

## Appendix A:

### Summary of Studies (listed in chronological order)

Study # & Title	Country	Research Design	Type of Treatment(s)	Sample	Outcome Variables	Findings
#1: Saunders et al. (1995). The impact of a brief motivational intervention with opiate users attending a methadone programme.	Australia	Experimental	Motivational intervention vs control condition.  1 hour session.  1-week, 3-month, and 6-month follow-ups.	n=122 adults with an opiate use disorder enrolled in a methadone program	Opiate-related problems, self-efficacy, stage of change, outcome expectancy, severity of opiate dependence, and intent.  Additional measures assessed at the 3- and 6-month follow-ups: attendance, empathy, retrospective opiate use timeline, and compliance with the methadone program.	There was a statistically significant reduction in the severity of opiate dependence for both groups over time, however, there were no statistically significant differences found between the two groups. The two groups were also compared on time until relapse as measured by participants' opiate use diary and there was not a statistically significant between-group difference. When the comparison was made by including participants that dropped out of methadone maintenance treatment, the MI group had a longer time to relapse than the control group and the difference was statistically significant.
#2: Nunes et al. (2006). Behavioral therapy to augment oral naltrexone for opioid dependence: A ceiling on effectiveness?	USA	Experimental	Behavioral Naltrexone Therapy (BNT) vs Compliance Enhancement (CE).  6 months.	n= 80 treatment-seeking individuals with heroin use disorder.	Retention in treatment, weeks of treatment completed, proportion of sessions attended, high percentage (>80%) of opiate free urine samples, proportion of urine samples positive for cocaine, proportion of urine samples positive for marijuana, proportion of urine samples positive for any drug.	The authors found no statistically significant differences in opioid use among individuals who received BNT or CE. The percentage of individuals with a high percentage of opioid-free urine samples did not differ significantly between the BNT and CE groups and increased for both groups over time. During the first month of treatment, 44.4% of individuals in the BNT and 57.6% of those in the CE group submitted high percentages of opioid free urine samples. During months three and six of the intervention, those percentages improved to 76.5% of participants in the BNT group and 88.9% of the CE group. Individuals in the BNT group were statistically significantly more likely to stay in treatment over six months compared to the CE group. However, both groups displayed gradual attrition over the course of the treatment. In the first month of treatment,

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						69.4% of individuals in the BNT group were retained compared to 48.5% in the CE group, while at six months those retention rates dropped to 22.2% of the BNT group and 9.1% of the CE group.
#3: Kidorf et al. (2009). Improving substance abuse treatment enrollment in community syringe exchangers.	USA	Experimental	Motivated referral condition (MRC) vs MRC plus monetary incentives for attending sessions and enrolling in treatment (MRC+I) vs standard referral condition (SRC).  4 months.  Monthly follow-ups throughout the study.	n=281 individuals with opioid use disorder enrolled in a needle exchange program	Adherence to scheduled motivational enhancement (eight sessions), treatment readiness group sessions (16 sessions), rates of treatment enrollment during the 4-month assessment period, methadone maintenance enrollment, days of drug use (heroin, cocaine) and HIV risk behavior (days injecting and sharing needles), and number of sessions attended.	Participants who received MRC+I reported fewer days of heroin use per each 30-day assessment compared to those in the MRC and SRC groups. Those in the MRC+I group also reported fewer days of injection use per each one of the 30-day assessments compared to individuals in the other two groups. All differences were statistically significant. Participants in the MRC+I group attended a higher proportion of motivational enhancement and treatment readiness group sessions compared to those in the MRC and SRC groups (statistically significant). Participants in all three groups completed about 75% of four follow-up assessments.
#4: Otto et al. (2009). Brief intervention in general hospital for problematic prescription drug use: 12-month outcome.	Germany	Experimental	Motivational Interviewing (MI) sessions vs control  2 sessions in 4 weeks (session I: 30-45 min & session II: 20-30 min).  3- & 12-month follow-up.	n=126 non-treatment seeking general hospital patients with potential drug use disorder.	Cessation and reduction (at least 25%) in prescription drug (PD) use.	At baseline, statistically significant differences were found between the intervention and control groups in two drug use measures: PD dependence as measured by SCID-I (Intervention: 53.6%; Control: 35.7%) and duration of PD intake in months (Intervention: 25.5; Control: 8.3).  A significant intervention effect of brief MI sessions on PD reduction was detected after 3 months, but the effect was not maintained after 12 months. No overall intervention effect on PD cessation was found after 3 or 12 months.
#5: Zahradnik et al. (2009). Randomized controlled trial of a brief intervention	Germany	Experimental	Motivational Interviewing (MI) sessions vs control.	n=126 hospital patients with problematic prescription drug use.	“True” reduction (>25%) and discontinuation of prescription drug (PD) intake in terms of defined daily dosages (DDD).	There were no statistically significant differences between the MI and control groups in the reduction of PD use. A higher percentage of the MI group (18%) compared to the control group (9%) discontinued drug

