Introduction
Hepatitis C Virus (HCV), a major public health threat, is endemic to most parts of the world. The World Health Organisation has estimated that the current prevalence of HCV infection is 2% representing 123 million cases worldwide.[1] Whilst the epidemiology of hepatitis A and B is well established, data about HCV are limited. Many aspects of this disease remain unclear, including its prevalence, natural course of infection and the socio−economic burden of infection worldwide. Risk factors strongly associated with HCV infection are intravenous drug use (IDU), receipt of infected blood products, use of inadequately sterilised medical equipment, high−risk sexual behaviours, body piercing and tattooing.[1,2] Perinatal transmission has been reported, but is not very efficient except in mothers with HIV co−infection.[3]

Of those exposed to HCV, it is estimated that the majority will become chronic carriers with an increased risk of developing cirrhosis and hepatocellular carcinoma. [2] In Europe it is estimated that 8.9 million people have been infected, with the majority of cases diagnosed in those with a history of IDU.

Blood donations were not routinely tested for HCV prior to 1991.The awareness of HCV infection in the Irish population was raised when women who received infected anti−D immunoglobulin after pregnancy in 1977 and 1991 were found through a lookback exercise to have been infected by HCV. A Tribunal of Inquiry was set up to investigate the practices and procedures that lead to anti−D immunoglobulin becoming infected with HCV . This tribunal reported in 1997 (The Finlay Report).[4] A subsequent investigation of haemophiliacs who became infected with HIV and HCV having received contaminated blood products was addressed by the Lindsay Report in 2002.[5]

Despite this raised awareness of HCV infection in the 1990s, it was only on January 1st 2004 following an Amendment to the Infectious Disease Regulations of 1981 that HCV became statutorily notifiable in its own right[6]. The Amendment established a revised list of notifiable diseases, and included for the first time HCV as a disease entity. HCV is now notifiable by laboratories or clinicians to the relevant Medical Officer for Health.

Prior to 2004, only hepatitis A and hepatitis B were notifiable as distinct types of hepatitis. A third category notifiable under the Infectious Diseases Regulations 1981 was â€œviral hepatitis unspecifiedâ€ . The vast majority of cases notified under this heading in recent years were thought to be due to infection with HCV.

Surveillance data for infectious diseases are collated nationally by the Health Protection Surveillance Centre (HPSC). The HPSC publishes quarterly and annual reports on HCV notifications which are available on their website www.hpsc.ie.

The prevalence of HCV infection in the general Irish population is unknown. Prevalence studies have been undertaken in selected study populations, i.e. blood donors[7], IDU[8−10] antenatal screening[11] and studies within the prison services[12,13]. These data on diverse populations show that the prevalence of HCV varies depending on the populations studied, ranging from 0.02% of new blood donors to 50−80% of IDUâ€™s.

We describe notifications for the Eastern Regional Health Authority (ERHA), comprising counties Dublin, Kildare and Wicklow for the period 2004 and 2005. On the 1st of January 2005 the Health Service Executive (HSE) was established to take over the management of the Irish Health Services and the ERHA was renamed the HSE−Eastern Region. We describe the epidemiology of HCV over this time period, have assigned risk status where possible and comment on difficulties with the notification process.

Methodology
All cases of notified infectious disease are entered on the general infectious disease database maintained in the Department of Public Health. Cases of HCV were abstracted by the authors

Where the notifying physician was identifiable (general practitioner or hospital consultant), contact was made by letter to gather enhanced data on risk factors. Only drug use was identified by this method. One of the authors(JB) manages the central treatment list which is a database of persons in receipt of methadone treatment for opiate use. It was possible to examine the methadone database to determine how many of the HCV notifications occurred in opiate users.

Results
A total of 2,014 cases of HCV were notified to the Department of Public Health, (2004, 941 cases, 2005 1,073 cases). There is no seasonal trend to HCV notifications. The mean number of notifications per month was 83 (Range 29−116) (Fig 1).

Fig 1 Number of HCV Cases by Month of Notification 2004 and 2005

There were a higher number of cases in males with 1,269 cases notified, compared to 714 cases in females.

Modal age band of notification was in the 25−29 year age group with 331 (16.4%) of male cases and 198 (9.8%) of female cases occurring in this age group (Fig 2). Thirty cases (1.5%)were notified in children under the age of 15 years (Fig 2).

Fig 2 Age and Gender distribution of HCV cases Notified 2004 and 2005

Table 1 outlines the age specific rates per 100,000 population, for cases notified in 2004 and 2005 combined.

Table 1 Age Specific rates (per 100,000) by sex for notified cases of HCV in ERHA 2004 and 2005

	Female		***Male***	
Age group	***Number of cases***	***Rate per 100,000***	***Number of cases***	***Rate per 100,000***
0−4	10	21.2	8	17.1
5−9	1	2.3	0	0
10−14	7	15.1	4	8.2
0−14	18	13.2	12	8.4
15−19	12	22.8	10	18.4
20−24	138	197.5	169	250.7
25−29	198	291.1	331	505.4
30−34	139	229.5	258	433.2
35−39	96	176.4	168	323.0
40−44	42	85.2	154	327.7
45−49	22	54.5	84	201.5
50−54	13	32.1	44	114.0
55−60	9	26.4	11	33.6
60−64	6	22.2	6	23.6
65−69	2	8.6	1	4.9
75+	6	12.3	7	21.8

Gathering information on risk factors was more problematic than descriptive epidemiology. By examining the methadone database it was possible to identify that 1247 (61.9%) patients had a history of opiate use. The source of notification for the remaining 767 (38.1%) patients is given in table 2. While it is possible to assume that drug users would be over represented in some of these services no definitive risk category can be assigned.

Table 2 Source of Notification of those with HCV infection where risk category is unknown

	Number	***% of Total Cases***
General Hospital	345	17.1
Antenatal	71	3.5
General Practitioner	67	3.3
Asylum Seeking Service	35	1.7
Women's Health	19	0.9
Prison	16	0.8
No clinician named on notification form	214	10.6
Total	767	

Two hundred and twenty one cases (10.9%) were notified on the basis of initial only– and in addition in 214 cases (10.6%) (Table 2) a notifying source (general practitioner or hospital) was not identifiable.

Discussion

Our paper highlights the importance of statutory notification. Prior to 2004 the main epidemiological information in this country came from a variety of cross sectional surveys carried out among drug users and prisoners and one incidence study carried out in drug users.[8,–13] Information was in the public domain as a result of Tribunals of Inquiry into the transmission of HCV through blood and blood products[4,5].

While we are now in a position to begin to construct a picture of HCV in Ireland challenges remain. Complete notification will help i.e. a patientâ€™s full name and an identifiable notifying clinician. Without this information it is difficult to assign risk category.

Enhanced surveillance offers one way of improving our knowledge of risk category. This will require notifying clinicians to make a judgement on how they believe their patient acquired their infection. If this is done our information will be of a higher quality. . There will still be questions that cannot be answered by a routine surveillance system. Planned epidemiological studies will be required to enable us to know the true extent and causes of HCV in Ireland. Given that so much controversy has surrounded the transmission of HCV in Ireland these studies should be funded. A start would be a national prevalence study, as was done for hepatitis B some years ago[14].

A start has been made in describing the epidemiology of HCV in a region of Ireland. Some improvements in the quality of notifications is required It will also be necessary to move to a higher level of epidemiological enquiry in order to understand better transmission patterns, so that service responses can be improved.

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