Viral Hepatitis in Ireland, 2005

Key Points

- **Hepatitis A incidence remained low, with 56 cases notified in 2005**
- **The number of hepatitis B notifications continued to increase with 905 cases reported in 2005, compared to 724 cases in 2004**
- **Where acute/chronic hepatitis B status was known, 90.5% (n=705) of cases were reported as chronic and 9.5% (n=74) were reported as acute**
- **Increases were also seen in hepatitis C notifications, with 1,439 cases reported, compared to 1,136 in 2004. The majority of cases occurred in young adults**
- **Baseline data collection for the national database for people infected with hepatitis C though administration of blood and blood products has been completed. The first annual report will be produced in early 2007**

Viral Hepatitis - Type A

Introduction

Hepatitis A is an acute, usually self-limiting disease of the liver caused by the hepatitis A virus (HAV). It is transmitted by person-to-person contact, primarily via the faecal-oral route and is associated with poor hygiene and sanitation and water that is contaminated with human faecal matter.[1]

In developed countries, hepatitis A is most commonly seen among travellers to endemic countries, injecting drug users (IDU), men who have sex with men (MSM) and household or sexual contacts of known cases. Sporadic food and waterborne outbreaks and outbreaks in crèches also occur. The median incubation period for hepatitis A is 30 days and infection can usually be transmitted from one to three weeks prior to onset of illness to approximately one week after the appearance of jaundice. Prolonged viral excretion, for up to six months, can occasionally occur. Clinical severity tends to increase with age and adults can experience severe illness lasting several months. Symptoms include sudden onset of fever, fatigue, loss of appetite, nausea and abdominal pain. Jaundice usually occurs within a few days of onset of symptoms.[1,2]

A safe and effective vaccine is available for hepatitis A. In Ireland, vaccination is recommended for individuals in high-risk groups such as travellers to high endemicity countries, patients with chronic liver disease, individuals at occupational risk, close contacts of infected persons, individuals with haemophilia and recipients of plasma-derived clotting factors.[3]

