IMPROVING QUALITY THROUGH THE DEVELOPMENT
OF A BENZODIAZAPINE SPARING PROTOCOL FOR TREATING ALCOHOL
WITHDRAWAL IN A COMMUNITY CORRECTIONAL SETTING

by

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A scholarly project submitted in partial fulfillment
of the requirements for the degree

of

Doctorate of Nursing Practice

in

Psychiatric Mental Health

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2018
ACKNOWLEDGEMENTS

Many thanks to my family for delaying your needs for a while and to my committee for your support, good mentorship, and great ideas.
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ABSTRACT

Alcohol detoxification within community correctional environments poses significant challenges to local jurisdictions that are called to manage rising rates of incarceration among citizens with complex health needs including multiple comorbidities and mental illness and substance abuse. Traditional methods for intervening during detoxification have relied upon benzodiazepine tapers to reduce chances of the most serious consequences of alcohol withdrawal syndrome (AWS) but these medications have been increasingly attributed to poor outcomes such as increased risks of delirium, medication interactions, and risk of diversion among others. This project describes an evidence-based benzodiazepine sparing protocol that can be used to avoid use of this class of medications as well as an associated education intervention for detention officers and healthcare staff in one community correctional institution designed to improve knowledge of monitoring and treatment for inmates suffering from AWS. In total, 28 staff participated in the training and results suggest excellent overall quality and accomplishment of objectives at a high level. Implications for advanced practice nursing are discussed as well as directions for future dissemination efforts for BZ-sparing treatment.
CHAPTER ONE

INTRODUCTION

Problem Description

The National Epidemiologic Survey on Alcohol and Related Conditions III recently determined that alcohol use disorder, as defined by the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5), have 12-month and lifetime prevalence's of 13.9% and 29.1% respectively (Grant, Goldstein et al. 2015). Lifetime prevalence is highest among men (36%), whites (32.6%) and Native Americans (43.3%), younger populations (37%) and those at the lowest income levels (1.5%). Economic costs of excessive drinking in the United States have been estimated at about 223.5 billion dollars (2006) and result primarily from losses in workplace activity, health care expenses, law enforcement and other criminal justice expenses, and motor vehicle crash costs (Centers for Disease Control and Prevention 2014).

Among the many challenges that health care providers face when providing treatment to patients with alcohol use disorder is providing safe and effective care during the acute phase of alcohol withdrawal. Alcohol withdrawal is characterized by restlessness, diaphoresis, anorexia, irritability, anxiety, tremors, and may evolve into more serious symptoms (i.e. delirium tremens) that can include seizures, delirium/hallucinations, and autonomic hyperactivity (Schuckit 2014). Importantly, settings in which alcohol withdrawal occurs among patients can range across the continuum of care from outpatient to inpatient services, and in fact health care providers
may not always anticipate alcohol withdrawal among diverse patients if alcohol use
history is not thoroughly assessed or cannot be known. Among inpatient settings,
research suggests that prevalence of alcoholism ranges from 25% on general medical
services to about 30% in psychiatric settings and that detection rates by health care
providers are generally less than 50% (Moore, Bone et al. 1989). On an outpatient basis,
about 10% of patients might have problems with alcohol dependence and thus are at risk
for alcohol withdrawal symptoms (Muncie, Yasinian et al. 2013).

Within the community, risk for AWS is perhaps most significant among newly
incarcerated populations where estimates of severe alcohol addiction leading to active
detoxification among those populations approach 12% and access to effective short and
long term treatment is limited (Fiscella, Pless et al. 2004).

Problem/Purpose Statement

Safe and effective clinical management of AWS in a community correctional
setting is an important role for psychiatric and primary care providers across the United
States. Improvements in quality and efficiency of care may be made if healthcare
providers are supplied with tools and training that allow for ideal assessment of
candidates for outpatient treatment, and protocols that address the limitations and dangers
of an over-reliance of benzodiazepines. Therefore, the purpose of this project is to:

1. Develop a benzodiazepine sparing treatment protocol for correctional facility
   based treatment of alcohol withdrawal syndrome.
2. Develop a screening process for appropriate selection of patients for BZ-sparing protocol use.

3. Provide and evaluate correctional staff education on alcohol withdrawal screening among community correctional inmates.

4. Provide and evaluate correctional healthcare provider and staff education on the BZ-sparing protocol and screening process.

**Context of Project**

This project is being carried out within the context of a program of study for the Doctor of Nursing Practice (DNP) Degree and corresponds with the suggestion from the American Association of Colleges of Nursing that the final DNP project represents a synthesis of the students work and may be a "practice change project" (American Association of Colleges of Nursing 2006). The format of this project is planned according to the guidelines for the Revised Standards for Quality Improvement Reporting Excellence 2.0 (SQUIRE)(Ogrinc, Davies et al. 2015) and generally follows the suggested reporting format with some permissible modifications based on adoption of this process for the particular elements of this project.
CHAPTER TWO

AVAILABLE KNOWLEDGE

Pubmed was queried for articles published in English on pharmacological management of alcohol withdrawal as well as benzodiazepine use and no restrictions were placed on publication date. The following medical subject heading (MeSH) terms: "Benzodiazepines", “Alcoholism”, “alcohol withdrawal seizures” and “alcohol withdrawal delirium”, “drug therapy”, and "benzodiazepine sparing". General search terms such as "alcoholism" and "Benzodiazepines" yielded 80,373 and 68,051 returned references respectively. Combinations of terms such as "benzodiazepines alcohol", "management of alcohol withdrawal", and "benzodiazepine sparing" yielded 7997, 1079, 122 articles respectively. Articles not relevant to the topic were excluded and full text articles most closely related to the topic of this project were retrieved and cross-referencing was performed to identify other relevant articles. Additional searches for books, monographs, professional reports, and clinical practice guidelines was performed using Google as the search engine and identical search terms as noted above.

