The Effectiveness of Prison Programming: A Review of the Research Literature Examining the Impact of Federal, State, and Local Inmate Programming on Post-Release Recidivism*

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On behalf of the First Step Act Independent Review Committee
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About the First Step Act Independent Review Committee

Title I §3631-3633 (inclusive) of Public Law 115-391 (December 21, 2018), commonly referred to as the First Step Act (FSA), assigns the Attorney General (AG) of the United States two principal responsibilities. In consultation with the Director of the Bureau of Prisons (BOP), the Director of the Administrative Office of the U.S. Courts, the Director of the Office of Probation and Pretrial Services, the Director of the National Institute of Justice (NIJ), and the Director of the National Institute of Corrections (NIC), the AG is directed to:

- Develop, validate, release for public review (by late July 2019), and implement (through BOP by late January 2020) FSA's "risk and needs assessment system" (RNAS) provisions; and
- Identify "effective evidence-based recidivism-reduction programs" (EBRPs) and "productive activities" for BOP inmates; expand inmate access to such programs and activities (by late January 2020) as necessary to implement FSA Title I's system of time-credit incentives for inmate participation; and further expand inmate access to such programs and activities such that (by late January 2022) EBRPs and productive activities are available "for all prisoners" in BOP custody

To assist the AG in the performance of these duties, FSA's Title I §107 provides for the establishment of an Independent Review Committee (IRC) composed of not fewer than six individuals with "expertise in risk and needs assessment systems" (including at least two who have published peer-reviewed scholarship on the subject; two current or former corrections practitioners—one of them with prior work experience inside BOP—who have developed and administered risk and needs assessment tools; and one with particular expertise in evaluating the implementation of such tools). NIJ is to select a "nonpartisan and nonprofit organization with expertise in the study and development of risk and needs assessment tools" that will then select and appoint the IRC's member experts and act as the Committee's "host" until its statutory tenure ends "two years after the date" on which the RNAS is initially released.

For more information, visit www.firststepact-irc.org

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His work in the area of evidence-based

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Introduction

The First Step Act emphasizes the importance of BOP programming as a recidivism reduction strategy and includes sentence-reduction incentives for eligible inmates who participate in "evidence-based recidivism reduction programs." This memorandum reviews available research about the recidivism reduction effects of federal, state, and local prison programming in an attempt to determine to what extent such programming can fairly be described as evidence-based. There are three distinct types of reviews that can be used to establish evidentiary criteria and determine "what works" in the area of prison programming (Byrne & Lurigio, 2009).

The most rigorous such review would focus narrowly on the results of high quality, well-designed randomized control trials (RCTs) conducted during a specified period. A minimum of two RCTs demonstrating effectiveness (and a preponderance of lower-level research studies producing similar results) would be necessary before a determination could be offered about whether a particular program or strategy "worked." This is the type of review strategy and scientific evidence relied on in the hard sciences.[1] A second review strategy allows identification of a program as evidence-based (or working) if there are at least two quasi-experimental studies with positive findings, and the majority of lower-quality studies point in the same direction. This is the approach used in the reviews produced by the Campbell Collaborative. A variation on this approach—representing a third type of evidence-based review—is found on the DOJ CrimeSolutions.gov website, where a program will be described as effective based on a rating of each applicable research study by two independent reviewers.[2] To be rated as effective, at least one high-quality evaluation—RCT or well-designed quasi-experiment—needs to be identified. This article adopts the second standard described above to summarize the research under review (see Appendix B), but we have also examined all studies and reviews of prison programs identified by CrimeSolutions.gov.[3]

Included in this review is a careful look at the available evaluation research on the BOP programming, focusing on the 18 "national model" prison programs identified by BOP.[4] Also included in this review is an examination of the much larger body of evaluation research conducted on the recidivism reduction effects of state and local prison programs, offering summary assessments of all relevant evaluation research and corresponding recommendations for DOJ and BOP to consider as they move to implement high-quality, evidence-based programming in the federal prison system.

General Overview and Preliminary Notes About Data Derived from PATTERN

The three major questions addressed in the following review are as follows:

1. What does a review of the available research reveal about the recidivism reduction effects of current BOP programming?
2. What does a broader review of prison programming research conducted in state and/or local prisons reveal about the risk reduction effects of such programming?
3. Can current BOP programs be described as evidence-based?

In the following pages, the five major categories of BOP prison programming are identified and the published evaluation research on the effectiveness of these programs is reviewed, focusing first on research conducted in the federal prison system from 1990 onwards. Unfortunately, there are too few high-quality evaluations available to offer any firm assessment regarding the impact of BOP programming on inmate success after release to the community. Because of the paucity of evaluation research available to assess the risk reduction effects of BOP programming, the following pages separately review evaluation research on general prison program types—utilizing the results of evaluations of programs operating in state and local correctional systems—in the following areas: substance abuse, employment, education, mental health, other programs and prison-based initiatives (e.g. mentoring and social support). Based on this broader review, estimates of the *potential* risk reduction effects from current BOP programs are provided, with necessary caveats about program availability, staffing quality, dosage, timing, and, perhaps most importantly, the likely impact of community context—and reentry programming—on individuals after release from prison.

Where implementation of the risk/need classification system required by the First Step Act is concerned, it should be emphasized that the law assumes inmate participation in programs designed to address identified needs will lower their recidivism risks (which then provides a rationale for their early release). Properly testing this assumption will require data on the impact of prison programming on identified need areas, and further data on the impact of improvement in each of these areas—mental health, substance use, education, employment skills, and so forth—on subsequent behavior in the community. Because that data does not currently exist, this memorandum offers several recommendations for BOP and DOJ to consider regarding the need for dynamic performance measurement, accreditation of BOP programs, and support for independent, external evaluations.

In the interim, however, data developed for the validation study conducted during construction of FSA's required risk-assessment instrument, PATTERN, can be used to provide estimates of the recidivism reduction effects of selected types of prison programming. Consider the increased risk of recidivism (any rearrests or technical violations resulting in return to prison during the first three years post-release) associated with each of the following PATTERN program variables when no action is taken by the inmate, compared with the reduced risk of recidivism associated with positive action by the inmate. For all but one program variable (drug education does not appear to be

linked to this outcome measure), there is a significant recidivism reduction effect associated with program participation, while those inmates who do not participate clearly pose a greater risk to the public upon release:

1. Number of programs completed: 0 (55 percent rearrested) vs. 10 or more (30 percent rearrested)
2. Number of technical or vocational courses: 0 (49 percent) vs. 2 or more (36 percent)
3. Drug treatment while incarcerated (if needed): need indicated but no treatment (58 percent) vs. completed residential treatment during incarceration (31 percent) and no need indicated (27 percent)
4. Drug education while incarcerated: no (47 percent) vs. yes (46 percent)
5. Noncompliance with financial responsibilities: no (46 percent) vs. yes (67 percent)
6. Federal industry employment while incarcerated: no (47 percent) vs. yes (42 percent)
7. Education level: no GED and not participating in GED program (58 percent) vs. enrolled in education program (50 percent) or HS degree or GED (43 percent)

While it is the static risk factors—in particular, age at assessment and criminal history score—that have the most predictive power in the current PATTERN risk model, various types of program participation also have statistically significant risk reduction effects. The initial research conducted by BOP's risk model development team provides empirical evidence that program participation can be linked directly to recidivism reduction three years post-release. In the absence of evaluation research, this is the best available evidence that BOP program participation has the intended risk reduction effect.

It will be possible for a federal inmate to significantly reduce her/his initial individual risk score while in prison by addressing the dynamic program-related risk items identified above. This is good for the individual (less time in prison) and good for society (lower overall recidivism among these releasees).[5] PATTERN will ultimately need to be revised so that its dynamic variables can capture inmate participation in all the BOP programs that DOJ formally designates as FSA-qualifying "evidence-based recidivism reduction programs" or "productive activities," not just the subset of programs included in the above listing. (The "number of programs completed" variable, for example, now only captures participation in adult continuing education, parenting classes, and technical/vocational programs.) In order to link any and all program participation to recidivism reduction, data will need to be collected on all program participation during incarceration. Such data are not yet routinely collected, so the recidivism reduction effect of overall program participation cannot yet be reliably estimated. (See Appendix B for an overview of BOP's current "national model programs.")

A full review of the BOP's risk/need assessment and case planning system must await further refinements to the risk model and the development of the companion needs assessment system. In the interim, case planning still goes on, and current FSA-eligible inmates will need to know whether participation in recommended prison programming will reduce their sentences and by how much. Participation in at least some current BOP programs—regardless of quality—does appear to be an effective risk reduction strategy, based on data collected during development of PATTERN. Until the necessary research has been completed on the risk reduction effects of all available prison programming, it makes sense to let inmates know which programs they need to complete to gain the early release credits identified in the First Step Act. Again, DOJ's list of FSA-qualifying programs and activities should be finalized as quickly as possible, and, as new data permits, an expanding "any program" participation variable should then be incorporated into PATTERN's model in order to maximize incentives and opportunities to complete the kind of need-specific rehabilitative programs that the law requires.