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for problematic prescription drug use in non-treatment-seeking patients.			2 sessions in 4 weeks (session I: 30-45 min & session II: 20-30 min).  3-month follow-up.			use, however, the difference was not statistically significant. However, more participants in the MI group had true reduction in their intake of drugs compared to the control group (30% and 51.8%, respectively) and the difference was statistically significant. When examining true reductions in different drug classes, a statistically significant effect of the intervention was observed for hypnotics/ sedatives and opioids with a moderate effect size. However, there were no statistically significant differences in discontinuation of different drug classes.
#6: Jones et al. (2011). Treating the partners of opioid-dependent pregnant patients: Feasibility and efficacy.	USA	Experimental	Helping Other Partners Excel (HOPE) vs usual care (UC).  22 weeks.  4- & 28-week follow-up.	n=62 opioid-using male partners of drug-dependent pregnant women.	Drug use, treatment services received, employment, illegal involvement, recreation, ASI composite scores, HIV-drug risk, HIV sexual risk, depression, and partner relationship quality.	Several statistically significant differences were found between the intervention and control groups. For example, compared with participants in the usual care condition, participants in the HOPE condition were found to have increased treatment retention, transient decreases in heroin use, increased involvement in recreational activities, less reliance on public assistance, and increased social support for their pregnant partners. All differences were statistically significant. Participants in the HOPE intervention showed a significant reduction in heroin use compared to the treatment as usual (TAU) group at one-month follow-up, but the effect was not sustained, with usage increasing from week 4 to week 28. Participants in the HOPE condition were statically significantly more likely to stay in outpatient treatment longer than individuals who received standard care.

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#7: Otiashvili et al. (2012). Drug use and HIV risk outcomes in opioid-injecting men in the Republic of Georgia: Behavioral treatment + naltrexone compared to usual care.	Georgia	Experimental	Behavioral Treatment plus Naltrexone (BT+N) vs usual care (UC).  22 weeks.  1-, 3-, & 6-month follow-up.	n=40 non-treatment-seeking opioid-injecting men.	Detox and naltrexone treatment entry, number of weekly treatment sessions attended during the 22-week trial, and number of weekly positive and negative urine samples collected, drug use (urine drug screening & selected BRAB items), and drug risk (BRAB Drug-Risk Score).	Most participants in both the experimental (60%) and control (55.5%) condition completed the study. Participants in the BT+N were statistically significantly more likely to have negative urine drug screening results. There was a statistically significant main effect of time within the BT+N condition for both frequency of benzodiazepine use and frequency of buprenorphine injection. There were statistically significant between-group differences in rates of needle sharing at 6-month follow-up (BT+N=0% vs UC=45%). Overall, the rate of sharing needles decreased in both groups over time (BT+N from 25% to 0%, and UC from 80% to 45%). No statistical significance was reported for these improvements.
#8: Jaffray et al. (2014). Does training in motivational interviewing for community pharmacists improve outcomes for methadone patients? A cluster randomised controlled trial.	Scotland	Experimental	Pharmacist-delivered motivational interviewing (MI) vs normal practice.  6 months.	n=542 patients in methadone treatment	Illicit heroin use, treatment retention, substance use, injecting behavior, psychological/physical health, treatment satisfaction and patient feedback.	The intervention did not significantly reduce heroin use, but there were indications of benefits from increased communication and treatment satisfaction. The author reported statistically significant within-group reductions in the median number of days of illicit heroin use for both the experimental and control groups during follow-up. However, despite an overall decrease in the proportion of patients using illicit heroin in the last 30 days, there were no significant between-group differences at follow-up (experimental = 32.4%; control = 31.4%). Although not statistically significant, treatment retention was higher in the intervention group (88%) compared to the control (81%).
#9: Zhong et al. (2015). Effects of a randomized comprehensive psychosocial intervention based	China	Experimental	Comprehensive psychosocial intervention (CPI) vs usual community care (UCC).	n=180 individuals with opioid use disorders after their release from detention in	Mental health status (SCL-90), quality of life related to health (SG-36), and drug use (ASI and drug urine screens for methamphetamine,	There were no statistically significant differences in drug urine test or self-reported drug use between the two groups. At the end of the intervention, the relapse rate was 25.9% and 22.7% for the CPI group and the UCC group, respectively, and there was no

