House of Representatives Inquiry into Hepatitis C in Australia

Thursday, 22 January 2015

Professor Lisa Maher
Head, Viral Hepatitis Epidemiology and Prevention Program and NHMRC Senior Research Fellow, Kirby Institute, UNSW Australia

1) Prevalence Rates, Testing and Treatment Options, and Related Costs: 5 minute topic opening statement

Prevalence of hepatitis C in Australia

- You have already heard about the prevalence of hepatitis C virus infection in the general population – in 2012 an estimated 310,000 Australians had been exposed to the virus, with approximately 230,000 living with chronic infection.

- And it is worth repeating that HCV-related cirrhosis is now the most commonly reported primary indication for liver transplantation in Australia and that the number of HCV-related deaths now exceeds the number of HIV-related deaths.

- Although the number and the rate has declined in recent years 10,114 new hepatitis C infections were identified in 2012.

- Notifications continue to occur at the highest rate among young adults aged 20-29 years, primarily those with a history of injecting drug use.

- Given that the primary risk factor for hepatitis C infection is exposure to contaminated blood during injecting drug use, I am going to focus on prevalence among PWID or people who inject drugs.

- The best available estimates of exposure to hepatitis C among this population come from the Australian Needle and Syringe Program Survey (ANSPS).

- Funded by the Commonwealth Department of Health, the ANSPS is an annually repeated cross-sectional survey conducted by my group at the Kirby Institute in ~ 50 NSPs throughout Australia.

- Data collection consists of a brief self–administered questionnaire and provision of a capillary dried blood spot (DBS) to derive annual estimates of HIV and HCV antibody prevalence.

- Because we have been conducting this survey since 1995, this large repository of data enables us to report on trends over time.

- Key trends observed over the last decade include a decline in young people initiating injection of psychoactive drugs and an increase in the proportion of people reporting that the last drug they injected was a performance and image enhancing drug, mainly anabolic steroids.

- In relation to blood borne viral infections, less than 2% test HIV Ab positive and this has been stable over the last decade, with between 15-50 infections identified each year and the majority of these in MSM who inject drugs.

- However hepatitis C prevalence remains high with 50-60% of the sample testing HCV antibody positive since we initiated surveillance in 1995.

- And while there has been a decline in prevalence over the last ten years, this decline has stabilised over the last 5 years and prevalence was 54% in 2013 – the last year for which data are available.

- These data also tell us that despite overall syringe distribution having increased in the last decade, and Australia having high levels of needle and syringe coverage by international standards, around one in 6 participants continue to report receptive syringe sharing in the last month – this is the key risk factor for hepatitis C transmission among PWID.

- These data also tell us that hepatitis C treatment uptake in this group remains very low, with less than 2% receiving treatment each year - although this has increased from 1.1% in 1999.

- While there has been a cumulative increase in PWID ever treated for hepatitis C over the last decade - from 3.4% in 1999 to 8.6% in 2011 - there has been no increase in the proportion receiving treatment in the past 5 years, possibly due to a warehousing effect.

- So, despite increases in lifetime treatment among Australian PWID, annual treatment uptake remains very low. Strategies to increase the proportion of PWID assessed and treated for HCV infection are required if we are to address the increasing burden of disease. Specific approaches that target women may also be warranted.

- Expansion of the ANSPS to continue surveillance of hepatitis C treatment uptake among PWID will also be crucial to monitoring the roll-out of new direct acting antiviral therapies and assessing whether these actually reach this key population.

- Finally, I would like to note my concern at the lack of input by drug user organisations into these hearings. The involvement of drug users has been key to Australia's success in preventing an epidemic of HIV among PWID – their support and partnership remains essential to mitigating the hepatitis C epidemic.

2) Prevention and Awareness: 5 minute topic opening statement

Methods to improve prevention of new hepatitis C infections

- Thank you for the opportunity to address the Committee on strategies to improve prevention of new hepatitis C infections.

- I am going to focus here on the incidence of hepatitis C in PWID and strategies for improving prevention.