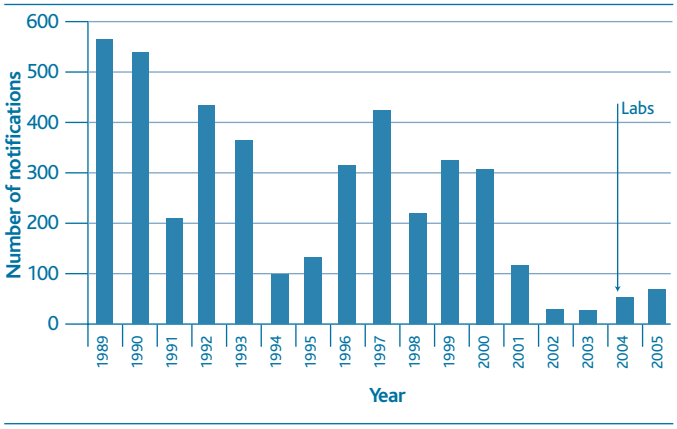

Figure 1. Number of cases of hepatitis A notified, 1989-2005

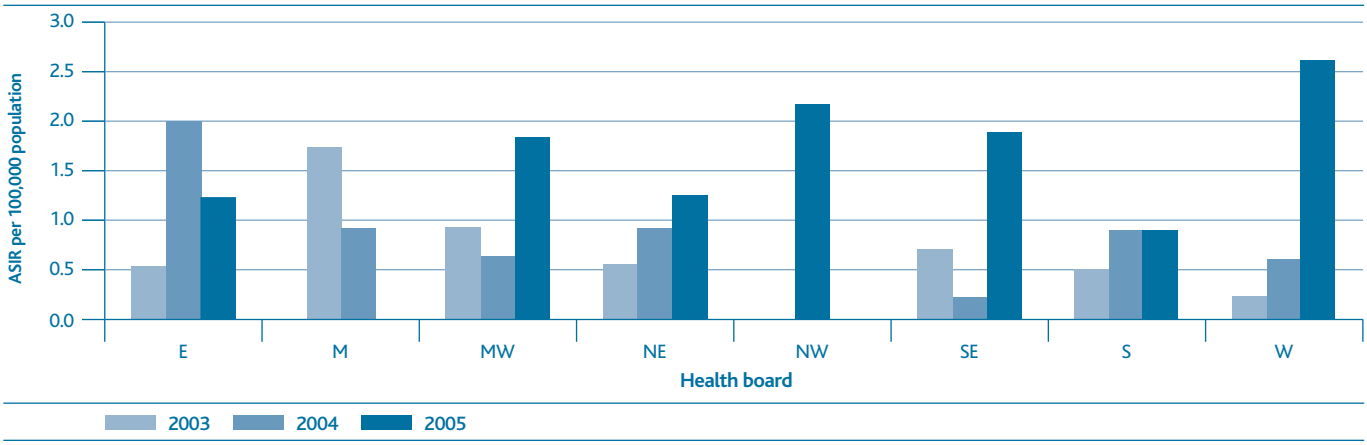

Figure 2. Age-standardised incidence rates of hepatitis A per 100,000 population by HSE area, 2003-2005

Materials and Methods

Hepatitis A is a notifiable disease under the Infectious Diseases Regulations 1981. Aggregate data on notifications are available from 1982 and disaggregate data are available since mid-2000. An amendment to the regulations implemented on 1st January 2004 (S.I. 707 of 2003) introduced case definitions and mandatory laboratory reporting.[4]

Results

Hepatitis A incidence remained relatively low in 2005, with 56 cases notified to HPSC. This corresponds to an age-standardised incidence rate (ASIR) of 1.4/100,000 population and represents an increase of 19% compared to the number of notifications received in 2004 (n=47) (figure 1). Forty-eight cases were reported as confirmed, six were reported as possible and the case classification was not reported for two cases. The highest ASIRs were in the HSE-W (2.6/100,000 population, n=10) and HSE-NW (2.2/100,000 population, n=5) (figure 2). However, a large proportion (70%) of the HSE-W cases represented late notifications and had onset dates in 2004. Fifty-seven percent of cases notified in 2005 were female (n=32). Young adults aged between 25 and 44 years (n=25) and adults over the age of 65 years (n=12) were most affected. (figure 3). Four cases had travelled outside Ireland within the incubation period of the disease. No hepatitis A outbreaks were reported to the HPSC in 2005.

Discussion

There is currently no enhanced surveillance system for hepatitis A in Ireland, but risk factor information is collected in the context of outbreaks. In 2005, four cases were thought to be travel-associated. Little or no information on the source of infection was available for the remainder of the cases.

The age distribution of cases notified in 2005 is different to that in 2004, when the highest rates were in young children, followed by young adults. In 2005, high rates were seen in people aged over 65 years in addition to young adults. High rates in young adults are expected in countries with low endemicity as many people are not exposed to hepatitis A in childhood and hence are not immune. Young adults are more likely to travel outside of Ireland and eat in restaurants both on holidays and at home. The cases in the over 65s were not clustered in time or place and none of them were reported as being part of an outbreak.

Outside of Ireland, an outbreak among MSM was reported in Dorset, England and a foodborne outbreak was reported among Danish travellers returning from a holiday at a Turkish resort.[5,6]

Viral Hepatitis – Type B

Introduction

Hepatitis B virus is transmitted by contact with blood or body fluids of an infected person. The main routes of transmission worldwide are perinatal, child-child transmission, unsafe injections and sexual contact. Although only a small proportion of those infected experience symptoms in the acute phase, there is a high probability of developing chronic infection if the infection is acquired in infancy or early childhood. Approximately 90% of infants infected at birth, 20-50% of children infected between one and five years of age