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on cognitive behavioral therapy theory and motivational interviewing techniques for community rehabilitation of patients with opioid use disorders in Shanghai, China.			12 months.  Follow-up at the end of the intervention.	compulsory treatment	morphine, ketamine, and ecstasy).	difference in relapse rates between the two groups. At the end of the intervention, 81.6% of participants in the CPI group versus 86.1% of participants in the UCC group remained in the program, but these differences were not statistically significant. Participants with longer lifetime heroin use, longer lifetime amphetamine use, injection drug use history, and high levels of phobic anxiety were more likely to relapse. Participants in the CPI group had statistically significantly fewer functional limitations caused by physical or emotional problems than those in the UCC group after intervention.
#10: Bohnert et al. (2016). A pilot randomized clinical trial of an intervention to reduce overdose risk behaviors among emergency department patients at risk for prescription opioid overdose.	USA	Experimental	Motivational intervention plus educational enhanced usual care (EUC) vs EUC alone.  Single 30-minute session.  6-month follow-up.	n=204 emergency department patients at risk for prescription opioid overdose	Overdose risk behavior, behavioral intentions, overdose knowledge, non-medical prescription opioid use.	Participants who received MI+EUC reported greater reductions in non-medical prescription opioid use (50% reduction) as compared to those receiving EUC (39% reduction) and the difference was statistically significant. At six-month follow-up, participants who received the MI+EUC intervention reported statistically significantly lower levels of self-reported overdose risk behaviors compared to the EUC-only group. Specifically, the MI+EUC group reported an average of 40.5% reduction in the frequency of overdose risk behaviors, which was significantly greater than the 14.7% average reduction in the EUC group.
#11: Coffin et al. (2017). Behavioral intervention to reduce opioid overdose among high-risk persons with opioid use disorder: a pilot randomized controlled trial	USA	Experimental	Repeated-dose brief behavioral intervention addressing opioid overdose and related risk behaviors (REBOOT) vs treatment as usual (TAU).	n=63 persons with opioid use disorder and at high-risk for subsequent overdose	Number of overdose events, substance use, substance use treatment, dependence, and HIV-related risk behaviors.	REBOOT was statistically significantly associated with the reduced overdose events compared to the control group. The mean number of overdose events in the past 4 months reported at baseline was similar for both study arms and was not statistically significant. However, at 16-month-follow-up, REBOOT participants reported a statistically significant decrease in the mean number of overdose events compared to TAU. The

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			12 months.  16-month assessment.			intention-to-treat GEE analyses of overdose outcomes (incident rate ratio) also showed statistically significant results in favor of the REBOOT group. There were no statistically significant differences in HIV-related sexual and injection risk behaviors between the groups.
#12: Banta-Green et al. (2019). Impacts of an opioid overdose prevention intervention delivered subsequent to acute care.	USA	Experimental	Overdose education combined with a brief behavioral intervention and take-home naloxone (IC) vs usual care (UC).  12 months.	n=256 individuals with opioid use disorder at elevated risk for overdose	Time to first opioid overdose-related event resulting in medical attention or death, and ED visit and hospitalization rates.	During the follow-up period, 23.7% of all participants had at least one overdose event, 85% had one or more ED visits and 55% had at least one hospitalization, with no statistically significant differences between intervention and comparison groups. The difference in time to first overdose event was not statistically significantly lower for the intervention group, suggesting no difference in the likelihood of survival between the two groups.
#13: Chen et al. (2019). Abstinence following a motivation-skill-desensitization-mental energy intervention for heroin dependence: A three-year follow-up result of a randomized controlled trial.	China	Experimental	Motivation-Skill-Desensitization-Mental Energy (MSDE) intervention vs control.  4 weeks.  3-year follow-up.	n=89 males with a heroin use disorder in a drug rehabilitation center	Abstinence (self-reported use of heroin and other illicit drugs), readiness to change, craving, depression, and aggression.	The MSDE intervention group reported statistically significantly higher abstinence rates at follow-up as compared to the control group. Abstinence rates declined during the 3-year follow-up. The MSDE intervention had a statistically significantly greater effect on drug abstinence than activities associated with the control condition. The interaction effect of group and time was not statistically significant. Results indicated that overall retention rate declined over time, with the MSDE intervention yielding a statistically significantly higher retention rate compared to the control condition. There was no significant interaction effect. The MSDE resulted in a statistically significant increase in readiness of change, as well as decreases in craving, depression, and aggression immediately after intervention.

