



Epidemiology and control of hepatitis A in the UK

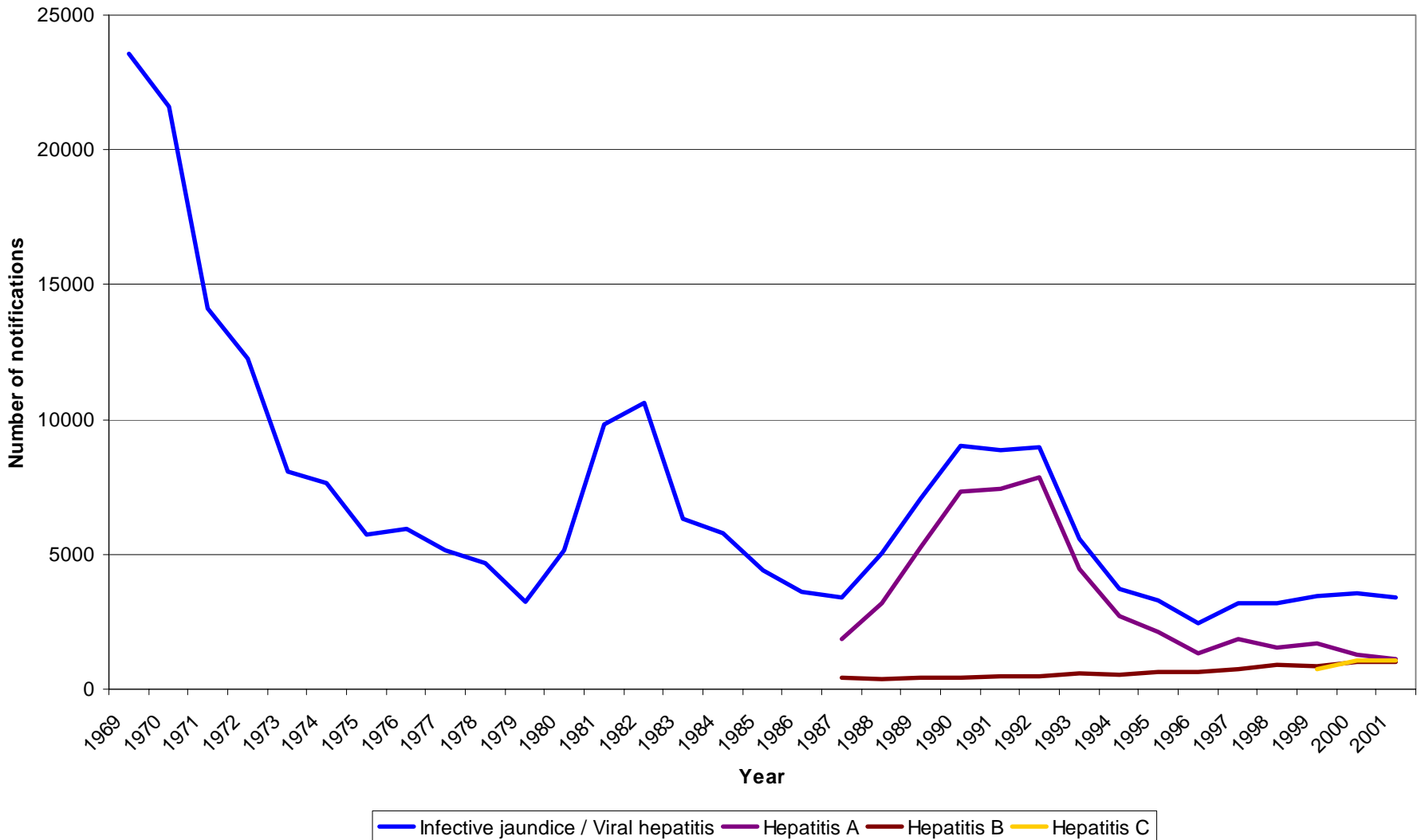
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Sources of information