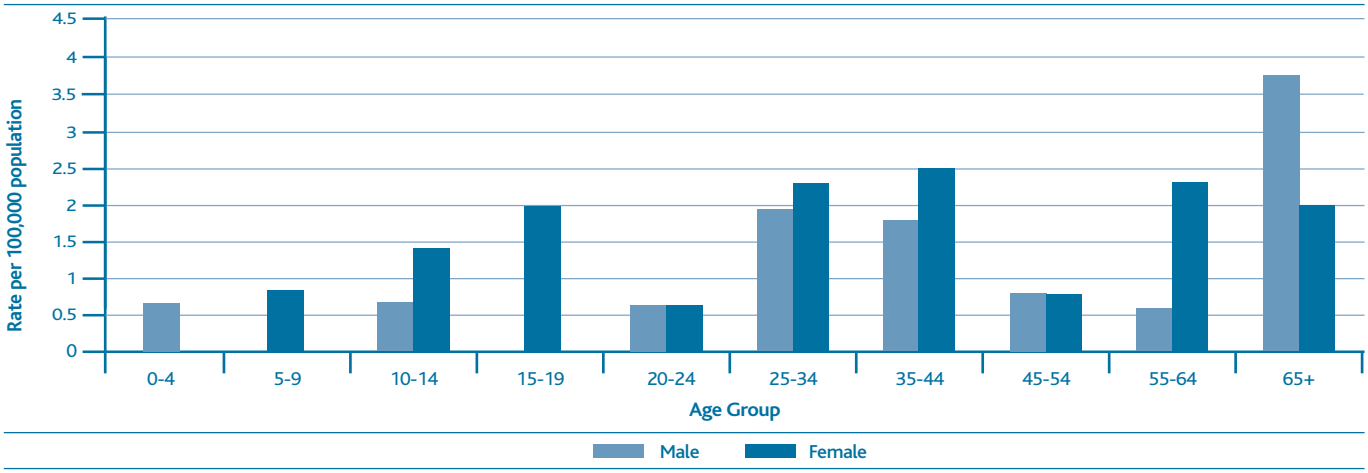

Figure 3: Age- and sex-specific incidence rates of hepatitis A per 100,000 population, 2005

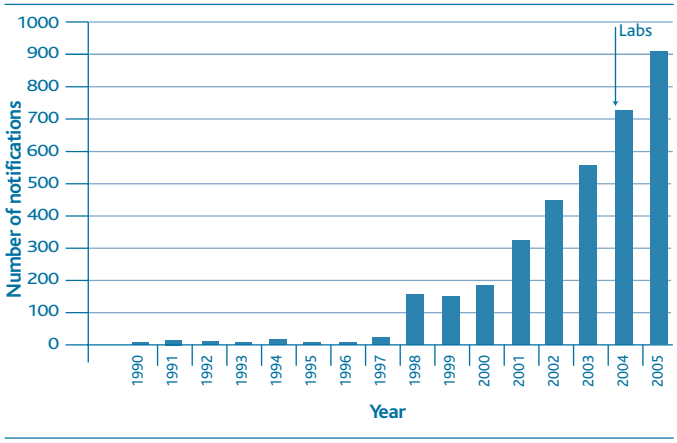

Figure 4. Number of cases of hepatitis B notified, 1990-2005

and 1-10% of those infected as older children or adults develop chronic hepatitis B infections.[1, 7]

It is estimated that more than 350 million people worldwide are chronically infected. In Sub-Saharan Africa, South-East Asia and parts of China over 8% of the population have chronic hepatitis B infections, most of which were contracted at birth or through child-to-child contact in household settings. Chronic infection is associated with an increased risk of developing liver cirrhosis and/or hepatocellular carcinoma and an estimated 15-25% of chronically infected people will die prematurely from these conditions.[1,7] The prevalence of hepatitis B virus infection in Ireland is low (<1%)[8], however infection is more prevalent in certain high-risk populations such as MSM, IDU[9,10], prisoners[11] and immigrants from intermediate- or high-endemicity countries.

Hepatitis B is a vaccine-preventable disease and in 1992 the WHO recommended that hepatitis B vaccine be included in routine immunisation programmes in all countries by 1997.[7] The current vaccination policy in Ireland is based on targeting identifiable risk groups for vaccination. These include babies born to mothers with acute or chronic hepatitis B infections, patients with chronic renal failure or haemophilia, individuals at occupational risk, close contacts of infected persons, IDU, prisoners, homeless people, heterosexuals with multiple partners and MSM.[3]

Materials and Methods

Hepatitis B is a notifiable disease under the Infectious Diseases Regulations 1981. An amendment to the regulations implemented on 1st January 2004 (S.I. 707 of 2003) introduced case definitions and mandatory laboratory reporting, and differentiated between notifications of acute hepatitis B and chronic hepatitis B for the first time.[4] Departments of Public Health, in conjunction with HPSC, introduced enhanced surveillance of acute cases of hepatitis B from January 2005. Some enhanced forms are also received for chronic cases.

Results

The increase in hepatitis B notifications seen in recent years continued in 2005, with 905 cases notified. This represents a 25% increase compared to 2004 (figure 4). The national age-standardised notification rate was 23/100,000 population, with the highest rates reported by the HSE-E (32.6/100,000 population, n=491) and the HSE-W (25.7/100,000 population, n=91) (figure 5). Case classification was reported for 821 cases, with 95% (n=777) of cases reported as confirmed and 5% (n=44) reported as probable.
Eighty-six percent of notifications (n=779) contained information on acute/chronic status. Where status was known, 90.5% of cases were reported as chronic (n=705) and 9.5% were reported as acute (n=74).