Alcohol Withdrawal

Significant heterogeneity is also understood with respect to presentations of alcohol withdrawal and the range and severity of symptoms correspond generally to the severity and chronicity of alcohol use. Table 1 shows the DSM-5 (American Psychiatric

### Table 1. DSM-5 Criteria for Alcohol Withdrawal

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>A.</td>
<td>Cessation of (or reduction in) alcohol use that has been heavy and prolonged.</td>
</tr>
<tr>
<td>B.</td>
<td>Two (or more) of the following, developing within several hours to a few days after the cessation of (or reduction in) alcohol use described in Criterion A:</td>
</tr>
<tr>
<td></td>
<td>1. Autonomic hyperactivity</td>
</tr>
<tr>
<td></td>
<td>2. Increased hand tremor</td>
</tr>
<tr>
<td></td>
<td>3. Insomnia</td>
</tr>
<tr>
<td></td>
<td>4. Nausea or vomiting</td>
</tr>
<tr>
<td></td>
<td>5. Transient visual, tactile, or auditory hallucinations or illusions</td>
</tr>
<tr>
<td></td>
<td>6. Psychomotor agitation</td>
</tr>
<tr>
<td></td>
<td>7. Anxiety</td>
</tr>
<tr>
<td></td>
<td>8. Generalized tonic-clonic seizures</td>
</tr>
<tr>
<td>C.</td>
<td>The signs and symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.</td>
</tr>
<tr>
<td>D.</td>
<td>The signs or symptoms are not attributable to another medical condition and are not better explained by another mental disorder, including intoxication or withdrawal from another substance.</td>
</tr>
</tbody>
</table>

**Specify if:** With perceptual disturbances: This specifier applies in the rare instance when hallucinations (usually visual or tactile) occur with intact reality testing, or auditory, visual, or tactile illusions occur in the absence of a delirium.

Importantly, criterion B lists 8 typical symptoms of alcohol withdrawal that vary between individuals according to a variety of factors including previous severe experience with withdrawal, previous seizures or delirium tremens, history of alcohol treatment, history of blackouts, history of combined use of alcohol with benzodiazepines or barbiturates, and objective measures such as blood alcohol level on presentation, and increased autonomic activity (Maldonado, Sher et al. 2014). More risk factors from this list suggests a greater likelihood of withdrawal occurring and the most severe symptoms of alcohol withdrawal (i.e., delirium and generalized seizures) can be predicted in many
cases by low serum potassium, low platelet counts, and prevalence of known brain lesions (Eyer, Schuster et al. 2011).

Clinicians assess severity of alcohol withdrawal during the course of treatment using standardized instruments such as the Clinical Institute Withdrawal of Alcohol Scale (CIWA-Ar) (Sullivan, Sykora et al. 1989) as a practice standard, although there are several versions of the CIWA in use such as the Alcohol Withdrawal Scale (AWS) (Wetterling, Kanitz et al. 1997). The CIWA results in a score that ranges from 0 to 67 and total score > than 15 suggests increased risk for severe withdrawal (Sullivan, Sykora et al. 1989). Prevalence estimates of severe withdrawal symptoms among populations of men undergoing treatment for alcoholism indicate that only about 8-15% of alcoholics experience fits/seizures and 11-29% experience delirium tremens so clinicians can expect at most about a third of chronic alcoholics will experience severe withdrawal necessitating the most intense treatment (Caetano, Clark et al. 1998).

Alternatively, the other 2/3's of chronic alcoholics undergoing withdrawals may experience unpleasant but non-life-threatening symptoms such as shaking (29-70%), insomnia (54-82%), diaphoresis (52-75%), and headaches 58-60%) (Caetano, Clark et al. 1998).

Symptoms of alcohol withdrawal syndrome may begin within a few hours after the last drink of alcohol and last up to a week from the last drink (Fair and Akwe 2015). The general goals of management as adopted by the American Society of Addiction Medicine (Mee-Lee and American Society of Addiction Medicine 2013) focus on a standard of care that includes both safe withdrawal but also providing care that is both
humane and accounts for enabling the patient to achieve long-term sobriety. For clinicians, management of alcohol withdrawal generally involves making a decision about the severity of withdrawal symptoms (i.e., risk of seizure or DTs) necessitating inpatient treatment, or making a determination if the client can be safely managed on an outpatient basis. Because the vast majority of individuals undergoing detoxification of alcohol will not experience the most severe symptoms of withdrawal (Caetano, Clark et al. 1998), increasing emphasis is being placed on protocols for providing safe detoxification on an outpatient basis. Interest in outpatient alcohol withdrawal since the early 1980's has been driven primarily through a realization of the tremendous costs associated with inpatient treatment, estimated to be $185 billion in 1998 (Caetano, Clark et al. 1998), but also an increasing number of studies that suggest fewer than 20% of patients with AWS need inpatient treatment and that outpatient treatment outcomes compare favorably with outcomes from inpatient settings (Abbott, Quinn et al. 1995).

In North America, standard supportive treatment for AWS for both outpatients and inpatients has relied heavily upon Benzodiazepines (BZ's) as a class of drug that suppresses much of the autonomic hyper reactivity experienced by those experiencing withdrawal (Institute of Medicine (U.S.), Institute of Medicine (U.S.). Committee to Identify Research Opportunities in the Prevention and Treatment of Alcohol-Related Problems. et al. 1989). However, clinicians have recently started questioning this practice in view that BZ's can result in significant unwanted sedation (Myrick and Anton 1998), continued CNS-depressant withdrawal, abuse liability, increase alcohol cravings and lead to early relapse, and significantly interact with alcohol, opioids, and other CNS
depressants especially in the context of outpatient treatment where environmental controls are not possible (Maldonado 2014). Moreover, clinicians have at their disposal other classes of drugs that are being increasingly utilized for outpatient treatment of AWS that do not carry the same risks, although protocols for implementation of BZD-sparing treatment plans and clinician education remains scant.

Protocol Development

The BZ-sparing protocol was adapted from the treatment algorithm used within the Stanford University School of Medicine (Maldonado 2017) in order to decrease excessive use of benzodiazepines and their related side effects. This algorithm was developed by a multidisciplinary taskforce from various clinical departments using evidence from the literature and considering problems such as over sedation, negative neurologic sequelae, and development of medication induced delirium. The original protocol is designed for inpatient settings where more intense assessment and a full range of pharmacological intervention is possible in cases where rescue treatment is needed or complex presentations of AWS occur. For this reason, modifications were necessary to use this protocol in correctional settings to not only conform to available resources but also to ensure safety. Table 2 shows overall elements of the original and modified treatment protocols.