Types of Programming in the Federal Bureau of Prisons

BOP currently provides hundreds, if not thousands, of unique programs at individual facilities across the nation.[6] According to BOP's 2016 *Directory of National Programs,* these programs fall into more than 50 program categories, including 18 programs identified as "national models." Boston Consulting Group's 2016 review categorized the 18 BOP national model programs as follows: three education models; two occupational/training models; one life skills model; 11 cognitive behavioral models; and one spiritual/religious model. Basic descriptions of each of these model programs are included in the Federal Bureau of Prisons' *Directory of National Programs,* along with references to supporting research (see Appendix B for a summary).

Do the national model programs developed by BOP represent a close approximation of evidence-based programming, using the review standards earlier described? The answer is that we do not know, because the necessary evaluation research on BOP programs has not been conducted. Similarly, we have no evaluation research with which to assess the myriad other programs available at individual Bureau facilities.

1. Evaluations of the Effectiveness of Federal Bureau of Prisons Programs.

Unfortunately, serious and recent formal evaluations of current BOP programming are too scarce to tell us much about the effectiveness of that programming. The Bureau's *Directory of National Programs* appears to suggest that only 3 of the 18 "national program models" have ever been directly evaluated, and none of them were evaluated during the past two decades (See Appendix B). Boston Consulting Group's 2016 report on BOP programming identified only a single evaluation of the effectiveness of one national model program: a 2000 study of the Bureau's Residential Drug Abuse Program (RDAP) that examined a cohort of federal inmates released between 1992 and 1995.

The above mentioned quasi-experimental study indicated that RDAP had a positive but modest effect on participants' recidivism during a three-year follow-up period.[7] The multi-site study examined a sample of inmates who were substance abuse treatment participants between 1990 and 1995. Separate analyses examining potential variations in program implementation reached similar conclusions (Pelissier et al., 2001). In addition, BOP researchers, in conjunction with Abt Associates, conducted a quasi-experimental study of RDAP's short-term impact (six months following release) on two different outcomes: subsequent substance abuse and new arrest. The authors were careful to note a number of their study's limitations. Its results reflected (but could not distinguish between) inmate participation in two different versions of RDAP (a high intensity program offered at three sites with 1,000 hours of programming and a lower intensity version offering 500 hours of programming at 17 sites) and processing through two different discharge mechanisms (halfway houses and direct releases). The study's overall results therefore made it impossible to determine

whether either dosage level or community transition procedure played a significant role. The authors further acknowledged that since participation in RDAP was voluntary, it was critical to control for potential selection bias before presenting and interpreting collected study data. Two very different groups were included in their comparison sample: both inmates who were eligible for RDAP but refused to participate *and* eligible inmates whose institutions did not offer RDAP to begin with. Absent controls for selection bias, an erroneous conclusion might thus be drawn that participation in RDAP had actually *increased* the risk of post-release re-arrest and substance abuse—simply because the RDAP volunteer group was at generally higher risk than the control group. With appropriate controls for selection bias in place, the authors reported that 16.7 percent of untreated inmates were rearrested within 6 months of release, compared to just 3.1 percent of RDAP-participating inmates. Similarly, 36.7 percent of untreated inmates tested positive for drugs or alcohol during the six-month follow-up period, compared to 20.5 percent of RDAP-participating inmates.

These results doubtless appeared promising at the time, but the study's design limitations (a level-3 study using Campbell Collaborative review criteria), and short follow-up period (six months in the subsequent 2001 quasi-experimental test) are not insignificant. More importantly, the datedness of this research—examining a cohort of BOP inmates released between July 1992 and December 1995—make it of questionable utility for purposes of evaluating the Bureau's current RDAP program. A quarter century or more later, inmate demographic and offense/risk profiles have changed, and BOP's RDAP staffing ratio, staffing quality, average program dosage, and program components have changed, as well.

2. A Review of the Available Research on the Impact of Major Types of Programming in State Prisons.

Similar cautions apply to many commonly cited estimates of the recidivism reduction effects of prison programs generally, not just those administered in the federal system. The 2016 Boston Consulting Group report (p. 23) offered the following figures for 10 different categories of inmate rehabilitation efforts:

1. Anger Management: 51 percent reduction in recidivism
2. Therapeutic Community (Hard Drugs): 45 percent reduction in recidivism
3. Sex Offender Treatment (Violent Recidivism): 44 percent reduction in recidivism
4. Moral Reasoning Therapy: 16-35 percent reduction in recidivism
5. Post-Secondary Correctional Education: 27 percent reduction in recidivism
6. Cognitive Behavioral Therapy: 25 percent reduction in recidivism
7. Vocational: 22 percent reduction in recidivism
8. General Drug Treatment: 12-22 percent reduction in recidivism
9. General Vocation/Education: 21 percent reduction in recidivism
10. Mental Health Treatment: 17 percent reduction in recidivism

Here again, however, these very optimistic estimates of prison program effects were based on a series of meta-analyses that were—on average—two decades old (see Appendix A) and cannot be assumed to apply for contemporary prison-system staffing levels, program designs, program availability and delivery, or inmate problems and needs. New federal corrections policy decisions should be made based on high-quality current research about the implementation and impact of current federal prison programs on the current federal inmate population.

Another factor to consider is that our expectations for the positive impact of prison programming on post-release behavior may be set unrealistically high due in part to how the evaluation results are presented to the general public. Study authors not infrequently describe their findings—accurately but sometimes misleadingly—in terms of percent changes, rather than as absolute percentage differences between treatment and control groups.

The most commonly cited review of research on cognitive behavioral treatment (item 6 in the Boston Consulting Group figures, above), for example, suggests that CBT programming in prison produces a 25 percent reduction in recidivism. But the 25 percent reduction in question only represents an absolute difference of .10 between treatment and control groups (from 40 percent to 30 percent), and the fact that such effect sizes are also often presented without emphasizing the short-term scope of the research (six-month, one-year, or two-year follow-ups) may further confuse policymakers and the general public alike.

One additional caveat: reviews of available evaluation research typically do not include critical information about the impact of these various programs on the *problems/needs being addressed in the program.* In order to meet FSA requirements regarding the provision of programs with known, evidence-based risk-reduction effects, we need to have access to intermediate outcome data about how well these programs perform *before* inmates are released. Do counseling or anger management programs have a measurable effect on program participants in pre-post comparisons of assessed needs? Do TC programs have a measurable pre-post impact on the substance abuse attitudes/behaviors of participants? Basic intermediate performance metrics are necessary in order to provide preliminary, near-term evidence about program quality and, ultimately, refine and calibrate program design for optimal post-release outcomes.

3a. Effectiveness of Residential Drug Abuse Treatment Programs.

What do we know about the effectiveness of residential substance abuse treatment programs, such as the Bureau of Prisons' residential drug abuse program, which currently has a stated capacity of 8,000 inmates? This is a difficult question to answer, because a sufficient body of research does not yet exist—at either the federal level (see Pelissier et al., 2000, 2001) or the state level—to provide an assessment of such programs in operation *during recent past decades* (see Duwe, 2017, and the BSC, 2016, for an overview). However, we can offer estimates based on earlier evaluations (1980-2011) of programs operating in state prisons included in two meta-analyses on incarceration-based therapeutic communities highlighted on the CrimeSolution.gov website (Mitchell, Wilson, & MacKenzie, 2012; Drake, 2012).

The Mitchell et al. (2012) meta-analysis actually included four types of incarceration-based substance abuse treatment: therapeutic communities, counseling, narcotics maintenance programs, and boot camps. Focusing on the review of TC programs, the authors identified 35 evaluations that met minimum review criteria, including 2 randomized control trials (RCTs) and 33 quasi-experiments of varying quality. They reported that 30 of 35 evaluations identified a statistically significant treatment effect, and that "TC programs consistently showed modest reductions in post-release recidivism and drug use" (Mitchell et al., 2012, p. 12). The authors defined "modest" recidivism reductions as reductions in the 17 percent range, which roughly translated into about a 6 percentage-point difference

in recidivism (rearrest) between treatment (29 percent) and control (35 percent) groups during an average follow-up period of one year. The authors found similar reductions in drug relapse in the subgroup of evaluations that included these data; however, these modest reductions were not statistically significant, perhaps due to the smaller number of included studies. It should be noted that PATTERN's operating definition of recidivism is any rearrest during a three-year post-release follow-up period, which makes the Mitchel et al. review only minimally relevant here.

Drake's 2012 meta-analysis focused on 45 adult prison-based drug treatment programs (TC, cognitive behavioral therapy, individual and group counseling, and 12-step programs), which she estimated had recidivism reduction effects ranging from four to nine percent, typically during a two-year follow-up period. The therapeutic community studies in Drake's meta-analysis included 18 separate TC evaluations conducted between 1990 and 2011, with 12 of the 18 published between 2000 and 2011 (see Drake, 2012, appendix, for a full list of these studies). The average recidivism follow-up period was 23 months. Minimal detail was provided in this review regarding the selection criteria and the quality of the TC evaluations conducted, but overall estimates of TC effect sizes were similar to those in the previous meta-analysis by Mitchel and colleagues: an overall effect size of – .118 was reported, indicating a significant but modest TC program effect on subsequent recidivism. No definitive statements were offered by Drake regarding substance abuse outcomes (adjusted effect size was – .012), because only 5 of the 18 studies included in this review provided these data. While this second review provided a longer follow-up and more recent evaluations, we are still left with insufficient research upon which to base a federal prison residential treatment program improvement initiative.

