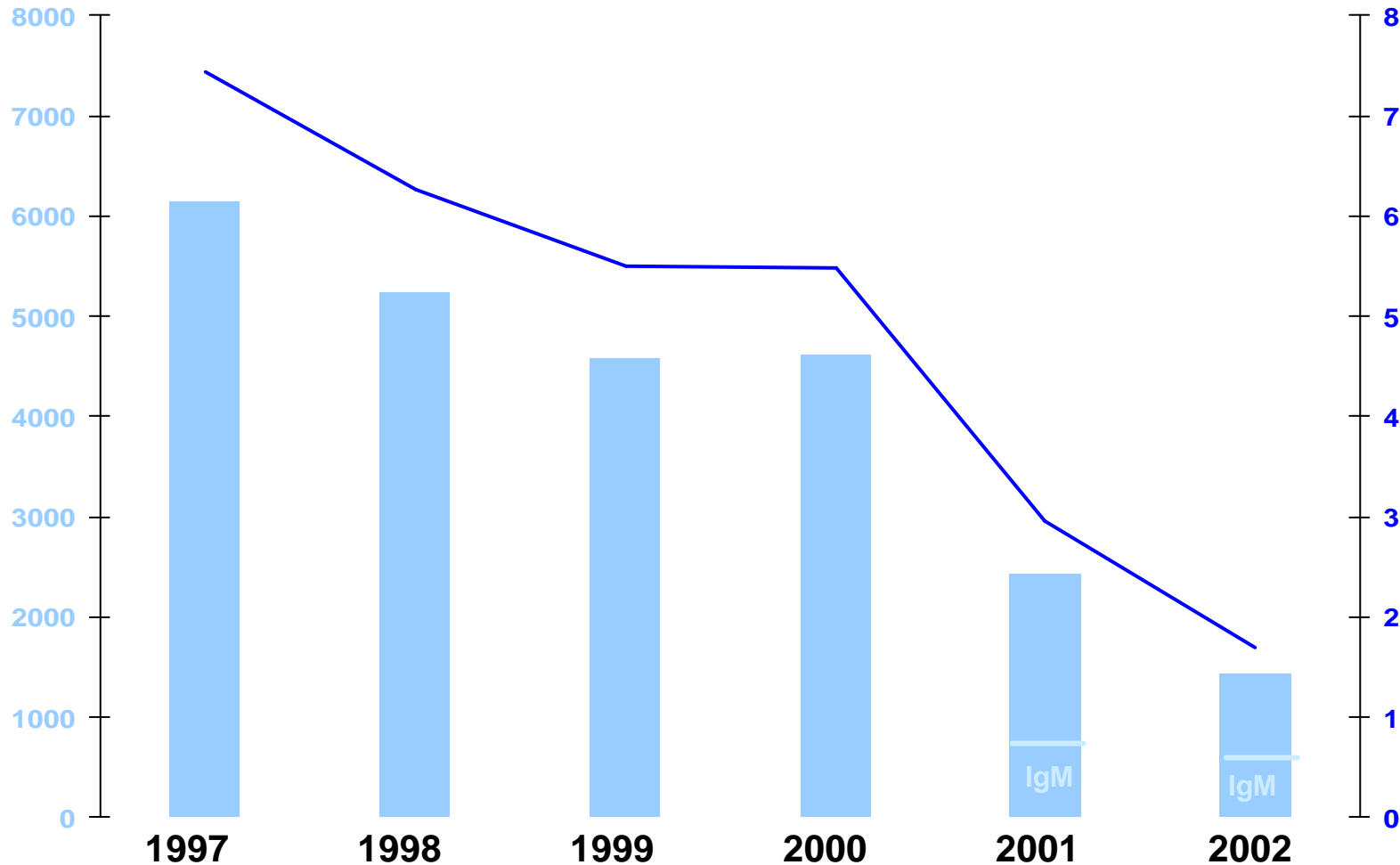




# Notified cases of hepatitis B, Germany, 1997-2002

No. of cases

Incidence

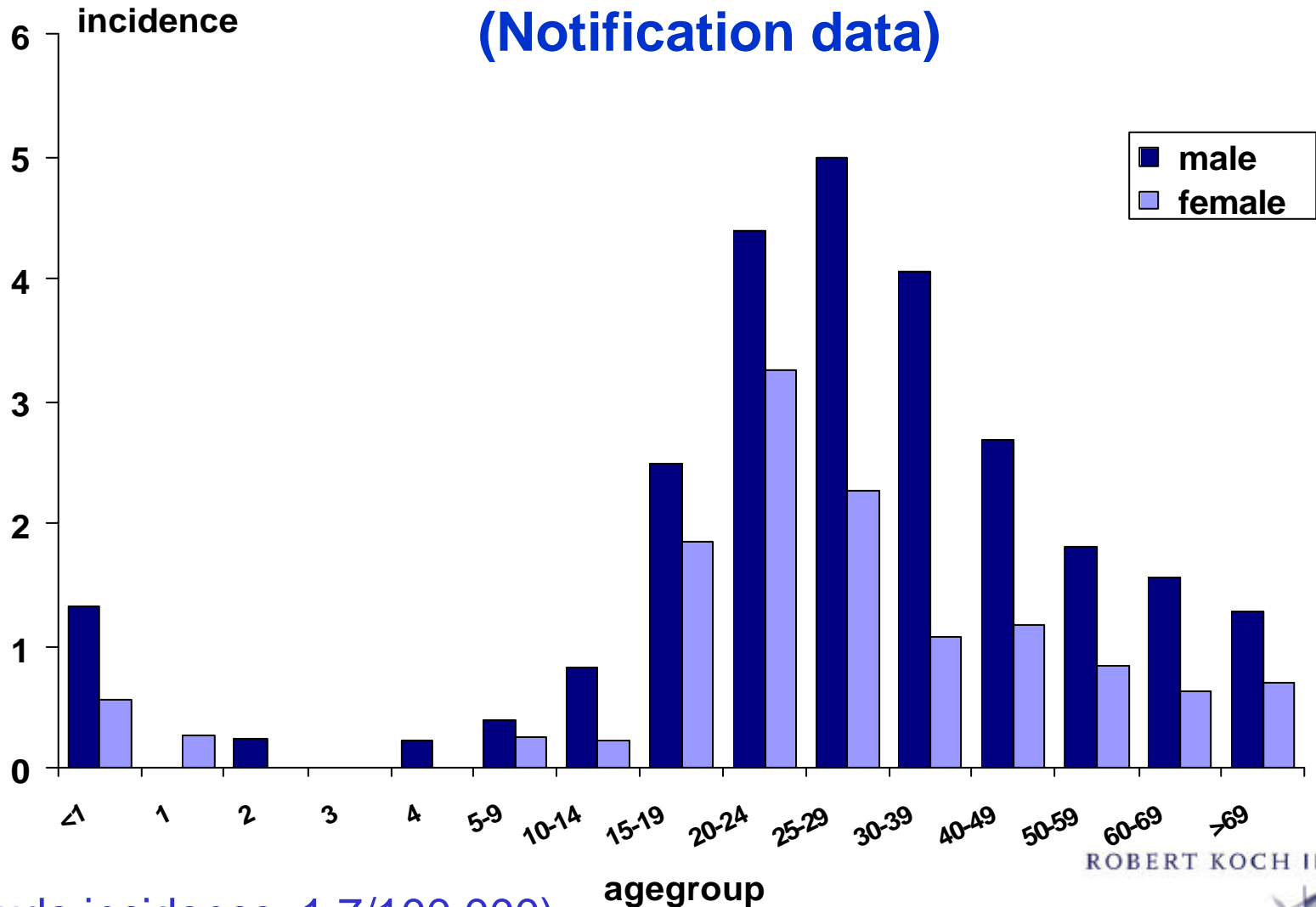


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# Incidences of hepatitis B by age and sex, Germany, 2002

(Notification data)