The complete modified protocol can be found in appendix A. The modified protocol uses only the CIWA-Ar for AWS severity assessment due to the familiarity of the current Gallatin County correctional staff with the assessment tool. Furthermore,
only AWS prophylaxis and not treatment is addressed in the modified protocol for those patients scoring <15 on the CIWA-Ar. This enforces a level of safety whereby patients scoring 15 or higher are appropriately referred out for detoxification under conditions where greater resources are available. Non-pharmacological interventions are identical

<table>
<thead>
<tr>
<th></th>
<th>Stanford Protocol</th>
<th>Modified Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Into Protocol</td>
<td>Patient with H/O ETOH use in last 30 days or &quot;+&quot; BAC</td>
<td>Patient with H/O ETOH use in last 30 days or &quot;+&quot; BAC</td>
</tr>
<tr>
<td>Assessment of AWS Risk</td>
<td>Prediction of Alcohol Withdrawal Severity Scale (PAWSS)</td>
<td>Prediction of Alcohol Withdrawal Severity Scale (PAWSS)</td>
</tr>
<tr>
<td>Assessment of AWS Severity</td>
<td>Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar) OR Alcohol Withdrawal Syndrome Scale (AWSS)</td>
<td>Only the CIWA-Ar is suggested</td>
</tr>
<tr>
<td>BZ-Sparing Prophylaxis: Non-pharmacological</td>
<td>Evidence-based interventions such as nutritional support, cognitive stimulation, support of circadian rhythm</td>
<td>Identical interventions within the limitations of corrections</td>
</tr>
<tr>
<td>BZ-Sparing Prophylaxis: Pharmacological</td>
<td>Centrally acting alpha-2 adrenergic receptor agonists AND/OR Gabapentin. BZDPs may be used for breakthrough symptoms of AWS</td>
<td>Centrally acting alpha-2 adrenergic receptor agonists AND/OR Gabapentin</td>
</tr>
<tr>
<td>Adjunct Insomnia/Anxiety</td>
<td>Full range of pharmaceutical therapies offered</td>
<td>Only hydroxyzine</td>
</tr>
<tr>
<td>BZ-Sparing Treatment: Pharmacological</td>
<td>Centrally acting alpha-2 adrenergic receptor agonists in combination with gabapentin or valproic acid</td>
<td>None</td>
</tr>
</tbody>
</table>

under the limitations imposed by a correctional environment (e.g., lighting cannot always be tailored to individual needs). Likewise, pharmacological intervention is the same and based on treatment with alpha-2 agonists or Ca^{2+} Ch modulators.  Adjunct treatment for
insomnia or anxiety is limited to hydroxyzine in the modified protocol based on correctional formulary.

**Evidence for Treatment with Alpha-2 Agonists**

Control of symptoms associated with AWS can be achieved using a variety of pharmacological modalities such as such as benzodiazepines, barbiturates, Ca\(^{2+}\)Ch modulators (e.g., valporic acid, gabapentin), \(\gamma\)-aminobutyric acid-ergic agents (e.g, propofol), alpha-2 agonists, and even ethyl alcohol itself (Maldonado 2017). The neurobiological basis for the symptomatology of AWS is explained by generalized brain excitability when the GABA inhibitory effect of ETOH is withdrawn along with excess availability of norepinephrine (NE) due to desensitization of alpha-2 receptors and conversion from dopamine (DA) (Turner, Lichstein et al. 1989, Littleton 1998). Alpha-2 Agonists (AAG) activate G-protein-coupled K\(^+\) channels and block voltage-gated Ca channels that effectively inhibits the presynaptic release of glutamate and norepinephrine. (Donello, Padillo et al. 2001). AAGs differ in their affinity for one of three subtypes of alpha receptor subtypes (A, B, and C) (Lomasney, Lorenz et al. 1990) and clinical effects can be differentially attributed to which of these 3 receptor subtypes are stimulated.

Although a number of AAGs exist in global use for a variety of conditions, only clonidine is available in the United States and has been studied for use among those suffering from AWS. Efficacy of clonidine in the treatment of AWS has been shown in both case reports as well as double-blind, placebo controlled trials. Maldonado (2017) recently reviewed the literature on using clonidine for treatment of AWS that included
seven randomized controlled trials and concluded that it was superior to benzodiazepines considering overall withdrawal scores, mean systolic blood pressure, mean heart rate, anxiety, cognitive recovery, psychological symptoms (e.g. anxiety, irritability, agitation), and CNS excitation (Bjorkqvist 1975, Walinder, Balldin et al. 1981, Wilkins, Jenkins et al. 1983, Manhem, Nilsson et al. 1985, Baumgartner and Rowen 1987, Baumgartner 1988, Nutt, Glue et al. 1988, Baumgartner and Rowen 1991, Adinoff 1994, Braz, Camacho Navarro et al. 2003, Dobrydnjov, Axelsson et al. 2004). Additionally, the author reports that no subject treated in these reviewed studies developed seizures or progressed to DTs.
CHAPTER THREE

METHODS AND STUDY OF THE INTERVENTION

Context

The Gallatin County Detention Center (GCDC) is a community correctional institution under direction of the elected county sheriff. In 2016, the GCDC had annual bookings of 3589 and 1052 male and female citizens respectively, and an average daily population of 147 inmates (Young 2017). Healthcare at the detention center has historically been provided on a contract basis with Benefis Spectrum Medical (Great Falls, MT) but in 2017 was transitioned to county responsibility alone. Current jail detoxification procedures (Policy 5.4.11) are as follows (Young 2017):

Detoxification from alcohol and/or drugs is conducted under medical supervision in accordance with local, state, and federal laws. If performed at the facility, detoxification is performed in accordance with clinical protocols approved by health authority.

**Detoxification Procedures:**
1. If performed at the facility, detoxification is performed in accordance with clinical protocols approved by the health authority.
2. Inmates, who are arrested under the influence, if released, will only be released to a sober person and; if detained, will remain in a booking cell until they are sober.
3. Through the booking process, Officers will gather as much information as they can in regards to an arrestees’ alcohol/drug use.
4. If a new arrest appears to be having life threatening medical emergency, detention staff will call (8)911 and begin emergency procedures above. For a non-life threatening medical emergency, officers will contact medical staff.
5. Officers will follow the instructions of health services staff in regards to inmate detoxification procedure.

Gallatin Mental Health Services (Bozeman, MT) currently provides a psychiatric nurse practitioner for consultation at the detention center for mental health needs that are outside of the scope of primary care. Jail administration and the consulting psychiatric
nurse practitioner were consulted to garner support for the project and have committed to use the suggested protocol in crafting new policy of treating AWS within the facility.