One final comment on residential substance abuse treatment: If the outcome of interest is to be longer-term reductions in recidivism, then we need to be cognizant of the fact that the statistically significant, albeit modest, *short*-term recidivism reduction effects reported in the above two meta-analyses may tell us very little. Indeed, a review of the small number of longer-term outcome evaluations of the impact of prison TC models paints a more pessimistic picture, while reinforcing the importance of follow-up community-based treatment for this target population. For example, a review of nine published therapeutic community treatment evaluations conducted between 2007 and 2014 revealed that the five studies identifying a positive impact of TC on rearrest had shorter follow-up periods; the longer the follow-up, the less supportive the findings regarding rearrest (Galassi, Mpofu, & Afhanasou, 2015). These findings suggest the need to refine existing prison treatment programs—including BOP's residential drug abuse treatment program—so that they can be better and more seamlessly linked with well-designed and adequately funded community treatment and aftercare components.

3b. Effectiveness of Other Prison-based Substance Abuse and Mental Health Treatment Programs.

There are a wide range of programs available for federal inmates. The Federal Bureau of Prisons *Directory of National Programs* includes the following model treatment programs:

- BRAVE: Bureau Rehabilitation and Value Enhancement program
- Challenge program
- Drug Abuse Education
- FIT: Female Integrated Treatment program
- Mental Health Step Down Unit program
- Nonresidential Drug Abuse program
- Resolve program
- Residential Sex Offender Treatment program
- Nonresidential Sex Offender Treatment program
- Skills program
- STAGES: Steps Toward Awareness, Growth, and Emotional Strength program.

There is a body of evidence that participation in various individual and group treatment programs—similar in design to the 11 programs identified above—results in small but statistically significant changes in the subsequent criminal behavior of adult offenders. The Bureau of Prisons *Directory of National Programs* provides an overview of the empirical support for each of these programs (see Appendix B for a list of these programs and the evidence referenced in the Directory). Since several of BOP's programs employ cognitive behavioral therapy (CBT) strategies, relevant CBT research is summarized below, but it is important to bear in mind that *none of the Bureau's national model programs has been the subject of a systematic and still-current publicly available evaluation.* DOJ will want to be able to demonstrate the specific risk reduction effects of federal prison programming, and this research gap will therefore need to be filled.

A recent review of available research on the impact of cognitive behavioral therapy programs by Grant Duwe (2017) found that CBT programs were effective in reducing both in-prison misconduct and post-release recidivism. Although much of the research addressed in this review was based on prison treatment programs operating in the 1980s and 1990s,[8] findings from that research are nevertheless worth considering, because—as Duwe's 2017 review points out—at the present time, *it is all we have available.* One oft-cited research review of CBT programs by Landenberger and Lipsey (2005) reported a .10 absolute difference in recidivism (one-year follow-up, .40 vs. 30) between experimental and control groups in a meta-analysis of 58 studies conducted between 1965 and 2005 (41 targeting adults, including 13 using random assignment designs and 6 "real world" CBT studies). The question as to whether provision of various forms of CBT results in changes in the thinking patterns and/or antisocial lifestyles (e.g., drug use attitudes/behaviors) of these offenders—beyond observed modest, though statistically significant reductions in recidivism—is difficult to answer definitively.[9] And, again, the fact that those estimated recidivism-reduction effects were obtained from studies of programs administered decades ago at the state and local level, not from current BOP programs, underscores a significant gap in FSA-relevant evaluation research.

3c. Prison Education Programs.

The Bureau of Prisons has identified three education-based programs as national models: literacy programs; English as a Second Language (ESOL) programs; and occupational educational programs.[10] The empirical research support for these three models is summarized in the *Directory of National Programs* (see Appendix B). None of the referenced empirical research involved participants in federal prison education programs, however.[11] Turning by necessity to prison education programs operating in state corrections systems, Duwe (2017) reviewed the available research and concluded that various types of prison education program participation do appear to have a modest post-release recidivism reduction effect. He based this assessment on several meta-analyses of prison education programs conducted over the past three decades. A separate assessment by Davis and colleagues (2014, iii) included studies completed between

1980 and 2011. This review found that "correctional education for incarcerated adults reduces the risk of post-release re-incarceration (by 13 points) [during a three-year follow-up period] and does so cost effectively (a savings of five dollars on re-incarceration costs for every dollar spent on correctional education." (These conclusions are consistent with the Pew Charitable Trusts' 2011 national estimate: 43.3 percent of releasees who did not receive correctional education are re-incarcerated within three years, compared to 30.4 percent of those who did receive correctional education in prison.) It should be noted that while Davis et al. identified 50 research studies eligible for inclusion in their meta-analysis, they based their impact-on-recidivism estimates only on the subset of seven program evaluations that met minimum (experiments or quasi-experiments) review criteria. And only three of these evaluations were published after 2000 (Lichtenberger et al., 2011; Nally et al., 2011; and Winterfield et al., 2009).

Findings from these three more recent studies identified varying recidivism reduction effects linked to educational programming. In the Lichtenberger study of Virginia's vocational education programs, re-incarceration rates for vocational program completers were 5 percentage points lower than the comparison group (24.9 vs. 29.2 percent reincarcerated after 3 years). Nally and colleagues' study of Indiana's educational programs (all types) identified a 23 percentage-point difference in re-incarceration (27.1 vs. 50 percent) between participants and non-participants. And in the Winterfield study of postsecondary education programs in 41 federal and state minimum and medium security prisons located in 3 states (Massachusetts, New Mexico, and Indiana), program impact (1-year rearrest and 1-year re-incarceration in same state) varied from state to state. In Indiana, the re-incarceration rate difference was 3 percentage points (2.4 vs. 4.3 percent); only one-year rearrest rates were reported for Massachusetts (15.8 vs. 29.7 percent) and New Mexico (39.4 vs. 44.9 percent).

A recent update to the Davis and colleagues 2014 evaluations database by Bozick and colleagues (2018) included 57 studies conducted between 1980 and 2017, adding 7 new studies. Focusing on the 11 studies in the database that qualified for minimum review classification (a level-4 or level-5 quality study using the Maryland Scientific Methods Scale), they estimated that "correctional education would be expected to reduce 3-year re-arrest and reincarceration rates by 8.6 and 9 percentage points respectively" (Bozick et al., 2018, p. 404). Although the two level-5 RCTs included in this review were conducted three decades ago (Lattimore et al., 1988 and 1990), five of the nine level-4 studies were conducted during the past decade, which increases confidence in the likely significant, albeit modest, recidivism reduction impact of educational programming of all types: adult basic education, high school diploma/GED, postsecondary education, and vocational education. However, it should be emphasized that the research reviews summarized here are only suggestive of what is happening (or has previously happened) at the state level in a handful of jurisdictions. Many of the studies included in these meta-analyses are of relatively poor quality, subject to selection bias, and sufficiently dated (pre-2000) that they may no longer be relevant to current program practices (Bozick et al., 2018; Muhlhausen & Hurwitz, 2019). Conclusions about the recidivism-reduction effects of current federal prison education programs must await new, high-quality evaluation research on those specific programs themselves.

3d. Prison Work/Employment Programs.

The federal system has long experience with prison work and employment programs. According to BOP's 2016 *Directory of National Programs* (see Appendix B) research associated with the Bureau's Post-Release Employment Project (PREP) "revealed inmates who worked in prison industries were 24 percent less likely to recidivate than non-program participants and 14 percent more likely to be gainfully employed." PREP evaluated post-release data from a 7,000-inmate sample from 1983 to 1987, however, and the most recent follow-up study of that data appears to have been completed in 1996, 23 years ago.[12] A more recent review of the available research on prison employment programming—including UNICOR and state-level programs—by Duwe (2017) concluded that while such programming does reduce prison misconduct, its effects on subsequent recidivism are minimal. A 2014 study of female inmate participation in UNICOR found no recidivism reduction effects (Richmond, 2014). Data collected and analyzed in connection with DOJ's new PATTERN risk assessment tool, on the other hand, appears to suggest that UNICOR may produce a significant, if modest, recidivism reduction effect: a 5 percentage point difference between participants and nonparticipants, using any recidivism or technical violation during a 3-year post-release review period as the criterion (42 percent vs. 47 percent). The possibility that these differences are a function of selection bias must be considered, however, and a full-scale, formal reevaluation of BOP work/employment programs is long overdue.

3e. Mentoring and Social Support Strategies.

One of the 18 national model programs identified by the BOP is the Life Connections program, which is designed to support value change among participants. No evaluation of this federal program's impact on recidivism is publicly available.[13] The Life Connections program appears to resemble a strategy that is certainly worth consideration here: the provision of in-prison, prosocial support in the form of mentoring, faith-based programming, and visitation programs. While formal evaluations in this area are minimal, Duwe (2017) has identified research linking participation in faith-based programs and various forms of visitation (by parents, clergy, and mentors) to recidivism reduction (Duwe and Clark, 2013).

