**IMPACT OF OPIATE SUBSTITUTION THERAPY AND NEEDLE SYRINGE PROGRAMMES ON INCIDENCE OF HCV: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Background:** Needle Syringe Programmes (NSP) and Opiate Substitution Therapy (OST) are the primary interventions to reduce HCV transmission among people who inject drugs (PWID). While there is growing evidence of the effectiveness of OST on HCV acquisition risk, evidence for NSPs remains inconclusive and we lack robust estimates of their effects in combination. We undertook a systematic review and meta-analysis to estimate the impact of NSP and/or OST on risk of HCV acquisition.

**Methods:** We searched Medline, PsycInfo, Embase, Cochrane and Web of Science up to July 2014 for observational and intervention studies measuring exposure to NSP and/or OST (compared to no intervention) among PWID and HCV incidence. Interventions were defined as current OST (within last 6 months) and high NSP coverage (regular attendance at an NSP or all injections covered by a new needle/syringe). Meta-analysis was conducted using random effects models.

**Results:** We identified 23 studies from 4992 records from North America (10), UK (5), Europe (4), Australia (3), and China (1). Preliminary findings suggest that current OST (from 11 studies across all regions) reduces risk of HCV acquisition by 57% (rate ratio (RR) 0.43 95% CI 0.29-0.56). Weaker evidence was found for high NSP coverage derived from six studies from North America and Europe only, (RR=0.65 95% 0.19-1.11) with moderate to high heterogeneity (I2=58%, p=0.019). After removing studies from North America, high NSP coverage in Europe was associated with a 57% reduction in HCV acquisition risk (RR=0.43 95% CI=0.15-0.70) with less heterogeneity (I2 =14%, p=0.327). There was strong evidence for the impact of combined NSP and OST, from 3 studies, resulting in 70% reduction in risk of HCV acquisition (RR=0.31 95% CI=0.11-0.51).

**Conclusions:** Despite regional differences, OST and NSP were both associated with a reduction in the risk of HCV acquisition with this effect strongest in combination.