Interventions

Although an important goal of this project was to develop a benzodiazepine sparing alcohol detoxification protocol to be used in the correctional setting, only two educational interventions were carried out for this project. After the development of the protocol, education was provided to both correctional staff and correctional healthcare workers focused on their knowledge of alcohol detoxification as well as their comfort with implementing the protocol. Educational sessions took place virtually via recorded video (hosted on Montana State University servers) at the request of the training officer for the GCDC so that materials could be delivered widely within the organization, repeated when necessary, and used for new employees. Invitations to participate in the educational intervention were sent from the training officer to staff (n = 68) and personal verbal invitations were repeated by the training officer to healthcare staff in the infirmary, sergeants on all shifts, and all officers that work in the booking operations. These personal verbal invitations were delivered to employees that were either 1) most likely to initially assess a person that might experience AWS (booking), 2) be responsible for AWS referrals in the detention center (healthcare staff), or 3) be responsible for assessment and intervention for complex inmates (sergeants). Initial invitation asked for staff to participate in the intervention over a 2 week period. A follow-up email was sent after the initial 2 week period reminding staff that they were invited to participate in the
intervention and allowing an additional 2 weeks prior to closing the evaluation. Slides of the educational intervention are included in appendix B. Correctional staff including both detention officers and healthcare personnel attended the 40-minute training session covering the following topics and associated learning objectives crafted to focus on factual/conceptual/procedural knowledge within the cognitive process dimension of Bloom's Taxonomy (Anderson and Krathwohl 2001):

1. Epidemiology of community based alcohol withdrawal.
   a. Officers will be able to relate community-based prevalence estimates of alcoholism to rates of correctional alcohol detoxification risks in Gallatin County.

2. Basic alcohol withdrawal pathophysiology including signs, symptoms, and consequences.
   a. Officers will be able to apply alcohol detoxification pathophysiology to the signs, symptoms, and consequences of alcohol detoxification.

3. Booking process to facilitate taking an alcohol history.
   a. Officers will be able to describe the process of taking an alcohol history during booking procedures.

4. Emergent or referral procedures for suspected alcohol withdrawal.
   a. Officers will be able to apply GCDC procedures for either emergent or referrals for suspected cases of alcohol detoxification.

5. Presentation of the alcohol withdrawal screening procedure for the appropriate selection of patients for the BZ-sparing protocol and continued assessment.
   a. Healthcare workers will be able to evaluate clients for appropriate use of the BZ-sparing protocol as well as continued assessment during treatment.

6. Presentation of the BZ-sparing protocol for correctional facility based treatment of alcohol withdrawal syndrome.
   a. Healthcare workers will be able to apply the BZ-sparing protocol to selected cases.
   b. Healthcare workers will be able to discuss the psychopharmacology of the BZ-sparing protocol as it relates to alcohol withdrawal.
Study of the Interventions

Numbers of participants as well as student oriented evaluation of intervention were collected as summative data on the impact of the intervention (Wilkes and Bligh 1999). Data included perceived competencies as well as perceptions of quality relating to the objectives of the training. Measures were constructed by the principle investigator and coded into a 20 item internet based survey via Qualtrics (Qualtrics 2017) that was linked at the end of the presentation as well as included in the invitation emails. The evaluation instrument can be found in appendix C. Staff that competed the evaluation were entered into a drawing for a custom hunting knife made by the principle investigator as an incentive for participation.

Ethical Considerations

This professional project represents an educational intervention on a common topic encountered within community corrections and human subject concerns are modest. There is some concern that discussions associated with alcoholism, alcohol detoxification, and mental health might be disturbing to some participants that have personal experiences as the topic itself is widespread. Also, some staff may be concerned that attending this training or subsequent evaluation may impact their position. Therefore, participants will be informed that participation is completely voluntary and no personal information will be collected that could identify participants unless they chose to share that information. Human subject approval from Montana State University is included in appendix D.
A total of 28 staff participated in the intervention (41%) at the time of this writing including 9 healthcare workers and 19 correctional officers. Further sample description is preempted by the anonymity of the course evaluation. Descriptive analysis was conducted with IBM SPSS Statistics Version 19 (Armonk, NY).

Descriptive analysis of the evaluation of the learning objectives suggests that participants were satisfied with the intervention and no subject selected either "poor" or "below average". Table 3 shows the summary of the evaluation data as it relates to the objectives of the intervention as well as overall quality and relevance. Highest rankings within the evaluation were associated with the objective covering community-based prevalence of alcoholism and lowest rankings were associated with discussing the pharmacology of the BZ-sparing protocol.

A single item asked about competence, performance and outcomes, (i.e., "This activity will assist in the improvement of my ______ when working with an inmate suspected of alcohol withdrawal") and 93% of respondents answered "all of the above". Additionally, 100% of respondents said their confidence level in understanding alcohol detoxification within incarcerated groups had increased and 86% said that they would either change some aspect of their work or seek additional information on the topic as a result of their participation.
## Table 3. Summary of Evaluation: count(%)  

<table>
<thead>
<tr>
<th></th>
<th>Poor (0%)</th>
<th>Below Average (0%)</th>
<th>Average (0%)</th>
<th>Above Average (0%)</th>
<th>Excellent (0%)</th>
<th>Total (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall quality of this activity was....</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>24</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The relevance of the content to my professional needs was...</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to better &quot;understand community-based prevalence estimates of alcoholism and rates of correctional alcohol detoxification&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>26</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to apply &quot;alcohol detoxification pathophysiology to the signs, symptoms, and consequences of alcohol detoxification&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to &quot;describe the process of taking an alcohol history during booking procedures&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to &quot;apply Gallatin County Detention Center procedures for referrals for suspected cases of alcohol detoxification&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>15</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to &quot;evaluate clients for appropriate use of BZ-sparing treatment&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>13</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to &quot;apply BZ-sparing treatment for clients experiencing alcohol withdrawal&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>13</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>The learning objective of teaching me to &quot;discuss the pharmacology of BZ-sparing treatment for clients experiencing alcohol withdrawal&quot; was met at which level:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>
Two items on the evaluation collected qualitative data on participant perceptions about others issues they encounter in their daily work concerning alcohol detoxification or if they would like other information on this subject. No subject stated that they would like additional information on this topic and results concerning issues/challenges are listed in Table4. Non-substantive comments (e.g., "I don't know, or "Nothing") were omitted.