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#14: Cochran et al. (2019). A community pharmacy-led intervention for opioid medication misuse: a small-scale randomized clinical trial.	USA	Experimental	Standard medication counseling (SMC) vs SMC plus Brief Motivational Intervention-Medication Therapy Management (SMC+BMI-MTM).  2 months.  3-month follow-up.	n=32 adults with prescription opioid use disorder	Feasibility, acceptability, mitigation of opioid medication misuse (self-reported), pain, depression, and urine toxicology screen to examine cannabis and opiate use.	Although not statistically significant, the BMI-MTM group experienced a greater reduction in self-reported medication misuse and objective opiate use over time than the control group. At two months, there were no statistically significant differences in misuse among participants, but at three months, the authors found a statistically significant improvement in misuse among the BMI-MTM recipients. Multivariate analyses revealed statistically significant improvements in percentages of negative opioid toxicology for both groups across time, with greater improvement for BMI-MTM recipients. A promising but not statistically significant trend indicated decreases in positive opiate toxicology screens for BMI-MTM recipients.
#15: Gryczynski et al. (2021). Preventing hospital readmission for patients with comorbid substance use disorder: A randomized trial.	USA	Experimental	Navigation Services to Avoid Rehospitalization (NavSTAR) vs treatment as usual (TAU).  3-, 6-, & 12-month follow-up.	n=400 hospitalized adults with comorbid stimulant use disorder	Hospital service use (readmissions and ED visits), SUD treatment linkage, substance use, HIV risks, and quality of life.	Participants in the NavSTAR intervention did not differ from those in the TAU group on most measures of substance use. At 6-month follow-up, participants in the NavSTAR group with OUD had statistically significantly fewer opioid positive urine samples as compared to the TAU OUD group. The statistically significant between-group difference in opioid use was not maintained at 12-month follow-up. Forty-eight out of 400 participants died during the study, but there was no statistically significant difference in survival time between individuals in the NavSTAR and the TAU groups. Participants who received the NavSTAR intervention had a statistically significantly lower rate of impatient readmissions and were less likely to be readmitted within 30 days compared to the individuals in the TAU group. Despite these promising trends, the authors noted that the effects of the NavSTAR intervention

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						decreased steadily for each subsequent 30-day period.
#16: Ober et al. (2023). Pilot randomized controlled trial of a hospital-based substance use treatment and recovery team (START) to improve initiation of medication for alcohol or opioid use disorder and linkage to follow-up care.	USA	Experimental	Substance Use Treatment and Recovery Team (START) vs usual care (UC).  One session during a hospital visit.	n=88 inpatients with a probable alcohol or opioid use disorder	Initiation in the hospital of a medication for AUD or OUD, linkage to follow-up care for an AUD or OUD after discharge, heavy drinking, daily number of drinks per day for people with AUD and days of opioid use for patients with OUD, and readmission to the same hospital within 90 days of discharge.	The authors found no statistically significant differences in opioid use between the START and UC groups. At one-month follow-up, the START intervention had no statistically significant effects on use of opioids after discharge from the inpatient stay. In fact, participants in both groups reported using fewer substances. A post-hoc analysis also revealed no significant differences in substance use based on whether participants received follow-up care for their OUD. Participants who received the START intervention had statistically significantly higher odds of initiating medication during the inpatient stay and being linked to follow-up care compared to those in the usual care group.