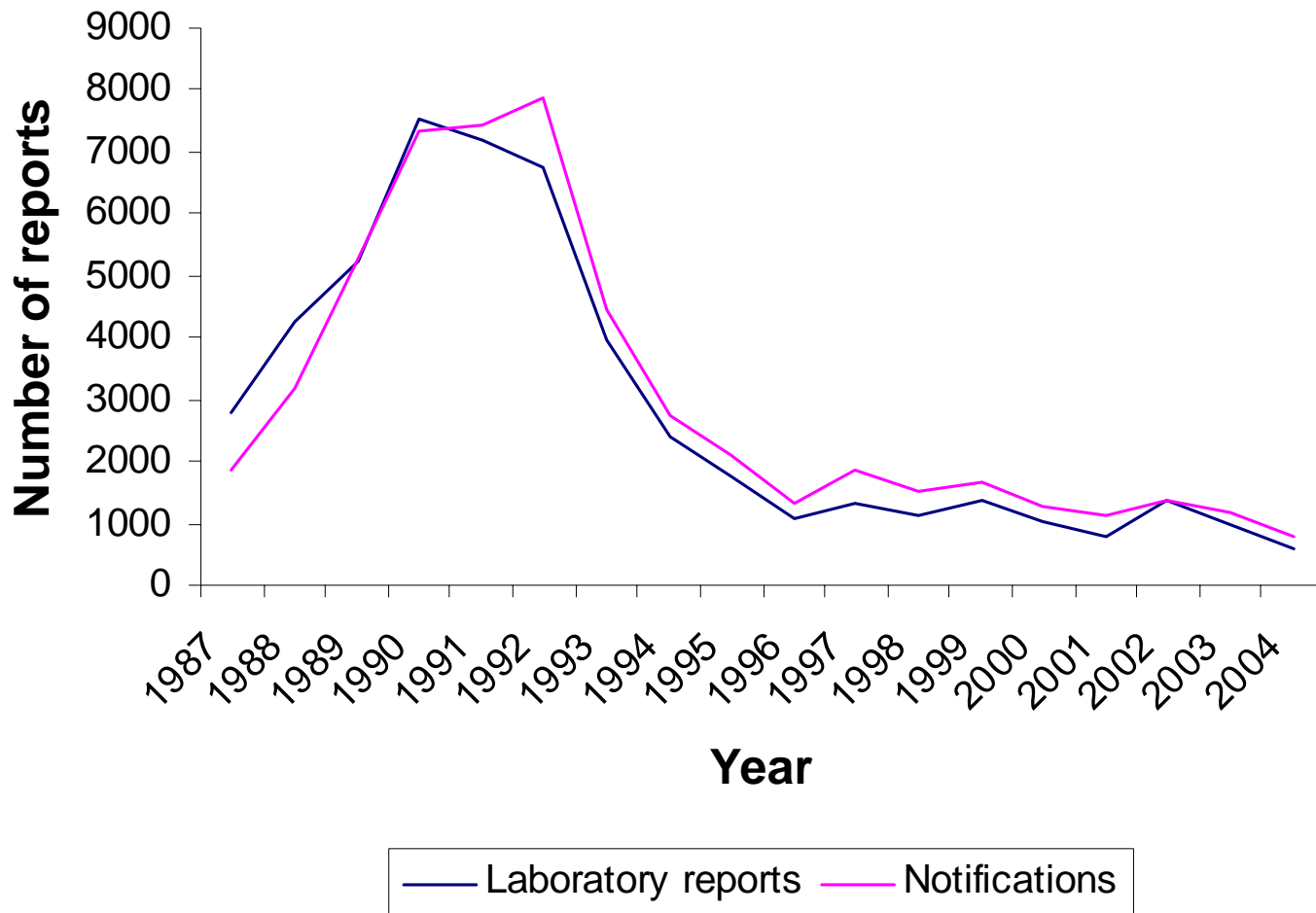


- Statutory notifications
- Laboratory reports
- Mortality statistics
- Liver transplantation registries
- Ad hoc reports to HPA: Incident database, reports to Cfl, bulletins
- Modelling of serosurveillance data

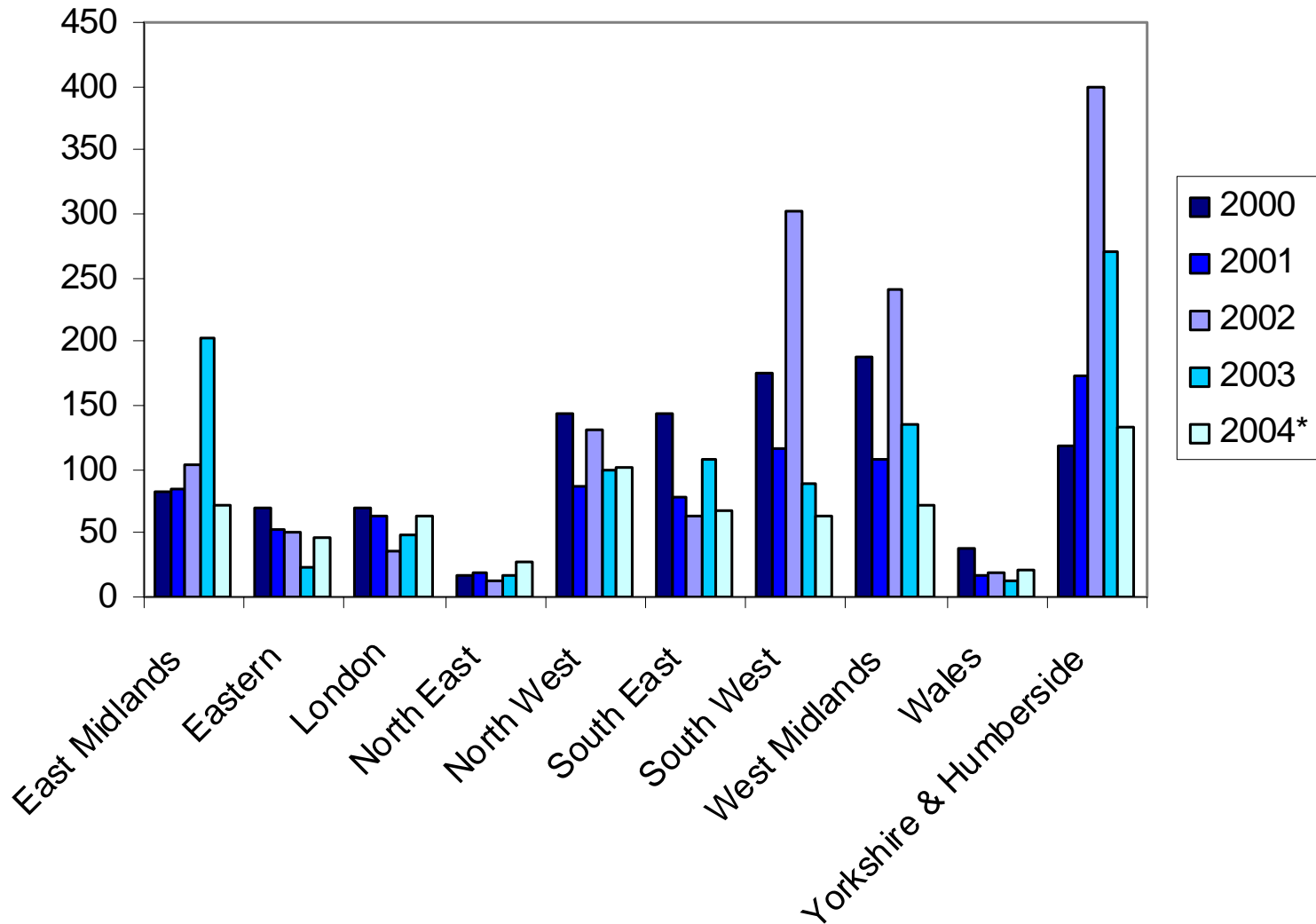
Infectious jaundice notifications England & Wales 1969-2001