Table 4. Issues & Challenges Concerning Alcohol Detoxification at GCDC

<table>
<thead>
<tr>
<th>What issues/challenges regarding alcohol detoxification and your correctional setting do you confront in your daily work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• &quot;In Booking Identifying people who will possibly DT and letting Medical know of the Situation and then to monitor the inmate for any further issues&quot;</td>
</tr>
</tbody>
</table>
| • "Getting inmates to admit to alcohol use and getting them to resources because of their failure to disclose."
| • "Typically I personally don't deal with it too much because I work if a housing unit that inmates can only be housed in if they are completely sober. On occasion, I have had someone slip through the cracks, who later started hallucinating due to AWS. That inmate was removed from the pod and placed on medical supervision."
| • "I think we do well for what we have"
| • "Being a Detention Officer this presentation was way above my medical training but informative as to the process medical staff take. A greatly abbreviated version for Detention Officers would be great."
| • "Although we let medical know when we have someone who willingly tells us that they will go through withdrawal, we are do not necessarily know even basics, i.e. does one have to be at zeroes before withdrawal begins, or can they be at zeroes for a few days before we would notice withdrawal symptoms."
| • "I found this lesson to be very informative. I was/am confused on some of the verbiage and acronyms used in the presentation. Perhaps if there was a key to explain those words, it would be helpful."
| • "Not really my thing, but OK"
| • "Thanks so much for doing this Dr. Hill. I had no idea it was so complex"
| • "This was interesting but I think better for others. We just don't deal with it much"
| • "I wish you would do one for all the other drugs we see!" |
CHAPTE R FIVE

DISCUSSION

The purpose of this project was to introduce an evidence-based benzodiazepine-sparing treatment protocol for AWS within a community-based correctional environment and provide education to officers and healthcare workers on community prevalence, features of AWS, and assessment. At the time of this writing, 28 staff participated in the training and these numbers are expected to rise as new officers and healthcare staff are hired or more staff elect to participate. This project remains active and represents a sustainable resource for GCDC for training on AWS.

Results indicate that overall participants felt that course was of high quality and objectives were met (i.e., all responses were above average or excellent) successfully. Importantly, 93% of respondents also stated that competence, performance and outcomes would be improved and 100% of respondents said their confidence level in understanding alcohol detoxification within incarcerated groups had increased. Staff (86%) also anticipated that they would either change some aspect of their work or seek additional information on the topic as a result of their participation which suggests that perhaps they were considering the unique aspects of their jobs during the course of the presentation and how they may integrate concepts to improve outcomes.

Qualitative data were enlightening even though a minority of participants elected to write comments. Feedback was positive overall further reinforcing that the training was effective. However, a contrast was noted where several comments imply that
participants thought issues surrounding AWS were less applicable based on where they currently work within the facility (e.g., housing or "pods"). Contrasting this another comment described an experience where an inmate experiencing AWS "slipped through the cracks" and was housed in the general population. This comment reinforces the need for generalized training of detention officers, even more considering many detention officers "float" where they are needed (e.g., booking). Other comments noted that the information was "complex", "way above my medical training", and "confused on some of the verbiage". Although every effort was made in the training to distill information into key concepts that were understandable to lay audiences, it is clear that at least some of the audience found this information to be complex and stretched their comprehension. Future efforts may separate information into content more tailored to each audience either healthcare workers or detention officers. However, in planning meetings with the jail training lieutenant it was felt that introducing the complexity of AWS to lay audiences (i.e., detention officers) may impart a greater sense of urgency and severity on their part to manage these inmates and minimize what was reported as a popular sense among the officers of malingering. Considering this, future efforts that intentionally challenge detention officers for similar purposes might also collect evaluation data on their perceptions of health risks associated with the topic at hand.

Integration of this training into community corrections is important for a variety of reasons. First, we know that the mental health burden is significant among jail populations in the United States and trends suggest overall rates of community incarceration are rising about 1% every year (Minton and Zeng 2015). In fact, among
those incarcerated in 2016, over 60% were reported to have both a mental health problem as well as a substance use disorder concurrently (Emily and Sheresa 2017) creating a complex challenges for community corrections that are already resource poor. The burden of ever increasing populations of mentally ill inmates housed in community corrections requires administrative strategies to ensure that basic levels of healthcare are both effective and efficient and at a minimum satisfy federal and state legal duties under the "Deliberate Indifference" Standard and the 8th Amendment to the U.S. Constitution (Anderson, Mangels et al. 2010).

The legal standard to provide access to medical care in one of our most vulnerable populations places tremendous financial burden on local corrections agencies which suffer from a patchwork for funding mechanisms, a generally disinterested public, and no economy of scale to purchase health services in quantities that promote efficiency. In terms of the treatment of AWS within jail environments, costs are often borne by corrections for inpatient admissions to the local hospitals, and in Montana this could mean spending about $1300 per inpatient day (The Henry J. Kaiser Family Foundation 2015). Assuming an uncomplicated treatment experience lasting 5 days to progress past the most severe symptoms and obtain release to return to incarceration, the total cost of inpatient detoxification for an inmate could reach about $6500. Although there are no published data showing that prophylactic treatment with the BZ-sparing protocol specifically prevents evolution to complicated DT's, Maldonado (2017) found in his literature review that no patient treated with clonidine among the 7 RCTs he reviewed progressed to seizures. This finding is confidence inspiring for clinicians considering
using this protocol but also promising to administration that is responsible for correctional healthcare budgets because clonidine itself is very cheap to purchase and administer. In fact, the cost of the BZ-sparing prophylactic protocol described here considering only the clonidine option totaled about $10.39 (i.e., 0.13 per 0.1mg; $10.00 per 0.1mg patch) (GoodRx 2018), or in other words 625 inmates could be treated with clonidine for one inpatient admission for AWS. Although a full economic analysis for administering the protocol might consider staff time for medication administration and assessment, in the correctional environment these costs are more-or-less fixed as staff are needed 24/7 anyway. The dramatic differences in costs between the BZ-sparing prophylactic protocol and the possibility of inpatient admission should appeal to community correctional administrators as stewards of public resources.