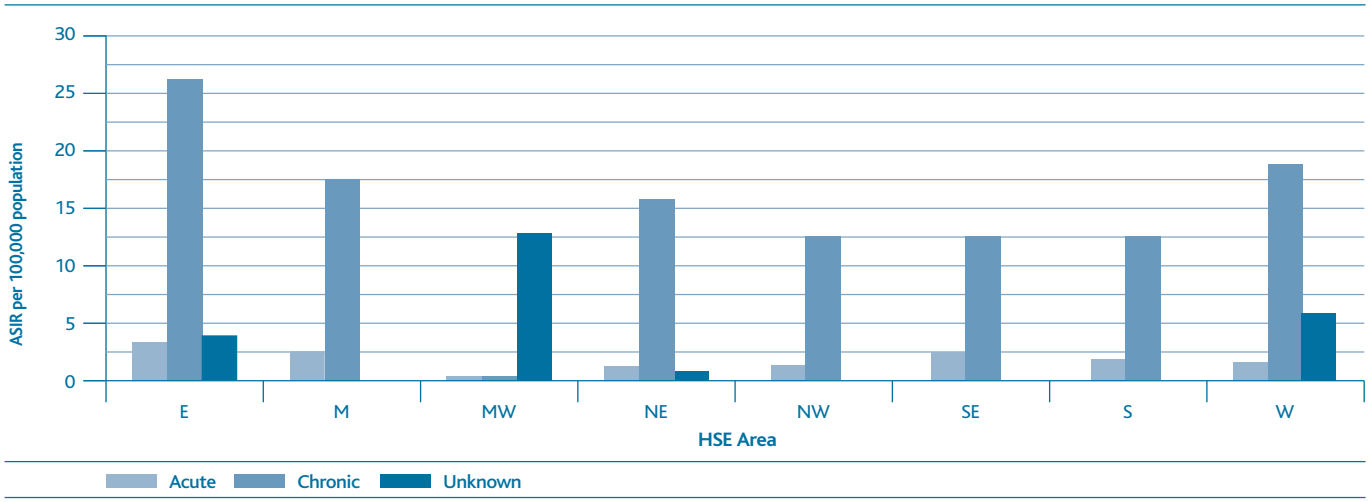

Figure 5. Age-standardised incidence rates of hepatitis B per 100,000 population by HSE area, 2005

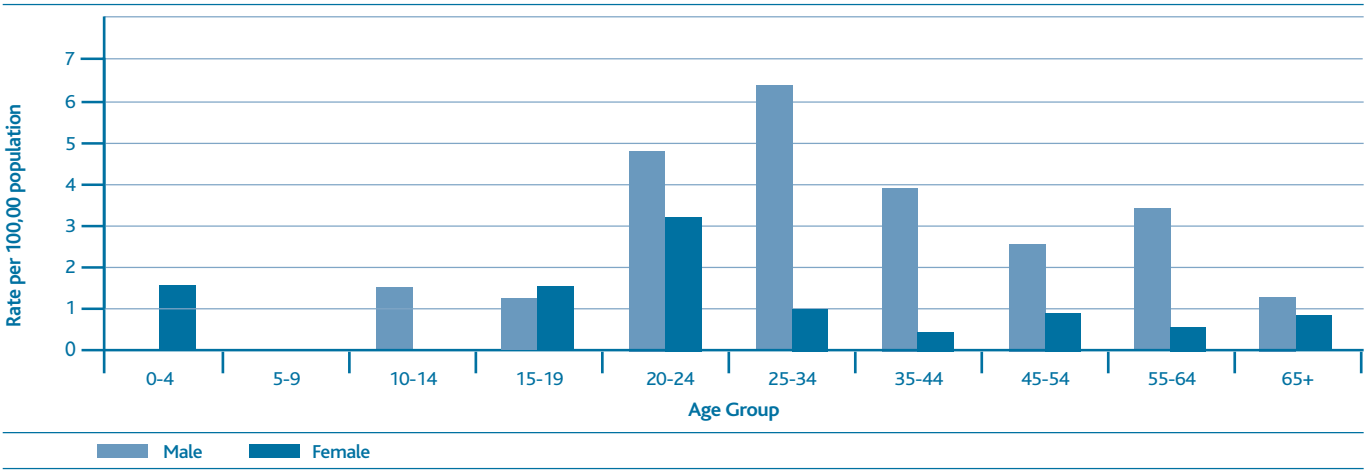

Figure 6a. Age-and sex-specific incidence rates of acute hepatitis B per 100,000 population, 2005

