

Opiate Injection Site Infections--19 years in the UK

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Today, I'm talking with Dan Lewer about his study on an increase in infections related to opiate injections. Dan is a public health registrar in England. Welcome Dan.

[Dan Lewer] Hi Sarah, thanks for having me.

[Sarah Gregory] Your study is about problems caused by the street use of opiate injections. Let's start with the basics. Are we talking about heroin use here?

[Dan Lewer] We are, yes, heroin is an opiate. In the UK, where we did this study, probably about nine out of 10 people who inject illegal drugs or psychoactive drugs inject heroin. The rest, the other one in 10, might inject stimulants, like crack cocaine, and some inject various drugs or mixture of drugs. Heroin is the most common, so we focused on that.

[Sarah Gregory] Where was your study conducted and why did you decide to do it?

[Dan Lewer] Well, I suppose the first thing to say is it's not a new issue. This group has always had a big problem with bacterial infections. Various surveys that have been done in the past of people who use needle exchanges have all shown very high prevalence of skin infections—perhaps 30 to 60 percent—varying widely between different countries.

We decided to look at this point in time because our colleagues' work in hospitals have been reporting lots infections in people who inject heroin. There are increases in things like spinal abscesses, infections of the bone and joints, and septicemia. And we wanted to know if there's a real increase. So after the looked-at hospital admissions for all NHS hospitals in England.

[Sarah Gregory] Ok, Dan, tell us about the study itself.

[Dan Lewer] So we used routine data that's collected by hospitals. All of the hospitals in England submit data to a national database, and that includes information like the patient's age and their sex, their diagnosis, which is the reason why they were admitted to hospital, and how long they were in hospital. So we focused on patients who were admitted—those who had serious problems.

We counted all of the patients who had a diagnosis that's commonly related to injecting, such as an abscess—and people who inject heroin often suffer from abscesses in their legs and groin—and where the hospital reported that use of an opiate had contributed to their admission.

There's a couple of limitations to point out. The first one, this won't capture all of the cases that we're interested in and sometimes the hospitals might miss out the opioid coding, either because they just forget or because they don't know the patient injects. So that's the first one. And secondly, we don't actually know how many people inject heroin in the community, so we reported the number of admissions rather than rates.

[Sarah Gregory] Ok, so what kind of infections did you find?

[Dan Lewer] We mainly looked for soft tissue problems, like abscesses, that's a localized infection, and infections of the blood vessels. So those accounted for about 90 percent of the admissions in our study. We also looked for invasive infections, infections of the blood, the heart and the bones—and that's about the other 10 percent.

They're all infections, though, caused by bacteria. Other research in this field suggests that the source is usually the patient's own body—their own skin—rather than from injecting partners. And in that sense it's a different kind of problem to HIV or Hepatitis C, which are viruses that often come to mind when we think about this group, and are usually caught through sharing needles.

We could also think about what kinds of infections, in terms of the kind of bacteria that have caused them, and we had a look at the coding that hospitals had recorded there; the most common species that came up was *Staphylococcus aureus* and that's a bacteria that often colonizes the skin of healthy people, but can cause serious problems if it's introduced into the body. And that's why cleaning the skin's really important before injecting. People who inject drugs have got enormous relative risks of serious infections that are caused by *Staphylococcus aureus*, like endocarditis.

[Sarah Gregory] It seems that infections match the trends for use and deaths from overdose in the U.K. Do you know why this is?

[Dan Lewer] Well, yes, you're right. There's been a big increase in deaths due to overdose and opiates are often involved in those. And despite the limitations that we talked about a moment ago, we can now also clearly see that there's a big increase in injecting-related bacterial infections, as well. And we don't know exactly why it is, but it's particularly interesting given that we usually think of injecting as a declining problem in this country and in other higher income countries, too. One of the key dynamics that we might think of as a contributing factor is that the cohorts of people who inject heroin is probably aging. Many of those people who inject today would have started in the 1980s or the 90s and are becoming older and more susceptible to health problems.

One of the really striking things in the study, in our study, is the number of admissions in the youngest group that we looked at, which were those aged 15 to 34 increased, and that's really striking because we normally thought that the number of younger people injecting heroin is decreasing over time.

So I think this study raises lots of important questions as to why we're seeing a lot more health problems in this group. And we've got questions like: Has the number and type of people injecting changed in ways that we weren't aware of? Is there a new group of injectors, potentially younger injectors, who haven't been visible to us so far? Are there changes to healthcare or addiction treatment services that might have made this group more vulnerable to infection? And also potentially, have injecting practices amongst people who inject heroin changed? Say for example, some people use lots of acid, such as citric acid, to dissolve their drugs before they inject it, and that can damage the skin and soft tissue around the injecting site and make them more susceptible to infection.

And, I guess, a couple of things I've been saying so far are kind of pointing towards the difficulty of collecting data on this group and traditionally their health has been hard to monitor for that reason—health services often don't record the fact that their patients inject drugs, and when we try to do more traditional epidemiological studies, there are lots of logistical challenges. And one option that we're thinking about more, at the moment, is linking data from specialty services that treat this group to other healthcare data sources to try and track people a bit more systematically.

[Sarah Gregory] Is there a way to contain this problem and stop it continuing to worsen?

[Dan Lewer] Yes, definitely. Lots of the infections are very serious and potentially life threatening but they generally are preventable and patients can make full recoveries.

This is common good practice for people who inject heroin and other drugs and that includes cleaning the skin before injecting; using new, sterile injecting equipment; avoiding injecting into the groin or under the skin, as opposed to into veins, that's sometimes called "skin popping"; and if infections do happen, then prompt treatment and wound care are needed.

So those aren't new ideas but in public health we're always trying to find ways to increase those kind of practices in the community. And we also need to design services in ways that are accessible and sensitive to the stigmatizing nature of injecting wounds. And when people have wounds, which we have covered already, it's very prevalent in this group, people often don't want to present them to healthcare services because they see them as something that's quite unpleasant or perhaps just a normal part of injecting rather than something that needs attention. And that can mean that they present very late and get some of the more serious kinds of infections that need hospital admission, so we hope to design services that can encourage people to get their wounds checked more quickly and treated more quickly.

[Sarah Gregory] Dan, would you care to tell us about your job and your public health interests?

[Dan Lewer] Yes. I'm a public health registrar, and in England, that's kind of the equivalence of a public health or a preventative medicine residency in the U.S. I'm interested in using data that's routinely collected by the health services here to understand and gain more insight into the health of marginalized groups. And the reason I'm interested in that is because I think that the more we can quantify the extreme poor health and the extreme inequalities that we can see in people who are homeless, or suffering from addiction, or earning money through sex work, for example, the more we can show the value of investing in the health and wellbeing of those groups. And people, in this study, for example, we've seen the very high numbers of extremely adverse outcomes, like sepsis after an injecting-site infection, and the costs to those individuals and to health services can be very high.

[Sarah Gregory] Thanks so much, Dan. I've been talking with Dan Lewer about his August 2017 article, Opiate Injection–Associated Skin, Soft Tissue, and Vascular Infections, England, UK, 1997–2016. Listeners can read the entire article online at [cdc.gov/eid](https://www.cdc.gov/eid).

I'm Sarah Gregory for *Emerging Infectious Diseases*.

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