Costs and efficiency are important considerations for community corrections as they experience increasing numbers of inmates with mental illness becoming incarcerated. However, costs are not the only consideration and jails are also increasingly being evaluated for quality of care. The National Commission on Correctional Health Care (NCCHC) began in the 1970's but was reformed in 1984 as a response to an influential study published by the American Medical Association that found jails had inadequate and disorganized health services that lacked national standards (Brent and Gary 2016). The NCCHC publishes standards for jails, prisons, and juvenile confinement services separately, and in fact separates standards for mental health services even further. A voluntary correctional health services accreditation program is administered by peer review by the NCCHC (Brent and Gary 2016) and procedures for
initial health assessment, mental health screening and evaluation, nursing assessment protocols, intoxication and withdrawal, and continuous quality improvement all are explicitly recognized as critical elements (among many others). At present, the GCDC is not accredited by the NCCHC but administration has expressed interest in engaging in the full process of peer review and capitalizing on more standardized programming (Young 2018). Efforts in quality improvement such as implementation of the protocol described in this project will support accreditation should GCDC continue to pursue this goal.

**Implications for APRN Practice**

Competencies for the Psychiatric Mental Health Nurse Practitioner are detailed by the National Organization of Nurse Practitioner Faculties (National Organizaton of Nurse Practitioner Faculties 2013) and include both core and specific competencies. This project represents specific attention to core competencies that consider scientific foundations in the integration of knowledge (i.e., pathophysiology, psychopharmacology, epidemiology, risk communication), into nursing practice, translation of research to improve practice, and development of new practice approaches. APRNs that develop and integrate new clinical treatment protocols into complex environments such as community corrections also exercise significant leadership through guiding change processes, considering multiple stakeholders, and advocating for improved quality of cost effective care. Quality and Practice Inquiry competencies are explicitly considered in this project as the overall goal was to use the best available evidence to change APRN practice and
effect changes in outcomes among those suffering from AWS in a correctional setting. In sum, this project touches on each of the core nurse practitioner competencies but focuses to a greater extent on psychiatric-mental health focused competencies as they relate to the development of programs to promote mental health. Further, this project focused on advocating for complex patients, capitalizing on the opportunity to reduce stigma of mental illness through an examination of background physiology of AWS, and outlining elements of independent practice within the protocol as it relates to the development of treatment plans, assessment, minimizing complications of treatment, safe administration of pharmacologic agents, ensuring patient safety, and many others.

**Limitations and Future Research**

Although this project represents an important organizational step forward in the treatment of AWS in the Gallatin County Detention Facility there is no guarantee that the APRNs coordinating care will adopt the protocol. They may also decide to adopt the protocol in parts and utilize assessment portions and not the BZ-sparing treatment. This project did not evaluate actual behaviors of the providers (i.e., prescribing the BZ-sparing treatment) nor did it evaluate any inmate outcomes that might result from implementation of the protocol. Future projects designed to improve treatment for AWS within correctional facilities should consider how to conduct long-term evaluation whereby patient outcomes are evaluated based not only on total cases treated with the protocol, but also occurrence of symptomatology and case disposition. Projects could be developed that examine recent historical data on costs borne by the facility for inpatient treatment
and then prospectively evaluate potential cost savings by implementing the BZ-sparing protocol. Significant buy-in for projects such as these are essential because sample generation in a rural environment may be slow and several years may be needed to generate the numbers of subjects needed for a rigorous evaluation.

Conclusion

Alcohol withdrawal syndrome experienced by individuals within correctional environments is a dangerous and sometimes poorly treated condition that can result in death for inmates and liability for facilities. Traditional treatments for AWS usually include the use of benzodiazepine tapers to slowly abate neurobiological dysfunction and prevent seizures and delirium tremens. Evolving literature comments to the risks of using benzodiazepines for this purpose, and new research suggests that BZDPs carry higher risks for delirium, long-term risks for dementia, and worse outcomes for those interested in substance abuse treatment. Moreover, correctional environments usually wish to avoid medications that can be abused within the milieu and patients requiring treatment with BZDPs may be referred for inpatient detoxification resulting in high medical costs borne by the public. The BZ-sparing protocol described in this project provides an avenue of effective prophylactic treatment that relies on commonly prescribed transdermal and oral medications that are quite cheap. The education for staff within the detention center about the protocol will enable them to effectively assess and prophylactically treat inmates at risk for AWS and if implemented improve outcomes for the correctional population while limiting costs.
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The Henry J. Kaiser Family Foundation. (2015). Hospital Adjusted Expenses per Inpatient Day. Retrieved from https://www.kff.org/health-costs/state-indicator/expenses-per-inpatient-day/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D


APPENDICES
APPENDIX A

BENZODIAZAPINE SPARING PROTOCOL FOR TREATMENT OF ALCOHOL WITHDRAWAL SYNDROME IN CORRECTIONAL SETTINGS
Benzodiazepine-sparing Prophylaxis and Treatment Protocol
For Alcohol Withdrawal Syndrome in Correctional Settings

This protocol was adapted from the Stanford Medical Center “Benzodiazepine-sparing: General Management Protocol” (Maldonado, 2017) for use in community-based correctional settings. Specific adaptations were made in order to:

1. Ensure the highest level of safety
2. Facilitate accurate and timely assessment within the correctional environment
3. Minimize healthcare costs
4. Minimize threats to jail milieu integrity
Prediction of Alcohol Withdrawal Severity Scale (PAWSS)  
Maldonado et al., 2014

Part A: Threshold Criteria:  
("+" or "+", no point)

Have you consumed any amount of alcohol (i.e., been drinking)  
within the last 30 d? OR did the patient have a "+" BAL upon admission?  

IF the answer to either is YES, proceed with test:

Part B: Based on patient interview:  
(1 point each)

1. Have you ever experienced previous episodes of alcohol withdrawal?  

2. Have you ever experienced alcohol withdrawal seizures?  

3. Have you ever experienced delirium tremens or DT’s?  

4. Have you ever undergone alcohol rehabilitation treatment?  
   (i.e., in-patient or out-patient treatment programs or AA attendance)

5. Have you ever experienced blackouts?  

6. Have you combined alcohol with other "downers" like benzodiazepines or  
   barbiturates during the last 90 d?  

7. Have you combined alcohol with any other substance of abuse  
   during the last 90 d?  

8. Have you been recently intoxicated/drunken within the last 30 d?  

Part C: Based on clinical evidence:  
(1 point each)

9. Was the patient’s blood alcohol level (BAL) on presentation >200?  

10. Is there evidence of increased autonomic activity?  
   (e.g., HR >120 bpm, tremor, sweating, agitation, nausea)  

Total Score: ___

Notes: Maximum score = 10. This instrument is intended as a SCREENING TOOL. The greater the number of  
positive findings, the higher the risk for the development of alcohol withdrawal syndromes. A score of ≥4  
suggests HIGH RISK for moderate to severe AWS; prophylaxis and/or treatment may be indicated.
CIWA-Ar

