

Shining a LIGHT Into Drug Darkness

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ABSTRACT

Harm reduction services are very important for nurse practitioners (NPs) to understand and participate in with the epidemic of opioid abuse, injectable drug use, and associated infectious diseases that are occurring in public health. NPs in any role will encounter individuals affected by these issues, and education is needed to help understand and provide harm reduction services. The Living In Good Health Together (LIGHT) project is 1 example of a successful harm reduction program in Appalachia that started as a syringe access program and has grown into a prototypical harm reduction venture. This article describes the background, development, implementation, and analysis of the LIGHT project.

Keywords: exchange, harm reduction, needle, syringe

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Injection drug abuse is on the rise in the United States, particularly with prescription opioid abuse and heroin.¹⁻³ Heroin use has increased more than 60% (114% in whites) in recent years. The use of injection drugs is a major risk factor for contracting human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).^{4,5} With the increase in injection drug abuse, there have been sudden startling rises in HCV incidence and prevalence in recent years.⁶ People who inject drugs (PWID), formerly labeled as intravenous drug users (IVDU), have a high risk of exposure to these viruses through the sharing of drug injection paraphernalia including needles and syringes (known as *rigs*) and other equipment (known as *the works*) including cookers and cottons/filters.⁷ Resilient viruses may live on paraphernalia that is shared among users (if the infected person's paraphernalia has virus on it and the noninfected person shares his or her paraphernalia, then the resilient virus may transfer and be injected by the previously noninfected person, allowing transmission of disease).

Per the World Health Organization, there is an estimated 13 million PWID; it is estimated that 67% of them are infected by HCV, and 1.7 million of them are living with HIV.^{8,9} The PWID population is evolving, with statistics now showing over half of the PWID are white, with only 19% blacks and 21%

Hispanics/Latinos.¹⁰ The concerns with these infectious diseases include morbidity and mortality from the sequelae of the diseases, but for PWID, there are other imminent dangers including acute infections from injecting (such as wound abscesses or endocarditis), a lifestyle entrapped in addiction, and acute respiratory arrest caused by overdose. Abstaining from injection drug use is the ideal goal for PWID, but many individuals struggle with addiction, difficulty with accessing or completing successful treatment, and chronic relapses. Harm reduction services in health care are needed for these individuals. According to the Harm Reduction Coalition,¹¹ harm reduction in theory is aimed at reducing negative consequences associated with drug use with a focus on their rights and respect for PWID.

Nurse practitioners (NPs) at the forefront of health care in any community will benefit from education and guidance about harm reduction syringe programs for individuals using injectable drugs. Professional nursing organizations support harm reduction for prevention and health promotion. NPs have played a major role in many communities dealing with this population and these problems. New findings, new practices, and a new program described in this article should help these NPs and physicians, as well as more inexperienced NPs, as practice evolves today.

WHAT IS A SYRINGE PROGRAM? WHY IS IT IMPORTANT?

A key aspect of harm reduction for PWID is a syringe access program. In the 1980s, PWID were subject to laws in most US states that outlawed the possession and distribution of drug paraphernalia such as needles and syringes for the injection of drugs.¹² A review of the current laws in effect by Bramson et al¹² showed that, starting in 1988, states began legally authorizing syringe exchange programs and over-the-counter sales of syringes, but many states still have restrictions. With these restrictions, PWID often reuse or share needles and syringes. The sharing of needles and other drug paraphernalia is the leading cause for the transmission of HCV and contributes to the spread of HIV and HBV.¹³ A common belief has been that HIV and HBV/HCV only lived on needles; however, it is now realized that viruses can live on various drug paraphernalia. HCV can survive outside the body at room temperature on these materials for up to 3 weeks, making it highly transmissible (HIV and HBV only survive about 7 days).¹⁴ Preventing the spread of these viruses by encouraging clean needle and syringe use is important because often individuals do not know that they have these diseases and may spread them to others unintentionally. Individuals are often asymptomatic or may have vague signs or symptoms after becoming infected, including fever, nausea, vomiting, loss of appetite, jaundice, fatigue, dark urine, clay-colored stool, and abdominal pain.

Systematic reviews of the medical literature have found that needle/syringe programs are effective in reducing HCV among PWID.^{4,7} Other systematic reviews have been inconclusive, recommending further studies be done to evaluate the effectiveness.⁵ Some of the studies in the systematic review by Abdul-Quadar et al⁴ found effectiveness in preventing HIV infection as well. The reduction of HBV through syringe access programs has not been extensively studied. The efficacy of syringe programs as an outreach to provide education, health promotion, and prevention measures for the population of PWID is well-documented in the literature.¹⁵⁻¹⁷

There are different models of syringe access programs, including an exchange model and a needs negotiation model. For the exchange model, there is

a 1:1 syringe exchange of used to sterile syringes, which enhances accountability but has some very important disadvantages as well. There are risks to the staff processing the used needles for exposure to blood-borne pathogens. If the syringes are brought back in sharps containers, approximations may be made for the measurement of syringes returned. A typical large sharps box (5.4 qt) holds approximately 210 insulin syringes, whereas a small sharps box (1 qt) holds about 40. Another disadvantage to returning used syringes to a health care facility for disposal is that there are often considerable costs associated with this sharps/hazardous waste disposal versus the no-cost option of legal home sharps disposal. In the needs-based negotiation model, the program does not limit the number of syringes dispensed but provides the number of syringes based on the individual's usual usage.¹⁸ It is important to educate patients on syringe cleaning techniques and proper sharps disposal. In reviewing the literature, there is not a program model determined to be most effective, and often programs provide a blended approach as is feasible in their individual setting.

The literature also provides evidence to support specific syringes for syringe access programs. Within a syringe, HCV can survive up to 63 days, whereas HIV survives about 42 days, and higher-volume syringes or those with detachable needles are the most likely to sustain the virus, making the choice of syringes dispensed at syringe access programs important.¹⁹ The literature promotes the use of low dead space syringes, instead of high dead space syringes, as an important strategy for reducing the transmission of HIV and HCV among PWID.^{20,21} The rationale for this is that the needle and syringe design of lower dead space influences virus transmission by reducing the volume of blood and the quantity of virus transferred when syringes are shared. Laboratory studies have shown that a 1-mL low dead space syringe retains an average 2 μ L versus a 1-mL high dead space syringe, which retains an average 84 μ L fluid when the plunger is fully depressed (Supplementary Figure 1, online).²¹ This makes insulin syringes an optimal choice for syringe service programs. Patients may also be educated that the temperature of the syringe supports the life of the

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