PIRE

AN OUTCOME EVALUATION OF DRUG TREATMENT IN AFGHANISTAN

Research Monograph

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INTRODUCTION

Opium production and use long has been a challenge in Afghanistan. Although opium production declined for several years, a 2018 Afghanistan Opium Survey conducted by United Nations Office on Drugs and Crime (UNODC) in collaboration with the Afghan Ministry of Counter Narcotics (MCN) estimated that the total Afghan area under opium poppy cultivation at 263,000 hectares in 2018, down by 65,000 hectares in 2017 (UNODC/MCN Afghan Opium Survey 2017 – Production and Cultivation). Southern provinces continue to be the largest producers of poppy, but reductions were observed in all poppy cultivating provinces.

A 2018 report found that Afghanistan remains the world's largest opium producer and exporter (UNODC/MCN Afghanistan Opium Survey – 2017, *Challenges to Sustainable Development, Peace and Security*). In US dollars, 2017 "farm gate" revenue from opium production amounted to approximately $1.2 to $1.5 billion dollars or the equivalent to approximately 7% of Afghanistan's estimated GDP. When including illegal trafficking, the "gross" value of Afghanistan opiate economy is between $4.1 and $6.6 billion dollars or equivalent to between 20% and 32% of the total GDP (UNODC/MCN Afghanistan Opium Survey – 2017, Challenges to Sustainable Development, Peace and Security). In addition, UNODC reported in 2016 that Afghanistan is a leading producer of hashish, second only to Morocco (UNODC, 2016).

While Afghans have used opium for medicinal purposes and to calm children for years, the increase in availability and supply of illicit drugs over the last fifteen years has been associated with an alarming increase in substance use and addiction in Afghanistan. This increase is often attributed to the ravages of living for decades in a war-torn country. War and insecurity compound the issues of severe poverty and dramatic economic and social changes contributing to dire conditions often correlated with drug use (USAID, 2018; Maguet & Majeed, 2010; Riphenburg, 2004).

The use of heroin and opioids in Afghanistan doubled between 2005 and 2009, according to The United Nations Office on Drugs and Crime (UNODC, 2009). The 2015 Afghanistan National Drug Use Survey estimated 7.4% of adults nationwide use opioids, suggesting that between 1.3 and 1.6 million adult Afghans use heroin and opioids (SGI Global, 2015). The survey found that at least one resident in approximately a third of all households (31%) tested positive for one or more drugs. Roughly 11.4% of the urban households and 38.5% of the rural households tested positive for one or more substances. Further, "the 13% rate of drug use among Afghan adults is twice the adult global average rate of drug use reported by UNODC. These urine and hair tests showed that opioids are the most commonly used substances, followed by cannabis and benzodiazepines among men and women (SGI Global, 2015).

Measuring drug use in much of the Muslim world is notoriously hindered by the difficulties inherent in estimating a highly stigmatized and illegal behavior in a traditional society. As a result, many experts consider the problem of drug use to be more widespread than official estimates suggest. Prevalence of drug injection in Afghanistan in particular has explosive potential. In 2007, in Kabul a study observed an extraordinary rise of 200% in injecting drug use in just 12 months (Griffin & Khoshnood, 2010). The Integrated Biological and Behavioral Surveillance Survey, conducted between May and August 2009 in the cities of Mazar-i-Sharif, Kabul, and Herat found a high incidence of Hepatitis C (HCV) infection among injecting drug users, particularly in the cities of Kabul and Herat (Ruisenor-Escudero, 2014). Evaluations of harm reduction programs in Kabul confirmed this high incidence rate and found that risky behaviors such as syringe sharing were more common during peak conflict periods (Todd, 2015; Todd, 2016).

Drug Treatment in Afghanistan. A 2009 UNODC report on drug use in Afghanistan notes a "troubling gap" in available drug treatment services for Afghan drug users. The report states that the 40 treatment

service agencies located in the 21 provinces focus primarily on detoxification and low intensity rehabilitation and aftercare (UNODC, 2009, p. 18). A relatively recent effort to improve the availability of treatment services is the Afghanistan Initiative undertaken by the Colombo Plan for Cooperative Economic and Social Development in Asia and the Pacific. In 2009, with funding support from the Bureau of International Narcotics and Law Enforcement Affairs, United States Department of State (INL), the Colombo Plan Drug Advisory Programme (CPDAP) established a training division consisting of experts in substance use training and rehabilitation with a goal of establishing a certification process for addiction professionals in the Asia-Pacific region. "The goal of this initiative is to create a cadre of addiction professionals by enhancing their knowledge, skills and competence, thereby enabling them to provide quality service and care for recovering individuals" (Colombo Plan, 2010). One of the objectives of the Afghan National Drug Action Plan, 2015-2019 is to "expand the reach and increase the sustainability of nationwide continuum of care for the treatment of drug use" (Afghan National Drug Action Plan 2015-2019, Islamic Republic of Afghanistan Ministry of Counter Narcotics, October 2015). Treatment capacity has greatly expanded since 2009. The 2015 Afghanistan National Drug Use Survey reported that a total of 101 drug treatment centers (68 residential or inpatient programs and 34 outpatient programs) were operating Afghanistan with a total capacity to treat 27,280 patients annually (2015).

Since 2005, the CPDAP Drug Advisory Programme (DAP) has trained staff working in Afghan treatment centers in the implementation of the Universal Treatment Curricula (UTC). The UTC focuses on developing competencies and skills related to knowledge of pharmacology of psychoactive substances, treatment modalities, case assessment management and client evaluation; screening and development of treatment plans, stages of change and motivational theory and dealing with resistance and relapse prevention. Afghan treatment centers send counselors and social workers to be trained. UTC trainees are taught how to use case documentation tools along with various counseling competencies skills (e.g., keeping abreast of current approaches and evidence-based practices) that can be incorporated into their respective areas of practice. Colombo Plan DAP/ACCE trainers and staff monitor utilization of UTC core concepts and practices and provide additional training and coaching as needed.

In 2009, the Pacific Institute for Research and Evaluation, Inc. evaluated seven residential drug treatment centers for men and women in Afghanistan. These centers, located in five of the 34 provinces of Afghanistan, were selected by INL to participate in this study after their staff had received training provided by the Colombo Plan Drug Advisory Programme. Although Afghanistan's treatment system has expanded to serve more patients in more provinces, gaps remain between resources and need and fewer treatment programs are located in rural areas where a disproportionate number of substance users reside.

Project partners are D3 Systems, located in Northern Virginia, and their subsidiary, The Afghan Center for Socio-Economic and Opinion Research (ACSOR), located in Kabul, Afghanistan. ACSOR was founded in 2003 by D3 Systems, Inc. and is an Afghan national company. D3 Systems was responsible for overseeing fieldwork for the project, and ACSOR conducted the interviews and managed fieldwork activities in collaboration with PIRE and D3 Systems. This study was conducted with the support and collaboration of Colombo Plan staff.

Specific Aims and Research Questions

The following aims and corresponding research questions guided this evaluation:

Aim 1: Assess the implementation of the Colombo treatment model in sampled Afghan Drug Treatment Centers.

Research Questions

1.1 What is the (a) average length of stay in treatment phases (detox, primary treatment, secondary) for the study and by modality and gender; (b) level of patient satisfaction with treatment services; and (c) level of patient participation in treatment services?

1.2 What is the level of knowledge of DTC Program Coordinators about the Universal Treatment Curriculum Basic Courses 1 and 2?

1.3 Were Universal Treatment Curriculum (UTC) Courses 1 & 2 implemented with fidelity across participating DTCs (e.g., did treatment services in each of the participating centers follow the prescribed treatment map?)

1.4 Does the level of Universal Treatment Curriculum (UTC) implementation fidelity (for Courses 1&2) vary by treatment modality, DTC operator (NGO vs. MoPH), or gender served?

Aim 2: Evaluate the (a) overall treatment success of Afghanistan Drug Treatment Centers that have been trained on modules of the Universal Treatment Curriculum and (b) identify factors that explain, in part, varying levels of treatment success.

Research Questions

2.1 Were there decreases in illegal drug use, problem drinking, and related problems (e.g., illegal criminal activity, number of arrests) among those who completed treatment at Afghan Drug Treatment Centers that utilizes the Universal Treatment Curriculum (UTC) Courses 1 & 2?

2.2 How do key results from the current evaluation compare to the results from the 2012 evaluation?

2.3 What are the differences in treatment success (if any) of male patients when compared to treatment success of female patients?

2.4 How do any differences in treatment success for male and female patients compare to gender differences observed in the 2012 evaluation?

2.5 What are the associations between the level of success of former DTC patients and the treatment processes (e.g., length of stay, treatment services received, extent and type of training that program staff has received) and contextual factors (e.g., drug addiction stigma, mental health measures)?

2.6 Do patient demographic characteristics (e.g., gender, ethnicity, age) predict key outcomes of illegal drug use, problem drinking, and related problems (e.g., illegal criminal activity, number of arrests)?

Aim 3: Assess differences in patient treatment success across three different treatment modalities (residential, home-based, and outpatient).

Research Questions

3.1 Are there demographic or other differences in the populations served by each treatment modality?

3.2 Are there differences in treatment outcomes (both drug use and related problems) for inpatient/residential, outpatient, and home-based treatment modalities?

Aim 4: Compare differences in treatment success across centers managed by NGOs and those managed by the Afghan Ministry of Public Health (MoPH).

Research Questions

4.1 Are there demographic or other differences in the treatment populations served by NGO centers and MoPH centers?

4.2 Are there differences in treatment outcomes (both drug use and related problems) for NGO centers and MoPH centers?

4.3 Are there differences in treatment process fidelity between NGO and MoPH centers?

Project Team

The evaluation team consists of the Principal Investigator, Dr. Matthew Courser (Research Scientist); co-investigators are Linda Young (Senior Research Scientist), Dr. Stephen Shamblen (Research Scientist), Dr. April Schweinhart (Associate Research Scientist), and Casey Shepherd (Research Associate). Amanda Bajkowski of D3 Systems directed the fieldwork in Afghanistan in consultation with Ashraf Salehi, the Administrative Director of the ACSOR headquarters office in Kabul, Afghanistan, who was responsible for overseeing all fieldwork operations for the project. Due to cultural restrictions in Afghanistan, interviewers could only interview patients of the same gender. Therefore, it was necessary to have separate male and female field teams to ensure gender-matching during field interview. Ninety-seven interviewers, 18 women and 79 men, were hired to work on the project. Under the direction of the D3/ACSOR Project Manager and Field Work Supervisor, they carried out the baseline and post-test DTC Program Coordinator interviews, conducted baseline and post-test interviews with DTC patients, and administered the urine tests with patients after the baseline and post-test interviews were completed. D3/ACSOR also worked directly with MCN to resolve questions and on capacity-building for MCN to help build their capacity to design and report results from empirical research. Due to the complexity of the study, where possible ACSOR utilized field interviewers who had completed higher levels of education, previous medical training, or who had prior experience conducting the fieldwork for the 2009-2012 evaluation.

RESEARCH DESIGN AND METHODS

Research Setting

The Islamic Republic of Afghanistan was established in 1919 after centuries of tribal conflicts and invasions led by great warriors such as Alexander the Great and Genghis Khan. Often called the crossroad of Central Asia, Afghanistan occupies landlocked territory consisting mostly of mountains and dry deserts. The population was estimated in 2015 to be between 26 and 32 million. The primary ethnic groups are Pashtun, Tajik, Hazara, Uzbek, Turkmen, Aimaq, Baluch, Nuristani, Kizilbash. The majority of the residents (80%) are Sunni Muslim and 19% are Shi'a. The main languages are Dari (Afghan Farsi) and Pashto (Colombo Plan, 2015). A 2011 estimate of the literacy rate was that 31.7% of Afghans could read and write. There are gender differences in literacy with 45% of male Afghans being literate compared to

18% of females (UNESCO, 2015). Economically, Afghanistan is a poor country with an estimated unemployment rate of 40%. Much of the progress begun in the 1930s toward developing the country's infrastructure to include banking systems, schools and universities, and other services was destroyed with the Russian invasion in 1979. The resulting internal strife that continues to the present day. Currently, the majority (85%) of Afghans depend on agriculture for their livelihood and while crops such as corn, rice, barley, wheat, vegetables, cotton, and tobacco represent the primary food and industrial crops, opium poppy production and trade has played an increasing role in the economy over the last three decades (United States Agency for International Development, 2018). The Afghan National Drug Action Plan states that the "key drivers of poppy cultivation include the high price of opium relative to licit crops, low productivity of licit crops, limited access to markets, and limited availability of credit" (MCN, 2015).

Persistent unemployment and poverty in Afghanistan have impacted both family structure and family health. According to the Global Burden of Disease Study, Afghanistan experienced a maternal mortality rate of 788.9 deaths per 100,000 live births in 2015 (Hay, 2017). Other surveys conducted by the Afghanistan's Ministry of Public Health and reported by the United Nations Population Fund cast doubt on the 2015 study, estimating a maternal mortality rate of closer to 1,291 deaths per 100,000 live births (UNFPA, 2017). A 2008 study (Mashal, et al., 2008) conducted in Kabul used interviews with 1,327 mothers and physical measurements of 2,474 children to better understand the impact of poverty on the health and nutritional status of Afghan children. They found evidence of physical growth retardation in almost 40% of children and another 12.4% that could be considered emaciated. These problems were found to be associated with a lack of maternal autonomy, shortages of basic material necessities such as food, and ongoing family movement within Afghanistan. As of 2017, these findings have remained relatively stable with 38.7% of children ages 6-23 months showing stunted growth, and 18.3% showing severely stunted growth (Kim, 2017). Moreover, schooling and education remain challenges in Afghanistan, with approximately 50% of the 10 million Afghan school aged children being enrolled in school (Guimbert et al., 2008). In 2016, UNICEF estimated 40% of school-aged children did not attend school. Enrollment varies widely by province (UNICEF, 2018).

The context of Afghanistan and the social and economic problems noted above are directly tied to a very significant problem of substance use, particularly of opioids. The national drug treatment and prevention strategies aimed at addressing the substance use problems are implemented under the oversight of the Afghanistan Ministries of Counter Narcotics and Public Health. There are 59 unique program sites providing drug treatment services in Afghanistan, and some of these sites offer multiple treatment modalities. Each site and mode combination is considered a drug treatment center (DTC) in the counts we report. INL and the Afghan Ministry of Public Health are the main funders for drug treatment in Afghanistan. Based on a 2016 treatment mapping of Afghanistan, the Ministry of Public Health directly funded 65 centers with 38 non-governmental centers also receiving funding. Over time, funding responsibility for the drug treatment centers will be fully shifted to Ministry of Public Health. Defining DTCs in this way, we sampled 32 DTCs from the 103 DTCs described in a 2016 treatment mapping of Afghanistan. Our sampling frame only considered DTCs that serve adult men and/or women. If a site was selected that offered multiple modes, the numbers we report only reflect the mode that was sampled. Thus, if we sampled a home-based center from a site that offered both home-based and inpatient services, the data we report will only reflect the home-based modality.

At the time the evaluation began, the 32 centers included in this evaluation were operated by the Afghan Ministry of Public Health, as well as five NGOs: Social Services for Afghan Women Organization (SSAWO), Welfare Association for the Development of Afghanistan (WADAN), Shahamat Health and Rehabilitation Organization (SHRO), the Organization for Social Development (OSD), and Khatiz

Organization for Rehabilitation (KOR). During the evaluation, ten centers transitioned from NGO operation to MoPH operation at some point between 2016 and 2018. Eighteen provided residential treatment, three provided outpatient treatment, and 11 provided home-based treatment services. The Colombo Plan provided monitoring, oversight, and training to all centers. The gender served in our sample, the operator of, and the modality of each DTC, as of fall of 2018, is listed in Table 1. The annual patient capacity indicated is just for the sampled modality in the 2016 treatment mapping, as this information served as the basis for our sampling design (discussed later). Centers were located in 18 of Afghanistan's 34 provinces. Of note, this evaluation focused only on adult male and female patients and did not include adolescents or children.