- In 1996 I published a paper in *Addiction* which reported on HCV incidence and risk factors associated with new infections in the CU Study, a community-based prospective observational cohort of 368 HCV Ab- PWID in NSW followed between 1999 and 2002.

- Overall incidence in this cohort was 30.8/100 PY (95% CI 24.3-39.0) and much higher in SW Sydney - 44.1/100 PY (95% CI: 34.4–56.6).

- Independent predictors or risk factors for new infections in this cohort were being female, injecting drugs for less than a year, mainly injecting cocaine, shared use of filters and being recruited via outreach.

- More recently, we reported on hepatitis C incidence and risk factors in the Hepatitis Incidence and Transmission Study – community (HITS-c), a prospective observational cohort of 188 Sydney-based HCV Ab- PWID followed almost a decade later between 2008-2014.

- Incidence in this cohort – reported in the *Medical Journal of Australia* in September 2014 - was 7/100 PY (95% CI 4.91 – 9.71) – a significant decline from the 30.8/100 PY observed a decade earlier.

- Independent predictors of incident infection in the HITS-c cohort were being aged less than 27 years, injecting daily or more frequently and not being on opioid substitution treatment (OST) where the main drug injected was heroin or other opioids.

- People who mainly injected heroin and who were not on OST in our cohort were almost 6 times more likely than those who mainly injected heroin and who were on OST to contract hepatitis C.

- While it has been long established that OST decreases HIV acquisition risk by half, this was the first ever prospective observational study to demonstrate the protective effect of OST against hepatitis C infection.

- This is an important finding for prevention policy and since we published our results there have been two other studies reporting a similar protective effect.

- One, based on a cohort of PWID in Vancouver Canada was published in *Addiction* and the other, based on a cohort of PWID followed up in San Francisco was published in *JAMA Internal Medicine*.

- Taken together these studies indicate that OST can reduce the risk of HCV acquisition by 50-80% (Table 1).

- What are the implications of these results for hepatitis C prevention strategies?

- Firstly, OST averts infections. A recent modelling study suggests that scaling up OST worldwide could avert between 1 and 2 million HCV infections over the next 10 years if coverage was increased from less than 10% to 50% of all PWID. These findings highlight the substantial potential prevention benefits of scaling up OST.

- However, it is important to note that while OST is an essential and cost effective component of any hepatitis C prevention strategy, it is only part of the solution.

- Despite the decline in hepatitis C incidence in recent years, young people who inject drugs in Australia remain at high risk of HCV infection.

- Other prevention and education initiatives, such as increased access to sterile injecting equipment, innovative health service delivery models including targeted primary health care, prison-based NSPs, and an effective prophylactic vaccine, remain essential.

- And despite recent advances in direct-acting antiviral therapies and their potential impact on trends in incidence, barriers to access and prohibitive costs mean that uptake of these new agents by PWID is likely to remain low - and treatment is usually always less cost effective than prevention.

- Prevention strategies also need to be accompanied by clear targets and dedicated resources - not only to promote action in terms of preventing new infections, improving access to treatment and care, and reducing stigma and discrimination – but, also and critically, so that we can assess the effectiveness of these strategies in meeting their declared objectives.

- And finally, I’d like to note that a major limitation on our ability to monitor the hepatitis C epidemic and evaluate the effectiveness of our prevention strategies is the lack of dedicated research, including long term observational studies of PWID and population size estimates – a crucial denominator used to calculate both NSP and OST coverage which has not been updated for over a decade.

Table 1: Summary of findings from recent studies showing protective effect of OST on HCV acquisition

	Incidence w/out OST†	Incidence w/OST†	aHR or aOR (95% CI)
Setting			
Sydney, AU[1]	26.9 (14.5-50.0)	3.3 (1.1, 10.2)	0.18 (0.04-0.77)
Vancouver, CA[2]	5.5 (4.7-6.4)	0.5 (0.3, 0.9)	0.47 (0.29-0.76)
San Francisco, US[3]	28.2 (23.9, 33.4)	8.6 (4.1, 18.1)	0.39 (0.18, 0.87)

† HCV incidence per 100 PY for PWID without or with OST in last time period except for Vancouver where HCV incidence per 100 PY is for PWID never and ever on OST