

# PROJECT START INTERVENTION INCREASES HIV TESTING UPTAKE AND DECREASES HIV RISK BEHAVIOUR AMONG MEN RELEASED FROM PRISON: A RANDOMIZED CONTROLLED STUDY IN UKRAINE

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## BACKGROUND

In Ukraine, the prevalence of infectious diseases (HIV, TB, hepatitis), substance use disorders and risky sexual behaviors is high among prisoners transitioning to the community. HIV prevalence in prisoners varies from 14% to over 19%, according to different studies. In 2013-2015, the USAID RESPOND Project supported four NGOs in Ukraine with the implementation of Project START, an HIV prevention intervention adapted from the CDC's compendium at [EffectiveInterventions.CDC.gov](http://EffectiveInterventions.CDC.gov) that targets prisoners transitioning back into the community. Project START consists of six individual counseling sessions: two prior to release, and four after the release from prison. The goal of these sessions is to decrease the risks of HIV, STIs and hepatitis in recently released inmates. This implementation study assessed whether Project START, adapted to Ukrainian context and implemented with fidelity, would decrease the risk of HIV infection in men who transition from prison to community in three regions of Ukraine.



Fig.1. Regions with the Project START study sites.

## METHODS

### Study Design:

Randomized controlled trial from 12 male state prisons and one detention center in 3 regions of Ukraine. Two months before release, male prisoners were randomly assigned to receive either commonly available community-based services (if any), or the Project START intervention in addition to those services. Pre-determined sample size was 240 participants for the intervention and 160 participants for the control group.

### Inclusion criteria:

- 1) 18+ years of age;
- 2) To be released within 2 months to an NGO catchment area;
- 3) Able to provide his contact information;
- 4) Two alternative contacts are available.

### Exclusion criteria:

Cognitive impairment; active tuberculosis.

### Recruitment period:

Between September 2013 and April 2015.

### Assessment:

Fidelity of implementation was assessed through:

- Analysis of standard client records;
- Analysis of 10% of randomly selected audio-recorded individual counseling sessions;
- Direct observation of counseling sessions.

Indicators of fidelity included:

- Correspondence of counseling sessions content to the Project START intervention manual;
- Proportion of sessions at which: the client, assisted by the counselor, developed his risk reduction goals, client's needs for the transition period were assessed, and referrals to the necessary services were made;
- Proportion of clients who received all 6 counseling sessions.

Participants were assessed at baseline, 3- and 6-month follow-up interviews by independent researchers through interviewer-administered paper-based surveys. Demographics, utilization of prevention services, substance use, sexual behavior, HIV knowledge and depression were mea-

sured at each assessment. The reporting period for behavior practices at baseline was 3 months before incarceration. Follow-up measurements addressed the period since previous assessment.

### Primary outcomes of interest:

Sexual risks:

- Unprotected sex at last intercourse;
- Inconsistent condom use in the past 3 months, measured separately for regular and casual partners.

### Secondary outcomes of interest:

- HIV knowledge;
- HIV testing within the past 12 months;
- Proportion of risk reduction goals reached by clients within 6 months;
- Proportion of clients accessing services recommended by the counselor.

HIV knowledge was measured as the proportion of participants who correctly identified ways of preventing HIV and rejected major misconceptions about HIV transmission by giving correct answers to all of the following five questions: Can having sex with only one faithful, uninfected partner reduce the risk of HIV transmission? Can using condoms at each sexual intercourse reduce the risk of HIV transmission? Can a healthy-looking person have HIV? Can a person get HIV by sharing needles, syringes or drug solution when injecting drugs with someone who is infected? Can a person get HIV by sharing a meal with someone who is infected?

HIV testing uptake was assessed as the proportion of participants who received HIV test in the past 12 months and knew their test results. Voluntary HIV testing was available in prison settings.

### Statistical analyses:

- Intent-to-treat analysis compared intervention and control groups at each assessment.
- Generalized linear mixed model (GLMM).
- Multivariate imputation by chained equations based on random forest algorithm to address data not missing at random (NMAR).