Table 1. Description of Participating Drug Treatment Centers

Region	Province	Annual Capacity	Sex	Mode	Operator	# Pre-Test	# Follow-Up	Retention
North-Eastern	Badakhshan	240	Female	Inpatient	NGO	48	22	46%
Northern	Balkh	160	Female	Inpatient	NGO	34	34	100%
Northern	Balkh	320	Male	Inpatient	Remained MoPH	66	65	98%
Southern	Dai Kundi	160	Male	Home	Trans. to MoPH	12	7	58%
Western	Farah	80	Male	Inpatient	Trans. to MoPH	7	6	86%
Western	Farah	400	Male	Inpatient	Remained MoPH	31	29	94%
Western	Farah	160	Female	Inpatient	NGO	31	31	100%
Northern	Faryab	400	Male	Inpatient	Remained MoPH	31	18	58%
Central	Ghazni	400	Male	Inpatient	Remained MoPH	29	10	34%
Western	Ghor	400	Male	Inpatient	Remained MoPH	31	27	87%
Southern	Helmand	160	Male	Home	Trans. to MoPH	11	3	27%
Southern	Helmand	160	Male	Home	Remained MoPH	6	0	0%
Western	Herat	800	Male	Inpatient	Remained MoPH	63	56	89%
Western	Herat	240	Female	Inpatient	NGO	53	52	98%
Central	Kabul	2400	Male	Inpatient	Remained MoPH	210	179	85%
Central	Kabul	360	Male	Inpatient	Remained MoPH	28	26	93%
Central	Kabul	80	Male	Inpatient	Trans. to MoPH	8	8	100%
Central	Kabul	170	Male	Outpatient	Trans. to MoPH	14	14	100%
Central	Kabul	160	Female	Home	Trans. to MoPH	13	13	100%
Southern	Kandahar	400	Male	Inpatient	Remained MoPH	32	28	88%
Southern	Kandahar	160	Male	Home	Remained MoPH	14	10	71%
Eastern	Kapisa	160	Male	Home	Remained MoPH	12	11	92%
Central	Khost	160	Male	Home	Trans. to MoPH	12	10	83%
North-Eastern	Kondoz	400	Male	Inpatient	Remained MoPH	31	28	90%
Eastern	Laghman	170	Male	Outpatient	Trans. to MoPH	13	13	100%
Eastern	Laghman	80	Male	Home	Remained MoPH	7	6	86%
Eastern	Nangarhar	800	Male	Inpatient	Remained MoPH	63	63	100%
Eastern	Nangarhar	320	Male	Home	Remained MoPH	25	25	100%
Eastern	Nangarhar	200	Female	Inpatient	NGO	41	34	83%
Western	Nimroz	170	Male	Outpatient	Trans. to MoPH	13	11	85%
Central	Paktia	160	Male	Home	Remained MoPH	12	6	50%
Western	Herat	160	Male	Home	Trans. to MoPH	21	20	95%
Total	--	**10,590**	--	--	--	**1022**	**865**	**85%**

The geographical location of the sampled DTCs in Afghanistan within their respective provinces is presented in the map below.

Provincial Map of Afghanistan with Sampled Drug Treatment Centers
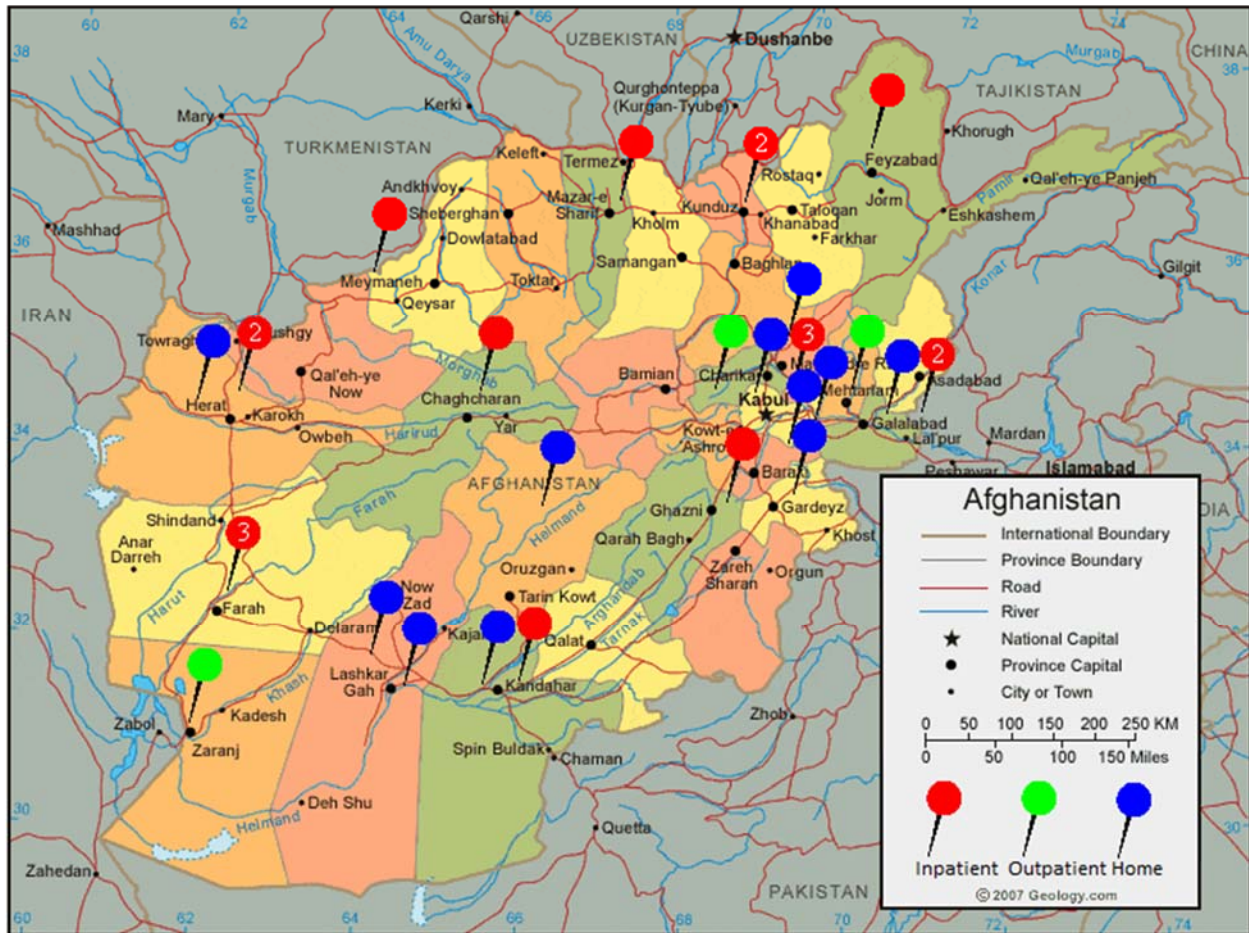
Sampling Design

The evaluation's sampling methodology was designed to ensure that the evaluation had sufficient power to inform the research questions and to ensure that study results could be generalized to Afghanistan's treatment system as a whole. Treatment centers were the primary sampling unit for our design and centers were sampled from the universe of 103 treatment centers operating in Afghanistan at the time the evaluation began. Because there is no data on the total universe of Afghans receiving drug treatment each year, the closest measure of size (MOS) was the annual patient treatment capacity of each Afghan DTC, which we divided by 12 to arrive at a monthly average. The 103 Afghan DTCs had a total monthly capacity of 1,895 patients. The sampling strategy and final sample estimates were designed to ensure that the sample was representative of the 1,895 adult patients potentially served by the Afghan adult-serving treatment system each month. Thirty DTCs were randomly selected with probabilities proportional to size (PPS) to represent the Afghan adult treatment system as a whole. Because the evaluation had a secondary objective of producing reasonable sample estimates for female patients, we used probability-proportionate to size sampling techniques to select two additional DTCs that served female patients. To ensure that the evaluation results could be generalized to Afghanistan's adult treatment system, a two-step weighting strategy was used. The inverse of the probability of

selection was used as the stage one weight. The second stage of the sampling design involved providing representative estimates of the monthly treatment capacity of each center. A quota-based sample to obtain 1,000 total patients was used at this stage, where quotas were proportional to our MOS. All patients willing to participate in the study were enrolled until either the center quota was achieved or the time window for data collection ended. Some centers exceeded sampling quotas, and some fell short. Post stratification weights were created to adjust sample weights, based on our MOS. Separate weights were created for post-test that additionally post-stratified the data to adjust for study attrition. A finite population correction was not applied at this second stage of sampling, as there is not a *known* population size and the selection of participants within centers was based on rostering, not random selection. The patients used in the creation of population correction estimates were 1,022 individuals enrolled in treatment. Of these 1,022 patients, follow-up data were collected one year after primary treatment was completed from 865 individuals (or 85% of the initial sample).

Measures

An extensive set of data elements was collected as part of this study to capture Director/Program Coordinator characteristics, DTC characteristics, patient characteristics, patient outcomes, and treatment processes. Study measures were categorized into one of 16 categories: (1) patient characteristics, (2) director characteristics at pre-test, (3) director characteristics at follow-up, (4) how patients got into treatment, (5) risk/protective factors for use, (6) illegal activity, (7) self-reported past 30 day drug use, (8) drug testing drug use, (9) drug testing corrected past 30 day use, (10) drug use related consequences, (11) center characteristics at pre-test, (12) center characteristics at follow-up, (13) center-level nuisance/moderator variables, (14) center-level dosage at pre-test, (15) center-level dosage at follow-up, and (16) patient treatment dosage.

Appendix A presents the measures of interest in this study, the instruments used to collect these data, as well as the scale range, number of survey items, and Cronbach's alpha (where relevant) for all study measures.

Instruments and Data Sources

The following instruments and protocols were developed and used.

(1) <u>Director/Program Coordinator Baseline and Follow-up Interviews</u>. These questionnaires were designed to collect background information about each Director or Program Coordinator, operational information on each DTC, and program level data about how the Colombo Plan training was implemented (see Appendices B and C).

(2) <u>Patient Baseline and Follow-up Interviews</u>. The patient baseline and follow up questionnaires were designed to capture retrospective self-reported use of alcohol and drugs before entering the DTC and during the previous 30 days and six months prior to the 12-month follow up interview. The questionnaires also included measures related employment status, legal and criminal history, peer/family relationships, beliefs about devaluation and discrimination toward drug addicts, stigma, treatment history since leaving the DTC, and demographic information (see Appendices D and E).

(3) <u>Treatment Services Log</u>: The treatment services log corresponds to the Treatment Mapping Charts developed by the Colombo Plan for residential, outpatient, and home-based treatment modalities in Afghanistan. The treatment services log was intended for centers to document each patient's participation in the various activities (e.g., detoxification, counseling, drug

education, life skills, etc.) as they progress through Pre-treatment, Treatment, and Post treatment phases of the program (see Appendix F).

(4) <u>DTC Patient Roster</u>: This form was developed to collect information on the dates each patient transitioned through the various treatment stages: the dates each patient entered the treatment center, completed detox, completed primary treatment, left the center or completed the primary treatment, and the date the post treatment phase was completed (see Appendix G).

(5) <u>Baseline and Follow-up Urinalysis</u>. To ensure that the evaluation collected valid and reliable measures of drug use by patients, urine samples were collected prior to detox and at the time of the post-treatment interview using TransMed Company CLIA-waived 12 panel urine test kits. The test kits were designed to determine the presence of benzodiazepines, marijuana, opioids, oxycodone, and methamphetamine, which are the most frequently used drugs in Afghanistan. Urine testing was selected as the primary verification method for adult patients because the research context in Afghanistan made it impractical to conduct large scale laboratory testing and because of concerns that other testing methods (such as hair) could result in false positives (particularly for opioids) due to secondhand exposure. Although urinalysis technology has improved significantly, urine tests may also produce false positive results if the patient has recently ingested certain medications or foods. The most common causes of false positives for the TransMed test kits are described below by substance (See Appendix H).

- For opioids, false positives can result if the subject is taking pain relievers and other medications containing Codeine, or if the patient has ingested food containing poppy seeds.

- For THC, false positives can result if the subject has ingested products containing hemp oil or hemp seed.

- For methamphetamine, false positives can result from the presence of procaine (Novocaine), trimethobenzamide, ranitidine (Zantac), chloroquine, ephedrine, fenfluramine, and pholodrine. 3,4-methylenedioxymethamphetamine (MDMA/Ecstasy) may cross-react with the methamphetamine detection reagent.

(6) <u>Patient Tracking Form</u>: In addition to the data collection instruments, a tracking form was constructed to capture several sources of contact information that were used to stay in touch and follow up with former patients after they left the center or completed the primary treatment program (see Appendix I).

All of the instruments and forms for this study were translated by ACSOR into Dari and Pashto.

Instrument Development Process

Because a key objective of the evaluation was to replicate the 2009-2012 evaluation, the instruments used in the current evaluation were designed to use identical questions and design characteristics wherever possible. In some cases, adjustment to wording or question structure needed to be made based on lessons learned in the first evaluation or to address research questions unique to this evaluation. A structured and iterative process was used to develop each of the evaluation instruments. In <u>step 1</u>, constructs to be measured were identified based on study objectives and the research questions guiding the study. In <u>step 2</u>, interview questions were mapped onto each construct. Questions were drawn from other, successfully-completed drug treatment evaluations, including the 2012 evaluation. In <u>step 3</u>, an item construct dictionary (ICD), which grouped questions by construct, was developed for each data collection instrument. These ICDs were then reviewed by the PIRE team

and D3 Systems staff. In step 4, revised versions of each ICD were created, incorporating the feedback from step 3. In step 5, each ICD was turned into a survey questionnaire or interview protocol (as appropriate) and reviewed again by the PIRE and D3 Systems team. In step 6, all instruments were translated and back translated and distributed to the Afghan field coordination team for review and revisions. Finalized instruments and support materials were provided to field supervisors in Sri Lanka during the Training of Trainers session.

Data Collection

Overview. Culturally appropriate data collection methods for this study were developed in close collaboration with our research partners, with review and input also provided by representatives of the Colombo Plan and the Afghanistan DTC center directors. All proposed data collection protocols were reviewed and approved by PIRE's Institutional Review Board (IRB). As the study unfolded, revisions to protocols were necessary due to unanticipated challenges. These revisions were subsequently reviewed and approved by PIRE's IRB. The final data collection protocols were incorporated into a comprehensive fieldwork training manual that was used to guide a training session conducted in Sri Lanka prior to the data collection start date. ACSOR supervisors, as well as representatives from the Ministries of Counter Narcotics, Public Health, and Higher Education attended this training. ACSOR then conducted trainings at their Kabul headquarters with field supervisors and remedial training with field staff as needed. The data collection plan for the study included: (a) an in person interview with directors, coordinators and assistant coordinators of the 32 DTCs; (b) baseline in person interviews of patients admitted to the centers during the study period; (c) a post treatment in person interviews of former patients 12 months after leaving the DTCs; (d) biological samples of urine collected from patients at baseline and follow up to test for the presence of illegal substances; and (e) center record data for each patient related to participation in primary treatment and aftercare components of the treatment programs and information collected at intake by the center staff. A follow-up interview with DTC coordinators following the completion of all other data collection activities was added to the protocol in August 2018.

Our goal for the post-test patient data collection was to interview at least 70% of the patients who completed baseline interviews. Before the 12-month follow up data collection began in October 2017, a second training was held to train supervisors on updates to the questionnaire. Field staff were subsequently trained by their supervisors. Additional strategies for minimizing attrition rates were developed and implemented as locating former patients proved to be extremely challenging. The fieldwork for the entire project was carried out over a 24-month period from September 2016 through September 2018. The following is a description of the study recruitment and data collection strategies that were employed for this study.

Recruitment and Selection

Drug Treatment Centers, Directors, and Staff

A meeting was convened in Dubai in October 2015 with Afghan stakeholders and representatives from the Colombo Plan to provide an overview of the study and discuss cultural and implementation challenges, as well as to identify key contacts. At this meeting, Dr. Courser and Ms. Young provided an overview of the proposed project and solicited the input of stakeholders on identifying key contacts, best practices for training field staff, quality assurance protocols, and research capacity needs of partners. Key research questions and power analysis were finalized to ensure that the proposed sample size was sufficient, and the Afghanistan partners provided an updated DTC list with information about the security status of each center.

A Memorandum of Agreement that specified the study protocols and role of center staff was signed. This agreement confirmed that the Center Director/Program Coordinator understood that the all data collected and participation of patients in the study were to remain strictly confidential. They also agreed to provide a private environment for ACSOR interviewers to conduct the interviews and confirmed their understanding that no penalties or loss of benefits would result if any patient declined to participate.

DTC Patient Recruitment and Consent Process

Each of the 32 centers regularly updated a roster of patients admitted to the center. All patients who were officially admitted to the DTC for 1-5 days were eligible to participate in the patient baseline interview (official admission occurred after a detoxification process was complete and each patient's official date of admission was determined by the DTC Center Director/Program Coordinator).

The patient recruitment and consent procedure was a two-step process. First, the DTC staff (Director/Program Coordinator, case manager, or "intake" administrator) asked all new patients admitted into treatment after September 10, 2016 to complete a consent form that authorized the DTCto release their name to ACSOR as a potential study participant. This consent form acknowledged that the patient was interested in hearing more about the study but did not authorize the release of any information other than their name and the date they entered the program for the purposes of maintaining the study roster of eligible and interested participants. The DTC staff member explained that the study was voluntary and there were no penalties or benefits to them personally or to the center relating to whether they agreed to participate. The DTCstaff only determined whether the client was interested in hearing more about the study.

If the patient agreed at this first stage of the process, their name and admission date was provided to ACSOR for the purpose of keeping a running roster of potential study participants. Patients who signed the first consent form were then visited in-person by an interviewer from ACSOR. The ACSOR Interviewers read a prescribed script that explained the purpose of the study and specified that the patient was requested to complete an in-person interview of up to 60 minutes in length. The interviewer script explained the following: the purpose of the study, the types of questions that were included in the baseline client interview, and the procedures, risks and safeguards involved with the study. All original signed consent forms were retained by ACSOR, though one copy was given to the subject and a copy sent to ACSOR. The consent process was designed in a modular (or flexible) format that allowed patients to decline to participate in any and all components of the evaluation. That is, patients could decline to participate in the evaluation altogether, or they could consent to the interview process but refuse the drug test for themselves. Patient participation in evaluation activities was not shared with DTC Center Directors/Program Coordinators or DTC staff and no interviews were completed with patients who were under 18 years of age.