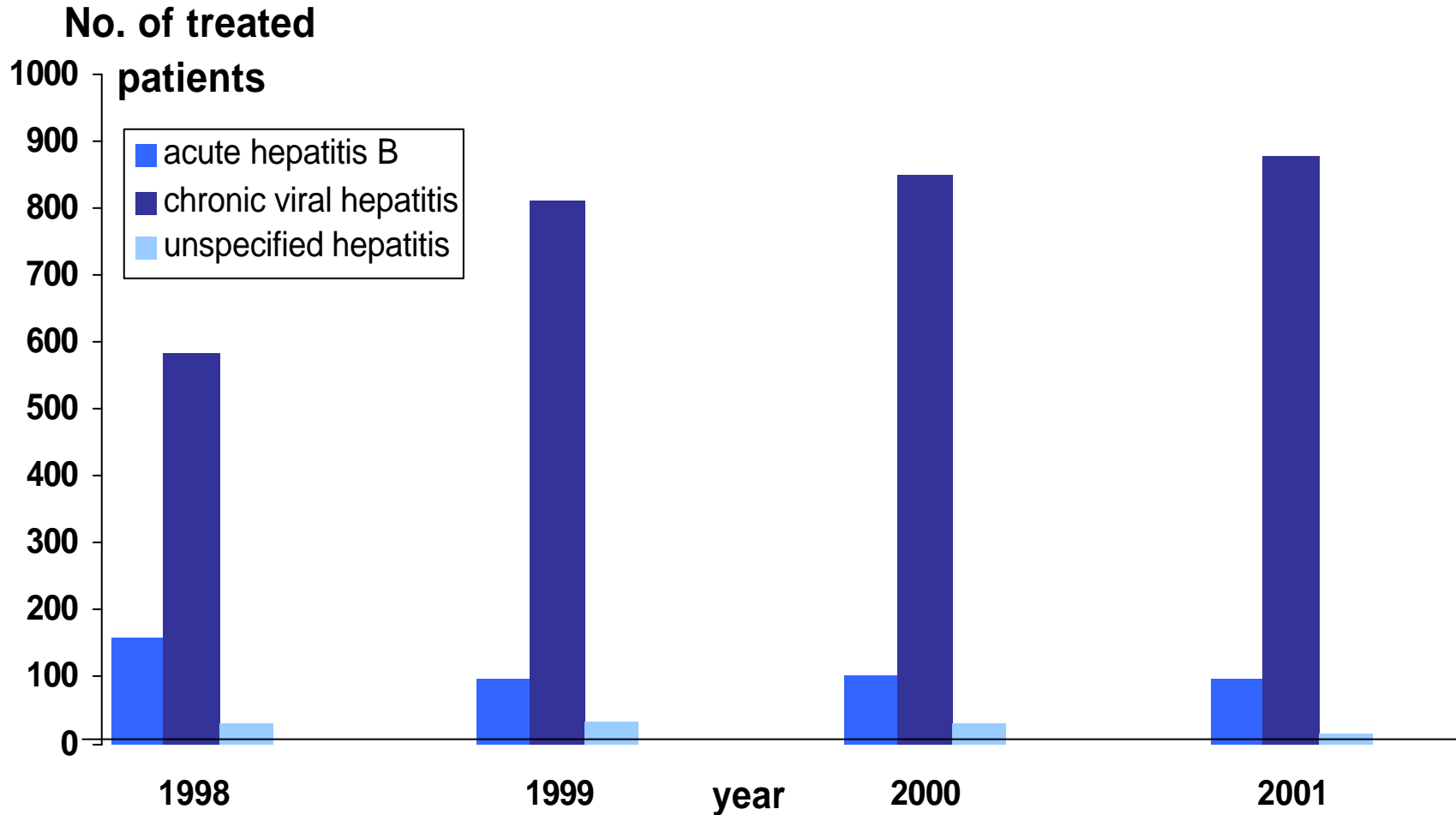


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(crude incidence: 1.7/100.000)