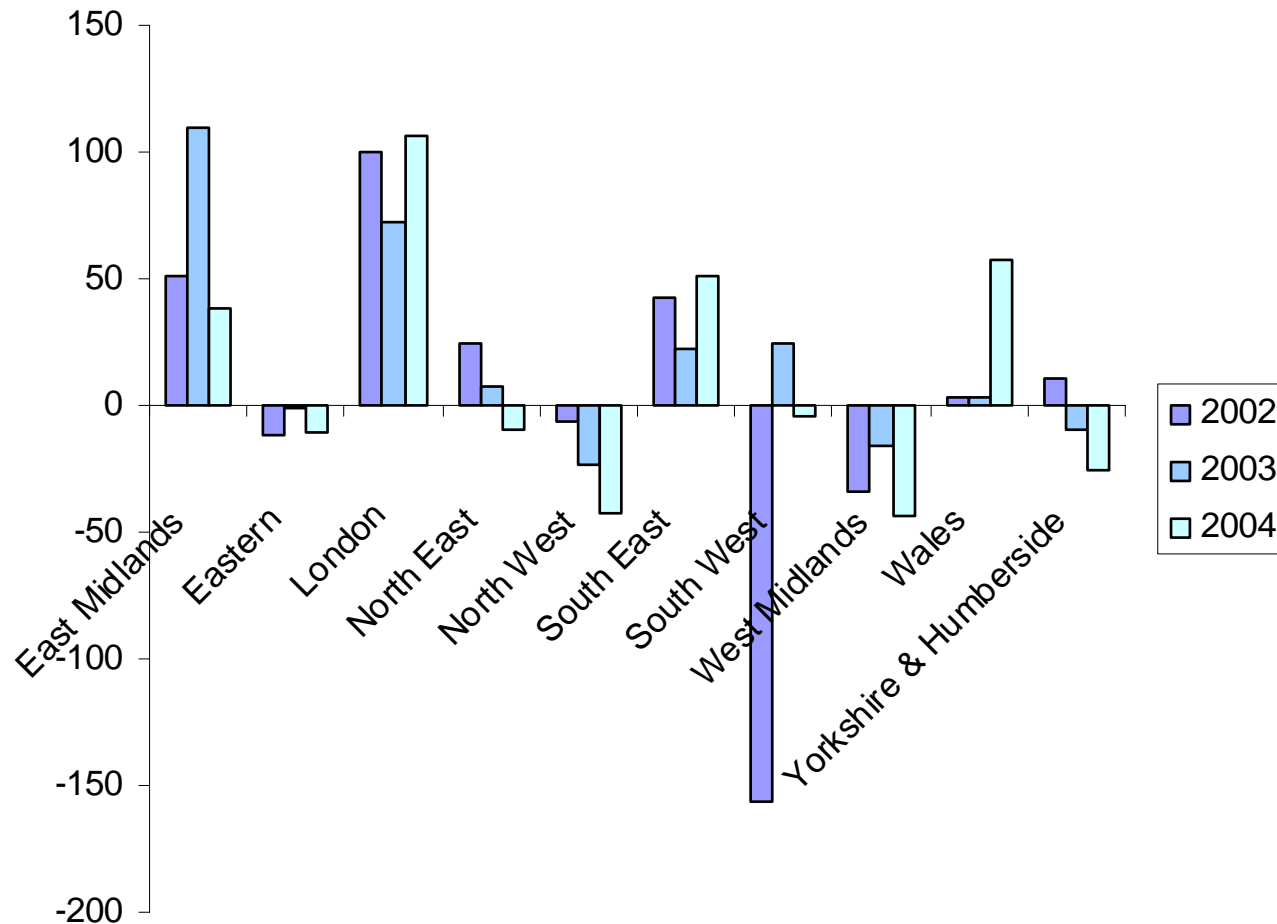
Hepatitis A notifications and laboratory reports, England and Wales 1987-2004