Data Collection Protocols

DTC Director and Coordinator Interviews

Interviews were conducted with each of the Center Directors/Program Coordinators of the 32 participating drug treatment centers (DTCs) participating in the evaluation. The initial in-person interview was conducted between September 2016 and January 2017 with Center Directors and/or Program Coordinators of the 32 participating DTCs. Due to a number of coordinators who were replaced during the course of the study, a follow up interview was conducted between September and October 2018. This sampling approach allowed us to maximize the information collected as part of the Director interview. In consultation with our ACSOR field team, which developed close working

relationships with each center, we identified one Director or Program Coordinator at each center who was most knowledgeable about the center and for analysis purposes considered them our key informants.

All directors and coordinators signed written consent forms acknowledging their agreement to be interviewed. Directors/Program Coordinators were given an incentive valued at $25 US to thank them for their time in completing the Directors interview. The information obtained during the interviews reflected the past experience of Directors and Program Coordinators, as well as additional contextual and descriptive information about each participating DTC, and how they implemented key methods, concepts and techniques in the centers that were presented during the UTC training.

Patient Pre-test Interviews

A total of 1,022 in-person interviews were conducted from September 17, 2016 through May 1, 2018. Table 1 (above) presents a breakdown of the baseline interviews conducted at each center.

The names of eligible and interested patients were maintained under lock and key by the Center Director/Program Coordinator on a Master patient roster with pre-assigned numerical identifiers. After an eligible patient completed the consent process, a trained professional ACSOR interviewer conducted the baseline interview in a private location within the center to ensure confidentiality. No one else was allowed in the room or to hear the interview. The completed interview data were seen only by the interviewer, and patients' answers were taken to the ACSOR office in Kabul for data processing. Only numerical identifiers were written on interview forms and the ACSOR interviewer did not retain a crosswalk of patient names and ID numbers. In this way, the ACSOR interviewers did not carry questionnaires with any personally identifying information that could disclose the names of patients residing at the treatment center.

Patient tracking information. The success of this study depended in large measure on the ACSOR interviewer being able to locate and re-interview a large percentage of the patients who completed the baseline interview. The literature on follow up study methods suggests that to reduce attrition rates related to locating subjects, it is important to collect multiple sources of contact information from them at the time of the initial interview and to maintain periodic contact between interviews (Scott, 2004). Therefore, at the end of the baseline interview, the ACSOR interviewer also asked each patient to provide contact information, which was recorded on the Patient Tracking Form. Whenever possible, the interviewer documented the patient's full name, village name, any mobile phone numbers, and names and telephone numbers of relatives. Patients were also asked their preference for the most private and safest location for conducting the follow up interview. This information was called into the ACSOR headquarters, entered into a database and updated as needed throughout the course of the study.

Patient incentives. To encourage participation in both the baseline and follow up interviews, patients were provided with an incentive for completing each interview. After completing the baseline interview, each patient was given the equivalent of $5 US. To reduce potential attrition for the follow up data collection, those former patients who completed the follow up interview 12 months after leaving the DTCs received the equivalent of $25 US. Based on learnings from the first Afghan drug treatment evaluation, ACSOR also provided inexpensive cell phones and airtime cards to patients. Providing cell phones increased the likelihood of reaching former patients and created safe opportunities for them to have a private phone conversation with the field staff. A total of 1,022 phones were purchased and distributed to treatment patients. Five hundred prepaid "top off cards" were also distributed to ensure that study phones had minutes available for the interviews. The phones and cards were provided to these patients in addition to the $30 baseline and follow up interview incentives.

Patient Post-test Interviews

Consent and data collection procedures. The following steps were implemented to conduct post-treatment interviews. First, the ACSOR interviewer contacted the former patient using available tracking information to schedule a date, time, and place to meet for conducting the post treatment interview. The study team was sensitive to cultural concerns related to stigma associated with drug use, as well as family communication norms in which family members expect to be privy to conversations that occur within the home. In this context, ACSOR field interviewers were prepared to meet former patients at the DTC, health clinic or another location that would offer privacy for conducting the interview. The location was agreed upon between the patient and the ACSOR interviewer—with the ACSOR interviewer taking his/her cues from the patient. As a result, a total of 865 12-month follow up interviews (85%) were completed.

Regardless of location, the environment for the post-treatment interview was private to ensure confidentiality (ACSOR interviewers rescheduled if this was not possible). No one else besides small children were allowed in the room or to hear the interview. The ACSOR interviewer provided all former patients with a consent form that was read to patients and which described the study, the procedures, risks and safeguards and asked the patient to sign it. The consent form described the objectives and scope of the study and outlined the patient's rights as a study participant. The follow-up consent form asked patients to provide consent to begin the post-treatment/follow-up patient interview process and was signed before the interview.

For the patient outcome study, we were able to locate and re-interview 85% of the patients interviewed at pre-test. Table 1 (above) presents the number of baseline and post-test interviews conducted at each of the centers and center-level study retention rates.

Urine/Hair Collection and Testing

Urine samples were requested from all patients at admission and from all former patients at the time of the post-treatment interview using a TransMed Company CLIA Waived 12 panel urine test cup. The test kits were purchased by PIRE and shipped to the ACSOR team in Afghanistan.

Because we were concerned that a urine sample might be considered intrusive by female patients, we adopted a two-step design for the female patients in our sample—first, a urine sample was requested. If the female patient indicated that a urine sample was intrusive, or they indicated that they were uncomfortable with the urine test, the ACSOR interviewer offered to take a hair sample instead of the urine sample. This two-stage protocol helps ensure comparability in the drug testing protocols for male and female patients, while also maximizing the number of post-test drug tests that are successfully obtained. No patients declined providing a urine sample and no hair samples were collected.

When a urine sample was provided upon admission, DTC staff recorded the results at the end of the patient interview. At follow-up, the ACSOR interviewer read the test cup and recorded the result on the post-treatment/follow-up interview instrument. Results were not provided to/shared with the patient. All results were kept strictly confidential and used only for research purposes.

Patient Record Data

Patient treatment services log. Center Directors/Program Coordinators were asked to complete (or have their staff complete) a log of services provided to each patient who consented to participate in the study. The treatment log was designed to correspond to the Colombo Plan Treatment Mapping Chart which specified the menu of services that centers were encouraged to offer as part of their residential treatment program. The purpose of the form was to collect treatment "dosage" information—i.e., what

treatment activities each patient participated in and/or completed. Specifically, the center staff was asked to document the level of treatment components or activities of the treatment model each patient received or completed as he/she progressed through the primary and post-treatment phases. ACSOR staff reviewed the forms periodically to ensure that they were being completed correctly and in a timely manner and to provide additional instruction on how to complete the logs when needed.

Patient roster. The Patient Roster was designed for the center staff to enumerate all new patients admitted into treatment after September 10, 2016. Patients were entered into the roster upon completion of the initial recruitment consent process authorizing the DTC to release their name to ACSOR as a potential study participant. ACSOR field staff checked with the Center Director/Program Coordinator each week to make sure that all patients who completed detox and were approached to determine their willingness to participate in the study were on the roster. In addition, the roster was used to document each client's treatment and study participation status so that center or ACSOR field staff could easily determine the dates when each patient: (a) was admitted to the center, (b) completed detox, (c) admitted to the primary treatment phase, (d) completed the baseline interview, (e) completed 45 Day treatment program or left the center without completing the program, (f) completed 12 month post-treatment phase, and (g) completed post-treatment interview. ACSOR staff also maintained in their field office a corresponding or duplicate record of these dates so that data collection activities could be adequately monitored and assigned to field interviewers as appropriate. If an eligible patient refused to participate in either the baseline or follow up interview, this was noted along with an explanation regarding the client's concern or reason for refusal.

Analysis Strategy

The data collected were based on a probability sample, so some of the descriptive and inferential analyses reported are based on weighted survey analysis. As a general decision rule, descriptive and inferential analyses involving study outcomes (e.g., substance use, crime, risk and protective factors) used survey weighted analyses and descriptive and inferential analyses involving study dosage (i.e., the services actually received by those we sampled) used unweighted analyses. When treatment dosage is examined as a predictor of treatment outcomes (Research Questions 2.5-2.6), weighted analyses were used. All weighted analyses used first-order Taylor-series approximated variances. Descriptive survey analyses were conducted using the R environment for statistical computing (Ihaka & Gentleman, 1996) with the survey package (Lumley, 2018) and inferential weighted analyses were conducted using Stata 15.1 (StataCorp, 2017). More specifically, for inferential models, random intercept generalized linear models were used. Random intercepts were used to adjust estimates for variability in the outcomes due to (a) repeated measurements and (b) the nesting of individuals within centers, as appropriate. We assumed continuous outcomes had a Gaussian distribution (with an identity link function) and we assumed dichotomous outcomes had a binomial distribution (with a logit link function). The Stata package was used for weighted generalized linear mixed model regressions for survey-weighted data and the lme4 package (Bates, Maechler, Bolker, Walker, Christensen et al., 2018) in R was used for unweighted analyses. The specifics of the analysis for each research question is detailed below.

Research questions 1.1 through 1.4 involve an unweighted description of (a) the treatment services received by patients and (b) how centers were trained in and how well they implemented the UTC.

Research question 1.4 further involves an examination of dosage and treatment process by sex, mode, and operator using unweighted generalized linear mixed models. Comparisons were made based on (a) the gender served by the center (male vs. female), (b) the mode of the center (inpatient, outpatient, and home; compared as inpatient vs. otherwise and home vs. otherwise), and (c) the operator (compared always MoPH vs. otherwise and transitioned to MoPH vs. otherwise). The

comparisons for treatment mode and operator had to be conducted using dummy variables, so the most substantively interpretable codings were chosen for treatment mode (inpatient vs. otherwise and home vs. otherwise) and operator (always MoPH vs. otherwise and transitioned to MoPH vs. otherwise). The three aforementioned sets of analyses were implemented by regressing patient characteristics on each of these contrasts in separate analyses.

Research questions 2.1 through 2.6 concern changes in the outcomes targeted by the UTC, where all analyses were conducted as weighted analyses. As there was non-ignorable study attrition, we examined the extent of the bias introduced by study attrition using a Heckman (1976) selectivity analysis. The expectation maximization algorithm (Dempster, Laird, & Rubin, 1977) was used to impute predictor data *only for this analysis*. We regressed study attrition status on patient characteristics thought to possibly be related to attrition: age, sex, marital status, ethnicity, household members, number of children, employment status, and income in the past 30-days. These predictors were examined as (1) they were readily available, (2) they could presumably be related to or be confounded with attrition, and (3) they were individual level factors. Predictors not related to attrition have little effect on this correction for attrition. The overall probit regression model suggested that patient background characteristics were related to attrition, $\chi^2(11)=40.53$, p<.001. This effect was primarily due to those with a Hazara ethnicity being more likely to drop out of the study, $\chi^2(1)=16.16$, p<.001, where no other predictors were significant. As we found evidence that patient characteristics were related to study attrition, an inverse Mills' ratio was calculated from the regression model and used as a predictor in all analyses examining changes in outcomes to partially mitigate biases due to selectivity. Analyses examining change in study outcomes for the entire sample were conducted by regressing outcomes on a contrast representing time and our correction for selectivity biases. The results of these analyses were compared to 2012 results with a narrative comparison. Research question 2.3 examined whether these changes were moderated by sex by performing the same analyses for research question 2.1, but also adding sex and the orthogonal interaction between sex and time as predictors. As a supplemental analysis, the same analysis as 2.3 was performed separately for each sex to aid with interpretation. To partially guard against falsely concluding change occurred (or alpha inflation), we set the alpha level to .01, two-tailed as our threshold for statistical significance for these analyses. These results were compared in a narrative fashion to the results of 2012 for Research Question 2.4.

Analyses for research questions 2.5 and 2.6 concern whether patient standing on the primary outcomes at follow-up [drug test corrected past 30-day use of any substance and any crime (serious or non-serious) in the past 30 days] were predicted by treatment dosage/implementation fidelity and center characteristics (2.5) or patient characteristics (2.6). We first examined what predictors were statistically significant at the p<.05 level using Pearson correlations. Those predictors that were a significant predictor of either outcome were entered into a regression model as a predictor of both outcomes. These regression models used pre-test criminal behavior as an additional predictor to adjust estimates for pre-test standing in the criminal behavior model. This was not done for use of any substance, as all but one patient had used a substance in the past 30-days at pre-test. Both models included our adjustment for selectivity as a predictor. These models were run in groups (e.g., risk and protective factors, center characteristics) due to the number of potential predictors examined. As with the analysis for research question 2.3, due to the number of statistical tests, we used a more conservative alpha level of .01 to interpret these analyses.

Research questions 3.1 and 4.1 concern whether there are differences in the patients served as a function of treatment mode (residential, home-based, and outpatient) and treatment operator (MoPH-operated over the entire study, transitioned to MoPH operation during the study, or remaining NGO-operated over the entire study), respectively. These comparisons were made using unweighted

generalized linear mixed models. Weighted generalized linear mixed models were used to examine whether mode (research question 3.2) and operator (research question 4.2) moderated changes in treatment outcomes. These analyses used the aforementioned contrasts for mode and operator and were performed in a manner identical to the analyses for research question 2.3.

RESULTS

First, we briefly describe the characteristics of the 32 Drug Treatment Centers, Directors/Program Coordinators from sampled centers, and patients that participated in the study. The remaining results are organized around the research questions under each of the aims of the study. The findings are presented in tables or figures, briefly described, and followed by bulleted lists of key findings. A comprehensive analysis of all study outcomes appears in Appendix J.

Center Profile (N=32)

On average, the 32 DTCs participating in our study had been in operation for three years at the beginning of the study, although one had operated for eight years. The average number of paid full-time staff (clinical and administrative) was 24 at pre-test, although this increased to 29 at post-test. The average number of paid program/clinical professionals (treatment staff) increased from 14 to nearly 18 over the study period. Only outpatient centers had more administrative staff (9 at both pre and follow-up) than treatment staff (7 at pre-test and 8 at post-test). Over the course of the study, treatment capacity appeared to increase. The average number of director self-reported non-residential patients being treated on a monthly basis across sampled centers also increased from 7 to about 30, as did the number of residential treatment beds that, on average, increased from nearly 40 to over 70.

32 Total Centers:

- 18 residential centers
- 11 home-based centers
- 3 outpatient centers
- 6 centers served females only

Multiple treatment modalities were available in some provinces including Kabul, Nangarhar, Laghman, Balkh, Herat, Farah, Helmand, and Kandahar. The average number of participants retained in the evaluation from pre-test through post-test was 81%, but many centers had 100% retention with a few centers having much lower retention rates (a minimum of 27%). Lower retention rates were associated with centers that experienced provincial security issues during the field period and also due to how well the DTCs were able to stay in contact with patients after primary treatment had been completed.

Sampled treatment centers were operated by MoPH throughout the study; over the course of the study, 31% transitioned to MoPH operation and 16% remained NGO-run at post-test.

DTC Program Coordinators were asked how their centers selected patients to be admitted for treatment. Table 2 below presents the full set of options available to Program Coordinators. The three criteria for admission cited most frequently by Program Coordinators follow below.

These admission criteria were similar for both male and female patients and for all three treatment modalities (Residential, Outpatient, Home-based). Outpatient centers, however, had no participants selected based on good participation in pre-treatment activities, ability to travel to the center, living in the same province, age, financial resources, or referrals by elders. Centers treating female participants

also had no participants selected based on having adequate financial resources but did indicate that age, ability to travel, and living situations were important admission criteria.

**Top 3 Reasons Participants
Were Selected for Treatment**

1. Seemed to be the most motivated (91%)

2. Were on a waiting list (91%)

3. Were identified as having the greatest chance of success (75%)

Three quarters (75%) of clinical staff were reported as completing UTC Basic Courses 1 and 2; across all center types, this number was at least above 70% (see Table 2). Nearly all Program Coordinators indicated that they prioritized staff training, were committed to supporting venter staff, and their centers operated with clear goals/objectives. Ratings were similar by gender and across treatment modalities. DTC Program Coordinators also were asked to rate whether staffing levels were adequate. On average, DTC Program Coordinators felt that their centers had adequate staffing levels; these ratings of adequate staffing increased from pre-test to post-test. However, ratings of adequate staffing stayed the same for outpatient centers and decreased for female-serving centers and for centers run by NGOs.