Patient: ___________________  Date: ____________  Time: ____________  (24 hour clock, midnight = 00:00)

<table>
<thead>
<tr>
<th>Pulse or heart rate, taken for 1 minute:</th>
<th>Blood pressure:</th>
</tr>
</thead>
</table>

**NAUSEA AND VOMITING** — Ask “Do you feel sick to your stomach? Have you vomited?” Observation.
- 0 no nausea and no vomiting
- 1 mild nausea with no vomiting
- 2 intermittent nausea with dry heaves
- 4 severe, even with arms not extended

**TACTILE DISTURBANCES** — Ask “Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?” Observation.
- 0 none
- 1 very mild itching, pins and needles, burning, or numbness
- 2 mild itching, pins and needles, burning, or numbness
- 3 moderate itching, pins and needles, burning, or numbness
- 4 moderately severe hallucinations (formications)
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

**TREMOR** — Arms extended and fingers spread apart. Observation.
- 0 no tremor
- 1 not visible, but can be felt fingertip to fingertip
- 2 moderate, with patient’s arms extended
- 5 severe, even with arms not extended

**AUDITORY DISTURBANCES** — Ask “Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?” Observation.
- 0 not present
- 1 very mild harshness or ability to frighten
- 2 mild harshness or ability to frighten
- 3 moderate harshness or ability to frighten
- 4 moderately severe auditory hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

**PAROXYSMAL SWEATS** — Observation.
- 0 no sweat visible
- 1 barely perceptible sweating, palms moist
- 2 beads of sweat obvious on forehead
- 6 drenching sweats

**VISUAL DISTURBANCES** — Ask “Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?” Observation.
- 0 not present
- 1 very mild photosensitivity
- 2 mild sensitivity
- 3 moderate sensitivity
- 4 moderately severe visual hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

**ANXIETY** — Ask “Do you feel nervous?” Observation.
- 0 no anxiety, at ease
- 1 mildly anxious
- 3 moderate anxiety, or guarded, so anxiety is inferred
- 6 severely anxious, equivalent...

**HEADACHE, PULSING IN HEAD** — Ask “Does your head feel different? Does it feel like there is a band around your head?” Do not rate for dizziness or lightheadedness.
- 0 not present
- 1 very mild
- 2 mild
- 3 moderate
- 4 moderately severe
- 5 severe
- 6 very severe
- 7 extremely severe

Source: Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow: Current Medical Diagnosis & Treatment 2018
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BZDP-Sparing Prophylaxis Protocol: CIWA-Ar ≤ 15

Non-pharmacological
1. Allow for as much mobility as possible.
2. Ensure needed sensory aids are available (e.g., hearing aids, eyeglasses).
3. Attempt to normalize environment to the degree possible.
   a. Light control-light during day, dark at night
   b. Noise control-ear plugs, turn off televisions, minimize nighttime interruptions
4. Attempt to allow for maximal intellectual stimulation such as visitation visits.
5. Monitor for seizures
6. Fall precautions
7. Basic laboratory tests including creatinine clearance (CrCL), LFTs, EEG, toxicology
8. Correct and monitor fluid imbalances
   a. Magnesium (Mg) {1.7-2.2 mg/dl}
   b. Na {135-145 mEq/L}
   c. K {3.7-5.2 mEq/L}
9. Vitamin supplementation
   a. Thiamine 500mg IV, IM, or PO 3 times per day x 5 days followed by 100mg PO x 14 days.
   b. Folate 1mg PO daily
   c. Multivitamin 1 tab PO daily
   d. B complex vitamin 2 tabs by mouth daily
   e. Vitamin K 5-10mg SQ x 1 (if INR is >1.3)

Pharmacological: Prophylaxis is suggested in patients who 1) are at risk for complicated AWS but 2) are not experiencing active AWS yet.
1. Select one:
   a. Clonidine transdermal 0.1mg (2 patches) + clonidine 0.1mg PO q8hours (x 3 doses)
   OR
   b. Clonidine transdermal 0.1mg (2 patches) + Guanficine 0.5-1mg PO BID.
      Guanficine has better axiolytic effect and is less hypotensive than clonidine.
2. If patients VS are unable to tolerate alpha-2 effect may instead use Gabapentin.
   a. Day 0: 1200mg loading dose + 800mg PO TID
   b. Day 1-3: 800mg PO TID
   c. Day 4-5: 600mg PO TID
   d. Day 5 to 7: 300mg PO TID
   e. Day 8: D/C
   f. Do not use gabapentin in with severe renal dysfunction who are unable to clear GAB (ie, CrCl is <60).
3. In patients that are extremely high risk for severe AWS (ie, PAWSS≥7 or BAC ≥300 at booking) use both clonidine and GAB, as above; GAB may also be used as an alternative to BZDPs in patients experiencing extreme levels of anxiety, even in the absence of objective signs of AWS.

4. Breakthrough symptoms of AWS signaled by CIWA-Ar scores >15 necessitate more intensive treatment and inpatient placement should be considered.
APPENDIX B

SLIDES OF EDUCATIONAL INTERVENTION AT
CORRECTIONAL FACILITY
Identifying and Managing Alcohol Detoxification in Correctional Settings

Wade C. Hill Ph.D., PHCN3-BC
Montana State University

In March, 2018 Brandon Lessen filed a lawsuit in the U.S. District Court in Eugene, Oregon. Lessen suffered a severe and severe injury to his leg after being hit by a concrete beam while withdrawing from alcohol. He claims that his injuries could have been prevented had staff’s efforts been more responsive to his medical needs. The lawsuit seeks $128,000 in compensation, damages and in medical expenses.

In January, 2006 the State of Alabama paid $10,000 to settle a federal civil rights lawsuit brought by the mother of Troy Wallace, who was 3 years old. Wallace suffered severe and severe injuries in his cheeks and face. The lawsuit was brought by the parents, including corrections officers, who were negligent and deliberately indifferent to Wallace’s medical needs.

In May, 2013 New York City agreed to pay $6 million to settle a civil rights lawsuit brought by a parolee who died in jail (because he was severely intoxicated). The suit accused the facility of deliberate indifference by medical personnel and corrections officers.

Why be concerned?

Why be concerned?
Quiz

True/False? Alcohol withdrawal is the most common type of substance withdrawal in correctional settings and the most dangerous.