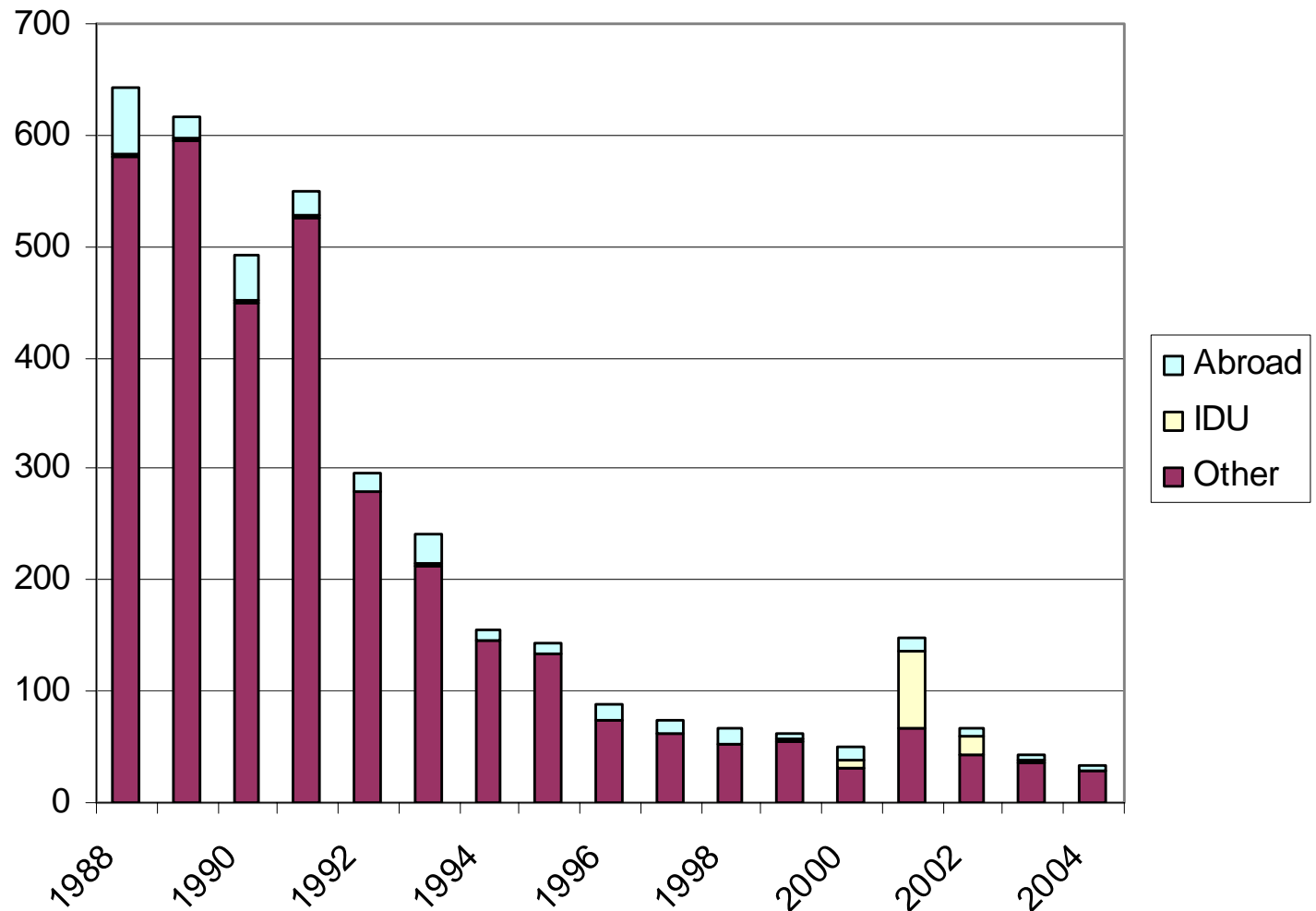
Regional laboratory reports



Difference between notifications and laboratory reports in England and Wales by region, 2002-4