Table 2. Center Profile

Pre (P) or Follow-Up (F)		Total (N=32)	Sex		Mode			Operator		
			Female (n=6)	Male (n=26)	Inpatient (n=18)	Out-patient (n=3)	Home (n=11)	Remained MoPH (n=17)	Became MoPH (n=10)	NGO (n=5)
residential tx. beds	P	39.22	22.50	43.08	63.61	.00	10.00	61.18	8.00	27.00
	F	71.90	61.17	74.70	80.44	97.00	50.70	87.14	51.80	69.40
non-residential monthly patients	P	6.86	10.17	6.10	2.22	11.67	13.14	4.91	9.60	8.00
	F	29.71	43.25	25.54	40.00	15.00	25.71	31.71	17.57	53.33
new admissions per month	P	25.77	18.25	27.65	32.14	14.50	16.55	33.97	13.38	17.70
	F	37.93	21.50	42.41	50.19	12.67	24.56	63.23	12.40	23.20
select for tx.: waiting list	P	91%	100%	88%	100%	33%	91%	100%	70%	100%
select for tx.: referred by mosque	P	25%	17%	27%	11%	33%	45%	18%	40%	20%
select for tx.: referred by village elder	P	25%	33%	23%	17%	0%	45%	29%	29%	20%
select for tx.: greatest chance of success	P	75%	100%	69%	67%	100%	82%	65%	80%	100%
select for tx.: most financial resources	P	9%	0%	12%	6%	0%	18%	12%	10%	0%
select for tx.: most motivated	P	91%	100%	88%	89%	100%	91%	82%	100%	100%
select for tx.: younger in age	P	28%	67%	19%	33%	0%	27%	24%	20%	60%
select for tx.: live in same province	P	28%	67%	19%	28%	0%	36%	18%	30%	60%
select for tx.: family support	P	72%	83%	69%	67%	67%	82%	71%	70%	80%
select for tx.: traveled far	P	41%	33%	42%	39%	0%	55%	41%	40%	40%
select for tx.: good attendance	P	72%	100%	65%	78%	0%	82%	71%	60%	100%
% drop out before primary	P	20%	14%	22%	16%	14%	29%	23%	19%	16%
tx. complete	F	25%	9%	30%	15%	14%	50%	20%	43%	8%
% unable to contact post tx.	P	35%	56%	30%	40%	17%	32%	28%	29%	66%

Table continues…

Table 2 (cont.). Center Profile

Pre (P) or Follow-Up (F)		Sex			Mode			Operator		
		Total (N=32)	Female (n=6)	Male (n=26)	Inpatient (n=18)	Out-patient (n=3)	Home (n=11)	Remained MoPH (n=17)	Became MoPH (n=10)	NGO (n=5)
% drop out before post tx. complete	P	37%	57%	31%	49%	34%	17%	32%	28%	66%
	F	22%	7%	27%	19%	28%	26%	18%	38%	4%
avg. monthly operating cost (Afg.)	P	555225.43	449821.00	583972.09	725277.31	70000.00	380187.50	715649.13	201571.43	536985.20
	F	478047.20	357000.00	499408.47	498861.08	315000.00	490768.50	634715.00	305349.25	385500.00
# full time administrative staff	P	9.78	6.92	10.44	10.92	11.00	7.59	10.97	9.30	6.70
	F	11.66	4.50	13.52	11.00	7.33	14.00	16.64	8.10	4.80
# full time tx. staff	P	14.26	19.58	12.98	19.03	7.00	8.86	15.62	6.89	22.90
	F	17.59	19.83	17.00	22.63	8.33	12.30	22.86	8.90	20.20
program has organizational obj.	P	91%	100%	88%	94%	67%	91%	94%	80%	100%
avg. monthly operating cost per mo./admission (Afg.)	P	32460.50	33318.10	32226.61	33581.45	4976.19	36163.84	33865.69	23971.59	39848.39
% clinical staff completing UTC	P	75%	80%	73%	71%	95%	76%	70%	80%	81%
research based decision making	P	3.00	3.06	2.99	2.80	3.25	3.26	2.71	3.31	3.20
adequate staffing (1-4)	P	3.32	3.75	3.23	3.28	3.67	3.31	3.10	3.50	3.75
	F	3.59	3.71	3.55	3.67	3.67	3.43	3.48	3.70	3.65
training prioritized (1-4)	P	2.66	3.19	2.54	2.81	1.67	2.68	2.64	2.42	3.23
staff commitment (1-4)	P	3.87	3.94	3.85	3.91	3.83	3.81	3.85	3.88	3.93
center operates with clear goals/objectives (1-4)	P	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
# staff in recovery	P	.53	.25	.60	.81	.00	.23	.44	.90	.10

Note: "P" indicates pre-test and "F" = follow-up. Percentages are averaged percentages reported by directors and averages are averaged numbers reported across directors responding. Items measured on a 1-4 scale used a 1 (strongly disagree) to 4 (strongly agree) Likert scale.

DTC Center Directors and Coordinator Profile (N= 32 Centers Represented)

Most of our sampled DTCs had a single Director or Program Coordinator during the study period. However, two of the sampled centers had multiple directors (n=2 respondents). For these DTCs we took an average for continuous measures and we coded dichotomous items as "yes" if either respondent chose yes. These characteristics are reported for both Pretest (P) and Follow-up (F) in Table 3, although they mostly remained similar, other than variables that naturally change over time (e.g. age). The Directors/Program Coordinators (at the center-level) were predominantly (26, 91%) male with six (9%) who were female. On average, DTC Center Directors/Program Coordinators were 40 years old (38-41 on average), although slightly younger in NGO centers (35-36). Slightly more than half of DTC Center Directors/Program Coordinators indicated their ethnicity to be Pashtun (53-56%) and another third indicated a Tajik ethnicity (30-34%) with few indicating (7-9%) that they were of Hazara ethnicity. All but one DTC Center Director/Program Coordinator reported completing a post-graduate education.

Most DTC Center Directors/Program Coordinators had been working in their centers for just over 5 years, although the Center Directors/Program Coordinators for outpatient centers had a shorter tenure overall (2.8 years). The DTC Center Directors/Program Coordinators had approximately 2-7 years' experience working in substance use or working at other centers, although this was lower for outpatient centers that reported only one year at other centers and 4-6 years' experience in substance use. DTC Center Directors/Program Coordinators reported spending about 15% of their time with patients (24 hours/month), although DTC Center Directors/Program Coordinators of outpatient centers reported substantially lower time with patients (7 hours/month on average).

Table 3. Center Director/Program Coordinator Profile

Pre (P) or Follow-Up (F)		Total (N=32)	Sex Female (n=6)	Male (n=26)	Inpatient (n=18)	Mode Out-patient (n=3)	Home (n=11)	Remained MoPH (n=17)	Operator Became MoPH (n=10)	NGO (n=5)
male	P	91%	50%	100%	83%	100%	100%	100%	100%	40%
	F	90%	50%	100%	81%	100%	100%	100%	100%	40%
age	P	37.99	37.00	38.26	39.06	32.67	37.85	39.82	36.30	36.60
	F	40.54	36.33	41.68	42.31	38.00	38.22	41.86	41.33	35.40
yrs. of education	P	16.73	17.00	16.67	16.75	16.00	16.91	17.06	15.95	17.20
	F	16.86	17.00	16.82	16.88	16.00	17.11	17.14	16.44	16.80
Pashtun ethnicity	P	53%	50%	54%	33%	100%	73%	53%	60%	40%
	F	56%	50%	57%	47%	67%	67%	62%	56%	40%
Tajik ethnicity	P	34%	50%	31%	50%	0%	18%	29%	30%	60%
	F	30%	50%	24%	33%	33%	22%	15%	33%	60%
Hazara ethnicity	P	9%	0%	12%	6%	0%	18%	12%	10%	0%
	F	7%	0%	10%	7%	0%	11%	8%	11%	0%
tenure in position in yrs.	P	5.51	6.76	5.22	6.40	2.83	4.78	5.20	5.65	6.27
	F	5.87	5.71	5.91	5.48	4.69	6.94	5.74	6.90	4.35
tenure in center in yrs.	P	4.40	5.61	4.09	5.08	4.17	3.47	4.17	3.97	5.95
	F	5.91	5.67	5.98	6.31	6.19	5.12	5.57	6.63	5.60
worked at other centers	P	34%	33%	35%	22%	33%	55%	24%	60%	20%
	F	46%	67%	41%	50%	33%	44%	36%	56%	60%
worked at other centers in yrs.	P	1.50	1.83	1.42	.74	.67	3.12	.92	2.76	1.20
	F	4.75	2.96	5.55	4.30	1.00	6.58	6.10	4.55	2.83
substance use exper. in yrs.	P	5.97	6.38	5.88	6.13	3.94	6.34	6.00	5.53	6.98
	F	7.47	7.37	7.50	7.56	6.19	7.75	6.57	9.51	6.35
other relevant job experience	P	72%	100%	65%	89%	0%	64%	71%	60%	100%
	F	64%	83%	59%	63%	100%	56%	50%	78%	80%
involve staff in decisions	P	4.70	4.42	4.77	4.53	5.00	4.91	4.65	5.00	4.30
monthly time with patients in hrs.	P	23.89	19.62	24.88	24.18	7.39	27.92	28.58	16.90	21.95

<u>Note</u>: "P" indicates pre-test and "F" = follow-up. Percentages are averaged percentages reported by directors and averages are averaged numbers reported across directors responding.

Patient Profile (N=1,022 at baseline; 865 at follow-up)

Table 4 presents an overview of patient characteristics. The Patient Profile Report in Appendix J provides a full description of patient characteristics. A majority of the patients in the study were male (78%) and on average were in their mid-30s, with a median age of 34 years. Forty percent of patients identified their ethnicity as Pashtun, 36% as Tajik, and 11% as Hazara. Most patients lived in their own home (64%), and the majority reported living with a spouse and children (73%, with an average of three children). Nearly three-quarters (73%) were married with male patients being more likely to be single than female patients and females being more likely to be widowed than male patients. We selected patients proportional to center size; as a result, a significant number of patients were from the provinces of Kabul (273), Herat (137), Nangarhar (129) and Balkh (100). There was an overall evaluation retention rate of 85% (865 patients of 1,022 at baseline had both pre-test and post-test data).

Low education levels were found for the majority of patients. Sixty-three percent indicated that they had completed no formal schooling upon entering treatment. Most of the patients were unemployed before entering treatment with only 34% reporting having worked at all in the 6 months prior to entering treatment. Patients also reported low income levels with an average income of just over 8,000 Afghanis in the last 30 days, which is roughly equivalent to $100 USD and close to the global standard of poverty ($3.10/day). As Table 4 shows, the top three reasons for using substances were use because of economic hardship (61%), depression (66%), and because of financial pressure (62%).

Table 4 also focuses on human rights and asked patients to rate whether they had experienced one or more human rights violations. Considering sex differences, 76% of women (compared to 50% in 2012) and 73% of men (not asked in 2012) expressed that they were denied at least one human right (out of a possible 19). For women, the top three were being forbidden to drive a car (43%), denied education (41%), and denied access to medical care (36%). For men, the top three were being denied food (41%), denied access to medical care (39%), and being denied education (34%). For women, two of the three most frequently cited human rights violations relate to women's position in Afghan society. The third (being denied medical care) and the human rights violations cited by male patients highlight that some of the human rights violations are due to structural and economic factors within Afghanistan (particularly in rural areas).

Participant scores on social functioning, criminal or antisocial behavior by peers, self-efficacy, unhealthy family relationships/family functioning, and attitudes towards opioids can be found in Table 4. These data suggest that Afghan patients have multiple risk factors for substance use and comparatively few protective factors.

Table 4. Patient Profile

Patient Characteristics	
Average age	33.99
male	78%
married	73%
Pashtun ethnicity	40%
Tajik ethnicity	36%
Hazara ethnicity	11%
live in own home	64%
live with spouse and children	73%

Table continues…

Table 4 (cont.). Patient Profile

Patient Characteristics	
number of children	2.87
working 6 mo. before entering	34%
income past 30 days	8043.30
PPI (Poverty Probability Index) probability of being above poverty line	72%
live in rural province	50%
number of prior tx. for alcohol	.11
number of prior tx. for drugs	.27
number of prior tx. for mental health	.27
denial of human rights (of 19)	3.68
Risk & Protective Factors	
education (some formal education)	37%
poor family functioning (1=Never/Poor; 5=Very Often/Positive)	2.16
criminal or antisocial behavior among peers (1 Never-5 Very Often)	1.74
positive community attributes/community assets (out of 7)	3.60
religious services per day	.76
importance of faith for staying sober (1 Not Imp. At All -4 Very Imp.)	3.58
use because of economic hardship	61%
use because of depression	66%
use because of financial pressure	62%
negative opioid attitudes	2.95
self-efficacy (1 Poor-4 Excellent)	2.00
social functioning (0 Not at All -9 Quite a Bit)	3.03

Tables 5 and 6 (below) presents self-report data for patients on the number of prior treatments for drugs and/or mental health. These data highlight that although some patients had been in treatment multiple times, the vast majority of patients who participated in the study had entered treatment for the first time. These data also suggest that there remains a significant unmet need for treatment for illegal drugs and mental health by Afghans.

Table 5. Distribution of Previous Treatment for Illegal Drug Use

0 (first time in treatment)	87%
1	8%
2	2%
3 or more	3%

Table 6. Distribution of Previous Treatment for Mental Health Issues

0 (first time in treatment)	84%
1	12%
2	3%
3 or more	1%

Table 7 presents self-reported barriers to entering treatment. The expense of treatment, social fears of being shunned, fears about getting in trouble with the police, and fears about losing one's children were the most frequently reported barriers. These barriers are presented by ethnicity and gender as well.

Table 7. Barriers to Treatment by Ethnicity and Sex (with 95% Confidence Interval for Weighted Percentages)

	Pashtun	Tajik	Hazara	Female	Male	Total
My spouse or family did not want me to seek treatment	16%(±7%)	12%(±7%)	1%(±1%)	13%(±7%)	12%(±5%)	12%(±5%)
There is no drug abuse treatment facility close by	43%(±8%)	28%(±9%)	16%(±10%)	40%(±13%)	33%(±6%)	34%(±6%)
Travel to treatment is expensive	44%(±9%)	45%(±10%)	22%(±13%)	43%(±13%)	42%(±7%)	42%(±7%)
Fear of losing my children.	39%(±6%)	32%(±8%)	19%(±7%)	33%(±11%)	34%(±6%)	34%(±5%)
Fear of losing my job	27%(±9%)	31%(±9%)	12%(±2%)	6%(±3%)	29%(±6%)	26%(±5%)
Fear I'll get in trouble with the law if they find out I use drugs/ alcohol	48%(±8%)	32%(±10%)	15%(±8%)	28%(±7%)	39%(±8%)	37%(±7%)
Fear I'll be shunned from my community if people find out I went to treatment	44%(±9%)	42%(±10%)	35%(±10%)	42%(±6%)	42%(±8%)	42%(±7%)
Fear I'll be beaten if people find out I went to treatment	37%(±8%)	22%(±7%)	11%(±8%)	30%(±8%)	28%(±7%)	29%(±6%)
I am not allowed to travel by myself and could not find a male relative to accompany me to treatment	37%(±19%)	42%(±16%)	36%(±14%)	36%(±14%)	--	36%(±14%)

Aim 1: Assess the implementation of the Colombo treatment model in sampled Afghan Drug Treatment Centers.

As noted above, Aim 1 has 4 research questions (1.1-1.4). Question 1.1 focuses on length of stay by treatment modality, level of patient satisfaction, and level of patient participation. Question 1.2 looks at the level of knowledge of DTC Program Coordinators about the Universal Treatment Curriculum (UTC) Basic Courses 1 and 2. Questions 1.3 and 1.4 pertain to implementation fidelity by modality, operator, and gender served.

Research Question 1.1: **What is the (a) average length of stay in treatment phases (detox, primary treatment, secondary) for patients in the study and by modality and sex; (b) level of patient satisfaction with treatment services; and (c) level of patient participation in treatment services?**

Treatment participation, length of stay, and treatment satisfaction have been found in many previous evaluations to be related to treatment outcomes. For Question 1.1 we relied primarily on the Treatment Services Log and Post-Treatment Patient Interview to examine patient exposure to treatment, also including patient roster data where possible. The Treatment Services Log, Patient Roster, and Post-Treatment Patient Interview each provide information about exposure and length of stay. The Patient Roster offers the most detail about days of treatment exposure and the Treatment Services Log provides detailed information about specific treatment services patients received. In addition to these sources of data, the Post-Treatment Patient Interview provides self-report data on program completion. Table 8 shows the percentage of patients completing key treatment phases according to each of these sources.

Table 8. Percentage of Patients Completing Key Treatment Phases by Data Source

	Treatment Log		Patient Roster		Self-Report	
	N	%	N	%	N	%
Completed Detox	631	75%	1022	100%	-	-
Completed Primary Treatment Phase	781	92%	1022	24%	867	94%
Completed Post-Treatment Phase	734	62%	1022	57%	780	62%
At Least Some Post-Treatment Phase	734	76%	1022	17%	-	-

Table 9 on the next page highlights that there is some discrepancy among these sources of treatment process data, where these percentages should be similar across these data sources. The N in this table represents the sample for which data were available (e.g., the log was not completed for some participants) and the percentage represents the proportion of the sample completing each treatment component. The percentages reported in the Treatment Services Log were consistent with the self-report from the Post-Treatment Patient Interview. It should be noted that the validity and reliability of data from the Patient Roster is less than desired due to logically inconsistent dates for services (e.g., entering the post-treatment phase prior to completing treatment) and missing data elements. This problem was exacerbated by some centers alternating between Persian and Gregorian date formats in their records. Table 9 presents the agreement between the data presented from the Treatment Services Log, the Patient Roster, and Post-Treatment Patient Interview. The Pearson correlations calculated for these data show positive and significant relationships between the Log and Roster for completion of each phase of treatment. Correlations could not be computed for completion of detox because every patient was listed as having completed detox in the Roster. The correlations between the Treatment Log and patient self-reports were not as strong as desired. As a result, the analysis of patient treatment program completion relies primarily on data from the Treatment Services Log (which is drawn from patient records), rather than the Post-Treatment Patient Interview.