Summary of Findings

Our review provides answers to each of the following questions:

1. **What does a review of the available evaluation research reveal about the recidivism reduction effects of current BOP programming?** Serious, formal evaluations of current BOP programming are too scarce to tell us much about the effectiveness of that programming. The Bureau's *Directory of National Programs* appears to suggest that only 3 of the 18 "national program models" have ever been directly evaluated, and only one of them during the past two decades (See Appendix B). Based on the research evidence currently available, no reliable judgment can be made about the recidivism reduction effects of particular BOP programs now in operation. Using Campbell Collaborative review criteria, the effects of current BOP programs are most accurately described as "unknown."
2. **What does a broader review of prison programming research conducted in state and/or local prisons reveal about the risk reduction effects of prison programming?** Our review focused on evaluations of state and/ or local prison programs conducted from

2000-present, but also included the results of meta-analyses with broader study inclusion time frames. Based on our review of this body of recent evaluation research, we can offer estimates of the likely recidivism reduction effects of five types of prison programming:

A. **Residential substance abuse treatment:** Meta-analyses of residential substance abuse treatment programs that used a therapeutic community model by Mitchell et al. (2012) and Drake (2012) identified statistically significant though modest differences between treatment and control groups, using rearrest during either a 1-year (Mitchell et al., 2012) or 2-year follow-up period (Drake, 2012). The Mitchell study identified modest reductions in recidivism of 6 percentage points using rearrest during the first year after release (35 percent vs. 29 percent). Similar findings were obtained by Drake using a longer follow-up period, but there is evidence from a more recent review (Galassi, Mpofu, & Afhanasou, 2015) that the longer the follow-up period, the smaller the differences between treatment and control groups.

B. **Other types of substance abuse and mental health treatment.** The Drake (2012) meta-analysis of other types of prison-based substance abuse and mental health treatment programs (utilizing cognitive behavioral therapy, individual and group counseling, and 12-step programs) revealed recidivism reduction effects ranging from 4 to 9 percent, typically using a 2-year rearrest criterion. Other frequently cited meta-analyses include the results of prison treatment programs operating in the 1980s and 1990s (see Wilson, Bouffard, & MacKenzie, 2005; Mitchel, Wilson, & MacKenzie, 2007; and Landenbarger & Lipsey, 2005). According to Duwe's 2017 summary, CBT programs included in these reviews reduced recidivism by 20 to 30 percent (note: this is a percentage change, not the absolute difference between the participants and non-participants). Landenbarger and Lipsey (2005) reported a 10-percentage point difference in recidivism between treatment and control groups during a 1-year follow-up period (40 percent vs. 30 percent). Evaluations of the longer-term impact of CBT programs were not identified.

C. **Prison education and vocational training:** Meta-analyses of various prison education programs have linked completion of prison education programs to modest reductions in recidivism (Wilson, Gallagher, & MacKenzie, 2000; Aos, Miller, & Drake, 2006). Duwe (2017, p. 7) noted that the Wilson meta-analysis found that prison education programs "reduced recidivism by 11 percent," while the Aos meta-analysis "found that basic adult education programs in prison lowered recidivism by more than 5 percent, and prison-based vocational programs reduced recidivism by more than 12 percent." Neither of these meta-analyses included evaluations of programs completed during the past two decades, however. More recent meta-analyses by Davis et al. (2014) and Bozick et al. (2018) do include studies conducted since 2000. The results of these more recent program evaluations vary, but estimates of the modest recidivism reduction effects were typically in the 5-10 percentage range, with follow-up periods ranging from 1-3 years.

D. **Prison work/employment programs:** It is difficult to provide an accurate estimate of the impact of various types of prison employment and/or work release programs because much of the evaluation research included in the reviewed meta-analyses is seriously dated (Wilson, Gallagher, & MacKenzie, 2000). The small number of recent program evaluations we reviewed, including the recent study of UNICOR for female inmates (Richmond, 2014), did not find that prison work/employment programs had either a short- or long-term recidivism reduction effect. Such programs do appear to have an impact on in-prison behavior (French & Gendreau, 2006; Saylor & Gaes, 1997). One program model that did show positive recidivism reduction effects was the EMPLOY program, which linked inmates to post-prison employment (Duwe, 2015).

E. **Mentoring and social support in prison:** There is insufficient evaluation research on which to base a reliable estimate of potential recidivism reduction effects for programs and initiatives that would fall under this heading.

3. **Can current BOP programs be described as evidence-based?** As described above, data collected during analyses performed on the inmate sample used to construct PATTERN inferentially suggest that certain of BOP's current programs do indeed have a positive effect on post-release recidivism. But that data—and any inference that may provisionally be drawn from it—is not the same as solid evidence derived from rigorous research studies specifically designed to evaluate BOP programs themselves. As also described above, few if any such research studies have been conducted during the past two decades. The empirical evidence cited in BOP's 2017 *Directory of National Programs* (see Appendix B) is an attempt to align current federal programming with "best practices" in—and results generally obtained from—non-federal correctional systems. BOP's own programs need to be carefully studied and accredited before they can be responsibly described "evidence-based" (or genuine "national models").[14]

4. **Is BOP Program Participation a Signal of Desistance?** One question that deserves attention here is whether voluntary participation in prison programming is a signal that an individual wants to change. The data used to develop the PATTERN risk instrument includes a cohort of inmates who made decisions to participate in prison programs voluntarily, without the new sentence reduction incentives provided by FSA. Again, the recidivism data collected in connection with PATTERN's design and construction appears to indicate that inmates who participate in most (but not all) of the current BOP programs included in the PATTERN model do significantly better than inmates who do not. The question is to what extent this

result can be attributed to the programs themselves and how much, in the alternative, is the product of individual program participants' motivation to change. Without a body of evaluation research to review, we cannot answer this critically important question. FSA's inclusion of incentives for program participation may well alter the profile of participating inmates and attract a new group of prisoners with an equally compelling but fundamentally different motivation: to secure an earlier-than-scheduled release. Additional evaluation research on the impact of FSA's program participation incentives will also be necessary, because if "motivation to change" proves to be a significant driver of post-release success, program effectiveness—as reflected in recidivism data—may, somewhat counterintuitively, appear to decline. Ongoing evaluation of the relative predictive power of the dynamic risk variables included in PATTERN is critical: evaluate as you innovate is perhaps the best course of action here, especially given the potential confounding effect of changes in incentives to participate in programming.

It seems safe to assume that inmates will take advantage of the new sentence reduction incentives by participating in programs at a higher rate than in the past. As recently highlighted in the report on FSA implementation (Office of the Attorney General, 2019), voluntary program participation rates for the types of programs identified as dynamic program variables is currently quite low:

- 49 percent of inmates had not completed even one of the three programs included in the "any programs" variable.
- 82 percent had not completed a single technical or vocational course.
- 92 percent had not been involved in federal industry employment.
- 73 percent of inmates who needed substance abuse treatment had not received it.

The Boston Consulting Group provided data on program participation rates across 122 BOP facilities, based on a 2015 BOP survey. They found the following voluntary inmate program participation rates: education (30 percent), occupational training (20 percent), cognitive behavioral programs (18 percent), reentry preparation (12 percent), and life skills (5 percent). No estimates on participation were provided for spiritual/religious programs. It is unclear from the BCG report whether participation rates are a function of program availability. However, the BCG report does document variation in the percentages of inmates participating in BOP's national model programs on the one hand and local, facility-specific programs, on the other, and their findings suggest that the 11 national-model cognitive behavioral programs are underutilized. Once inmates learn which federal programs they can participate in to reduce their sentence, we suspect that participation rates in those FSA-qualifying programs will increase significantly. Without access to much more detailed data than we have so far seen on current program availability, we are unable to offer reliable estimates about how and where programming should be expanded. However, the Boston Consulting Group identified what programs *should* be included in each of the five major program category listings based on their review of available research (see Appendix A). BCG's listing identified significant gaps in program availability that likely still need to be addressed.

Conclusion

Completion of prison programming by federal prisoners does appear to provide an important signal that these individuals have begun to address—via BOP programming—problems that we know are linked to criminality: substance abuse, mental health deficits, and lack of education and/or employment skills. However, a careful review of the evaluation research strongly suggests that the likely effects of participation in current prison programming on both treatment outcomes (i.e., improvement in identified need areas) and post-release behavior are—statistically speaking—significant but marginal (i.e., about a .10 absolute difference between treatment and control groups is the likely result were these programs rigorously evaluated). While prison programming is certainly one piece of the desistance puzzle, it appears that *individuals will desist from crime upon release from prison based on a variety of individual and community level factors not directly related to the availability and/or quality of prison programming.* For this reason, accurate prison-based risk/need classification that links inmates at different risk/need levels to appropriate evidence-based prison programming should be followed by evidence-based reentry programming (Cullen, 2013). While this report focuses on prison programming, we recognize the critical role of reentry programming and community context (e.g., structure, support, resources, location) in the desistance process.[15]

Next Steps: Recommendations

A review of the available evaluation research on the recidivism reduction effects of prison programming underscores a major potential impediment to the successful implementation of the First Step Act: evidence-based programs cannot yet be accurately identified, because the necessary evaluation research on the effectiveness of current BOP programs has not been conducted. It is possible that FSA may be based on overly optimistic expectations about the impact of prison programs on post-release behavior, but we will not know until these programs are formally evaluated.[16] A review of the available state-level research conducted over the past three decades suggests that the overall recidivism reduction effects of prison program participation will likely be significant but modest (an estimated 5–10 percentage point difference between participants and nonparticipants). Stated simply, the dynamic program variables included in the current risk model may not reduce risk all that much, but it is critical to include these dynamic program variables in order to establish the foundation for long-term recidivism reduction via programming. To achieve the critical risk reduction/public safety goal of the First Step Act, it will be necessary to link evidence-based prison programming to evidence-based community programming in new and innovative ways, including the utilization of what has been called the new technology of offender change (Pattavina & Corbett, 2019; Lerch et al., 2017; Byrne & Pattavina, 2013). The following recommendations should be understood with this caveat in mind.