## RESULTS

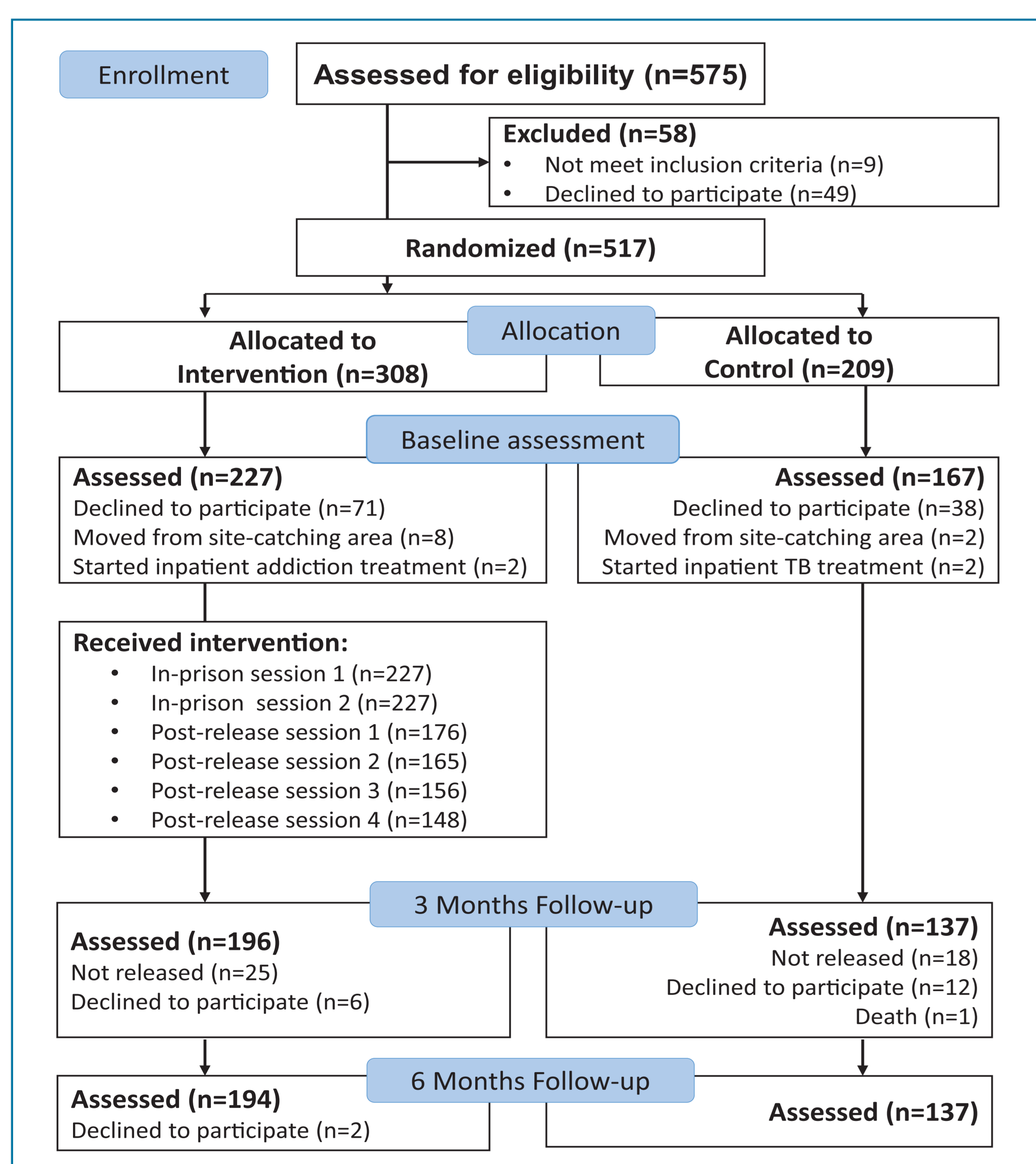


Fig. 2. Study Participant Flow

In total, 394 male prisoners were included in the study. Mean age of participants was  $35.6 \pm 9.6$  years, mean duration of imprisonment  $38.9 \pm 24.1$  months, and 56.9% reported history of injection drug use. Follow-up rates at 3- and 6-month assessments were 86% and 85% for the intervention group and 82% and 82% for the control group, correspondingly.

We demonstrated both short-term and long-term positive effects of Project START on recently released male prisoners in three regions of Ukraine.

Receiving the intervention was associated with lower odds of unprotected sex at last intercourse, and lower odds of inconsistent condom use with regular and casual partners.

Participation in Project START was associated with higher odds of testing for HIV at 3 and 6 months. Intervention participants were more likely than controls to correctly identify ways of HIV transmission and prevention at both assessments.

Sixty-eight percent of risk reduction goals were reached by clients within 6 months after release; 87.3% of clients reached more than 50% of their goals; 67.6% of clients accessed the recommended services.