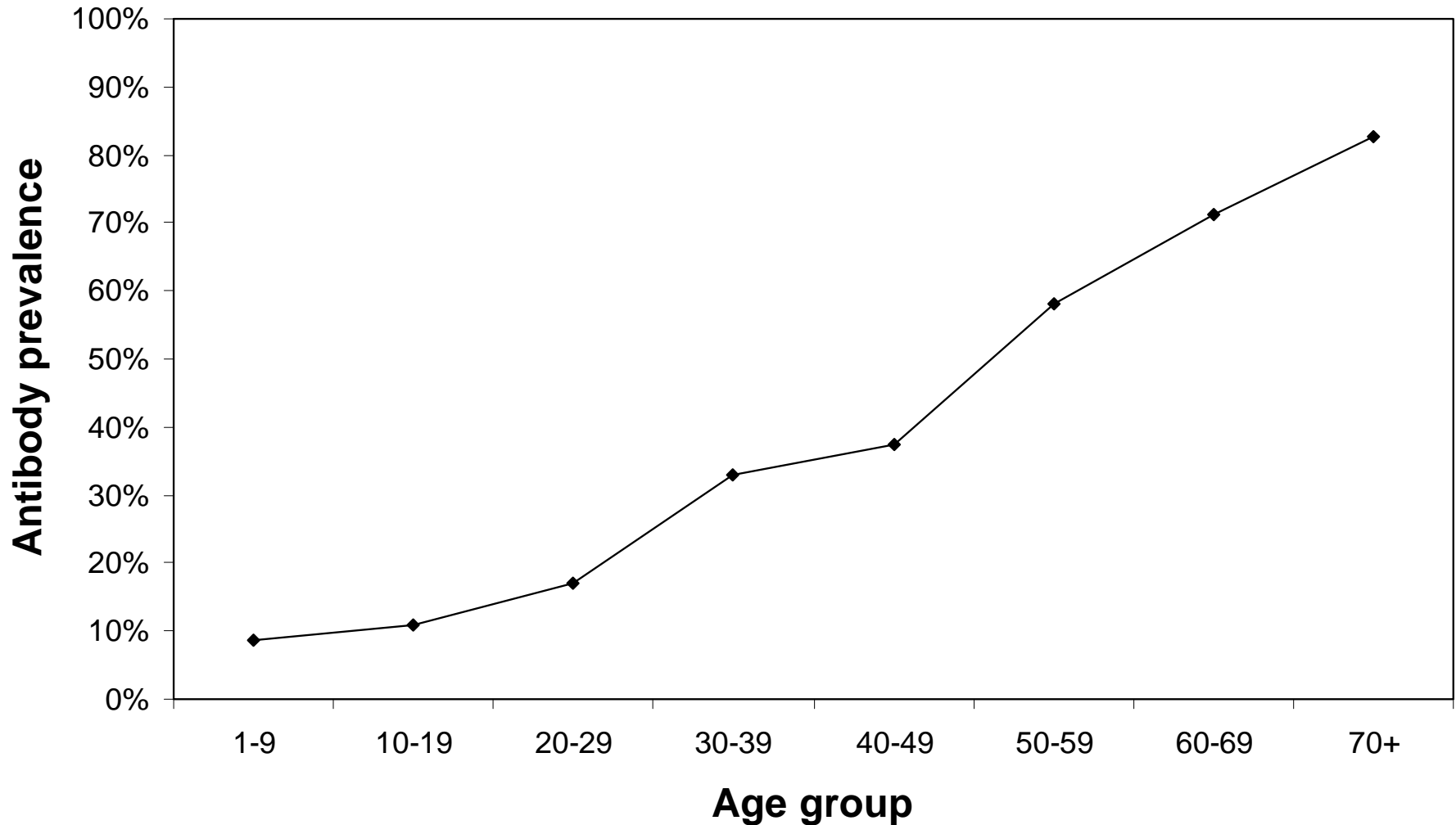


Laboratory reports Scotland 1988-2004



Prevalence of Antibody to Hepatitis A in E&W 1996

Morris et al Epidemiol & Infect 2002;128:457-63

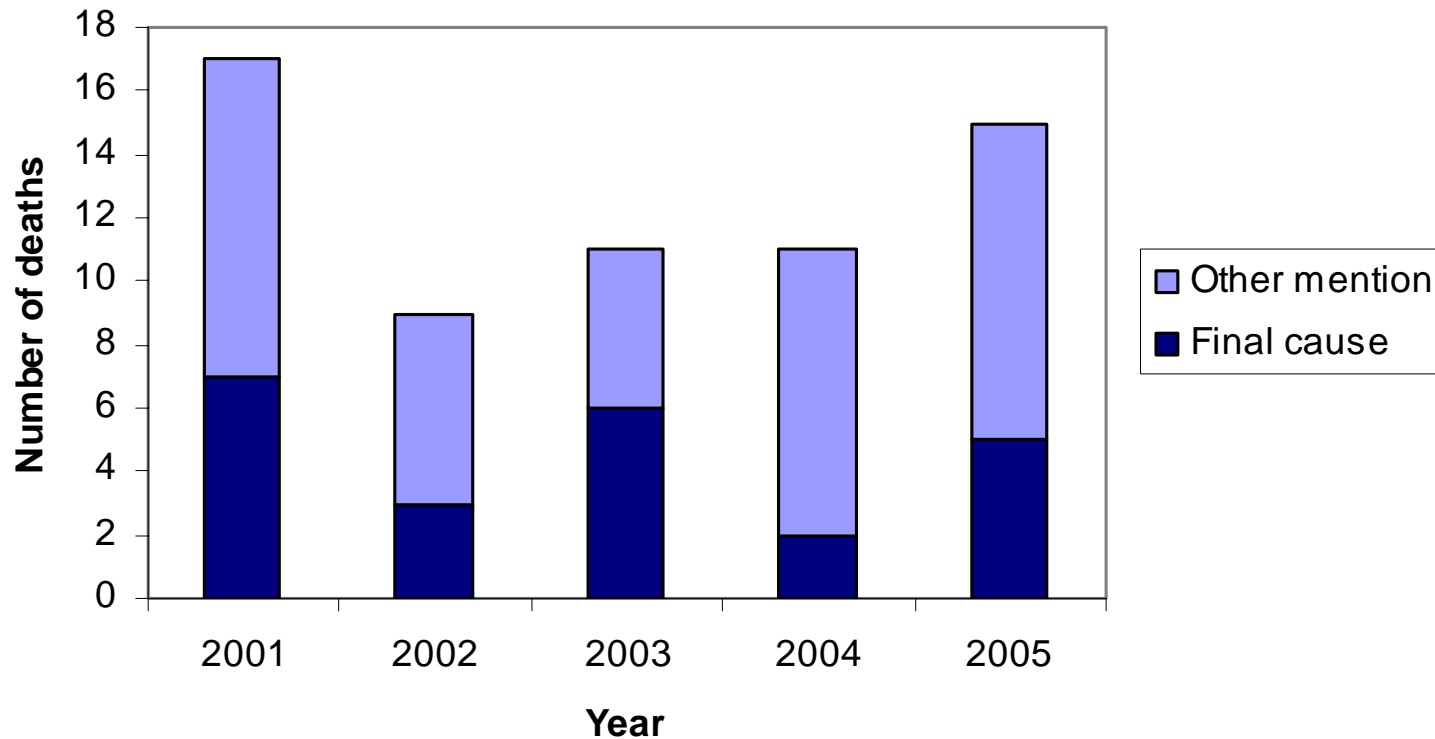


Deaths in England, any mention of hepatitis A, 2001 – October 2005



Age	Deaths
<5	1
15-34	3
35-54	13
55-74	23
>74	23
Total	63

Deaths from hepatitis A in England 2001-2005*



* *Data in 2005 to October only*

Incomplete information



- Quality of laboratory surveillance poor and deteriorating Travel history, injecting drug use, sexual or foodborne exposure, ethnic group should be reported
- Less than 5% reports have information
- Travel history has fallen from 80% in 1990 to 3% in 2004

Evaluation of surveillance 2004/5



- Patient postcode – not available
- Ethnicity – virtually never
- Information is collected at local level, not integrated into national reporting
- Poor reporting of outbreaks
- Genotyping – tried but not evaluated