The age and sex breakdown for acute and chronic cases differed substantially and is presented separately in figures 6a and 6b. Seventy-six percent of acute cases notified in 2005 were male (n=56) and 24% (n=18) were female. Over 60% (63.5%, n=47) were aged between 20 and 44 years. However, adults of all ages were affected and 26% (n=19) of acute hepatitis B cases were aged 45 years or older. There was also a higher proportion of male (53%, n=372) chronic cases than female (41%, n=292), but the difference was not as marked (sex was unknown for 6%). Young adults were predominantly affected, with 82% (n=578) of chronic cases aged between 20 and 44 years. The age distribution for male chronic cases was slightly older than that for females.

Risk factor information and region of birth also differed between acute and chronic cases. Enhanced surveillance forms were received for 49 of the 74 acute cases and no risk factor was identified for 13 (26.5%) of these. The main risk factors identified for acute hepatitis B related to sexual exposure. Where enhanced data were received, 6.1% (n=3) of cases were associated with sexual contact with a known case of hepatitis B, 24.5% (n=12) of cases were MSM and a further 20% (n=10) were associated with possible sexual exposure (sexual orientation not identified). The cases with known or suspected sexual exposure ranged in age from 19 to 70 years and were mostly males (80%). Where reason for testing was identified (n=41), 73% (n=30) of acute cases were tested because they were symptomatic and 15% (n=6) were tested because they were MSM or went for STI screening. Where country of birth was known (59%, n=44), 75% (n=33) were born in Ireland.

Limited enhanced data and risk factor information were available for chronic cases, but where information was available, 139 out of 183 cases (76%) were identified as either asylum seekers or as having been born in a country where hepatitis B is endemic (hepatitis B surface antigen prevalence of 2% or higher). Where region of birth was identified (n=144), 52.1% (n=75) of chronic cases were born in Sub-Saharan Africa, 13.2% (n=19) were born in East Asia/The Pacific, 9.7% (n=14) were born in Central Europe and 7.6% (n=11) were born in Western Europe (10 in Ireland). The most common countries of birth were Nigeria (20.8%), China (11.8%) and Somalia (10.4%). Where the reason for testing was reported (n=116), 66% (n=76) of chronic cases were identified through asylum seeker screening and 9% (n=10) were identified through antenatal screening.

Discussion

Statutory notifications of hepatitis B have increased every year since 1999 and the epidemiology of hepatitis B in Ireland is changing. This is due in part to the changes in immigration patterns to Ireland associated with economic development. The number of asylum seeker applications increased from 1,179 in 1996 to a peak of 11,634 in 2002, and decreased to