# Number of deaths due to hepatitis, hospitalisation data, Germany, 1998-2001



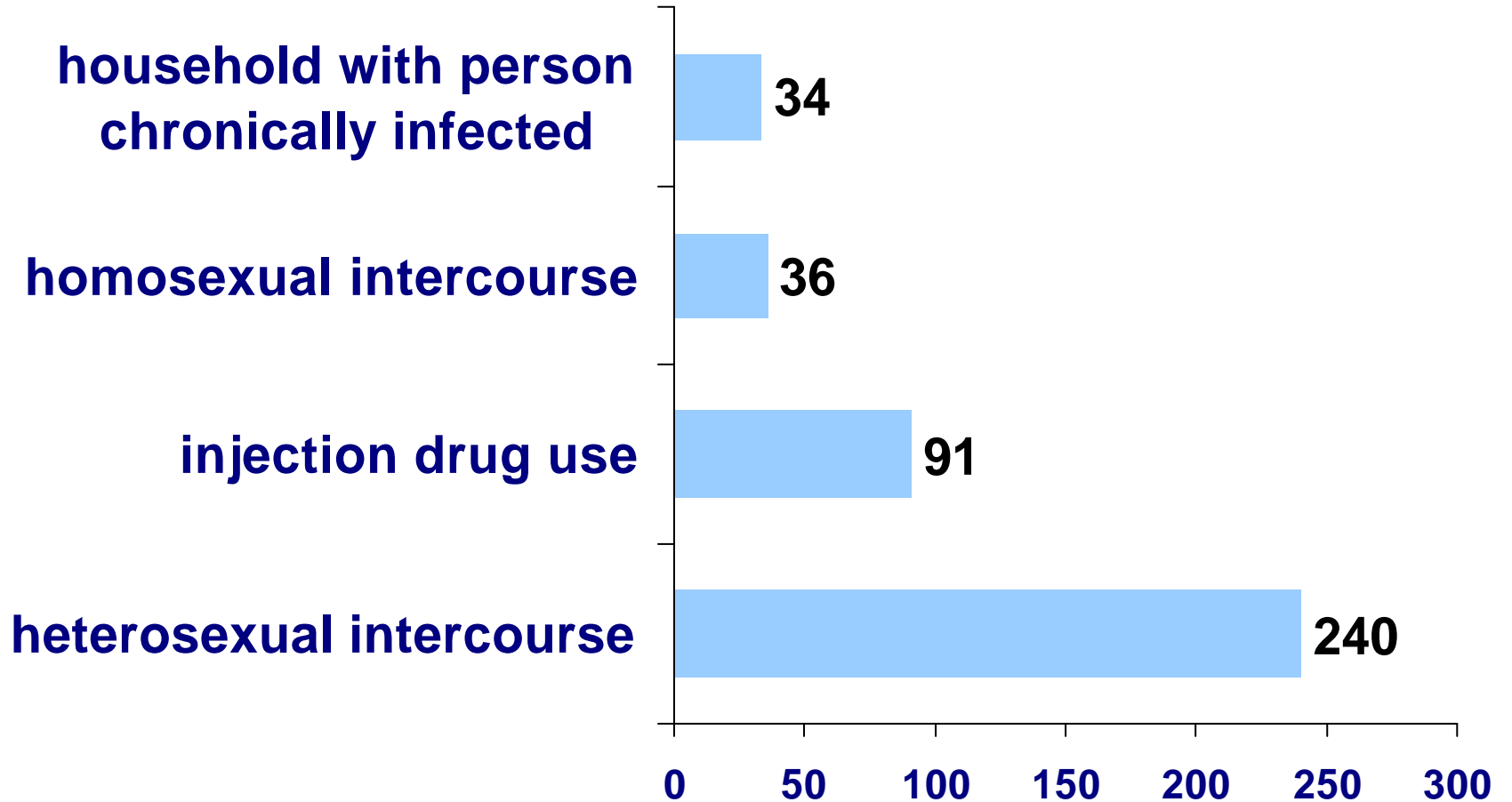
Data source: National Bureau of Statistics

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# Main reported exposures for hepatitis B

(German notification data, 2002, n=578)



# Blood donors

- since 1970, HBs-Ag-screening of blood products
- calculated residual risk for transfusion-transmitted hepatitis B ('97/'98): 1: 200 000<sup>1</sup>
- suspected cases of transfusion-transmitted infections are reported to the Paul-Ehrlich-Institut (since 1995, 11 reports of transfusion-transmitted hepatitis B)

<sup>1</sup> Glück D; Infusionsther Transfusionsmed 1999

# Prevalence and incidence of hepatitis B markers in blood donors, 2001

Population	Prevalence (HBs-Ag)	Incidence (HBs-Ag)
blood donors <sup>2</sup>	0.16%	<u>1.43</u> 100 000 donations
general population <sup>3, 4</sup>	0.6%	<u>2.96</u> 100 000 inhabitants x year

<sup>2</sup> Offergeld R: Bundesges.blatt Ges.forsch Ges.schutz 2003

<sup>3</sup> Thierfelder W; Eur J Epidemiol 2001

<sup>4</sup> German Notification data; Yearbook 2001

# Prevalence and incidence of hepatitis B markers in injection drug users, 1993-94

Population	Prevalence (antiHBc)	Incidence
injection drug users <sup>5</sup>	64%	<u>26.3</u> 100 person-years
general population <sup>6,7</sup>	7%	<u>1.7</u> 100 000 inhabitants × year