Outbreaks

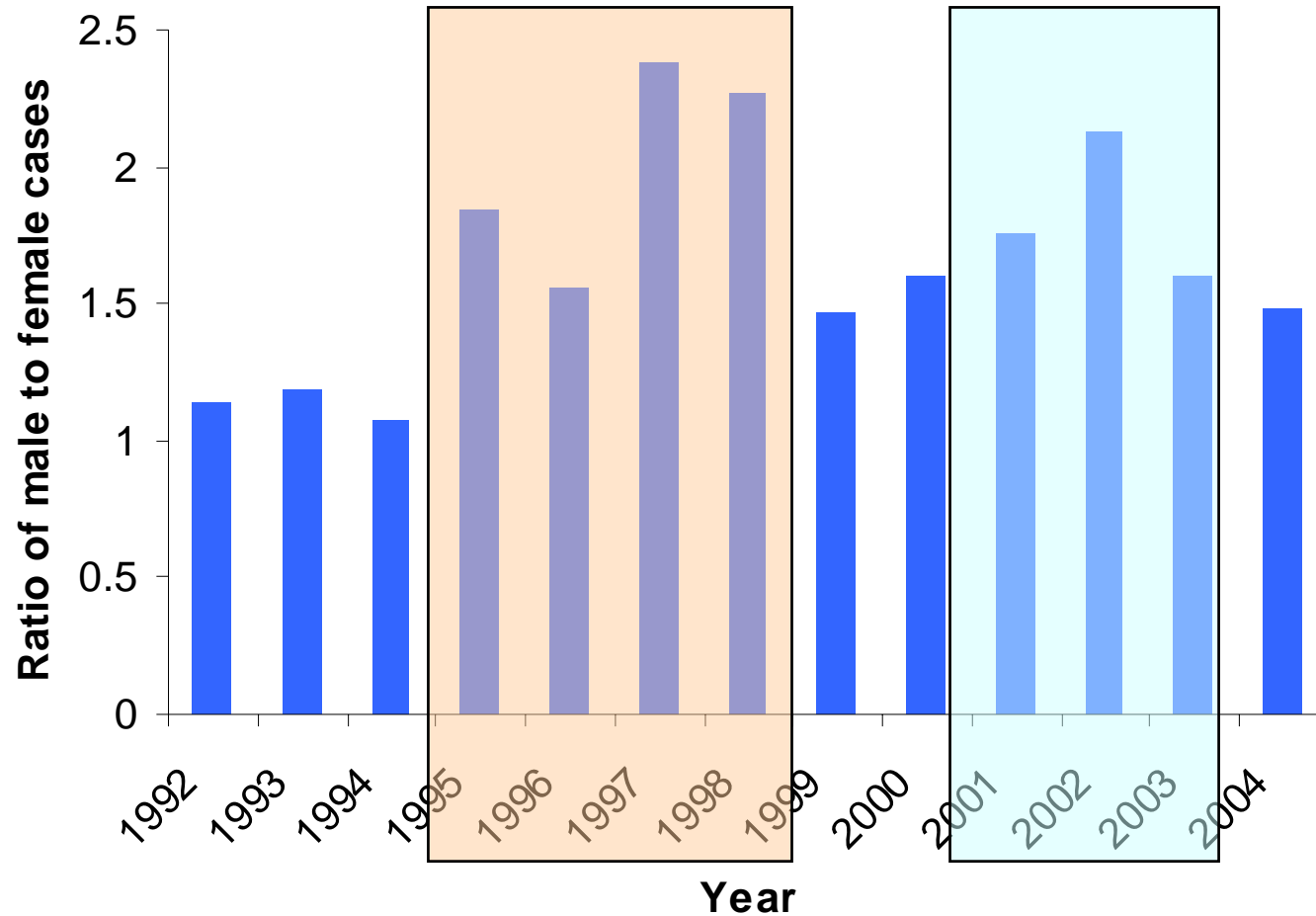


- Outbreaks in MSM in mid to late 1990s and in 2004 in London (Walsh B et al Genitourinary Medicine 1996;72:449-50). Rate in London in 1995 estimated 94/100,000
- Outbreaks in IDUs in Scotland in 2001-2 linked to an outbreak in Grampian
- Survey in 2002 of public health departments found 20 outbreaks occurred in England and Scotland since 1999
- In 2004 three outbreaks reported to HPA incident database: kebab shop, primary school and MSM

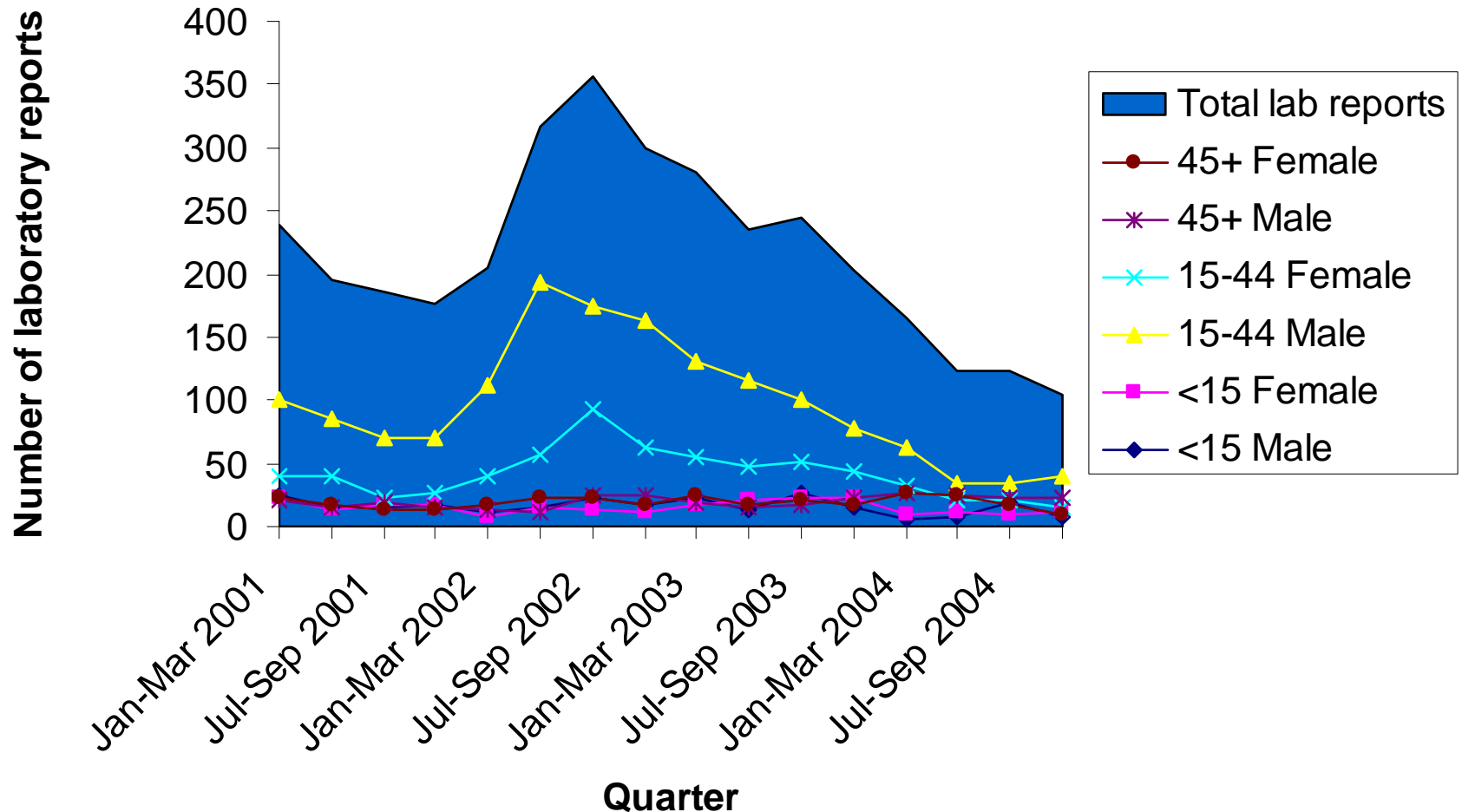


Risk groups

Male: female ratio of cases



Laboratory reports of hepatitis A England & Wales by age and sex, Jan 2001 - Dec 2004