1. Risk/Need Assessment and Case Planning.

DOJ will want to address several issues involving PATTERN's current design in the immediate short-run. The first issue to be addressed is how to expand the number of programs included in the *any programs* variable. The current risk variable counts participation in only three programs (adult continuing education, parenting, and technical/vocational programs). Once the Department's provisional list of FSA-qualifying programs is finalized and approved, PATTERN will need

to include an expanded count of any program participation. Researchers will then need to determine how this newly defined variable performs as a predictor and adjust the weights for each category as needed.

It would also be helpful for the BOP to develop a tool that simulates the impact of various types of program participation on each individual's risk score.[17] This information can be provided to inmates at the case planning stage. It would perform much like the tools used by credit monitoring companies like Experian to show consumers how to improve their credit scores. Examination of the points that can be earned through various types of program participation could be presented to inmates as follows:

- Number of programs completed: male inmates can reduce their overall risk score by up to 12 points by completing designated programs; women can reduce their risk scores by up to 8 points by completing one or more of these programs.
- Number of technical or vocational courses: male inmates can reduce their overall risk score by up to 2 points; females can reduce their overall risk score by up to 4 points.
- Federal industry employment: female inmates can reduce their overall risk score by 1 point; no reduction for male UNICOR participants.
- Drug treatment while incarcerated: male inmates with drug problems can reduce their overall risk score by up to 4 points by participation; females with drug problems can reduce their risk scores by up to 6 points.
- Drug education while incarcerated: males can reduce their overall risk score by 1 point; no reduction for females who participate.
- Financial responsibility: females who address their financial responsibility requirements (e.g., restitution) can reduce their overall risk score by 3 points through compliance; no reduction for men through compliance.
- Education: females who address education deficits can reduce their overall risk score by up to 2 points; no reduction for male participants in GED programming.

By linking program participation to reduction in risk scores, it will be possible to demonstrate to inmates how they can move from a medium risk (34–45 initial risk score for males; 30–45 for women) to a low risk (11–33 for men; 10–29 for women) classification and thus become eligible for the early release time credits provided by FSA.

2. Independent, External Evaluations of BOP Programs.

Each of BOP's 18 "national model" programs should be the subject of a new, independent and external evaluation in order to responsibly calibrate expenditures on prison programming and improve public and stakeholder confidence in the Bureau's rehabilitation services. A plan for funding these critical evaluations should be developed in conjunction with NIJ. Because of the paucity of evaluations conducted over the past two decades, it would be a major mistake to solicit impact evaluations without first conducting process/formative evaluations of several of these national model programs[18] that are currently operating in each region. Once this initial evaluability assessment phase is completed, sites can be identified for the impact assessment, utilizing high-quality research designs.

3. Performance Measurement in BOP.

BOP should undertake to collect systematic program performance data that will be detailed enough to identify both high-performance and low-performance prison programs, utilizing measures of system efficiency and effectiveness. Other countries (e.g., Australia and the United Kingdom) have developed such performance review criteria, and they use these performance indicators to gauge the overall effectiveness of their prison systems and identify critical gaps in service delivery and performance of individual programs.[19] A task force should be established to assist in the implementation of the risk/need assessment system, and in the process, to develop performance measures that capture the intermediate outcomes addressed in programs and social support initiatives (improvement in mental health, substance abuse, criminal thinking, education, vocational training, and employment skills) linked to recidivism reduction upon release.

4. Accreditation of BOP Programs by an Independent Panel of Experts.

A critical step in the implementation of the First Step Act involves the development of evidence-based prison programming. In order to establish a program as evidence-based, DOJ will first need to establish what constitutes evidence of a particular program's effectiveness, based on a systematic review of the available research. DOJ will then need to review current programs in order to establish whether they meet evidence-based review criteria. The United Kingdom's National Offender Management Service (NOMS) utilizes an international panel of corrections scholars to establish what constitutes the evidence base supporting each of the prison programs NOMS operates (NOMS, 2016). This Accreditation Panel must approve new programs proposed by individual prison managers before such programs are fully implemented, while current programs are subject to biannual accreditation review.

5. The Link Between Prison Programming and Community Programming.

If risk reduction is the ultimate goal of FSA, then what happens in prison (in terms of programming) must not happen *only* in prison: community-based programming should be linked to prison programming in meaningful ways (Lipsey, 2019). This is particularly important in the following three areas: substance abuse, mental health, and employment. The current strategic focus of the BOP on prison programming should include an effort to enhance necessary linkages with community programming and social support services provided in its Residential Reentry Management Centers (RRCs)—and improve collaboration with U.S. probation offices that assume responsibility for such services once offenders leave an RRC. Recent audits of the federal prison system's programming by GAO (2013) and the Inspector General (2017) have highlighted the need for improved program delivery in prison and in the community.

Endnotes

[1] This first review strategy is often described as the "gold standard" for evidence-based reviews (see for example Sherman et al., 1998, and Farrington & Welsh, 2005). Using such a strategy—there being too few RCTs available for review—the effects of prison programming on post-release recidivism would be classified as "unknown" across all program categories.

[2] For more detail, see https://www.crimesolutions.gov/about_practicereview.aspx.

[3] In some cases, policymakers may only be interested in recent research conducted in a particular area, rather than all research studies across several decades. These types of reviews are called Rapid Evidence Assessments (REAs). The United Kingdom's Accreditation Panel conducts these types of reviews for the National Offender Management Service (NOMS). We have highlighted the results of recent research in this review, but we have also reported the findings from meta-analyses identified on the CrimeSolutions.gov website that identify studies completed up to 50 years ago.

[4] The proposed risk/need assessment system currently being developed for the Bureau of Prisons includes both a risk assessment instrument and

a needs assessment instrument. Focusing on the risk assessment instrument, several variables have been identified that are directly related to subsequent offender success or failure upon release from prison. These variables include both "static" risk predictors that the inmate cannot change while incarcerated and a subset of "dynamic" predictor variables that can and likely will change during incarceration. Static predictors include such factors as prior convictions, age at conviction, and history of violence. There are two types of dynamic variables included in BOP's risk model: program variables—designed to reflect steps an inmate may take during incarceration to address educational, financial, substance abuse, employment, and skills deficits, for example—and infraction variables, which provide summary measures of current and past behavior in prison.

[5] As currently designed, a total of 21 points can be subtracted from your risk score (for males) due to program participation (22 points for females), which could move an inmate from medium to low risk. Once at this risk level, the inmate is eligible for earlier release based on FSA provisions.

[6] DOJ has created and made available a preliminary list of what they currently define as either evidence-based recidivism reduction programs or productive activities. Eleven of the 18 national programs reviewed here are currently designated as evidence-based recidivism reduction programs, 5 were designated as productive activities, and 2 were not classified. For details, see Appendix and link below: https://www.bop.gov/inmates/fsa/docs/evidence_based_recidivism_reduction_programs.pdf

[7] It should be noted that when any arrest during the three-year follow-up period was used as the outcome measure, gender-specific differences were reported. For males the difference was 30.6 percent (treated) versus 37.6 percent (untreated); for females, the arrest probability was 16 percent regardless of prior program participation. When technical violations were included in the outcome measure, arrest probability differences between treated and untreated groups were reported for both males and females (Pelissier et al., 2000).

[8] See, for example, French & Gendreau (2005); Wilson, Bouffard, & MacKenzie, 2005; and Landenberger & Lipsey (2005).

[9] In one study of cognitive behavioral treatment in a community setting using a randomized control trial (RCT) design, baseline and outcome comparisons were made in dimensions that may be considered measures of lifestyle change, such as drug and alcohol use, social functioning, social problem-solving, and violent attitudes (Davidson et al., 2009). No reported improvements in these areas that could be attributed to participation in the cognitive skills program were identified.

[10] For an overview and recent summary of available research, see Muhlhausen and Hurwitz, First Step Act: Best practices for academic and vocational education for offenders (National Institute of Justice, 2019).

[11] Winterfield & colleagues (2009) did include federal program participants in their multisite review of postsecondary education programs, but they did not present findings separately for federal inmates.

[12] See William G. Saylor & Gerald G. Gaes, PREP: Training inmates through industrial work participation, and vocational and apprenticeship instruction, U.S. Federal Bureau of Prisons, 1996 (also published in *Corrections Management Quarterly*, vol. 1, no. 2, spring 1997).

[13] For an overview of BOP's faith-based prison program, see Camp et al. (2006), An exploration into participation in a faith-based prison program, Office of Research and Evaluation, Federal Bureau of Prisons.