Table 9. Concordance Correlations for Treatment Phase Completion by Data Source

	Roster	Self-Report
Treatment Log Completed Detox	†	-
Treatment Log Completed Treatment Phase	.14**	.05
Treatment Log Completed Post-Treatment Phase	.26**	-.12**
Treatment Log At Least Some Post-Treatment Phase	.53**	-

** p<.01, * p<.05
† Correlation could not be computed, due to all patients completing detoxification in the treatment roster.

Treatment Participation and Length of Stay

Data for treatment participation and length of stay, completion, and satisfaction came primarily from treatment logs and roster data completed by center staff. Table 9 compares these data to patient self-reports of treatment completion.

- Length of stay in detox and primary treatment: 58 days overall when considering all treatment modalities together.
  - Average length of stay for residential treatment was 57 days, 91 days for outpatient treatment, and 47 days for home-based treatment.

- Residential treatment program completion rates:
  - Primary treatment: 92% of patients completed primary treatment according to the treatment log, which can be compared to 94% of patients reporting that they completed primary treatment.
  - Secondary treatment: 61% of patients completed primary treatment according to the treatment log, which can be compared to 72% of patients reporting that they completed treatment.

- Outpatient treatment program completion rates:
  - Primary treatment: 100% of patients completed primary treatment according to the treatment log, which can be compared to 95% of patients reporting that they completed treatment.
  - Post-treatment 100% of patients completed primary treatment according to the treatment log, which can be compared to 68% of patients reporting that they completed treatment.

- Home-based treatment program completion rates:
  - Primary treatment: 92% of patients completed primary treatment according to the treatment log, which can be compared to 95% of patients reporting that they completed treatment.
  - Post-treatment 56% of patients completed primary treatment according to the treatment log, which can be compared to 81% of patients reporting that they completed treatment.

- The detox, primary treatment, and post-treatment length of stays were similar to the overall length of stay across modality, although patients in outpatient treatment had longer stays in primary treatment and shorter stays in detox and secondary treatment (Table 10).

Treatment Satisfaction

Data for treatment satisfaction came primarily from patient self-reports (n=865) completed as part of the post-treatment interview. Satisfaction was rated on a 1-4 scale (where 1 = very dissatisfied and 4 = very satisfied) and was high across modality for both primary treatment (3.46 overall) and secondary treatment (3.29 overall).

Table 10. Treatment Participation and Patient Reaction

	Residential (n=837)	Outpatient (n=40)	Home-based (n=145)	Overall (N=1022)
Treatment Completion (treatment log)				
Primary Treatment	92%	100%	92%	92%
Post-treatment	61%	100%	56%	62%
Treatment Completion (self-report)				
Primary Treatment	94%	95%	95%	94%
Post-treatment (participated, not completed)	72%	68%	81%	73%
Average Treatment Satisfaction (1-4 scale)				
Primary Treatment	3.47	3.50	3.36	3.46
Post-treatment	3.25	3.52	3.45	3.29

Note: Satisfaction measured on a scale where 1=Very Dissatisfied and 4=Very Satisfied.

Treatment Dosage

We examined whether there were differences in patient treatment dosage (or exposure) as a function of gender served by the center, treatment modality, and the operator of the center (Tables 11 and 12). Generally, these subgroups examined were similar to the overall across all centers. As such, we only highlight subgroups below that are divergent from the overall (or average) dosage.

Statistically significant results are reported in bullets. Non-statistically significant results are reported in tables and appendices but not in the bullets. Considering the DTCs as the unit of analysis:

- There was no evidence to suggest differences in treatment dosage as a function of gender served.

- The only differences in treatment dosage by modality were largely due to differences with outpatient treatment. Patients in outpatient treatment were more likely than the other two treatment types to receive a treatment plan review during the final portion of secondary treatment. Patients in outpatient treatment also were less likely to receive structured counseling than patients in the other two modalities.

- Those who were at a treatment facility that transitioned to MoPH were less likely to be at treatment due to a word-of-mouth referral and less likely to be there due to a referral from another organization.

- Also, patients in facilities that remained MoPH were less likely to have received basic education services in the final portion of treatment. Patients in facilities that transitioned to MoPH also were less likely to have received client education services during detox.

The following details the overall percentages participating in each stage of treatment and delineates differences by modality or operator if there were statistically significant differences. Statistically significant differences are reported in bullets. Non-statistically significant differences are reported in tables and appendices, but not in the bullets.

Prior to Treatment (treatment log, N=800)

- 86% received Community Outreach
- 83% received Family Involvement
- 57% received Support Network
- 67% received Motivational Interviewing
- 70% received Crisis Intervention
- 72% received Counseling
- 68% received Screening and Intake

Detox (treatment log, N=800)

- 99% received Assessment
- 94% received Treatment Planning
- 91% received Counseling
- 91% received symptomatic medication to assist with detox
- 94% received Referrals
- 94% received Daily Review
- 72% received Client Education – however, transitioning DTCs differed significantly from other centers:
  - For centers that started as MoPH and remained MoPH – 77% received Client Education
  - For centers that started as NGO and became MoPH – 18% received Client Education
  - For NGO centers – 84% received Client Education

Primary Treatment (treatment log, N=800)

- 39% received Basic education - transitioning DTCs differed significantly from other centers
  - For centers that Remained MoPH – 22% received Basic education
  - For centers that Became MoPH – 84% received Basic education
  - For NGO centers – 96% received Basic education
- 89% received Case management
- 92% received Client education
- 96% received Medical
- 88% received Recreational
- 94% received Religious studies
- 3% received Treatment plan review – this result differed by modality:
  - 0% received Treatment plan review in Residential
  - 96% received Treatment plan review in Outpatient
  - 0% received Treatment plan review in Home-based
- 86% received Self-help
- 99% received Structured counseling – this result differed by modality;
  - 99% received Structured counseling in Residential
  - 72% received Structured counseling in Outpatient
  - 100% received Structured counseling in Home-based
- 88% received Treatment planning

Secondary Treatment (treatment log, N=800)

- 76% received phase 1 (first three months)

- 69% received phase 2 (second three months)
- 78% received phase 3 (final six months)

Table 11. Patient Participation in DTC Treatment Activities by Gender Served and Modality

	Overall (N=800)	Sex		Mode		
		Women (N=122)	Men (N=678)	Residential (N=679)	Outpatient (N=25)	Home-based (N=96)
Prior to Admission						
Comm. Outreach	86%	97%	81%	84%	100%	98%
Family Involvement	83%	91%	51%	81%	80%	98%
Support Network	57%	86%	63%	54%	76%	75%
Motiv. Interviewing	67%	100%	64%	61%	96%	96%
Crisis Intervention	70%	99%	67%	66%	64%	98%
Counseling	72%	100%	62%	68%	100%	98%
Screening and Intake	68%	92%	85%	62%	100%	98%
During Detox						
Assessment	99%	99%	99%	99%	96%	98%
Treatment Planning	94%	97%	93%	94%	96%	94%
Counseling	91%	93%	91%	91%	96%	94%
Med. Assisted Tx.	91%	97%	90%	90%	96%	95%
Referrals	94%	87%	95%	96%	88%	83%
Daily Review	94%	98%	93%	93%	96%	96%
Client Education	72%	75%	71%	78%	0%	47%
Primary Treatment						
Basic Education	39%	93%	29%	34%	68%	63%
Case Management	89%	86%	89%	90%	100%	75%
Client Education	92%	87%	93%	92%	76%	95%
Medical	96%	100%	96%	96%	100%	97%
Recreational	88%	74%	91%	94%	0%	72%
Religious Studies	94%	97%	94%	94%	100%	97%
Tx. Plan Review*	3%	0%	4%	0%	96%	0%
Self-help	86%	97%	85%	86%	72%	95%
Struct. Counseling*	99%	99%	99%	99%	72%	100%
Treatment Planning	88%	75%	90%	93%	100%	50%
Secondary Treatment						
Phase 1	76%	100%	71%	73%	100%	89%
Phase 2	69%	100%	63%	67%	100%	75%
Phase 3	78%	100%	72%	80%	100%	59%

Note: All Data was obtained from the project treatment log. There were no significant sex differences.
* Inpatient treatment modality differed significantly from other modalities, p<.01, two-tailed.

Table 12. Patient Participation in DTC Treatment Activities by Operator

	Total (N=800)	Started & Remained MoPH (N=608)	Started NGO and Became MoPH (N=82)	Started & Remained NGO (N=110)
Prior to Admission				
Community Outreach	86%	84%	99%	91%
Family Involvement	83%	79%	93%	96%
Support Network	57%	51%	56%	91%
Motivational Interviewing	67%	59%	98%	85%
Crisis Intervention	70%	62%	88%	100%
Counseling	72%	64%	98%	100%
Screening and Intake	68%	59%	90%	100%
During Detox				
Assessment	99%	99%	99%	99%
Treatment Planning	94%	93%	93%	99%
Counseling	91%	90%	94%	95%
Med. Assisted Treatment	91%	90%	89%	99%
Referrals	94%	95%	80%	96%
Daily Review	94%	94%	85%	100%
Client Education*	72%	77%	18%	84%
Primary Treatment				
Basic Education*	39%	22%	84%	96%
Case Management	89%	93%	63%	85%
Client Education	92%	95%	78%	85%
Medical	96%	96%	90%	100%
Recreational	88%	97%	45%	71%
Religious Studies	94%	93%	99%	97%
Treatment Plan Review	3%	0%	29%	0%
Self-help	86%	85%	82%	98%
Structured Counseling	99%	100%	91%	99%
Treatment Planning	88%	92%	60%	84%
Post-treatment				
Phase 1	69%	59%	95%	100%
Phase 2	78%	70%	89%	100%
Phase 3	69%	59%	95%	100%

Note: All data was obtained from the project treatment log.

 * Those that transitioned to MoPH differed significantly from others, p<.01, two-tailed.

Research Question 1.2: What is the level of knowledge of DTC Program Coordinators about the Universal Treatment Curriculum Basic Courses 1 and 2?

As noted above, at the time that the study began, UTC Basic Courses 1 & 2 had been diffused throughout the Afghan treatment system and training for the remaining courses was just beginning. Table 13 (next page) presents attendance and participation data for the UTC Basic Courses 1 & 2. Generally, exposure was greatest for staff in inpatient DTCs.

Table 13. Exposure to UTC Basic Courses

	Pre (P) or Follow-Up (F)	Total (N=32)	Mode Inpatient (n=18)	Out-patient (n=3)	Home (n=11)
% all staff attended UTC Basic Courses 1 &2	P	45%	50%	31%	41%
	F	52%	61%	37%	44%
coordinator attended UTC training	F	90%	100%	100%	70%
# of UTC trainings attended (of 8)	F	6.79	7.31	8.00	5.60
# of whole days of UTC training attended by Directors (of 8)	F	6.48	6.75	8.00	5.60
# of CPDAP training certifications received for Directors (of 8)	F	6.48	6.75	8.00	5.60
Average # of days of CPDAP training attended (of 8) across staff	F	7.26	6.80	8.00	7.79
Average # of CPDAP training certifications received (of 8) across staff	F	7.21	6.75	8.00	7.76

As a result, our assessment of staff knowledge of the UTC focuses just on those two UTC courses, reported in Table 14. Examining knowledge for the first two courses, DTC Directors/Program Coordinators got slightly more than half of knowledge items correct for the first curriculum (52% pre-test and 53% follow-up) and slightly fewer than two thirds of the items correct for the second curriculum (61% pre-test and 60% follow-up). Overall, the percentage of correct scores increased from pre-test to follow-up for both curricula and across gender, modality, and center operator (NGO vs. MoPH).

Table 14. Program Coordinator Knowledge of UTC Basic Content

	Knowledge at Pre-test		Knowledge at Follow-up	
	% Correct Curriculum 1	% Correct Curriculum 2	% Correct Curriculum 1	% Correct Curriculum 2
Gender Served				
Women (n=6)	53%	58%	63%	68%
Men (n=26)	52%	52%	61%	58%
Modality				
Residential (n=18)	52%	53%	66%	61%
Out-patient (n=3)	47%	42%	53%	55%
Home-based (n=11)	54%	55%	57%	60%
Operator				
Remained MoPH (n=17)	51%	52%	62%	56%
Transitioned to MoPH (n=10)	53%	53%	59%	61%
NGO (n=5)	53%	57%	64%	69%
Total (N=32)	**52%**	**53%**	**61%**	**60%**

Research Question 1.3: Was the Universal Treatment Curriculum (UTC) implemented with fidelity across participating DTCs (e.g., did treatment services in each of the participating centers follow the prescribed treatment map?)

In order to better understand the extent to which the Colombo treatment plan was implemented as designed (i.e. implementation fidelity) in each sampled Center, Directors/Program Coordinators were asked to report on implementation of key elements of treatment activities included on treatment maps for each modality. This fidelity instrument included 15 items relating to each element that may be true or false. These items were developed in close consultation with Colombo Plan staff. We also asked Center Directors/Center Administrators to self-report whether they had modified any of the key treatment components. Table 15 presents the implementation fidelity data, showing that, overall, pre-treatment screening was implemented with 97% fidelity, assessment was implemented with 100% fidelity, and treatment plans were implemented with 94% fidelity. Looking in more detail at the treatment assessment and treatment plans, the fidelity data show that on average treatment assessments included 13.7 of 15 elements and treatment plans included 12.6 of 15 elements.

Table 15. Implementation Fidelity by Gender Served, Modality, and Operator

	Pre-Treatment Screening	Assess-ment	Develop Treatment Plan	Types of Assess-ments per Patient (of 15)	Treatment Plan Items (of 15)	Modifica-tions from UTC
Gender Served						
Women (n=6)	100%	100%	100%	14.00	12.42	33%
Men (n=26)	96%	100%	92%	13.62	12.62	49%
Modality						
Residential (n=18)	94%	100%	94%	14.11	12.36	47%
Out-patient (n=3)	100%	100%	67%	12.67	9.00	0%
Home-based (n=11)	100%	100%	100%	13.27	13.91	57%
Operator						
Remained MoPH (n=17)	94%	100%	94%	13.35	12.71	51%
Transitioned to MoPH (n=10)	100%	100%	90%	14.20	12.60	50%
NGO (n=5)	100%	100%	100%	13.80	12.10	20%
Total (N=32)	**97%**	**100%**	**94%**	**13.69**	**12.58**	**46%**

An analysis of the implementation fidelity, as reported by the director at pre-test, suggested implementation fidelity was high. Considering center as the unit of analysis:

- Assessment
    - Between 90-100% of patients were assessed for physical/mental conditions, current and past use treatment, family history of use, crisis risk, psychological status, had an initial treatment screen done, reason for seeking treatment, medical conditions, educational and vocational background, readiness to change, natural supports, substance use history, risk of withdrawal, recovery environment, and legal history.
    - Between 80-89% of patients were assessed for relapse potential and were assessed with diagnostic tests

- Treatment Planning
  - Between 90-100% of patients had an individualized treatment plan that was flexible, documented, written as a signed agreement, included signed off achievements and realistic behavioral objectives, specified a level of care, identified type and frequency of treatment activities, included co-occurring disorders, included patient supports, has a treatment plan for each patient, included other resources to support patients, and included plans to manage patient obstacles.
  - 80% had a treatment plan that included family input
  - 79% had a treatment plan that included alternate strategies
  - 68% had a treatment plan that was reviewed daily by clinical staff

- Treatment Approaches
  - Between 90-100% of patients received the following treatment approaches: individual counseling, use of motivational interviewing techniques, follow up outpatient or continuing care, group counseling, medical assisted treatment, daily review, staff led support group, family support group, addressing comorbid medical complications, family counseling, drop in monitoring, relapse prevention, religious sessions, health education sessions, laboratory referral services, reassessment, and recreational activities.
  - 84% of patients received medical services while in primary treatment.
  - Between 70-79% of patients received case management and referrals and participated in peer led self-help support groups, and skills training
  - 45% were exposed to the following treatment approaches: skill based vocational training and drug testing

- Treatment Services
  - 97% were exposed to treatment services for health screening or evaluation and personal safety planning
  - 84% were exposed to treatment services for treatment of physical health problems and treatment of emotional issues or trauma
  - 78% were exposed to treatment services for nutrition education
  - 60-69% were exposed to treatment services for managing trauma and violence and domestic skills
  - 50% were exposed to treatment services for reading or literacy classes
  - 45% were exposed to treatment services for managing financial resources
  - 30-39% were exposed to treatment services for other educational classes and parenting or childcare evaluation

Research Question 1.4: Does the level of Universal Treatment Curriculum (UTC) implementation fidelity vary by treatment modality, DTC operator (NGO vs. MoPH), or gender served?

We examined whether there were differences in patient treatment dosage as a function of gender served by the center, treatment modality of the center, and the operator of the center (details under section 1.1 in Tables 11 and 12). Generally, these subgroups examined were similar to the total across all centers. As such, we only highlight subgroups here that are divergent from the total. These analyses focus on the center as the unit of analysis.

For Treatment Assessments:

- Only 33% of outpatient facilities screened for relapse potential, which is lower than the overall pattern for all centers.
- Outpatient centers (50%) and those that transitioned to MoPH (44%) were less likely to review patient assessments daily.
- About half of facilities made modifications to planned treatment activities (47%) across all programs, but outpatient centers did not make any modifications to planned treatment activities.