Table 1. Selected Descriptive Characteristics of Participants at Baseline

| Variable   | Intervention group (n=227) |           | Control group (n=167) |           | p-value* |
|--|----------------------------|-----------|-----------------------|-----------|----------|
|  | No. (%)                    | Mean (SD) | No. (%)               | Mean (SD) |          |
| Mean age (full years)  | 35.6 (10.0)                |           | 35.6 (9.1)            |           | 1.00     |
| Secondary or vocational education  | 217 (96%)                  |           | 155 (93%)             |           | 0.06     |
| Single, divorced or widowed  | 190 (84%)                  |           | 132 (80%)             |           | 0.18     |
| Mean period of current incarceration by the interview date (full months) | 39.0 (24.2)                |           | 38.8 (24.2)           |           | 0.93     |
| Moderate/severe depression symptoms                                      | 33 (15%)                   |           | 24 (14%)              |           | 0.96     |
| Binge drinking before incarceration                                      | 146 (64%)                  |           | 102 (61%)             |           | 0.51     |
| Ever injected drugs  | 93 (41%)                   |           | 83 (50%)              |           | 0.09     |

\*T-tests for means, chi-square tests for binary variables.

The intervention was implemented with high fidelity. At 99% of sessions, clients' needs for the transition period were explored, and risk reduction goals were developed by a client with the help of a facilitator. All of the recorded or observed counseling sessions adhered to the intervention manual. Sixty-eight percent of clients received all 6 intervention sessions.

Table 2. Post-release Outcomes Reported by Scheduled Period of Follow-up for Intervention and Control Groups

|  | Baseline              |                       |                      | 3 months              |                       |                      | 6 months              |                       |                      |
|--|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
|  | Intervention          | Control               | Adjusted OR (95% CI) | Intervention          | Control               | Adjusted OR (95% CI) | Intervention          | Control               | Adjusted OR (95% CI) |
|  | No. / Denominator (%) | No. / Denominator (%) |                      | No. / Denominator (%) | No. / Denominator (%) |                      | No. / Denominator (%) | No. / Denominator (%) |                      |
| Unprotected sex at last intercourse <sup>a</sup>                           | 161/227 (70.9)        | 122/167 (73.1)        | 0.87 (0.50-1.51)     | 79/196 (40.3)         | 80/137 (58.4)         | 0.41 (0.19-0.89)     | 82/194 (42.3)         | 80/137 (58.4)         | 0.35 (0.16-0.75)     |
| Inconsistent condom use with regular partners (past 3 months) <sup>b</sup> | 166/227 (73.1)        | 125/167 (74.9)        | 0.84 (0.45-1.57)     | 78/196 (39.8)         | 71/137 (51.8)         | 0.47 (0.20-1.11)     | 86/194 (44.3)         | 89/137 (65.0)         | 0.30 (0.13-0.70)     |
| Inconsistent condom use with casual partners (past 3 months) <sup>c</sup>  | 61/227 (26.9)         | 50/167 (29.9)         | 0.80 (0.44-1.46)     | 23/196 (11.7)         | 33/137 (24.1)         | 0.35 (0.15-0.81)     | 21/194 (10.8)         | 27/137 (19.7)         | 0.32 (0.14-0.76)     |
| Tested for HIV in the past 12 months and got the result <sup>d</sup>       | 106/227 (46.7)        | 69/167 (41.3)         | 1.51 (0.79-2.89)     | 149/196 (76.0)        | 56/137 (40.9)         | 11.72 (5.13-26.76)   | 155/194 (79.9)        | 77/137 (56.2)         | 6.05 (2.63-13.94)    |
| Correctly identified ways of HIV transmission and prevention <sup>e</sup>  | 115/227 (50.7)        | 96/167 (57.5)         | 0.61 (0.32-1.17)     | 150/196 (76.5)        | 81/137 (59.1)         | 3.38 (1.45-7.88)     | 146/194 (75.3)        | 81/137 (59.1)         | 3.20 (1.37-7.47)     |

Note. Odds ratios estimated from mixed logistic regression that included intervention group, assessment period as well as group by period interaction.

<sup>a</sup> Adjusted for binge drinking (yes vs. no).

<sup>b,c</sup> Adjusted for marital status (married vs. no).

<sup>d</sup> Adjusted for age (under 25 years vs. 25+).

<sup>e</sup> Adjusted for duration of imprisonment (40 months or less vs. 41+).

## CONCLUSIONS:

In this first implementation study of Project START in Ukraine, the intervention was found effective in increasing the HIV testing uptake, improving the HIV knowledge, and decreasing HIV sexual risk behaviors in men released from prison. The Project START intervention adapted to the local context can be recommended for scale up in Ukraine, and for implementation in other countries of Eastern Europe and Central Asia.