

## Drug Injectors Sharing Cookers and Cotton Increase Their Risk of Hepatitis C

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The hepatitis C virus (HCV) is extremely common among injection drug users (IDUs); some regions of the United States have reported prevalence rates as high as 90 percent in their IDU populations. Previous research has shown that sharing contaminated needles is responsible for many of these infections. NIDA research now has shown that IDUs can contract hepatitis C not only from sharing needles but also through sharing other drug injection equipment, especially cookers and filtration cotton.

The research team, led by Dr. Holly Hagan of the Seattle-King County Public Health Department, evaluated risk factors for HCV by analyzing data from their Risk Activity Variables, Epidemiology and Networks (RAVEN) study. The RAVEN study collected information and blood samples between June 1994 and May 1997 from 2,879 IDUs in Seattle area programs that provided them with clean needles in exchange for used ones.

"As needle sharing declined throughout the 1980s and 1990s," says Dr. Hagan, "it became possible to consider other risk factors for the transmission of blood-borne diseases among IDUs. This was one of the principal goals of the RAVEN study. We knew that the IDUs who participated in that study were less likely to share needles after they received counseling, but that sharing of drug cookers and filtration cotton was commonplace."

Of the initial 2,879 IDUs, only 507 (17.6 percent) tested negative for HCV at the conclusion of the RAVEN study. After a year, researchers were able to collect blood samples and administer a questionnaire to 317 of these 507 participants. Of these, 259 reported having injected drugs during the followup period, and of this group, 53 (16 percent) had become HCV-positive during the 1-year followup period. The questionnaire also asked participants if they had shared needles at any time during the previous year and if they shared cookers and cotton.

### **Hepatitis C Is America's Most Common Blood-Borne Infection**

Approximately 36,000 new cases of acute hepatitis C infection are reported each year in the United States, according to the Centers for Disease Control and Prevention (CDC). The number of Americans with chronic hepatitis is unknown-although CDC estimates the number at 4

million-because the symptoms of the disease can be minimal. In chronic hepatitis C, progressive injury to liver cells over 2 to 4 decades often leads to cirrhosis of the liver and liver cancer. Hepatitis C-related liver failure is now the leading indication for liver transplants in the United States. The disease also is the leading cause of liver cancer and is responsible for 8,000 to 10,000 deaths a year in this country.

Syringe sharing was associated with a three-fold higher risk of HCV infection as opposed to IDUs who did not share syringes, according to Dr. Hagan. Among the much smaller group that did not share syringes, "The risk of HCV infection was also three-fold higher among those who did not share syringes but did share a cooker and cotton." Dr. Hagan notes that the study's ability to evaluate the risk of sharing equipment other than syringes was reduced by the limited number of HCV-negative IDUs who did not share syringes but who did test positive over the course of the study. This group numbered only 11 out of the 53 who became positive over the course of the study.

With respect to frequency of sharing equipment, the study confirmed the link between more syringe sharing and higher risk of HCV-the rate of infection was relatively higher among those who reported sharing syringes sometimes, usually, or always than among those who reported rare syringe sharing. However, the risk elevation associated with cookers and cotton appeared to be the same for individuals who shared this equipment regardless of the frequency of sharing."

"Prevention education has been successful in a large portion of the IDU population, but over time, some high-risk groups will become more identifiable," says Dr. Peter Hartsock of NIDA's Center on AIDS and Other Medical Consequences of Drug Abuse. "This research should lead to the development of interventions that will have a greater impact than previous interventions on populations at risk of developing HCV and other blood-borne diseases. With this new data, we can better adjust interventions and programming to meet the needs of these populations," he says. Dr. Hagan notes that Seattle-King County Public Health Department staff have already revised their prevention messages to include the risks of sharing equipment such as cookers and cotton, as well as sharing needles, but adds that many IDUs are not yet aware that these are high-risk practices.

"I think it will be increasingly feasible to study each step of the injection process in terms of blood-borne viral transmission," Dr. Hagan says. "Once we understand the powerful risk factors, such as sharing needles and equipment, it will be possible to move on to other factors that perhaps do not carry as strong a risk but nonetheless are responsible for a significant number of infections. Studies to measure the risk of transmission through less common routes of exposure are important because they enable us to extrapolate general epidemiologic information that will have direct implications for the prevention of all types of blood-borne viruses in the population as a whole."

## Sources

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