Rates of hepatitis A infection per 100,000 population in England and Wales, 2002

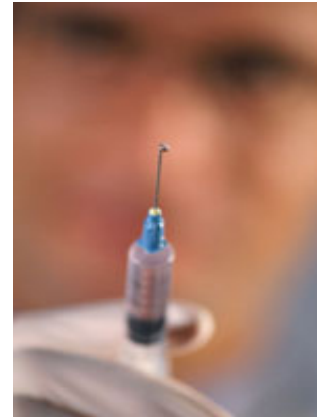


Region	Rate per 100,000	Rate in children <15y
YORKSHIRE & HUMBER	7.4	1.5
SOUTH WEST	5.9	0.9
WEST MIDLANDS	4.2	1.3
EAST MIDLANDS	2.2	0.5
NORTH WEST	1.7	0.4
EASTERN	0.9	0.3
SOUTH EAST	0.7	0.2
WALES	0.6	0.1
NORTH EAST	0.5	0.2
LONDON	0.4	0.1

Control measures



- Hygiene
- Human Normal Immunoglobulin (HNIG)
- Vaccine available since 1992



Guidelines



- Department of Health and Joint Committee on Vaccination and Immunisation's Immunisation against infectious diseases ("Green Book")
- PHLS Guidelines: Crowcroft et al Commun Dis Public Health 2001;4:213-27

Guidelines for the control of hepatitis A virus infection

NS Crowcroft, B Walsh, KL Davison, U Gungabissoon on behalf of PHLS Advisory Committee on Vaccination and Immunisation

Summary: *The PHLS Advisory Committee on Vaccination and Immunisation, following a review of the evidence on control measures for preventing hepatitis A virus (HAV) infection and widespread consultation, has prepared the following guidelines. They include a description of the current epidemiology of HAV infection in England and Wales, where most individuals are now susceptible to HAV. HAV infection is uncommon, with around 1000 infections notified per year in England and Wales. Clusters occur in families and in settings where potential for faecal/oral spread is high, e.g. day care centres, nurseries, primary schools. Larger outbreaks have been recorded in men who have sex with men and injecting drug users. Personal hygiene remains the cornerstone of measures for preventing HAV infection and its spread. Those with*

Key words:
hepatitis A virus (HAV)
hepatitis A vaccine
human normal immunoglobulin (HNIG)
outbreak
secondary cases
control of infection
guidelines
prevention

guidelines

Settings



- Contacts of cases - household contacts, sexual contacts
- Outbreaks
 - Institutional (“well defined”)
 - Community-wide (“poorly defined”)
- High risk groups
 - Occupational - laboratory staff
 - IDU
 - Homeless
 - Men who have sex with men
 - Chronic liver disease
 - Haemophiliacs
 - Travellers

Policy I



- Vaccination to be used in preference to HNIG for:
 - Travellers
 - Control of outbreaks
 - Protection of close contacts of cases provided they can be vaccinated within one week of onset in the index case (*“onset”=jaundice in most cases*)

Policy II



- Vaccination recommended for high risk groups
 - Injecting drug users, gay men, staff working with high risk groups such as special needs/hostels
- HNIG to be used for:
 - Protection of close contacts when the onset date in index case is more than one week ago (and less than two weeks)
 - Additional protection of vulnerable groups (with vaccine)

Other guidance - Schools and nurseries



OUR HEALTHIER NATION

GUIDANCE on infection control in schools and nurseries

CHILDREN WHO ARE UNWELL WITH AN INFECTIOUS DISEASE SHOULD NOT BE AT SCHOOL OR NURSERY.

Children who have had infectious diseases should not be at school or nursery for a set period to act as a guide to exposure. This should only be undertaken by an appropriately qualified health professional. It is important to ensure that the management of a particular illness, which should be sought from one of the contacts listed below.

TO MINIMISE THE RISK OF TRANSMISSION OF INFECTION TO OTHER CHILDREN AND STAFF

RASHES AND SKIN	Recommendations to be followed by schools/nurseries	COMMENTS
Scarlet fever	None	Transmission is by direct contact with infected children (PHN/STREP THROAT AND SCARLET FEVER) AND DROUGHT VA (SCARLET FEVER)
Chickenpox	For the age five year old cohort	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Cellulitis (impetigo)	None	The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Conjunctivitis (pink eye)	1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Hand, foot and mouth disease	None	Usually self-limiting and spreading from contact
Herpes	1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Herpes zoster (shingles)	None	Not highly infectious
Impetigo (flesh)	None	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Measles	None	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Scarlet fever	1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Strep throat	1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
Wheezing cough	None	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)

DARRHOEA AND VOMITING ILLNESS

Recommendations to be followed by schools/nurseries	COMMENTS
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RESPIRATORY

Recommendations to be followed by schools/nurseries	COMMENTS
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OTHERS

Recommendations to be followed by schools/nurseries	COMMENTS
1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)
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1-2 days from onset of rash	Highly infectious and can occur in all ages at the outbreak starting in 2007. The risk was eliminated by the introduction of a vaccine for children aged 12 months to 16 years (PHN/STREP THROAT AND SCARLET FEVER)

HIV/AIDS

1-2 days from onset of rash

HEPATITIS B AND C

1-2 days from onset of rash

OUTBREAKS OF INFECTION

A disease is an outbreak if it affects more than one child in a school or nursery. An outbreak of infection is considered to have occurred if there is a significant increase in the number of cases of a disease over a period of time.

IMMUNISATIONS

Children should be immunised against a range of infectious diseases. The immunisation schedule for children is set out in the National Child Immunisation Schedule (NCIS).

HANDS - WASHING AND GOOD HYGIENE PRACTICES

Children should be encouraged to wash their hands frequently and thoroughly with soap and water. This is particularly important when they are in school or nursery.

PRECAUTIONS FOR CHILDREN WITH INFECTIOUS DISEASES

Children who are unwell with an infectious disease should not be at school or nursery. This is particularly important for children who are contagious.

VULNERABLE CHILDREN

Some children are more vulnerable to infectious diseases than others. These children should be given extra protection and care in school or nursery.