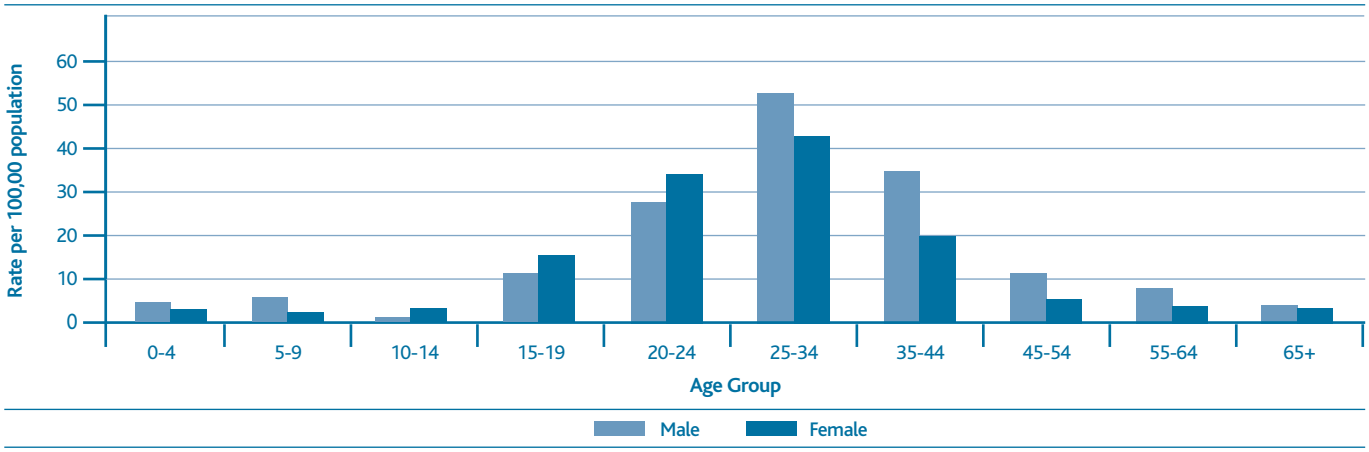

Figure 6b. Age- and sex-specific incidence rates of chronic hepatitis B per 100,000 population, 2005

4,323 in 2005.[12] The most common nationalities of asylum seekers in 2005 were Nigerian (34%), Somalian (9%) and Romanian (9%). All of these countries have either intermediate or high hepatitis B surface antigen prevalence. The number of work permits issued by the Department of Enterprise, Trade and Employment has also increased substantially in recent years, with 4,328 new permits issued in 1999 and 29,594 in 2002.[13] The number has decreased since then and 7,354 new permits were issued in 2005. The most common countries of origin in 2005 were the Philippines, India and South Africa, all of which have either intermediate or high hepatitis B endemicity. Limited information is available on the actual risk factors for cases with chronic infections but it is likely that a large proportion of infections were acquired at birth or in early childhood where individuals were born in countries with endemic hepatitis B.

The number of acute hepatitis B notifications also increased in 2005, with most cases occurring in Irish nationals. Sexual acquisition remained the dominant likely source of infection. The current immunisation policy in Ireland is based on targeting identifiable risk groups for vaccination. MSM and individuals who change sexual partner frequently are included as risk groups in the immunisation guidelines. However, there may be problems identifying people at risk. Most sexually acquired acute cases were tested for hepatitis B because they were symptomatic. Many people at risk may not attend STI clinics or discuss their sexual behaviour with their GPs and may never have been offered hepatitis B vaccination. The number of sexually-acquired acute cases in people aged over 35 years increased by 70% in 2005 compared to 2004 and people who fall outside of the expected demographic for sexually transmitted infections may be less likely to be offered vaccination.

A proportion of the increases seen in recent years are likely to be attributable to improvements in case identification and notification with the introduction of mandatory laboratory reporting and screening programmes such as voluntary health screening for asylum seekers and antenatal screening in many maternity hospitals.

Hepatitis B data have improved significantly with the introduction of case definitions, differentiation between acute and chronic hepatitis B and enhanced surveillance for hepatitis B. Further improvements are anticipated with the planned addition of the enhanced surveillance questions to CIDR by the end of 2006.

Viral Hepatitis-Type C

Introduction

Hepatitis C virus (HCV) was first identified in 1989. It was previously known as non-A non-B hepatitis and was known to be the cause of most transfusion-associated hepatitis. The WHO estimates that about 170 million people worldwide are currently infected with HCV. [1,14]

HCV is transmitted primarily via exposure to contaminated blood or blood products and the main causes of infection are sharing infected needles or other drug paraphernalia and the receipt of unscreened blood or blood products. Occupational

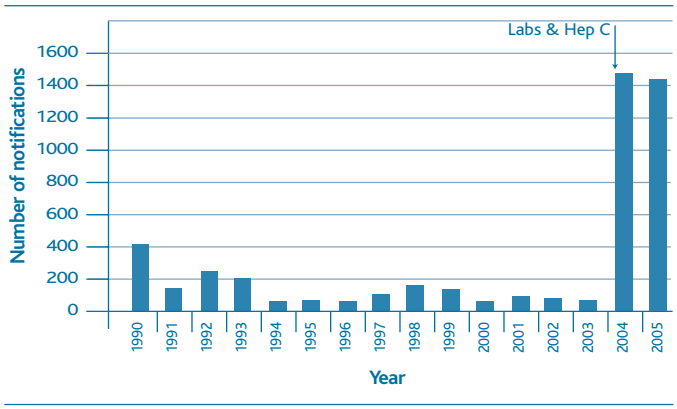

Figure 7. Number of notifications of hepatitis (type unspecified) 1990-2003, and number of notifications of hepatitis C in 2004 & 2005