Estimates of GCDC ETOH Risk

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>c14Hrs</th>
<th>Positive</th>
<th>L.O.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1846</td>
<td>1284</td>
<td>194</td>
<td>284</td>
</tr>
<tr>
<td>Female</td>
<td>1309</td>
<td>885</td>
<td>194</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>3155</td>
<td>2169</td>
<td>388</td>
<td>342</td>
</tr>
</tbody>
</table>
Jail Procedures and Intervention

Correct booking procedure:
1. From Pre-Booking an inmate will be either directed to the Basic Booking area or escorted to a holding cell depending upon behavior. (See Pre-Booking procedures)
2. The inmate can be directed to the waiting area at this point.
3. A booking packet will be completed on every new arrest. This packet includes but is not limited to: prebooking assessment form, booking/relase checklist, bloodwork, body search, medical information and prescription form.

Pharmacology of Bz-Sparring Tx

The gold standard has always been Benzodiazepines. Why?
- INOS binds directly to receptors for GABA, benzodiazepines, GABA, and Glutamate
- Most withdrawal effects come from GABA
- Loss of GABA stimulation causes rebound excitation

Pharmacology of Bz-Sparring Tx

Benzodiazepines also stimulate GABA and block the rebound excitation—then taper.
- Problems with KUDs
- Anxiolysis potential
- Cognitive impairment and risk of dementia
- Significant interactions with other medications
- Increase in craving, early relapse

Maybe most important...

Delirium Risk Factors

- Pre-existing cognitive impairment
- Poor health status
- Substance abuse
- Reduced ability to cope
- Underlying medical conditions
- History of substance abuse
- Elderly age
- Pre-existing dementia
- Comorbidities
Questions?

- uciir@uciir.evans.edu

Evaluation:
https://mcdonalds.qpolitics.com/cv/form/178/54df5f86ebf03e92

References

APPENDIX C

EVALUATION INSTRUMENT
Q1 Welcome to the evaluation for "Identifying and Managing Alcohol Detoxification in Correctional Settings"!

Thank you for agreeing to take part in this important evaluation designed to collect information on the effectiveness of the educational module you viewed. The results of this evaluation will be used to help us design future educational programs to support your work with incarcerated groups.

We anticipate that it will take about 10 minutes to complete the evaluation, and a measure of your progress is included in the survey web form. This survey is completely confidential and all data will be analyzed in aggregate so that no information from individuals will ever be reported. You may choose at the end of the survey at any time.

Q2 Your participation in this evaluation is completely voluntary and you can choose to not answer any questions you do not want to answer and/or you can stop at anytime. If you have questions about the program, you can contact Wade Hill PhD, PHCNS-BC at whill@montana.edu or call (406) 994-4011. If you have additional questions you can contact the Chair of the Institutional Review Board at Montana State University, Mark Quinn PhD, (406) 994-4707 [mquinn@montana.edu].
Q3 The overall quality of this activity was....

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)

Q4 The relevance of the content to my professional needs was...

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)
Q5 This activity will assist in the improvement of my ________ when working with an inmate suspected of alcohol withdrawal.

- Competence (knowing what to do) (1)
- Performance (doing it) (2)
- Inmate Outcomes (seeing results) (3)
- A and B (4)
- A and C (5)
- B and C (6)
- All of the above (7)

Q6 The learning objective of teaching me to better "understand community-based prevalence estimates of alcoholism and rates of correctional alcohol detoxification" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)
Q7 The learning objective of teaching me to apply "alcohol detoxification pathophysiology to the signs, symptoms, and consequences of alcohol detoxification" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)

Q8 The learning objective of teaching me to "describe the process of taking an alcohol history during booking procedures" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)
Q9 The learning objective of teaching me to "apply Gallatin County Detention Center procedures for referrals for suspected cases of alcohol detoxification" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)

Q10 The learning objective of teaching me to "evaluate clients for appropriate use of BZ-sparing treatment" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)
Q11 The learning objective of teaching me to "apply BZ-sparing treatment for clients experiencing alcohol withdrawal" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)

Q12 The learning objective of teaching me to "discuss the pharmacology of BZ-sparing treatment for clients experiencing alcohol withdrawal" was met at which level:

- Poor (1)
- Below Average (2)
- Average (3)
- Above Average (4)
- Excellent (5)
Q13 Based on my experience and knowledge, the level of this activity was....

- [ ] Too Basic (1)
- [ ] Basic (2)
- [ ] Appropriate (3)
- [ ] Complex (4)
- [ ] Too Complex (5)

Q14 My confidence level in understanding alcohol detoxification and incarceration groups ___________ as a result of participation in this activity.

- [ ] Increased (1)
- [ ] Stayed the Same (2)
- [ ] Decreased (3)

Q15 Based on the information presented in this activity, I will...

- [ ] Change some aspect of my work (1)
- [ ] Seek additional information on this topic (2)
- [ ] A and B (3)
- [ ] Do nothing as my work already reflects the activity recommendations (4)
- [ ] Do nothing as the content was not convincing (5)
Q16 Please select your primary role at the detention center:

- Detention officer (1)
- Detention Healthcare Staff (2)

Q17 What issues/challenges regarding alcohol detoxification and your correctional setting do you confront in your daily work?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q18 What additional information about alcohol detoxification and correctional settings would help you in your work?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

Q19 Additional Comments?

________________________________________________________________
________________________________________________________________
________________________________________________________________
Q20 If you wish to be entered into the drawing for a custom knife, please enter your name and email address below.

End of Block: Default Question Block
APPENDIX D

HUMAN SUBJECTS APPROVAL
INSTITUTIONAL REVIEW BOARD
For the Protection of Human Subjects
FWA 0000165

960 Technology Blvd. Room 127
Montana State University
Bozeman, MT 59718
Telephone: 406-994-6783
FAX: 406-994-403
Email: cheryl@montana.edu

MEMORANDUM

TO: Wade Hill and Maria Wines
FROM: Mark Quinn
Chair, Institutional Review Board for the Protection of Human Subjects
DATE: February 9, 2018

RE: "Identifying and Managing Alcohol Detoxification in Correctional Settings" [WH020918-EX]

The above research, described in your submission of February 9, 2018, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal regulations, Part 46, section 101. The specific paragraph which applies to your research is:

(b) (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

Although review by the institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit 3 copies of the usual application form and it will be processed by expedited review.