[14] This also applies to the recently developed listing of 21 EBRR programs and 40 plus "productive activity" programs.

[15] While beyond the scope of this review, one recent development in the design of risk instruments is the inclusion of both individual level and community level predictors in the model. For a full discussion of this development, see Byrne & Pattavina, 2017.

[16] For estimates of the likely risk reduction effects that can be expected due to increased prison programming and treatment availability using simulation modeling techniques, see Taxman & Pattavina (2013).

[17] The Urban Institute's simulation tool is one such example: https://apps.urban.org/features/risk-assessment/

[18] The recommendation also applies to the evidence-based recidivism reduction programs identified recently by BOP.

[19] For an overview, see the National Offender Management Service (2016) report describing the prison program accreditation process in the United Kingdom.

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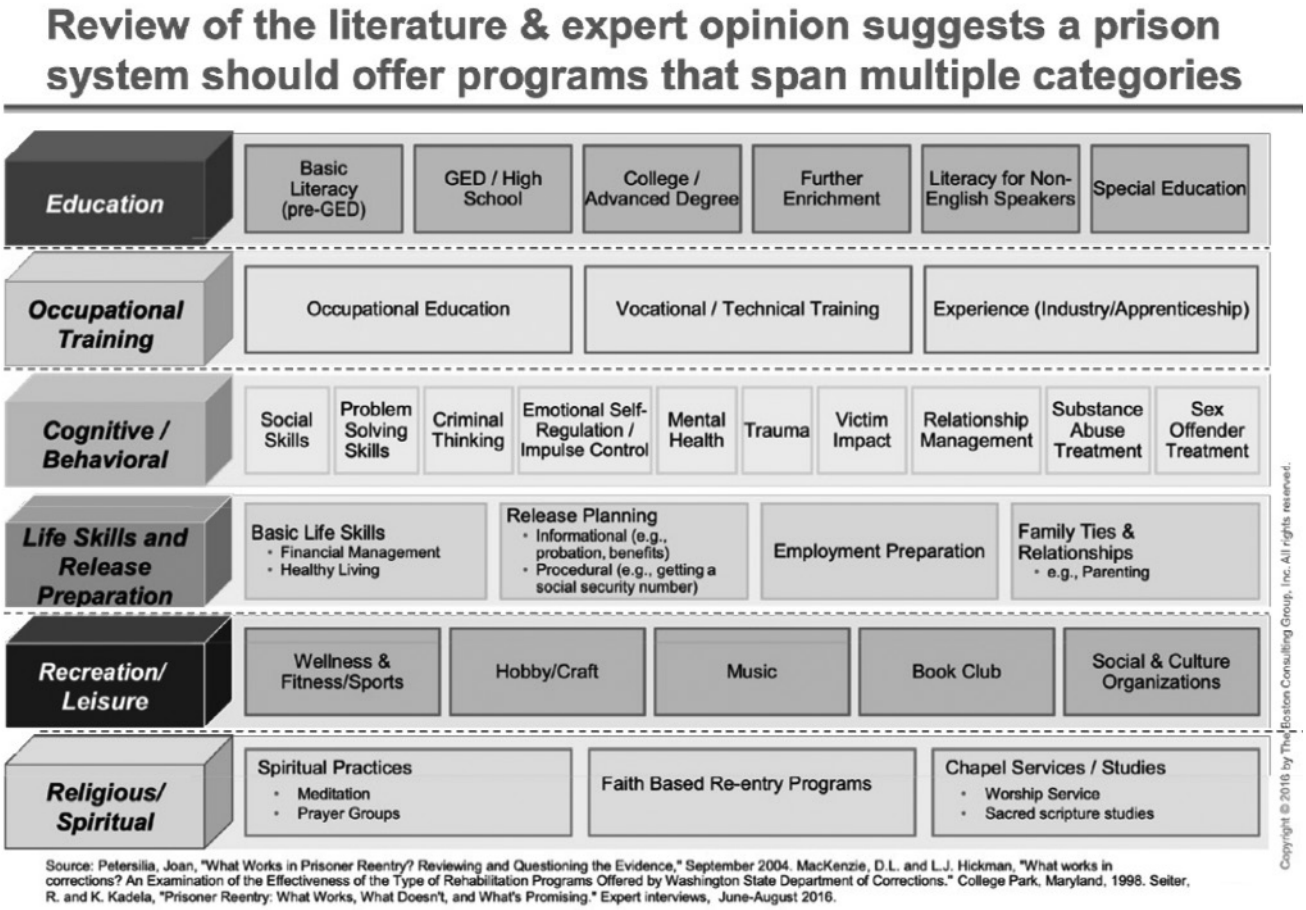
APPENDIX A:
SELECTED SUPPORTING TABLES FROM THE BOSTON CONSULTING GROUP'S 2016 REVIEW OF BOP PROGRAMMING



Evidence Base: Some evidence exists for national programs; however, much is outdated or not independent

Program category	National Programs	Evidence Base: Study conducted	Evidence Base: Other support
Education	Bureau Literacy Program		✓
	English as a Second Language		✓
	Adult Continuing Education		✓
Occupational Training	Occupational Education		✓
	Federal Prison Industries	✓ Study conducted in 1998	✓
Cognitive / Behavioral	Skills Program		✓
	BRAVE	✓ Study conducted in 2000	✓
	STAGES		✓
	Step Down		✓
	Drug Abuse Education		✓
	Residential Drug Abuse Program (RDAP)	✓ Study conducted in 2000	✓
	Non-Residential Drug Abuse Program (NRDAP)		✓
	Sex offender treatment group (residential)		✓
	Sex offender treatment group (non-residential)		✓
	Resolve		✓
	Challenge		✓
Life Skills and Release Preparation	Parenting Program		✓
	Release Preparation Program (RPP)	×	×

While empirical support is cited for all programs, studies confirming effectiveness only exist for a few; given research continues to evolve, assessment should be done more regularly

This gap already identified

Source: BOP National Program Catalogue (May 2015)

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Growing body of evidence suggests well-designed programs can meaningfully encourage rehabilitation & reduce recidivism

Selected examples

Rehabilitative Intervention	Meta-analysis source	Reduction in recidivism 12-51%
Anger Management	Beck and Fernandez, 1998	51%
Therapeutic Community (Hard Drugs)	Holloway, Bennett and Farrington, 2006	45%
Sex Offender Treatment (Violent Recidivism)	Schmucker and Losel, 2008	44%
Moral Reasoning Therapy	Little, 2005; Wilson, Bouffard, and MacKenzie, 2005	16-35%
Post-Secondary Correctional Education	Wilson, Gallagher and MacKenzie, 2000	27%
Cognitive Behavioral Therapy	Lipsey, Landenberger and Wilson, 2007	25%
Vocational	Wilson, Gallagher and MacKenzie, 2000	22%
General Drug Treatment	Holloway, Bennett and Farrington, 2006; Prendergast, Podus, Chang, and Urada, 2002	12-22%
General Vocation/Education	Wilson, Gallagher, and MacKenzie, 2000	21%
Mental Health Treatment	Martin, Dorken, Wamboldt, and Wooten, 2001	17%

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APPENDIX B:
RESEARCH SUPPORT AND EVALUATION REVIEW OF 18 NATIONAL PROGRAM MODELS INCLUDED IN THE *DIRECTORY OF NATIONAL PROGRAMS*

(Note: For BOP's updated online listing of evidence-based programs, see https://www.bop.gov/inmates/fsa/docs/evidence_based_recidivism_reduction_programs.pdf)

* Tentative DOJ designation as an FSA "evidence-based recidivism reduction program"