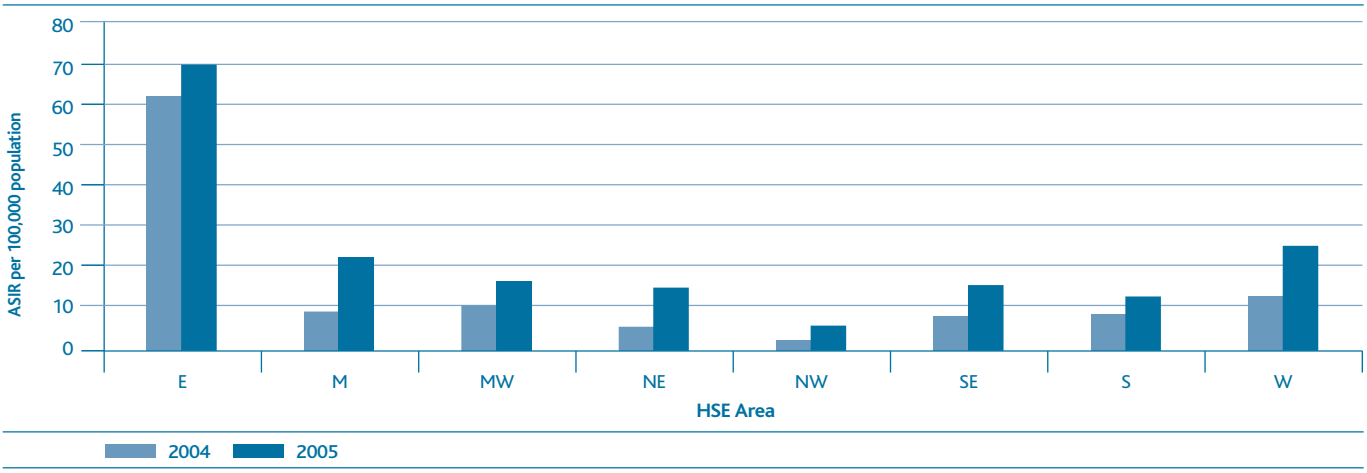

Figure 8. Age-standardised incidence rates of hepatitis C per 100,000 population by HSE area, 2004 & 2005

exposure to infected blood, mother-to-baby and sexual transmission also occur but are less common. In developed countries, it is estimated that 90% of people with chronic hepatitis C are current or former injecting drug users or have received unscreened blood or blood products.[1,14]

Over 90% of cases are asymptomatic in the acute phase of the disease but between 50 and 80% progress to chronic infection. Of those chronically infected about 10-20% develop cirrhosis and between 1 and 5% develop hepatocellular carcinoma over a period of 20-30 years. There is currently no vaccine available for hepatitis C. [1,14]

Materials and Methods

Hepatitis C became a notifiable disease under the Infectious Diseases Amendment Regulations introduced on the 1st January 2004 (S.I. 707 of 2003).[4] Previously hepatitis C could be notified under the category "viral hepatitis, type unspecified", but was not a notifiable disease in its own right. Since the HPSC started collecting disaggregate data in mid-2000, many of the notifications of viral hepatitis type unspecified have included information on the causative agent and most of these were hepatitis C.

Results

The number of cases of hepatitis C remained high in 2005 with 1,439 cases notified to the HPSC, compared to 1,136 in 2004 (figure 7). This corresponds to an ASIR of 36/100,000 population. Over 70% of all cases were reported by the HSE-E, giving an ASIR of 69/100,000 population (n=1063) (figure 8). Sixty-four percent (n=918) of cases were male and 35% (n=503) were female (sex was unknown for 1% (n=18)). Young adults of both sexes were most affected, with 80% (n=1,154) of cases aged between 20 and 44 years. The age breakdown of males and females was very similar (figure 9).

Discussion

Prior to 2004, there was very little routine information available to describe the epidemiology of hepatitis C in Ireland. The 2004 and 2005 data indicate that the incidence of hepatitis C is high and that the geographic distribution is skewed towards the HSE-E.

There is currently no enhanced surveillance system for hepatitis C. However, studies in Irish settings and anecdotal evidence indicate that new cases of hepatitis C are mainly occurring in injecting drug users and are strongly associated with sharing syringes or other drug paraphernalia.[9,10,11] A cross-sectional study of blood-borne infections in clients attending addiction treatment centres in the HSE-E found that 66% had antibodies to hepatitis C virus, and a national study of individuals entering prisons found that 72% of IDU had hepatitis C antibodies.[10,11] The skewed geographic distribution and the predominance of males and young adults of both sexes, in the notification data, are likely to be a reflection of this.