<sup>5</sup> Stark K; Int J Epidemiol 1997

<sup>6</sup> Thierfelder W; Eur J Epidemiol 2001 <sup>4</sup>

<sup>7</sup> German Notification data; Yearbook 2002

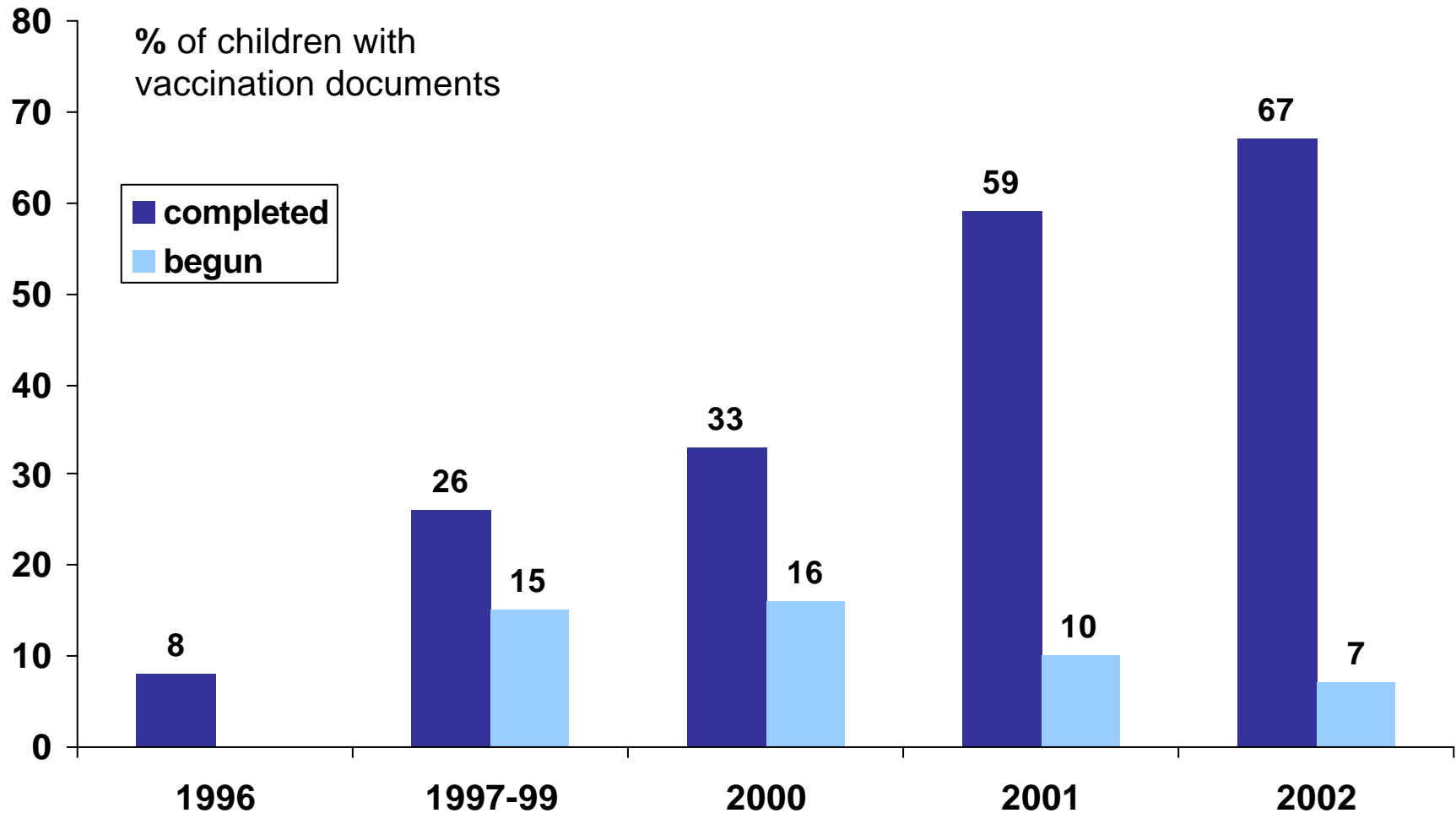
# Vaccination for hepatitis B

- STIKO (German Standing Committee on Immunisation) provides guidelines
- until 1995, recommendation only for risk groups
- since 1995, in addition, standard vaccination for infants, children, adolescents
- vaccination coverage measured at school entry
- in 2000, two hexavalent combination-vaccines including hepatitis B were approved (EC)