**Tentative DOJ designation as an FSA "productive activity"

NAME OF PRISON PROGRAM	PROGRAM DESCRIPTION	EMPIRICAL SUPPORT: BOP RESEARCH SUMMARY AND IRC REVIEW FINDINGS
*Bureau Literacy Program**	The Literacy Program is designed to help inmates develop foundational knowledge and skill in reading, math, and written expression, and to prepare inmates to earn a General Educational Development (GED) credential. Completion of the Literacy Program is often only the first step towards adequate preparation for successful post-release reintegration into society.	**BOP Research Summary:** "Research has shown that passing the GED Test increases earnings for some dropouts, but labor market payoffs take time (Murnane, Willett, & Tyler, 2000; Tyler, 2004; Tyler & Berk, 2008; Tyler, Murnane, & Willett, 2000, 2003). GED credentials provide a pathway into postsecondary education, and finishing even a short-term program offers important economic benefits to GED credential recipients (Patterson, Zhang, Song, & Guison-Dowdy, 2010)." **Our Review: No evaluation of BOP's literacy program has been conducted to date.**
*English-as-a-Second Language Program***	The English-as-a-Second Language (ESL) Program is designed to help inmates with limited English proficiency improve their English until they function at the equivalency of the eighth-grade level in listening and reading comprehension.	**BOP Research Summary:** "Research has shown that individuals who are literate only in a language other than English are more likely to have non-continuous employment and earn less than those literate in English (Greenberg, Macas, Rhodes, & Chan, 2001). Data from the 2000 U.S. Census on immigrant earnings revealed a positive relation between earnings and English skill ability (Chiswick & Miller, 2002). An analysis of higher quality research studies has shown, on average, inmates who participated in correctional education programs (to include ESL instruction) had a 43% lower recidivism rate than those inmates who did not participate (Davis et al., 2014). The same research study also demonstrated correctional education is cost effective (i.e., a savings of $5 on re-incarceration costs for every $1 spent on correctional education)." **Our Review: No evaluation of BOP's English as a second language program has been conducted to date.**
*Occupational Education Programs**	The Occupational Education Program is designed to help inmates acquire marketable skills in a wide variety of trades. Programs, which vary from institution to institution, are provided by career civil-service vocational training instructors or through contracts with colleges and technical schools. Many institutions also provide registered apprenticeships through the U.S. Department of Labor's Office of Apprenticeship. The Inmate Occupational Training Directory outlines the specifics for programs offered at each institution.	**BOP Research Summary:** "Evidence shows a relationship between correctional education program participation before release and lower odds of recidivating after release (Davis et al., 2014; Saylor & Gaes, 1996; Aos, Phipps, Barnoski, & Lieb, 2001). In a study conducted in Maryland, Minnesota and Ohio, correctional education participants had lower recidivism rates in the categories of re-arrest, re-conviction, and re-incarceration (Steurer, Smith, & Tracy, 2001). There is some evidence that in-prison vocational education is effective in improving the likelihood of post-release employment (Davis et al., 2014)." **Our Review: No evaluation of BOP's occupational education program has been conducted to date.**
F*ederal Prison Industries Program**	The mission of Federal Prison Industries, Inc. (FPI) is to protect society and reduce crime by preparing inmates for successful reentry through job training. FPI (also known by its trade name UNICOR) is a critical component of the Bureau's comprehensive efforts to improve inmate reentry. By providing inmates the skills needed to join the workforce upon release, FPI reduces recidivism and helps curb the rising costs of corrections. FPI was established in 1934 by statute and executive order to provide opportunities for training and work experience to federal inmates (18 U.S.C. § 4121, et seq.). FPI does not rely on tax dollars for support; its operations are completely self-sustaining. FPI is overseen by a presidentially-appointed Board of Directors. It is one of the Bureau's most critical programs in support of reentry and recidivism reduction.	**BOP Research Summary:** "Rigorous research, as outlined in the Post-Release Employment Project (PREP Study), demonstrates participation in prison industries and vocational training programs as a positive effect on post-release employment and recidivism. The research revealed inmates who worked in prison industries were 24% less likely to recidivate than non-program participants and 14% more likely to be gainfully employed. These programs had an even greater positive impact on minority inmates who are at a greater risk of recidivism." **Our Review: No evaluation of BOP's Prison Industries program has been conducted in over 25 years. The PREP Study was completed in 1996.**

NAME OF PRISON PROGRAM	PROGRAM DESCRIPTION	EMPIRICAL SUPPORT: BOP RESEARCH SUMMARY AND IRC REVIEW FINDINGS
Parenting Program*	The Parenting Program provides inmates information through directed classes on how to enhance their relationship with their children even while incarcerated. All parenting programs include a classroom component and relationship-building visitation activities. Additionally, social services outreach contacts are often established to facilitate the provision of services to the inmate parent, visiting custodial parent, and children.	**BOP Research Summary:** "Research has shown parenting programs for incarcerated parents can improve their self-esteem, parenting attitudes, and institutional adjustment." **Our Review: No evaluation of BOP's parenting program has been conducted to date.**
Bureau Rehabilitation and Values Enhancement Program*	The Bureau Rehabilitation and Values Enhancement (BRAVE) Program is a cognitive-behavioral, residential treatment program for young males serving their first federal sentence. Programming is delivered within a modified therapeutic community environment; inmates participate in interactive groups and attend community meetings while living in a housing unit separate from the general population. The BRAVE Program is designed to facilitate favorable institutional adjustment and reduce incidents of misconduct. In addition, the program encourages inmates to interact positively with staff members and take advantage of opportunities to engage in self-improvement activities throughout their incarceration.	**BOP Research Summary:** "Research found BRAVE Program participants had a misconduct rate lower than a comparison group and BRAVE Program graduates also had a lower misconduct rate. The BRAVE Program utilizes cognitive-behavioral treatment within a modified therapeutic community; these interventions have been found to be effective with an incarcerated population in the reduction of recidivism." **Our Review: One evaluation of BOP's BRAVE program has been conducted since 2000; this evaluation focused on in-prison behavior rather than on recidivism.**
Challenge Program*	The Challenge Program is a cognitive-behavioral, residential treatment program developed for male inmates in penitentiary settings. The Challenge Program provides treatment to high security inmates with substance abuse problems and/or mental illness. Programming is delivered within a modified therapeutic community environment; inmates participate in interactive groups and attend community meetings while living in a housing unit separate from the general population. In addition to treating substance use disorders and mental illnesses, the program addresses criminality via cognitive-behavioral challenges to criminal thinking errors. The Challenge Program is available in most high security institutions.	**BOP Research Summary:** "Interventions used in the Challenge Program (i.e., cognitive-behavioral protocols and a modified therapeutic community model) have been demonstrated to be effective in other treatment programs, such as the Bureau's Residential Drug Abuse Program and BRAVE Program. Specifically, they have been noted to reduce misconduct, substance abuse/dependence, and recidivism. The mental health interventions selected for the Challenge Program also have strong empirical support and appear in multiple evidence-based programs (EBPs) registries." **Our Review: No evaluation of BOP's Challenge program has been conducted to date.**
Drug Abuse Education**	Drug Abuse Education is designed to encourage inmates with a history of drug use to review the consequences of their choice to use drugs and its physical, social, and psychological effects. Drug Abuse Education is designed to motivate inmates to participate in drug abuse treatment as needed; Drug Abuse Education is not drug treatment.	**BOP Research Summary:** "Research has demonstrated psycho-educational techniques are effective motivational strategies, particularly in moving individuals toward seriously considering a significant life change." **Our Review: No evaluation of BOP's drug abuse education program has been conducted to date.**
Female Integrated Treatment Program*	The Female Integrated Treatment (FIT) Program is an institution-wide residential treatment program that offers integrated cognitive-behavioral treatment for substance use disorder, mental illness, and trauma-related disorders to female inmates. Inmates who would otherwise qualify for RDAP and whose treatment plan addresses substance use in this residential program may qualify for the early release benefit associated with RDAP. FIT is jointly offered by Psychology Services and the Female Offender Branch.	**BOP Research Summary:** "The mental health and trauma interventions selected for this program have strong empirical support and appear in multiple evidence-based programs (EBPs) registries. In coordination with the National Institute on Drug Abuse (NIDA), the Bureau conducted a rigorous three-year outcome study of the RDAP, which was published in 2000. The analysis also found that female inmates who participate in RDAP are 18% less likely to recidivate than similarly situated female inmates who do not participate in treatment." **Our Review: No evaluation of BOP's RDAP program—focusing on female inmates—has been conducted since 2000 (a study that examined a cohort of releasees from 1992-1995).**

NAME OF PRISON PROGRAM	PROGRAM DESCRIPTION	EMPIRICAL SUPPORT: BOP RESEARCH SUMMARY AND IRC REVIEW FINDINGS
Mental Health Step Down Unit Program	The Mental Health Step Down Unit Program is a residential treatment program offering an intermediate level of care for inmates with serious mental illnesses. The program is specifically designed to serve inmates who do not require inpatient treatment but lack the skills to function in a general population prison setting. The program uses an integrative model that includes an emphasis on a modified therapeutic community, cognitive-behavioral therapies, and skills training. The goal of the Mental Health Step Down Unit Program is to provide evidence-based treatment to seriously mentally ill inmates in order to maximize their ability to function and minimize relapse and the need for inpatient hospitalization.	**BOP Research Summary:** "The mental health interventions selected for this program have strong empirical support and appear in multiple evidence-based programs (EBPs) registries." **Our Review: No evaluation of BOP's Mental Health Step Down Unit program has been conducted to date.**
*Nonresidential Drug Abuse Program***	The Nonresidential Drug Abuse Program is a flexible, moderate intensity cognitive-behavioral treatment program. The program is designed to meet the needs of a variety of inmates, including inmates waiting to enter the Residential Drug Abuse Program (RDAP); inmates who do not meet admission criteria for the RDAP but who wish to benefit from less intensive drug abuse treatment services; and inmates who have been referred by other Psychology Services or institution staff for drug abuse treatment.	**BOP Research Summary:** "The Nonresidential Drug Abuse Program utilizes cognitive-behavioral interventions, which have been proven to be effective in the treatment of substance use disorders. The group treatment format used in this program also offers empirically supported benefits from pro-social peer interaction among participants." **Our Review: No evaluation of BOP's nonresidential drug abuse program has been conducted to date.**
*Residential Drug Abuse Program**	The Residential Drug Abuse Program (RDAP) provides intensive cognitive-behavioral, residential drug abuse treatment. Programming is delivered within a modified therapeutic community environment; inmates participate in interactive groups and attend community meetings while living in a housing unit separate from the general population. The RDAP is currently available to Spanish-speaking inmates at two facilities. In addition, Dual Diagnosis RDAPs provide specialized treatment services for inmates with co-occurring substance abuse and mental illness and/or medical problems. Inmates who successfully complete the RDAP and meet other criteria (e.g., sufficient time remaining on their sentence, no precluding offense convictions) may be eligible for up to a 12-month sentence reduction.	**BOP Research Summary:** "In coordination with the National Institute on Drug Abuse (NIDA), the Bureau conducted a rigorous three-year outcome study of RDAP, which was published in 2000. The study revealed that male participants were 16% less likely to recidivate and 15% less likely to relapse than similarly situated inmates who do not participate in residential drug abuse treatment for up to three years after release. The analysis also found that female inmates who participate in RDAP are 18% less likely to recidivate than similarly situated female inmates who do not participate in treatment." **Our Review: The above-mentioned evaluation of BOP's RDAP program was conducted over 20 years ago, examining cohorts of releasees from 1992-1995. Federal offender profiles, the program model, and staffing levels have likely changed since the mid-90s, rendering these findings inapplicable to the current RDAP program.**
*Resolve Program**	The Resolve Program is a cognitive-behavioral program designed to address the trauma-related mental health needs of inmates. Specifically, the program seeks to decrease the incidence of trauma-related psychological disorders and improve inmates' level of functioning. In addition, the program aims to increase the effectiveness of other treatments, such as drug treatment and healthcare. The program uses a standardized treatment protocol consisting of three components: an initial psychoeducational workshop (Trauma in Life/Traumatic Stress & Resilience); a brief, skills-based treatment group (Seeking Safety); and Dialectical Behavioral Therapy (DBT), Cognitive Processing Therapy (CPT), and/or a Skills Maintenance Group which are intensive, cognitive-behavioral treatment groups to address persistent psychological and interpersonal difficulties. The Resolve Program is currently available in many female institutions and a limited number of male institutions.	**BOP Research Summary:** "Empirical support for the interventions utilized in the Resolve Program is well-established. Seeking Safety, CPT, and DBT appear in multiple evidence-based programs (EBPs) registries. These protocols are also used in the Veterans Administration, the country's largest provider of trauma-related treatment." **Our Review: No evaluation of BOP's Resolve program has been conducted to date.**

