

Persons who inject drugs (PWID) often experience stigma, which is defined as the social exclusion and dehumanization of individuals in an undesirable social category. A randomized controlled trial will be conducted to assess the effect of a stigma intervention targeted to help PWID cope with stigma. Patients will be recruited at 3 treatment addition clinics. They will be randomized 1:1 to either i) stigma intervention consisting of three 2-hour group sessions (stigma intervention), or ii) standard of care (control intervention). The primary outcome is overdose during the 12-month study period. The investigators expect that 15% of patients in the control group will experience an overdose in the 12 months following the intervention, but they hope that only 5% of patients in the stigma intervention group will experience an overdose event.

- $H_0: p_A = p_P$ The proportion of overdose is the same in the stigma intervention group and control group.
 $H_A: p_A \neq p_P$ The proportion of overdose is not the same in the stigma intervention group and control group.
 The investigators are hoping to detect a 10% decrease in proportion of overdose in the stigma intervention group compared to the control group.

$$\frac{282}{1 - 0.15} = 332$$

A sample size of 282 total subjects, 141 per group, yields 80% power to detect a significant difference in proportion of overdoses of 10%, assuming risk of 15% in the control group and 5% in the stigma intervention group. To allow for 15% loss to follow-up, a total of 332 total subjects are needed.

$$\frac{297}{1 - 0.15} = 350$$

A sample size of 297 total subjects yields 80% power to detect a significant difference in proportion of overdoses of 10%, using a 2:1 allocation ratio while assuming risk of 15% in the control group and 5% in the stigma intervention group. To allow for 15% loss to follow-up, a total of 350 total subjects are needed.

- $H_0: \mu_A = \mu_P$ The average change in stigma score from baseline to 12 months is the same in the stigma intervention group and control group.
 $H_A: \mu_A \neq \mu_P$ The average change in stigma score from baseline to 12 months is not the same in the stigma intervention group and control group.

Using a sample of 350 subjects in a 2:1 allocation ratio to detect a significant difference in change in stigma score from baseline to 12 months of at least 3 units, 90.8% power will be yielded.