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- There is no justification for exclusion of well older children with good hygiene who will have been much more infectious prior to the diagnosis
- Exclusion is justified for five days from the onset of jaundice or stools going pale for the under fives or where hygiene is poor

PREVENTING PERSON TO PERSON SPREAD FOLLOWING GASTROINTESTINAL INFECTIONS

A guide for public health physicians and
environmental health officers



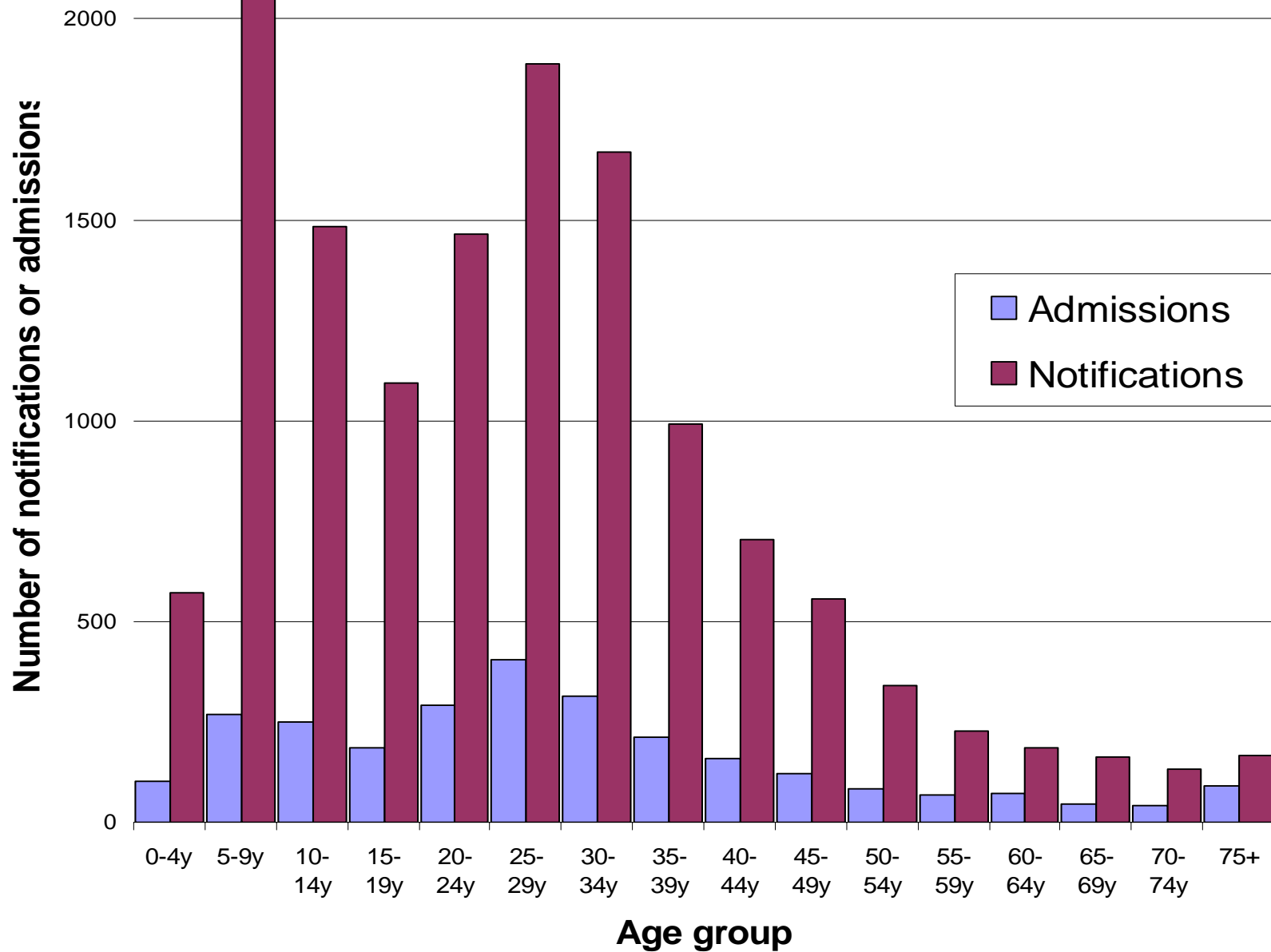
- **Control of human source**
 - Statutorily notifiable as viral hepatitis
- **Cases**
 - Enteric precautions
- **Contacts**
 - Handwashing by children must be supervised in nurseries and infant schools. Authorities must satisfy themselves that hygiene and toilet facilities are adequate

Exclusions



- All cases including those in risk groups A to D (that pose an increased risk of spreading infection) should be excluded for 7 days after onset of jaundice and/or other symptoms
- Microbiological clearance
 - None required

Number of notifications and admissions for Hepatitis A by age group 1993 - 1998 in England and Wales



Policy for children in contact with a case



- Recommend same policy for all children 5 years and older
 - Deaths are concentrated in older age groups but not exclusively – fulminant hepatic failure occurs in childhood
 - 5-9 years hospitalisation pattern similar to 10-14 years
- Children less than 5 years old – discuss with parents
 - A significant number of hospitalisations
 - Consider the protection of others

Vaccinating IDUs (with HBV programme)



- Prison vaccination campaigns have been successful (Gilbert R et al CDPH 2004; 7:289-293)
- Combined HAV/HBV vaccine is equivalent protection to single HAV vaccine **only** if all doses given
- Single HAV has better seroconversion rate than single HAV/HBV BUT may have worse compliance (two injections)



From policy to reality

Vaccine or HNIG for post-exposure prophylaxis?



- Use of vaccine based on one study (Sagliocca et al 1999).
- HNIG and vaccine never been compared
- Studies of efficacy of vaccine and HNIG are heterogeneous
- Recommendations for use of HNIG have not changed in US, Canada
- BUT public health practice HAS changed in UK

Efficacy



- HNIG 47-95% depending on setting etc
 - Various studies, some quite old
- Vaccine efficacy pre-exposure 95% (81-99%)
 - 4 studies
- Vaccine efficacy post-exposure 82% (23-96%)
 - 1 study (Sagliocca et al)

Conclusions



- Incidence is at historically low levels
- Surveillance is incomplete
- Utility of genotyping needs evaluating
- Highest risk groups IDUs, MSM, South Asians, travellers
- National control policies are based on hygiene, HNIG and vaccine
- Local practice varies

Acknowledgements



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