For Treatment Approaches:

- 100% of female-serving centers and 100% of NGO-sponsored centers offered skills based vocational training, which was much higher than other centers that participated in the study.
- No outpatient centers provide referrals for medical services for patients.
- Home-based programs (60%) and programs that transitioned to MoPH (56%) were more likely to have drug testing than other centers that participated in the study.

For Treatment Services

- Centers that served women (83%) and NGO centers (100%) were more likely to have parenting or childcare evaluation than the balance of programs
- Similarly, centers that served women (83%) and NGO centers (100%) were more likely to have services pertaining to managing financial resources
- Centers that served women (100%), Home-based centers (91%) and NGO facilities (100%) were more likely to have trainings on domestic skills

Aim 2: Evaluate the (a) overall treatment success of Afghanistan Drug Treatment Centers that have been trained on modules of the Universal Treatment Curriculum and (b) identify factors that explain, in part, varying levels of treatment success.

Research Question 2.1: Were there decreases in illegal drug use, problem drinking, and related problems (e.g., illegal criminal activity, number of arrests) among those who completed treatment at an Afghan Drug Treatment Center that utilizes the Universal Treatment Curriculum (UTC)?

Table 16 presents the changes over time between pre-test and follow-up for outcomes targeted by the Afghan treatment system (the complete list can be found in Appendix J). There was a statistically significant reduction in use of any substance (drug test corrected) from 100% to 70%, where the odds of use at follow-up are .002 times as likely as use at pre-test. Similarly, there were statistically significant decreases in self-reported non-serious crime (20% to 11%) and serious crime (8% to 3%), which represent the odds of non-serious crime being about half as likely and the odds of serious crime being close to a third as likely at follow-up (Table 17). Also, there was a decrease in self-reported past six-month arrests (6% to 1%), which indicates that the odds of arrest were about one-fifth as likely. Interestingly, no one reported having engaged in crime in the past 30 days at follow-up, which precluded statistical tests.

Almost all changes were statistically significant and in the desired direction including statistically significant decreases in drug use and alcohol as well as the drug use-related consequences (see Appendix J for a complete list of outcomes). Statistically significant results are reported in bullets. Non-statistically significant results are reported in tables and appendices but not in the bullets.

Significant decreases in use of:

- Opioids: 39% change (decrease)
- Stimulants: 36% change (decrease)
- Methamphetamines: 46% change (decrease)
- Sedatives: 47% change (decrease)
- Benzodiazepines: 43% change (decrease)
- Hashish: 23% change (decrease)
- Drank Alcohol: 67% change (decrease)

Significant decreases in related consequences (size of effect is interpreted relative to r for continuous variables):

- opioid use symptoms showed a medium-sized decrease between the pre-test and post-test assessments; this is likely a function of fewer patients using opioids at post-test.
- opioid withdrawal symptoms showed a medium-sized decrease between the pre-test and post-test assessments; this is likely a function of fewer patients using opioids at post-test.
- consequences related to drug use (such as physical health, mental health, and relationships with family and friends) showed a small-sized decrease from pre-test to post-test
- past 30-day overdose showed a 70% decrease from pre-test to post-test
- attempted suicide showed a 67% decrease from pre-test to post-test

Self-Reported Crimes with statistically significant changes:

- forgery or fraud decreased by 67% from pre-test to post-test
- receiving stolen property decreased by 80% from pre-test to post-test.
- burglary or auto theft decreased by 80% from pre-test to post-test
- other theft decreased by 100% from pre-test to post-test
- parole violations increased by 100% from pre-test to post-test (from 1% to 2%)
- stealing livestock decreased by 75% from pre-test to post-test
- destruction of property decreased by 100% from pre-test to post-test
- smuggling decreased by 50% from pre-test to post-test
- distribution of any drugs decreased by 100% from pre-test to post-test
- violence against others decreased by 100% from pre-test to post-test

Table 16. Changes in Substance Use-Related Outcomes*

	Pre	Follow-Up	% Change	p	ES
Drug Test Corrected Self-Report					
Any illegal drug	100%(±0%)	70%(±7%)	-30%	<.001	.00
Opioids	96%(±2%)	59%(±8%)	-39%	<.001	.02
Stimulants	67%(±7%)	43%(±8%)	-36%	<.001	.28
methamphetamines	59%(±7%)	32%(±7%)	-46%	<.001	.21
Sedatives	45%(±8%)	24%(±7%)	-47%	<.001	.35
benzodiazepines	37%(±7%)	21%(±7%)	-43%	<.001	.39
Hashish	48%(±8%)	37%(±6%)	-23%	<.001	.57

Table continues…

Table 16 (cont.). Changes in Substance Use-Related Outcomes*

	Pre	Follow-Up	% Change	p	ES
Self-Report					
drank alcohol	6%(±2%)	2%(±1%)	-67%	<.001	.27
Drug Use-Related Consequences					
opioid use symptoms	2.78(±.08)	2.29(±.08)	-18%	<.001	-.36
opioid withdrawal symptoms	2.64(±.10)	1.95(±.08)	-26%	<.001	-.44
related consequences (physical health, mental health, relationships with family/friends, etc.)	2.90(±.11)	2.33(±.15)	-20%	<.001	-.29
past 30-day overdose	43%(±6%)	13%(±4%)	-70%	<.001	.18
attempted suicide	30%(±5%)	10%(±3%)	-67%	<.001	.20

Note: Effect sizes are odds ratios for dichotomous outcomes and r for continuous outcomes. Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. *Margins of error for 95% confidence intervals appear in parentheses. Symptoms measured as an average of items on a 1 Never to 4 Always response scale and consequences measured as an average of items on a 1 Never to 5 Very Often response scale.

Table 17. Changes in Crime-Related Outcomes*

	Pre	Follow-Up	% Change	p	ES (OR)
Non-Serious Crime	**20%(±5%)**	**11%(±5%)**	**-45%**	**<.001**	**.48**
forgery or fraud	6%(±3%)	2%(±1%)	-67%	<.001	.38
receiving stolen property	5%(±4%)	1%(±1%)	-80%	<.001	.22
gambling	3%(±2%)	2%(±2%)	-33%	.307	.81
prostitution or pandering	2%(±1%)	1%(±1%)	-50%	.246	.73
burglary or auto theft	5%(±2%)	1%(±1%)	-80%	<.001	.21
other theft	2%(±2%)	0%(±0%)	-100%	<.001	.21
weapons offenses	0%(±0%)	1%(±1%)	--	.738	1.14
vandalism or loitering	1%(±1%)	0%(±1%)	-100%	.395	.72
parole violations	1%(±1%)	2%(±2%)	100%	.016	2.46
stealing livestock	4%(±2%)	1%(±1%)	-75%	<.001	.34
destruction of property	0%(±0%)	0%(±0%)	--	.006	.26
racketeering or extortion	3%(±2%)	0%(±1%)	-100%	<.001	.16
pick pocketing	4%(±3%)	3%(±2%)	-25%	.071	.74
burglary looting	2%(±1%)	1%(±1%)	-50%	.026	.62
smuggling	1%(±1%)	0%(±1%)	-100%	.016	.32

Table continues…

Table 17 (cont.). Changes in Crime-Related Outcomes*

	Pre	Follow-Up	% Change	p	ES (OR)
Serious Crime	**8%(±3%)**	**3%(±2%)**	**-63%**	**<.001**	**.36**
distribution of any drugs	5%(±3%)	1%(±1%)	-80%	<.001	.25
robbery	1%(±1%)	1%(±1%)	0%	.525	1.26
violence against others	1%(±1%)	0%(±0%)	-100%	<.001	.05
arson	1%(±1%)	1%(±1%)	0%	.487	.77
sex offenses	0%(±0%)	0%(±0%)	--	--	--
hijacking	1%(±1%)	0%(±0%)	-100%	.214	.51
arrested past 6 months	6%(±1%)	1%(±1%)	-83%	<.001	.21
arrested past 30 days	4%(±2%)	0%(±0%)	-100%	--	--

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. *Margins of error for 95% confidence intervals appear in parentheses.

Research Question 2.2: How do key results from the current evaluation compare to the results from the 2012 evaluation?

We examined whether changes on key outcomes in the 2012 evaluation were similar to changes observed in the current evaluation. We compared the percentages for drug test corrected 30-day use of any illegal drugs and opioids, as well as self-reported past 30-day non-serious and serious criminal behavior. The comparison of the drug tests results across survey must be interpreted in context of the differences in methods used. Both pre- and post-test drug use self-reports could be corrected by drug testing results for the 2017 survey. This was also the case for the 2012 post-test survey, but only self-report data were available for the 2012 pre-test. As can be seen in Table 18, the level of use of any illegal substance and opioids at follow-up was similar in both studies. However, the percentage decrease in use of any illegal substance was larger in this study. In addition, decreases in serious and non-serious crime were similar in magnitude in both studies.

Table 18. Comparison of Changes in Outcomes for 2012 Study and the Current Study

	Year	Pre	Follow-up	Decrease
drug test corrected use of any illegal drugs	2012	85%	75%	10%
	2017	100%	70%	30%
drug test corrected use opioids	2012	84%	58%	26%
	2017	96%	59%	37%
non-serious crime	2012	25%	13%	12%
	2017	20%	11%	9%
serious crime	2012	13%	8%	5%
	2017	8%	3%	5%

Research Question 2.3: What are the differences in treatment success (if any) of male patients when compared to treatment success of female patients?

Examining whether gender moderated changes over time, there were several patterns of results observed in the data (see examination of all variables in Appendix J). Most outcomes decreased over time for both women and men, but the decreases between pre-test and post-test were larger over time for women on non-serious crime, opioid use symptoms, past six-month overdose, and past 30-day overdose. Note that some of the overall decreases in substance use were likely driven by significant differences for men, as the differences were much larger in size for men relative to women. Also note that many of the rates of individual serious and non-serious crimes were extremely small for women, leading to little variability and an inability to conduct statistical significance tests for many of these variables.

Again, statistically significant results are reported in bullets. Non-statistically significant results are reported in tables and appendices but not in the bullets.

There were differences by gender in self-reports of:

- opioid use symptoms: female patients (.73) reported a greater decrease than male patients (.44)
- past 30-day overdose: female patients (57%) reported a much large decrease than male patients (28%)

We found significant decreases over time among women only for the following.

- 46% decrease in use of opioids
- 34% decrease in use of sedatives
- 3% decrease in self-reported use of alcohol
- a significant decrease in opioid use symptoms
- a significant decrease in opioid withdrawal symptoms
- a significant decrease in substance use related consequences (such as problems in relationships with family and friends)
- a significant decrease in past 30-day overdose
- 21% decrease in suicide attempts

We found significant change over time among men only for the following.

- 48% decrease in use of any illegal drug
- 35% decrease in use of opioids
- 29% decrease in use of methamphetamines
- 19% decrease in use of sedatives
- 14% decrease in use of benzodiazepines
- 13% decrease in use of hashish
- 5% decrease in self-reported use of alcohol
- a significant decrease in opioid use symptoms
- a significant decrease in opioid withdrawal symptoms
- a significant decrease in consequences related to use
- a significant decrease in past 30-day overdose
- 20% decrease in suicide attempts

Table 19. Changes in Substance Use-Related Outcomes by Gender*

	Pre		Follow-Up	
	Women	**Men**	**Women**	**Men**
Corrected Self-Report				
anything[3]	100%(±0%)	100%(±0%)	52%(±21%)	73%(±7%)
opioids[2,3]	92%(±10%)	96%(±2%)	46%(±23%)	61%(±8%)
stimulants[3]	47%(±21%)	69%(±7%)	31%(±19%)	44%(±9%)
methamphetamines[3]	37%(±21%)	62%(±7%)	22%(±12%)	33%(±8%)
sedatives[2,3]	54%(±21%)	44%(±8%)	20%(±13%)	25%(±8%)
benzodiazepines[3]	44%(±19%)	36%(±7%)	18%(±11%)	22%(±8%)
hashish[3]	23%(±15%)	52%(±8%)	15%(±9%)	39%(±6%)
Self-Report				
drank alcohol[2,3]	4%(±3%)	7%(±2%)	1%(±1%)	2%(±1%)
Drug Use-Related Consequences				
opioid use symptoms[1,2,3]	2.86(±.13)	2.76(±.09)	2.13(±.23)	2.32(±.08)
opioid withdrawal symptoms[2,3]	2.61(±.19)	2.65(±.12)	1.82(±.15)	1.97(±.10)
related consequences[2,3]	2.75(±.23)	2.93(±.13)	1.90(±.32)	2.39(±.17)
past 30-day overdose[1,2,3]	66%(±16%)	41%(±6%)	9%(±9%)	13%(±5%)
attempted suicide[2,3]	31%(±12%)	30%(±6%)	10%(±5%)	10%(±3%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=sex by change interaction was statistically significant; 2=change was statistically significant when only examining women; 3=change was statistically significant when only examining men. *Margins of error for 95% confidence intervals in parentheses. Symptoms measured as an average of items on a 1 Never to 4 Always scale; consequences measured as an average of items on a 1 Never to 5 Very Often scale.

Examining self-reported crime, statistically significant results are reported in bullets. Non-statistically significant results are reported in tables and appendices but not in the bullets.

There were differences by gender in patient self-reports of:

- forgery or fraud: female patients reported reductions in forgery or fraud by 6 percentage points (or 6%: from 6% to 0%) while male patients reports reductions only by 4 percentage points (or 4%, 6% to 2%).
- burglary or auto theft: Male patients showed a greater decrease in burglary and auto theft than female patients although both genders ended up reporting only 1% of this type of crime at post-test (i.e. men started at higher levels).

We found significant decreases over time among female patients for the following outcomes.

- committing forgery or fraud by 6 percentage points (from 6% to 0%)
- committing burglary or auto theft by 3 percentage points (from 4% to 1%)

We found significant decreases over time among male patients for the following outcomes.

- committing forgery or fraud by 4 percentage points (from 6% to 2%)
- receiving stolen property by 4 percentage points (from 6% to 2%)
- committing burglary or auto theft by 4 percentage points (from 5% to 1%)
- committing other theft by 2 percentage points (from 3% to 1%)

- committing stealing livestock by 2 percentage points (from 4% to 2%)
- committing racketeering or extortion by 3 percentage points (from 3% to 0%)
- committing distribution of drugs by 4 percentage points (from 5% to 1%)
- committing violence against others by 1 percentage point (from 1% to 0%)

Both male and female patients reported decreased engagement in non-serious crimes, but the reduction in prevalence was larger for men. In addition, male patients had significant decreases between pre-test and post-test in serious crimes and being arrested in the past six months.

Table 20. Changes in Crime-Related Outcomes by Gender*

	Pre		Follow-Up	
	Women	**Men**	**Women**	**Men**
Non-Serious Crime[1,2,3]	**13%(±18%)**	**21%(±5%)**	**1%(±1%)**	**13%(±6%)**
forgery or fraud[1,2,3]	6%(±8%)	6%(±3%)	0%(±0%)	2%(±2%)
receiving stolen property[3]	1%(±2%)	6%(±4%)	0%(±0%)	2%(±1%)
gambling	0%(±1%)	4%(±2%)	0%(±0%)	3%(±2%)
prostitution or pandering	0%(±0%)	2%(±1%)	0%(±0%)	1%(±1%)
burglary or auto theft[1,2,3]	4%(±6%)	5%(±3%)	1%(±1%)	1%(±1%)
other theft[3]	1%(±2%)	3%(±2%)	0%(±0%)	1%(±1%)
weapons offenses	0%(±0%)	0%(±0%)	0%(±0%)	1%(±1%)
vandalism or loitering	0%(±0%)	1%(±1%)	0%(±0%)	1%(±1%)
parole violations	0%(±0%)	1%(±1%)	0%(±0%)	2%(±2%)
stealing livestock[3]	1%(±2%)	4%(±2%)	0%(±0%)	2%(±1%)
destruction of property	1%(±1%)	0%(±1%)	0%(±0%)	0%(±0%)
racketeering or extortion[3]	2%(±3%)	3%(±2%)	0%(±0%)	0%(±1%)
pick pocketing	5%(±7%)	3%(±3%)	0%(±0%)	3%(±2%)
burglary looting	0%(±1%)	2%(±1%)	0%(±0%)	1%(±1%)
smuggling	0%(±0%)	1%(±1%)	0%(±0%)	0%(±1%)
Serious Crime[3]	**3%(±4%)**	**9%(±3%)**	**0%(±0%)**	**4%(±2%)**
distribution of any drugs[3]	1%(±2%)	5%(±3%)	0%(±0%)	1%(±1%)
robbery	2%(±3%)	1%(±1%)	0%(±0%)	1%(±1%)
violence against others[3]	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)
arson	0%(±0%)	2%(±1%)	0%(±0%)	1%(±1%)
sex offenses	0%(±0%)	0%(±0%)	0%(±0%)	0%(±0%)
hijacking	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)
arrested past 6 months[3]	1%(±1%)	6%(±2%)	0%(±0%)	1%(±1%)
arrested past 30 days	1%(±1%)	4%(±2%)	0%(±0%)	0%(±0%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=sex by change interaction was statistically significant; 2=change was statistically significant when only examining women; 3=change was statistically significant when only examining men. *Margins of error for 95% confidence intervals appear in parentheses.