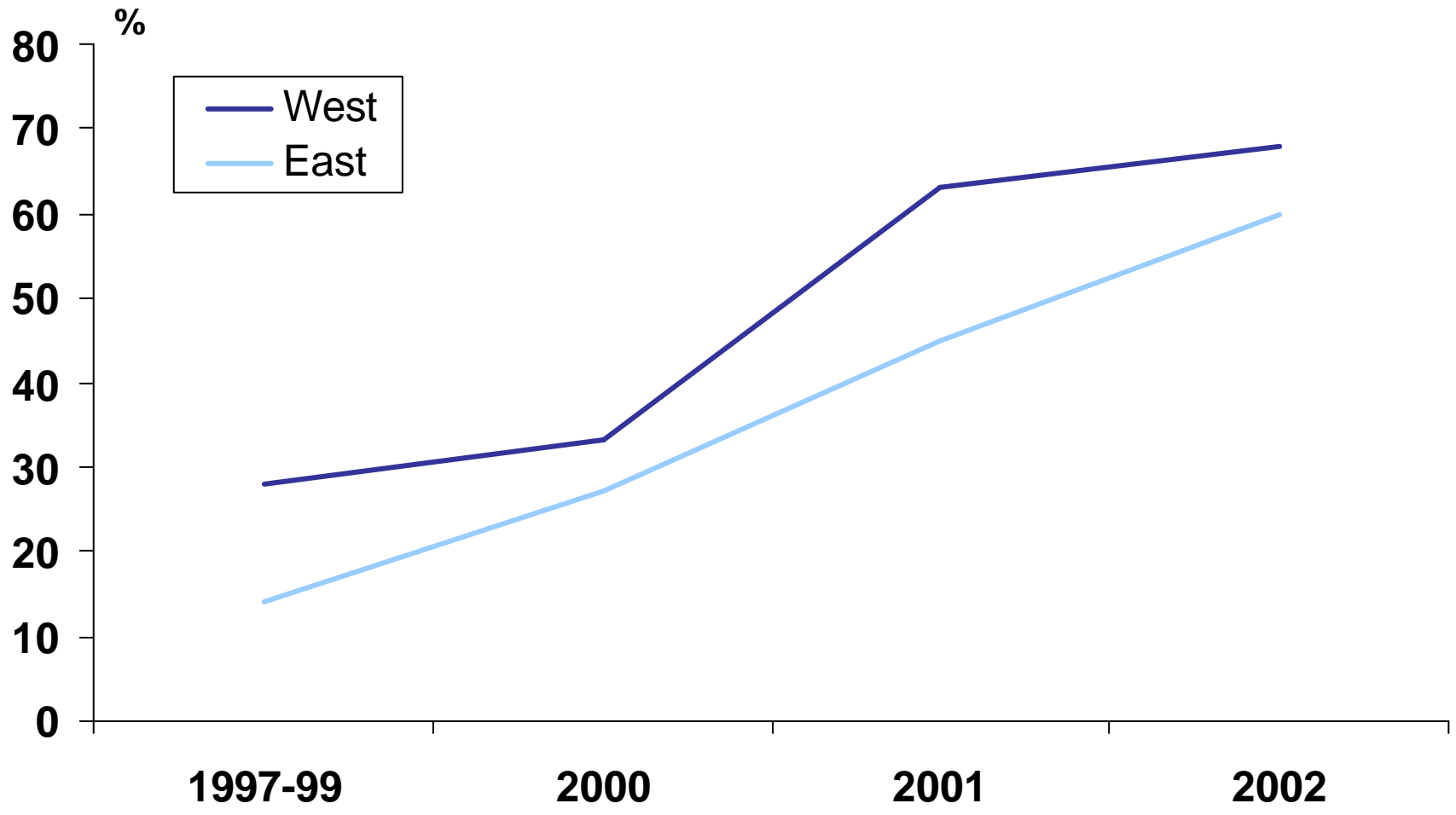


# Vaccination coverage for hepatitis B at school-entry, Germany, 1996-2002



# Vaccination coverage for hepatitis B at school-entry, 1997-2002

## Eastern and Western states



# Antenatal screening

- routine screening of pregnant women for HBs-Ag (after 32 week of gestation)
- if positive, the newborn receives HB-Ig and active immunisation

# Clustering of cases of hepatitis B,

German notification data, 2001-2002

- in 2001, 33 clusters with less than 5 cases and one cluster with 18 cases were reported
    - long-term care facility
  - in 2002, 9 clusters with less than 5 cases and one cluster with 6 cases were reported
    - dialysis practice
- violation of hygiene standards

# Summary

- new Infectious Disease Law allows for improved surveillance of hepatitis B
- incidence of reported hepatitis B cases decreased
- serosurveys provide valuable information on seroprevalence
- since 1995, standard vaccination for hepatitis B (infants, children and adolescents)
- vaccination coverage reached 67% (children at school-entry)