NAME OF PRISON PROGRAM	PROGRAM DESCRIPTION	EMPIRICAL SUPPORT: BOP RESEARCH SUMMARY AND IRC REVIEW FINDINGS
Sex Offender Treatment Program – Nonresidential*	The Sex Offender Treatment Program - Nonresidential (SOTP-NR) is a moderate intensity program designed for low to moderate risk sexual offenders. The program consists of cognitive-behaviorally based psychotherapy groups, totaling 4-6 hours per week.	**BOP Research Summary:** "The SOTP-NR is designed to conform to the characteristics of sex offender treatment programs with proven effectiveness in reducing re-offense as demonstrated by outcome research. These characteristics include: 1) stratification of treatment into separate tracks for high and low/ moderate risk inmates; 2) targeting empirically demonstrated dynamic risk factors; and 3) training and oversight to ensure fidelity with the program model." **Our Review: No evaluation of BOP's nonresidential sex offender treatment program has been conducted to date.**
Sex Offender Treatment Program – Residential*	The Sex Offender Treatment Program - Residential (SOTP-R) is a high intensity program designed for high risk sexual offenders. The program consists of cognitive-behaviorally based psychotherapy groups, totaling 10-12 hours per week, on a residential treatment unit employing a modified therapeutic community model.	**BOP Research Summary:** "The SOTP-R is designed to conform to the characteristics of sex offender treatment programs with proven effectiveness in reducing re-offense as demonstrated by outcome research. These characteristics include: 1) stratification of treatment into separate tracks for high and low/moderate risk inmates; 2) targeting empirically demonstrated dynamic risk factors; and 3) training and oversight to ensure fidelity with the program model." **Our Review: No evaluation of BOP's residential sex offender treatment program has been conducted to date.**
Skills Program*	The Skills Program is a residential treatment program designed to improve the institutional adjustment of inmates with intellectual disabilities and social deficiencies. The program uses an integrative model which includes a modified therapeutic community, cognitive-behavioral therapies, and skills training. The goal of the program is to increase the academic achievement and adaptive behavior of socially and cognitively impaired inmates, thereby improving their institutional adjustment and likelihood for successful community reentry.	**BOP Research Summary:** "The cognitive-behavioral therapy, cognitive rehabilitation, skills training, and modified therapeutic community interventions selected for this program have sound empirical support and consistently appear in evidence-based programs (EBPs) registries". **Our Review: No evaluation of BOP's Skills program has been conducted to date.**
Steps Toward Awareness, Growth, and Emotional Strength Program	The Steps Toward Awareness, Growth, and Emotional Strength (STAGES) Program is a residential treatment program for inmates with serious mental illnesses and a primary diagnosis of Borderline Personality Disorder. The program uses an integrative model which includes a modified therapeutic community, cognitive-behavioral therapies, and skills training. The program is designed to increase the time between disruptive behaviors, foster living within the general population or community setting, and increase pro-social skills.	**BOP Research Summary:** "DBT is an evidence-based practice for the treatment of Borderline Personality Disorder, with strong empirical support. In addition, the cognitive-behavioral interventions and modified therapeutic community model employed in the program are well supported in the professional literature. These interventions appear in a number of evidence-based programs (EBPs) registries." **Our Review: No evaluation of BOP's STAGES program has been conducted to date.**
Life Connections Program*	The Life Connections Program (LCP) is a residential faith-based program offered to inmates of all faith traditions, including those who do not hold a religious preference. This program is available to inmates at low, medium, and high security facilities. The goal of LCP is to provide opportunities for the development and maturation of the participants' commitment to normative values and responsibilities, resulting in overall changed behavior and better institutional adjustments. In addition, the participants receive life skills and practical tools and strategies to assist them in transitioning back to society once released from federal custody.	**BOP Research Summary:** "The LCP materials and workbooks are based on interactive journaling which was listed on SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP)." **Our Review: No evaluation of BOP's Life Connections program has been conducted to date.**

APPENDIX C:

PROGRAMMATIC INFORMATION FOR NATIONAL "MODEL" PROGRAMS

(For the BOP's updated list of programs, see
https://www.bop.gov/inmates/fsa/docs/evidence_based_recidivism_reduction_programs.pdf**)**

MODEL PROGRAM	DURATION	FREQUENCY	HOURS	PROGRAM LOCATION	NEED(S) ADDRESSED
Bureau Literacy Program (Reading, math, and writing skills leading to high school equivalency)	Dependent on Inmate Progress	1.5 hours per day	240	All BOP institutions	Education/ Vocation
Occupational Education Programs (Vocational training and marketable skills in a wide variety of trades)	Varies	Varies	500	All BOP Institutions	Education/ Vocation
Federal Prison Industries (Trade name UNICOR, a job skills program)	Indefinite Duration	Full or shared half time	500	57 factories and 2 farms located at 51 facilities	Education/ Vocation
National Parenting from Prison Program (2 phase program focused on family engagement and parenting skills)	Phase 1: 4 weeks; Phase 2: varies from 5 to 10 weeks	2 hours per week	40	All BOP institutions	Social/Family
Brave (CBT for young males with first offense)	6 months	20 hours per week	500	Beckley; Victorville-Medium	Cognitions, Social/Family
Challenge (CBT for high security males focused on substance use and mental illness intervention)	Minimum of 9 months	20 hours per week	500	High Security Facilities (17)	Substance Abuse, Social/ Family, Cognitions
Female Integrated Treatment (CBT program for women addressing mental illness, trauma, substance use and vocational needs)	Varies based on individual need	20 hours per week	500	Danbury - female	Substance Abuse, Cognitions, Mental Health, Social/Family
Mental Health Step Down Program (CBT for SMI inmates)	12-19 months	20 hours per week	500	Allenwood-High; Atlanta; Butner-Medium	Mental Health, Cognitions
Residential Drug Treatment (CBT for inmates with diagnosed substance use disorders)	9 months	20 hours per week	500	88 locations	Substance Abuse, Cognitions
Resolve Program	40 weeks	Varies based on program phase	80	All female sites except satellites; Florence and Danbury - male	Cognitions, Mental Health
Stages Program (high intensity CBT for SMI and PD inmates)	12-18 months	20 hours per week	500	Florence High; Terre Haute Medium	Mental Health; Cognitions
Skills Program (CBT and educational residential programs with inmates with cognitive impairments)	12-18 months	20 hours per week	500	Danbury; Coleman - Medium	Cognitions, Mental Health
Life Connections Programs (faith-based values and life skills program)	18 months	20 hours per week	500	Petersburg Low; Leavenworth; Milan; Terre Haute High; Carswell	Social/Family, Cognitions
English-as-a-Second Language	Dependent on inmate progress	Minimum of 1.5 hours per day	500	All BOP institutions	Education/ Vocation
Drug Education	Varies based on institutional setting	Varies based on institutional setting	15	All BOP institutions	Substance Abuse
Non-Residential Drug Treatment Program	3-6 months	1.5-2 hours per week	24	All BOP institutions	Substance Abuse, Cognitions
Sex Offender Treatment Program (Residential and Non)	9-12 months	12 hours per week	500	Carswell, Devens, Elkton, Englewood, Petersburg-Medium, Marianna, Marion, Seagoville, Tucson-High	Cognitions