Research Question 2.4: How do any differences in treatment success for male and female patients compare to gender differences observed in the 2012 evaluation?

We further explored differences between the 2012 and 2017 evaluations by examining whether the level of change was moderated by gender. There was little evidence to suggest gender moderated the level of observed change in key substance use and criminal behavior outcomes across the two evaluations. Table 21 presents the level of 30-day use of any illegal drugs and opioids, as well as self-reported past 30-day non-serious and serious criminal behavior by year and gender. Overall, patterns of change were similar across both evaluations. Statistically significant results are reported in bullets.

Table 21. Comparison of Changes in Outcomes for 2012 Study and the Present (2017) Study by Sex

	Year	Females			Males		
		Pre	Follow-up	Decrease	Pre	Follow-up	Decrease
Drug test corrected use of any illegal drug	2012	89%	71%	18%	83%	77%	6%
	2017	100%	52%	48%	100%	73%	27%
Drug test corrected use of opioids	2012	89%	49%	40%	81%	62%	19%
	2017	92%	46%	46%	96%	61%	35%
Non-serious crime	2012	2%	0%	2%	37%	19%	18%
	2017	13%	1%	12%	21%	13%	8%
Serious crime	2012	1%	1%	0%	20%	11%	9%
	2017	3%	0%	3%	9%	4%	5%

Research Question 2.5: What are the associations between the level of success of former DTC patients and the treatment processes (e.g., length of stay, treatment services received, extent and type of training that program staff has received) and contextual factors (e.g., drug addiction stigma, mental health measures)?

and:

Research Question 2.6: Do any demographic differences (e.g., sex, ethnicity, age) predict key outcomes of illegal drug use, problem drinking, and related problems (e.g., illegal criminal activity, number of arrests)?

To assess the impact of contextual factors, treatment processes, and patient characteristics on treatment success (i.e., patients being less likely to use drugs at the time of the post-test interview and drug test), a complex and comprehensive multi-level model was used. The following moderators predicted the use of any substance to be less likely at follow-up. A number of moderators emerged as significant predictors of treatment success. To facilitate interpretation, these factors have been grouped into three categories: (1) DTC Center Director/Program Coordinator moderators; (2) DTC Center moderators; and (3) Patient moderators.

DTC Center Director/Project Coordinator Moderators
- Having a DTC Center Director/Program Coordinator with fewer years of education (pre-test)
- Having an older DTC Center Director/Program Coordinator (post-test)
- Having a DTC Center Director/Program Coordinator with greater tenure in his/her position (post-test)

- Having a DTC Center Director/Program Coordinator with more extensive experience working in other DTCs (post-test)
- Having a DTC Center Director/Program Coordinator with related and other relevant job experience (post-test)

DTC Moderators

- DTC admission processes that do not prioritize patient motivation as a criterion for admission
- Patient completion of primary treatment (i.e., lower percentage of patients at center dropping out before primary treatment complete)
- Having a lower percentage of patients at the DTC unable to be contacted during secondary treatment
- Having lower average monthly DTC operating costs
- Having a smaller proportion of patients at the DTC addicted to drugs
- Utilizing more types of patient assessments during primary and secondary treatment.
- Having adequate staffing (as reported by the Center Director/Program Coordinator

Patient level Moderators

- Having more perceived barriers to entering treatment
- Reporting having fewer friends and peers engaged in drug use, crime, and other antisocial behaviors
- Not indicating economic hardship as a reason for use of illegal drugs
- Scoring higher on a measure of social functioning
- Not receiving counseling prior to treatment
- Not receiving a screening intake prior to treatment
- Not receiving symptomatic medications during detoxification
- Receiving case management in the final portion of treatment
- Completing detox
- Completing primary treatment

The following moderators predicted engaging in any crime to be less likely at follow-up. As with the moderation analysis for use of illegal drugs, a number of moderators emerged as significant predictors of criminal behavior. To facilitate interpretation, these factors have been grouped into three categories: (1) DTC Center Director/Program Coordinator moderators; (2) DTC moderators; and (3) Patient moderators.

DTC Center Director/Project Coordinator Moderators

- Having a female Center Director/Program Coordinator (post-test)
- Having an older Center Director/Program Coordinator (post-test)
- Having a Center Director/Program Coordinator with more years of education (follow-up)
- Having a higher score on the pre-test assessment of the UTC Course #1 (pre-test)

DTC Moderators

- DTC admission processes select patients based on a waiting list

- DTC admission processes that do not prioritize selecting patients for treatment based on the greatest chance of success
- DTC admission processes that do not prioritize selecting patients for treatment based on those having the most financial resources
- Having a higher proportion of center staff had additional training beyond the UTC.
- Having adequate staffing (as reported by the Center Director/Program Coordinator
- Having a higher proportion of center staff who attended UTC Basic Courses 1 & 2

Patient level Moderators

- Having more healthy family relations
- Receiving support network services prior to treatment

Aim 3: Assess differences in treatment success across three different treatment modalities (residential, home-based, and outpatient).

Research Question 3.1: Are there any demographic or other differences in the populations served by each treatment modality?

- Most female patients were treated in inpatient DTCs.
- No other demographics showed differences across modality (Table 22).
- The full tables of all study demographics across treatment modality can be found in Appendix J.

Table 22. Patient Characteristics and Risk and Protective Factors by Center Modality

	Inpatient	Outpatient	Home	Total
Patient Characteristics				
age	33.72	36.05	35.01	33.99
male*	75%	100%	91%	78%
married	71%	85%	79%	73%
Pashtun ethnicity	37%	45%	61%	40%
Tajik ethnicity	39%	26%	26%	36%
Hazara ethnicity	10%	26%	10%	11%
live in own home	64%	63%	60%	64%
live with spouse and children	72%	75%	78%	73%
number of children	2.82	3.33	3.05	2.87
working 6 mo. before entering	34%	55%	31%	34%
income past 30-days (Afg.)	8765.19	2462.50	5465.55	8043.30
PPI prob. above poverty line	72%	70%	72%	72%
rural province	45%	65%	77%	50%
number prior tx. for alcohol	.08	.00	.30	.11
number prior tx. for drugs	.28	.13	.27	.27
number prior tx. for mental health	.30	.08	.17	.27
denial of human rights (of 19)	3.42	3.45	5.20	3.68

Table continues…

Table 22 (cont.). Patient Characteristics and Risk and Protective Factors by Center Modality

	Inpatient	Outpatient	Home	Total
Risk & Protective Factors				
education (some formal education)†	37%	43%	36%	37%
poor family functioning (1 Never-5 Very Often)	2.15	2.29	2.18	2.16
criminal or antisocial behavior among peers (1 Never-5 Very Often)	1.71	1.79	1.87	1.74
positive comm. attributes (of 7)	3.69	2.70	3.34	3.60
religious services per day	.78	.36	.78	.76
importance of faith for staying sober (1 Not Imp. At All -4 Very Imp.)	3.55	3.77	3.73	3.58
use because of economic hardship	61%	85%	56%	61%
use because of depression	67%	59%	65%	66%
use because of financial pressure	63%	60%	56%	62%
Risk & Protective Factors				
negative opioid attitudes (1 Strongly Disagree-4 Strongly Agree)	2.96	3.23	2.85	2.95
self-efficacy (1 Poor-4 Excellent)	2.03	1.89	1.87	2.00
social functioning (0 Not at All -9 Quite a Bit)	3.04	3.80	2.75	3.03

† An interval-level education variable was compared in statistical tests, but the percentage with some formal education is reported here for interpretability. *Inpatient and home patients were less likely to be male, p<.01, two-tailed.

Research Question 3.2: Are there differences in treatment outcomes [both drug use and consequences of use] for inpatient/residential, outpatient, and home-based treatment modalities?

All three treatment modalities (residential, outpatient, and home-based) were very similar in their effectiveness related to reducing opioid use by patients. Treatment modality had some impacts on treatment outcomes, but those effects related to non-opioid drugs. Considering non-opioid drugs, residential treatment and home-based treatment modalities were most effective. Given that residential, outpatient, and home-based treatment modalities are very different, it is surprising that there were not more differences in treatment outcomes as a result of mode (see Appendix J for an examination of all outcomes). Non-statistically significant results are reported in tables and appendices but not in these bullets.

Examining moderation effects:

- Residential facilities produced changes that were more favorable (i.e. larger desirable decreases) than other modes for stimulant use.
- Home-based treatment facilities showed the most desirable declines in hashish use, but they also showed the smallest reductions in opioid use, opioid use symptoms, and past six-month and 30-day overdoses.

When examining the effects individually for each treatment modality, statistically significant decreases were found for the following substances and related consequences of substance use:

- Residential Centers

- all illegal drugs measured
- alcohol
- all drug use-related consequences (related to physical or mental health, relationships with family or friends, attention and concentration, work, money, or legal trouble)

- Outpatient Centers
  - opioid use
  - sedative use

- Home-based Centers
  - opioid use
  - stimulant use
  - methamphetamine use
  - hashish use
  - all drug use-related consequences

Table 23. Changes in Substance Use-Related Outcomes by Modality*

	Pre			Follow-Up		
	Inpatient	**Outpatient**	**Home**	**Inpatient**	**Outpatient**	**Home**
Corrected Self-Report						
anything[3]	100%(±0%)	100%(±0%)	100%(±0%)	66%(±9%)	70%(±16%)	79%(±11%)
opioids[1,3,4,5]	98%(±1%)	90%(±7%)	93%(±5%)	57%(±9%)	50%(±29%)	68%(±13%)
stimulants[1,3,5]	74%(±7%)	45%(±25%)	60%(±12%)	43%(±8%)	34%(±26%)	45%(±19%)
methamphetamines[3,5]	66%(±7%)	42%(±28%)	51%(±13%)	34%(±9%)	15%(±15%)	33%(±14%)
sedatives[3,4]	45%(±9%)	50%(±11%)	44%(±16%)	22%(±7%)	22%(±5%)	29%(±19%)
benzodiazepines[3]	37%(±8%)	40%(±17%)	37%(±14%)	19%(±7%)	19%(±6%)	27%(±18%)
hashish[1,2,3,5]	43%(±7%)	30%(±12%)	62%(±17%)	33%(±7%)	44%(±12%)	42%(±12%)
Self-Report						
drank alcohol[3]	5%(±1%)	0%(±0%)	11%(±4%)	2%(±1%)	3%(±4%)	1%(±2%)
Drug Use-Related Consequences						
opioid use symptoms[2,3,5]	2.80(±.10)	2.87(±.22)	2.69(±.18)	2.27(±.11)	2.29(±.05)	2.33(±.16)
opioid withdrawal symptoms[3,5]	2.64(±.13)	2.74(±.46)	2.62(±.19)	1.99(±.09)	1.89(±.20)	1.90(±.17)
related consequences[3,5]	2.87(±.12)	3.16(±.46)	2.88(±.23)	2.28(±.16)	2.37(±.68)	2.41(±.34)
past 30-day overdose[2,3,5]	50%(±7%)	28%(±9%)	37%(±10%)	12%(±3%)	5%(±7%)	18%(±11%)
attempted suicide[3,5]	29%(±5%)	15%(±5%)	36%(±13%)	10%(±4%)	2%(±3%)	11%(±5%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=Significant Moderation by Being Inpatient; 2=Significant Moderation by Being Home-Based; 3=Significant Change for Inpatient Facilities when examined separately; 4=Significant Change for Outpatient Facilities when examined separately; 5=Significant Change for Home Facilities when examined separately. *Margins of error for 95% confidence intervals appear in parentheses. Symptoms measured as an average of items on a 1 Never to 4 Always response scale and consequences measured as an average of items on a 1 Never to 5 Very Often response scale.

As can be seen in Table 24, substance use at follow-up did not generally differ as a function of gender for each modality; however, use of any substances at follow-up was much lower among women than men for home-based treatment. This finding of a remarkably reduced relapse rate for female patients in home-based treatment should be interpreted with caution due to small sample sizes, but it suggests further exploration with a larger sample.

Table 24. Follow-Up Use of Any Substance by Modality and Gender

	Inpatient	Outpatient	Home
Female	66% (±17%)	-	8% (±0%)
Male	67% (±9%)	71% (±16%)	81% (±10%)

Examining moderation effects among the criminal behavior variables, home-based treatment facilities showed the largest reductions in serious crime and arrests in the past 6 months, whereas residential facilities typically showed the smallest changes from pre-test to post-test.

When examining the effects individually for each treatment modality, the following significant decreases were found for:

- Residential Centers
  - non-serious crime
  - forgery or fraud
  - prostitution or pandering
  - burglary or auto theft
  - other theft
  - stealing livestock
  - racketeering or extortion
  - pick pocketing
  - distribution of any drug
  - violence against others
  - being arrested in the past 6 months

- Outpatient Centers
  - forgery or fraud
  - receiving stolen property
  - prostitution or pandering
  - distribution of any drugs
  - being arrested in the past 6 months

- Home-based Centers
  - forgery or fraud
  - receiving stolen property
  - distribution of any drugs

Table 25. Changes in Crime-Related Outcomes by Modality*

	Pre			Follow-Up		
	Inpatient	**Outpatient**	**Home**	**Inpatient**	**Outpatient**	**Home**
Non-Serious Crime[3]	**14%(±6%)**	**25%(±25%)**	**29%(±8%)**	**7%(±5%)**	**15%(±21%)**	**18%(±11%)**
forgery or fraud[1,3,4]	6%(±3%)	6%(±8%)	5%(±5%)	1%(±1%)	3%(±4%)	4%(±4%)
receiving stolen property[1,4]	1%(±1%)	15%(±21%)	10%(±8%)	1%(±1%)	5%(±7%)	2%(±3%)
gambling	1%(±1%)	9%(±14%)	6%(±4%)	1%(±0%)	6%(±9%)	5%(±6%)
prostitution or panderign[1,2,3,4]	1%(±0%)	3%(±4%)	3%(±2%)	0%(±0%)	5%(±7%)	2%(±3%)
burglary or auto theft[3]	2%(±2%)	13%(±7%)	9%(±5%)	1%(±1%)	5%(±7%)	1%(±2%)
other theft[3]	2%(±1%)	3%(±4%)	4%(±5%)	0%(±0%)	3%(±4%)	0%(±0%)
weapons offenses	0%(±0%)	0%(±0%)	1%(±1%)	1%(±1%)	0%(±0%)	0%(±0%)
vandalism or loitering	0%(±0%)	0%(±0%)	2%(±2%)	0%(±1%)	3%(±4%)	0%(±0%)
parole violations	0%(±1%)	0%(±0%)	1%(±2%)	0%(±0%)	5%(±8%)	5%(±6%)
stealing livestock[3]	4%(±3%)	0%(±0%)	5%(±3%)	1%(±1%)	3%(±4%)	2%(±3%)
destruction of property	0%(±0%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)
racketeering or extortion[3]	3%(±3%)	0%(±0%)	2%(±3%)	0%(±0%)	0%(±0%)	1%(±2%)
pick pocketing[3]	5%(±4%)	0%(±0%)	3%(±4%)	3%(±2%)	3%(±4%)	2%(±3%)
burglary looting	2%(±1%)	0%(±0%)	2%(±3%)	1%(±2%)	0%(±0%)	1%(±2%)
smuggling	1%(±1%)	0%(±0%)	3%(±3%)	1%(±1%)	0%(±0%)	0%(±0%)
Serious Crime[1,2,3]	**5%(±3%)**	**8%(±6%)**	**13%(±6%)**	**2%(±2%)**	**8%(±11%)**	**4%(±3%)**
distribution of any drugs[3,4]	4%(±3%)	6%(±8%)	7%(±5%)	1%(±1%)	3%(±4%)	1%(±1%)
robbery	1%(±1%)	0%(±0%)	1%(±2%)	0%(±1%)	0%(±0%)	3%(±3%)
violence against others[3]	1%(±1%)	3%(±4%)	1%(±2%)	0%(±0%)	0%(±0%)	0%(±0%)
arson	1%(±0%)	0%(±0%)	3%(±3%)	1%(±1%)	5%(±7%)	0%(±0%)
sex offenses	0%(±0%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)
hijacking	1%(±1%)	0%(±0%)	1%(±1%)	0%(±0%)	3%(±4%)	0%(±0%)
arrested past 6 months[1,3,4]	5%(±1%)	5%(±8%)	6%(±3%)	1%(±1%)	3%(±4%)	2%(±3%)
arrested past 30 days	2%(±1%)	0%(±0%)	7%(±4%)	0%(±0%)	0%(±0%)	0%(±0%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=Significant Moderation by Being Inpatient; 2=Significant Moderation by Being Home-Based; 3=Significant Change for Inpatient Facilities when examined separately; 4=Significant Change for Outpatient Facilities when examined separately. *Margins of error for 95% confidence intervals appear in parentheses.

Aim 4: Compare differences in treatment success across centers managed by NGOs and those managed by the Afghan Ministry of Public Health (MoPH).

Research Question 4.1: Are there demographic or other differences in the populations served by NGO Centers and MoPH Centers?

Statistically significant results regarding demographic differences in populations served by each center operator are reported in bullets. Non-statistically significant results are reported in tables and appendices, but not in the bullets. There were two key differences in the patient populations served by

NGO and MoPH centers. It should be noted that these differences are correlational in nature and not causal factors.