Additional information, particularly risk factor data, is essential for identifying populations at risk and for planning public health strategies for hepatitis C prevention and future

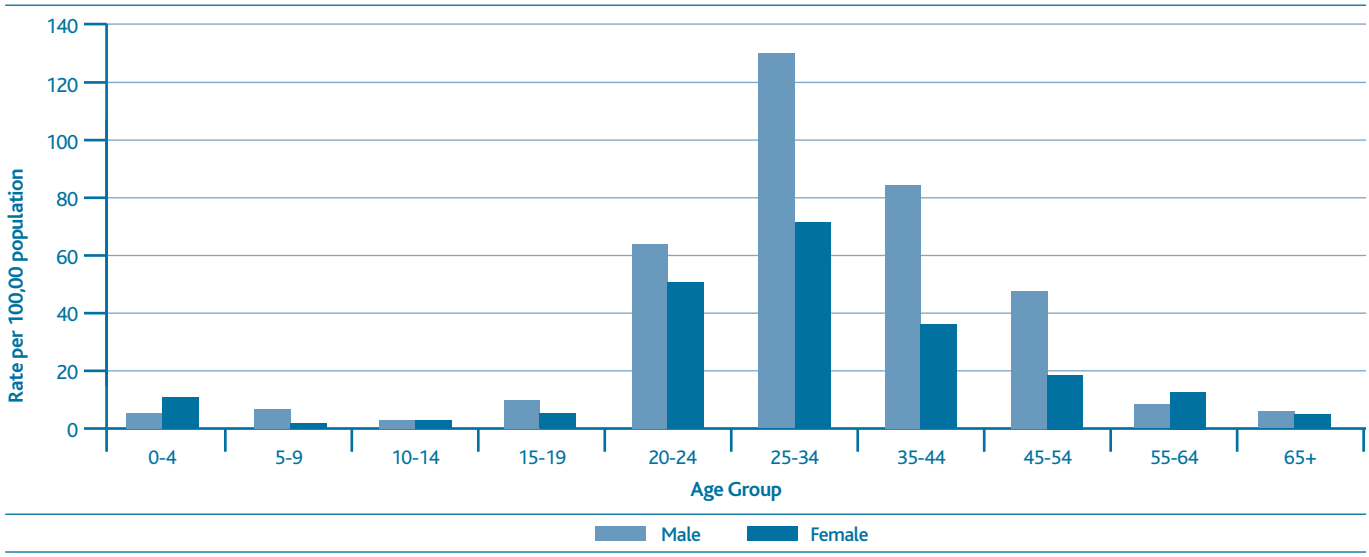

Figure 9. Age- and sex-specific incidence rates of hepatitis C per 100,000 population, 2005

health service provision. It is hoped that the proposed introduction of enhanced surveillance for hepatitis C, and the availability of this on CIDR, will result in improvements in the hepatitis C data.

National Hepatitis C Database

A national database of people infected with hepatitis C through the administration of blood or blood products has been set up by HPSC in association with the eight designated hepatology units. This project was recommended by the Consultative Council on Hepatitis C [15] and is supported financially by the Department of Health and Children. The objectives of the database are:

- To follow the natural history of infection in this group of people
- To evaluate the impact of various host factors on the progression of the disease
- To evaluate the outcomes of treatment
- To monitor the uptake of services
- To provide information for the planning and evaluation of health services
- To serve as a resource for future research into hepatitis C

Any person who has contracted hepatitis C infection through the administration of blood or blood products within the State is eligible to be included in the database. It is estimated that over 1,700 persons have been infected with hepatitis C in this way. These include women infected through anti-D immune globulin, persons with haemophilia, recipients of blood transfusion and persons who received treatment for renal disease.

Data collection commenced at the end of 2004 and is based on data contained in the medical records of patients who have attended any of the eight designated hepatology units. Baseline data collection has been completed and the first annual report will be published in early 2007. Follow-up information will be collected annually thereafter. Only patients who have given written consent are included in the database and the database does not contain names or addresses. Ethical approval for the database has been received from the ethics committees of the eight hospitals. Patient support groups are represented on the Steering Committee, which oversees the project. There will be an annual call for research based on the data contained in the database and this process will also be overseen by the Steering Committee.

Acknowledgments
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