EDITORIAL: HEPATITIS C SURVEILLANCE

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Hepatitis C has emerged as an important public health issue in Australia, with the number of notifications to the National Notifiable Diseases Surveillance System steadily increasing over time. However, it is not known what proportion of these notifications are incident cases. The incidence of infection in Australia has, until now, only been estimated in particular high risk groups such as injecting drug users (IDUs), where Crofts *et al.* predicted between 8,000 and 10,000 incident cases among IDUs each year[1].

The surveillance system outlined by Andrews and colleagues in this issue of *CDI* is commendable in that it is the first of its kind specifically designed to address the incidence issue. They found an estimated hepatitis C incidence of 7.8 per 100,000 population, ranging from 1.0 per 100,000 in Tasmania to 15.6 per 100,000 in New South Wales. However, this study raises a number of important issues and questions, including the reasons for the apparent high incidence in New South Wales compared with the rest of Australia.

The first problem to emerge is the low sensitivity of the surveillance system. Surveillance for hepatitis C virus (HCV) infection (and for other chronic infections with a large proportion of asymptomatic cases) is limited because it cannot capture the many incident cases who feel essentially well and do not seek serial HCV testing. As the majority (75%) of new infections of HCV do not have an associated clinical illness, surveillance data may underestimate the incidence by three- to four-fold[2]. Secondly, the extent of compliance with NHMRC testing algorithms that require repeat testing of initial reactors is unknown across Australia. False positive hepatitis C antibody tests are common[3], especially in low risk groups where the positive predictive value of testing is low. If a substantial number of these tests were not confirmed, then the potential for incorrectly inferring a seroconversion is considerable. Thirdly, the lack of standardisation of the questionnaire among States and Territories could generate bias. Fourthly, the total laboratory reports of hepatitis C cases includes duplicates, as much as ten per cent of prevalent notifications.

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It is impossible from these data to determine the extent to which the true incidence in New South Wales is higher than the rest of the country. This can only be resolved when case definitions have been standardised, compliance with an agreed testing algorithm is evaluated, and the risk profiles of the populations tested (and so the tests' positive predictive values) are better understood.

So what does an incidence of 7.8 per 100,000 mean? If we assume that the number of incident cases is an underestimate by a factor of three, and that 75% were among IDUs, then we get approximately 4,000 new cases of hepatitis C in Australia per year, including 3,000 in IDUs. This figure is well below the estimate of Crofts and colleagues of 8,000 to 10,000[1].

Future epidemiological studies will need to better determine the reasons for the large State-to-State variation in the rates, accounting for differing methods of case ascertainment and laboratory testing strategies. This study highlights the importance of gathering epidemiological data on hepatitis C to help gain a better understanding of past and present transmission rates. Further epidemiological data are clearly required on risk behaviour to help plan prevention programs, as well as to anticipate resource requirements for control of HCV infection including therapeutic as well as vaccination strategies. Finally, other approaches for estimating the incidence of HCV infection in the Australian community, such as sentinel screening programs and studies in selected cohorts, should be pursued.

References

1. Crofts N, Hopper JL, Bowden DS *et al.* Hepatitis C virus infection among a cohort of Victorian injecting drug users. *Med J Aust* 1993; 159:237-241.
2. Van der Poel CL, Cuypers HT, Reesink HW. Hepatitis C virus six years on. *Lancet* 1994; 344:1475-1479.
3. Breschkin A, Bowden DS, Locarnini SA. Testing issues in hepatitis C diagnostics. *Today's Life Sciences* 1993; 5:26-33.