- Socio-economic differences. Patients receiving services from a DTC that transitioned from being run by a NGO to MoPH were more likely to live in their own home and to have been working six months before entering treatment.
- Educational attainment. Patients receiving services from a DTC that transitioned from being run by a NGO to MoPH had a higher education level.
- Deviant peers. Patients receiving services from a DTC that transitioned from NGO to MoPH had had more deviant peers, which is a greater risk.
- No other demographics were significant (Table 26).

Table 26. Patient Characteristics and Risk and Protective Factors by MoPH Status

	Remained MoPH	Became MoPH	NGO	Total
Patient Characteristics				
age	32.94	35.70	36.80	33.99
male	100%	90%	0%	78%
married	73%	78%	70%	73%
Pashtun ethnicity	38%	48%	43%	40%
Tajik ethnicity	38%	27%	36%	36%
Hazara ethnicity	12%	19%	0%	11%
live in own home*	69%	63%	44%	64%
live with spouse and children	75%	74%	68%	73%
number of children	2.79	2.94	3.13	2.87
working 6 mo. before entering*	41%	38%	11%	34%
income past 30-days	10448.70	5806.49	1247.53	8043.30
PPI prob. above poverty line	7399%	7078%	6573%	7193%
rural province	47%	55%	58%	50%
number prior tx. for alcohol	.16	.00	.01	.11
number prior tx. for drugs	.31	.15	.23	.27
number prior tx. for mental health	.32	.12	.20	.27
denial of human rights (of 19)	3.78	4.32	2.93	3.68
Risk & Protective Factors				
education (some formal education)†*	44%	37%	14%	37%
poor family functioning (1 Never-5 Very Often)	2.15	2.28	2.12	2.16
criminal or antisocial behavior among peers (1 Never-5 Very Often)*	1.83	1.75	1.44	1.74
positive comm. attributes (of 7)	3.68	3.02	3.67	3.60
religious services per day	.82	.57	.66	.76

Table continues…

Table 26 (cont.). Patient Characteristics and Risk and Protective Factors by MoPH Status

	Remained MoPH	Became MoPH	NGO	Total
Risk & Protective Factors				
importance of faith for staying sober (1 Not Imp. At All -4 Very Imp.)	3.58	3.68	3.51	3.58
use because of economic hardship	62%	65%	54%	61%
use because of depression	66%	63%	69%	66%
use because of financial pressure	65%	57%	53%	62%
negative opioid attitudes (1 Strongly Disagree-4 Strongly Agree)	3.03	2.91	2.72	2.95
self-efficacy (1 Poor-4 Excellent)	2.01	1.91	2.02	2.00
social functioning (0 Not at All -9 Quite a Bit)	3.17	3.22	2.45	3.03

† An interval-level education variable was compared in statistical tests, but the percentage with some formal education is reported here for interpretability. *Difference between centers that were finally MoPH and centers that remained NGO significant, p<.01, two-tailed.

Research Question 4.2: Are there differences in treatment outcomes (both drug use and related problems) for NGO Centers and MoPH Centers?

In general, both NGO-operated and MoPH centers were very similar in their effectiveness related to reducing illegal drug use and criminal behavior. While there were some differential treatment effects for operator (NGO vs. MoPH), the general lack of differences found between these types of centers is perhaps more interesting than the differences found (see Appendix J for full tables of results). The general lack of differences between NGO operation and MoPH operation suggests that transitions from NGO operation to MoPH operation were handled well and that treatment maps were followed regardless of the center operator. When there were moderation effects for either of our comparisons, we explored which operator produced a level of change that was discrepant from the others. Statistically significant results are reported in bullets. Non-statistically significant results are reported in tables and appendices, but not in the bullets.

- Considering these effects, NGO centers tended to have slightly more favorable changes, as they produced the largest desirable changes in use because of economic hardship or financial pressure, opioid use and withdrawal symptoms, methamphetamine use and withdrawal symptoms, overdoses (past six month & 30 day), and stigma; but NGO centers showed the least favorable improvement in negative opioid attitudes.

- Centers that started as NGO and transitioned to MoPH showed the most desirable changes over time in unhealthy family relations, self-efficacy, attempted suicide and PTSD symptoms.

- Centers that remained MoPH showed the most desirable changes in decreasing alcohol use.

When examining the operators separately, significant reductions were observed for those centers that were operated by MoPH throughout the study period.

- 27% decrease in use of anything
- 36% decrease in use of opioids
- 30% decrease in use of stimulants
- 28% decrease in use of methamphetamines
- 15% decrease in use of sedatives

- 14% decrease in use of benzodiazepines
- 11% decrease in use of hashish
- 6% decrease in self-reported use of alcohol
- Reduction in all drug use-related consequences
  - Reduced opioid use symptoms
  - Reduced opioid withdrawal symptoms
  - Reduced drug use-related consequences
  - 27% decrease in past 30-day overdose
  - 19% decrease in suicide attempts

No significant changes were found for the small number of facilities that transitioned from a NGO operation to MoPH during the study period.

The following significant decreases were observed for centers that were operated by NGOs throughout the study period.

- 43% decrease in use of opioids
- 16% decrease in use of methamphetamines
- Reduction in all drug use-related consequences
  - Reduced opioid use symptoms
  - Reduced opioid withdrawal symptoms
  - Reduced related drug use-related consequences
  - 53% decrease in past 30-day overdose
  - 16% decrease in suicide attempts

Table 27. Changes in Substance Use-Related Outcomes by Operator*

| | | Pre | | | Follow-Up | |
	Always MoPH	Became MoPH	NGO	Always MoPH	Became MoPH	NGO
Corrected Self-Report						
anything[3]	100%(±0%)	100%(±0%)	100%(±0%)	73%(±9%)	68%(±12%)	61%(±19%)
opioids[3,5]	96%(±3%)	94%(±5%)	99%(±2%)	60%(±9%)	58%(±16%)	56%(±22%)
stimulants[3]	69%(±8%)	67%(±15%)	52%(±24%)	39%(±10%)	52%(±16%)	36%(±21%)
methamphetamines[3,5]	61%(±8%)	59%(±14%)	41%(±23%)	33%(±10%)	31%(±13%)	25%(±14%)
sedatives[3]	40%(±10%)	56%(±15%)	45%(±19%)	25%(±10%)	22%(±14%)	24%(±13%)
benzodiazepines[3]	35%(±9%)	43%(±13%)	33%(±10%)	21%(±10%)	21%(±13%)	22%(±12%)
hashish[3]	52%(±8%)	48%(±18%)	24%(±18%)	41%(±8%)	34%(±10%)	18%(±9%)
Self-Report						
drank alcohol[2,3]	8%(±3%)	3%(±3%)	5%(±4%)	2%(±1%)	2%(±2%)	1%(±1%)

Table continues…

Table 27 (cont.). Changes in Substance Use-Related Outcomes by Operator*

	Pre			Follow-Up		
	Always MoPH	Became MoPH	NGO	Always MoPH	Became MoPH	NGO
Drug Use Related Consequences						
opioid use symptoms[1,3,5]	2.77(±.11)	2.78(±.16)	2.80(±.12)	2.30(±.11)	2.37(±.11)	2.11(±.24)
opioid withdrawal symptoms[1,3,5]	2.58(±.12)	2.74(±.23)	2.71(±.15)	1.95(±.12)	2.04(±.16)	1.81(±.15)
related consequences[3,5]	2.92(±.14)	2.96(±.24)	2.63(±.18)	2.43(±.18)	2.23(±.34)	2.04(±.28)
past 30 day overdose[1,3,5]	42%(±6%)	39%(±13%)	64%(±19%)	15%(±6%)	9%(±6%)	11%(±10%)
attempted suicide[2,3,5]	31%(±6%)	28%(±11%)	28%(±14%)	12%(±4%)	4%(±4%)	12%(±5%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=Significant Moderation by Being MoPH at End; 2=Significant Moderation by Becoming MoPH; 3=Significant Change for Facilities that were Always MoPH when examined separately; 4=Significant Change for Facilities that became MoPH when examined separately; 5=Significant Change for NGO Facilities when examined separately. *Margins of error for 95% confidence intervals appear in parentheses. Symptoms measured as an average of items on a 1 Never to 4 Always response scale and consequences measured as an average of items on a 1 Never to 5 Very Often response scale.

Examining moderation of change in criminal behavior by NGO and MoPH operators, there was a 15% decrease in non-serious crime for NGO-operated centers which was larger than the reduction for MoPH centers or for centers that transitioned to MoPH during the study period.

Significant change for facilities that were operated by MoPH throughout the study period when examined separately:

- 3% decrease in burglary or auto theft
- 3% decrease in other theft
- 3% decrease in stealing livestock
- 2% decrease in burglary looting

Significant change for NGO facilities when examined separately:

- 15% decrease in non-serious crime
- 4% decrease in burglary or auto theft

Table 28. Changes in Crime-Related Outcomes by Operator*

	Pre			Follow-Up		
	Always \MoPH	Became MoPH	NGO	Always \MoPH	Became MoPH	NGO
non-serious crime[1,5]	17%(±5%)	27%(±12%)	16%(±20%)	12%(±7%)	13%(±8%)	1%(±1%)
forgery or fraud	3%(±2%)	10%(±7%)	7%(±9%)	2%(±2%)	3%(±3%)	0%(±1%)
receiving stolen property	3%(±2%)	12%(±11%)	2%(±3%)	2%(±2%)	2%(±3%)	0%(±0%)
gambling	3%(±2%)	5%(±5%)	0%(±1%)	3%(±3%)	3%(±3%)	0%(±0%)
prostitution or pandering	1%(±1%)	3%(±2%)	0%(±0%)	1%(±2%)	2%(±3%)	0%(±0%)
burglary or auto theft[3,5]	4%(±2%)	8%(±5%)	5%(±8%)	1%(±1%)	3%(±3%)	1%(±1%)
other theft[3]	3%(±3%)	1%(±1%)	2%(±3%)	0%(±0%)	1%(±1%)	0%(±0%)
weapons offenses	1%(±1%)	0%(±0%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)
vandalism or loitering	1%(±1%)	1%(±2%)	0%(±0%)	0%(±1%)	1%(±1%)	0%(±0%)
parole violations	0%(±1%)	1%(±2%)	0%(±0%)	2%(±3%)	3%(±3%)	0%(±0%)
stealing livestock[3]	4%(±3%)	4%(±3%)	1%(±2%)	1%(±1%)	3%(±3%)	0%(±0%)
destruction of property	1%(±1%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)
racketeering or extortion	1%(±1%)	5%(±5%)	3%(±3%)	1%(±1%)	0%(±0%)	0%(±0%)
pick pocketing	3%(±3%)	4%(±5%)	5%(±8%)	3%(±2%)	3%(±3%)	0%(±0%)
burglary looting[3]	2%(±1%)	2%(±3%)	0%(±1%)	0%(±1%)	3%(±3%)	0%(±0%)
smuggling	1%(±1%)	3%(±3%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)
serious crime	7%(±4%)	13%(±6%)	3%(±5%)	4%(±2%)	3%(±4%)	0%(±0%)
distribution of any drugs[3]	3%(±2%)	9%(±7%)	1%(±2%)	1%(±1%)	1%(±2%)	0%(±0%)
robbery	1%(±1%)	0%(±0%)	2%(±3%)	2%(±2%)	0%(±0%)	0%(±0%)
violence against others[3]	2%(±2%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)	0%(±0%)
arson	1%(±1%)	3%(±3%)	0%(±0%)	1%(±1%)	2%(±3%)	0%(±0%)
sex offenses	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)	0%(±0%)
hijacking	1%(±1%)	1%(±1%)	0%(±0%)	0%(±0%)	1%(±1%)	0%(±0%)
arrested past 6 months[3]	7%(±2%)	5%(±3%)	1%(±1%)	1%(±1%)	3%(±4%)	0%(±0%)
arrested past 30 days	6%(±2%)	0%(±0%)	1%(±1%)	0%(±0%)	0%(±0%)	0%(±0%)

Note: Estimates are weighted to population proportions, where follow-up weights are post-stratified to adjust for non-response at the center level. 1=Significant Moderation by Being MoPH at End; 2=Significant Moderation by Becoming MoPH; 3=Significant Change for Facilities that were Always MoPH when examined separately; 4=Significant Change for Facilities that became MoPH when examined separately; 5=Significant Change for NGO Facilities when examined separately. *Margins of error for 95% confidence intervals appear in parentheses.

SUMMARY AND RECOMMENDATIONS

Summary

The results of the Afghanistan drug treatment evaluation show positive change (i.e. statistically significant reductions) in illegal drug use and criminal behavior. Our results suggest that although the reductions in illegal drug use tended to be larger for women than men, both genders showed decreases in drug use. Meaningful reductions in substance use occurred in all three treatment modalities (residential, outpatient, and home-based). The differences in treatment modality tended to favor inpatient treatment, but were similar overall.

Treatment process results show that 92% of patients completed primary treatment and 62% of patients completed secondary treatment. Through our interviews with Center Directors and Program Coordinators, we also found that key elements included on the treatment maps for each residential, outpatient, and home-based treatment modalities generally were implemented with fidelity. However, levels of knowledge UTC concepts for Courses 1 & 2 and processes were low, averaging just above 50% at pre-test and just above 60% at post-test.

We used our data to understand what treatment factors predicted positive changes in past 30-day drug use. We found that completing primary and secondary treatment predicted reductions in past 30-day substance use. In addition, we found that patients who were served by DTCs with adequate staffing levels and by treatment staff who had higher levels of treatment experience were more likely to have a reduction in illegal drug use from pre-test to post-test. These findings highlight the importance of maintaining Drug Treatment Center staffing levels and further investing in training for Afghan treatment professionals.

As we discuss below in our recommendations, these results have important policy implications and support the use of a "continuum of care" model with patients who relapse.

Recommendations

While results must be interpreted cautiously without a control group comparison, outcomes of the Afghanistan drug treatment study show that the residential, outpatient, and home-based DTCs that participated in the evaluation appear to be making a positive difference in the lives of patients. This success is commendable and critical, given the importance of reducing illegal drug use and opioid use among Afghans. Our experience and results also suggest improvements that can be made. Our recommendations follow below.

1. **Drug Treatment Centers should provide continued treatment and outreach services to former patients who relapse.** This evaluation found that Afghanistan's drug treatment system was effective in significantly reducing illegal substance use and related consequences for patients who completed primary and secondary treatment. Residential, outpatient, or home-based Drug Treatment Centers were nearly equally effective at providing this treatment. However, a significant proportion of patients reported or tested positive for illegal drug use after 12 months of primary and secondary treatment. This finding suggests that substance use remains a chronic medical condition with high relapse rates and requires repeated treatment aimed at reducing "symptoms" over time rather than setting a goal of complete abstinence. Our results also lend support to the concept of recovery as a process within a "continuum of care" model that incorporates repeated assessments, treatment approaches (e.g., inpatient, monitoring, aftercare) and follow-up aimed at reinforcing goals that eventually lead the drug addicted patient back toward a productive and more healthy life. Afghan

Drug Treatment Centers can support this approach to addiction by continuing to try to engage non-abstinent patients in additional courses of treatment services.

2. **Treatment emphasis should continue to be placed on ensuring that patients complete primary and secondary treatment.** Our results showed that completing primary and secondary treatment was a significant predictor of reductions in past 30-day use of illegal drugs. This focus and work should be maintained to help ensure that patients complete both primary and secondary treatment. Despite these efforts, we found that only 62% of patients in our sample reported completing secondary treatment. This is an area in which centers will need one-on-one technical assistance and coaching from Colombo Plan staff to help understand and remove barriers to patients completing secondary treatment.

3. **Ensure DTC staff have ongoing access to training on UTC basic and advanced courses.** Although this evaluation focused just on assessing knowledge about and implementation of UTC Basic Courses 1 and 2 (which in 2015 were the two UTC courses that had been widely trained on in Afghanistan), we found very low levels of knowledge of key concepts and processes from the courses (average knowledge scores fell between 50% and 60%). Because knowledge of UTC concepts, principles, and activities can be considered a necessary precondition for utilizing UTC content in patient treatment plans, efforts should be made to provide booster trainings and refresher trainings on UTC content. This recommendation becomes even more critical as clinical staff and others who provide patient treatment continue to receive further UTC training. Careful attention should be paid to the quality of training delivery as well to ensure that training attendees leave UTC trainings with the knowledge and skills necessary to utilize UTC concepts and processes with fidelity in their Centers.

4. **Continue to assess the performance of the Afghan treatment system and engage Afghan DTCs as partners in ongoing data collection.** Both this evaluation and the evaluation in 2012 highlight the strongly positive impact that the Afghan drug treatment system is having on patients. This treatment success is critically important from a public health standpoint as it is making Afghan villages and cities healthier and in doing so is helping to stabilize the Afghan economy. Because the Afghan treatment system continues to evolve as new drugs emerge, as centers continue to implement UTC content, and as centers continue to transition to MoPH operation, we recommend that a system to collect data on treatment processes and patient outcomes be developed and implemented. Such as system—while very challenging to design and implement given the context of Afghanistan—would help MoPH and MCN ensure that the system continues to have a strongly positive impact on public health in Afghanistan. A system also would help support ongoing monitoring efforts by the Afghan government, and by the Colombo Plan and UNODC.

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