

EVALUATING THE PATIENT EXPERIENCE IN OUTPATIENT DETOXIFICATION:  
IMPLICATIONS FOR IMPROVEMENT OF THE EARLY STAGES OF ALCOHOL AND/OR  
OPIOID USE DISORDER AND RECOVERY TREATMENT PROCESS

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### **Abstract**

*Background and Literature Review:* Anchorage is among the cities besieged by the alcohol and opioid crisis. The city has numerous outpatient MAT programs and substance treatment settings that can provide outpatient detoxification programs. Although the literature supports outpatient detoxification as feasible, safe, and affordable, it does not provide a specific model of outpatient detoxification. The Alaska Treatment Center (ATC) offers outpatient detoxification based on a biopsychosocial model of detoxification. Since the ATC outpatient detoxification seeks to expand treatment through this model, it is necessary to evaluate the patients' experiences to improve clinical practice and substance treatment.

*Purpose:* This project aimed to evaluate patient experiences in outpatient detoxification at ATC and identify promising strategies for improvement of the model to formulate strategic practice advancement using empirical data from participants.

*Methods:* The project was quasi-experimental in design and informed by Lewin's three stage change model. Descriptive statistics of demographic and survey responses were presented using frequencies and percentages for categorical and ordinal variables. A 45-item survey collapsed into three areas: the initial encounter, relationship during treatment, and overall impression. A Spearman's rank correlation was conducted to test the internal consistency and construct validity of the instrument. Statistical significance was set at  $p \leq .05$ . All analyses were conducted using SPSS Version 26.

*Implementation Plan/Procedure:* The Generic Short Patient Experiences Questionnaire (GS-PEQ) was modified and approved for use in this project by the University of Alaska Anchorage Institutional Review Board. The survey instrument was administered to 42 participants who received outpatient detoxification from ATC. The findings revealed successful completion rate

of detoxification, with a significant correlation between before detoxification,  $\rho = 0.1414$ ,  $p = .007$ , and after detoxification,  $\rho = -0.439$ ,  $p = .769$ .

*Conclusion:* The findings led to a modification of the ATC biopsychosocial model to encompass theoretical, contextual, conceptual, systematical, empirical, and implementational analysis.

Consequently, flow charts, modified decision trees, and theory of change were integrated into the ATC policies and the electronic medical record. The project revealed that detoxification is a vital step in substance treatment and may be successfully provided in outpatient treatment settings using the right model of treatment. Organizational changes such as hiring additional staff and sharing the model with other MAT programs are still in progress.

### **Chapter 1: Introduction to the Problem, Purpose, and Aim**

Outpatient detoxification offers an option for people to enter the process of recovery for substance use disorder and dependency. This option incorporates a medically managed approach to addressing one of the most serious physical and behavioral health issues facing societies across the globe (American Society of Addiction Medicine [ASAM], 2019). Through managed medical care, medically qualified professional, often nurse practitioners, prescribe, and manage medication that can offset the debilitating effects of withdrawal within a supportive, nonstigmatizing outpatient setting (ASAM, 2019; Holt, Dearmon, Lawrence, Lewis, & Skotzko, 2017; U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019). An alternative to inpatient treatment, outpatient detoxification holds the promise of addressing recovery within the context of daily life, and it may offer a cost-effective option to what is often highly expensive inpatient detoxification care (Barry, Vinayaga-Pavan, Turner, & Wong, 2013; Carnwath, & Hardman, 1998; Hayashida et al., 1989; Willey, Walker, Toffey, & Caughey, 2018).

The legitimacy of outpatient detoxification care is now approved for reimbursement, professional standards, and regulatory oversight. It is no longer an emergent innovation, but rather it has garnered considerable support in the research literature by experts in addiction recovery and diffusion across the globe as a promising practice (ASAM, 2019; Corace et al., 2019; U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019). Controlled studies suggest outpatient detoxification offers patients a promising option to care and can facilitate entry into the continuum of recovery, as those patients seek to live a substance-free lifestyle through 12-step programs, counseling, peer support, and/or clinical case management.



The practitioner, herein referred to as the practitioner evaluator, evaluated the outpatient detoxification experience from the perspective of patients who attempt and/or complete this programmatic component of recovery. Accordingly, survey methodology within a practitioner-based evaluation framework was used to gather patients' perspectives and experiences in a specific outpatient detoxification program in which he serves as medical director and provider. This evaluation captured relevant data from the perspective of patients undergoing outpatient detoxification for advancing the program itself as a model of care in addictions-based nursing practice.

The evaluation supported learning about the design, implementation, and outcomes of the program to further improve the provision of care. This project involved practitioner-focused action learning aimed at improving a practice model through the systematic use of data-based decision-making for the advancement of promising practice in substance use treatment. Other practitioners may benefit from this project and experience and adopt, test, and use the outpatient detoxification model in their practice, thereby encouraging adaptation by—and utilization within—other treatment settings.

## **Background**

Alcohol use disorder (AUD) refers to a clinically significant effect of alcohol use within a 12-month period, leading to strong cravings and tolerance that impairs the ability to stop use on one's own, causing hazardous physiological, social, and occupational impacts on the individual. Opioid use disorder (OUD) refers to a clinically significant impairment use of an opioid within a 12-month period that induces strong cravings and tolerance that impairs the ability to stop use on one's own, causing hazardous physiological, social, and occupational impacts on the individual. Individuals diagnosed with AUD and/or OUD will experience withdrawal when they stop using

the substance, which has unpleasant and painful psychological effects and, in some cases, can be fatal. This means that patients seeking substance use treatment would first have to undergo detoxification. Detoxification is the first phase of AUD/ODD treatment that prepares the brain physiologically and psychologically for the maintenance phase and long-term treatment. Detoxification refers to the physiological removal of toxins from the body through careful medical treatment. Detoxification could take place in many settings but requires qualified practitioners in addiction medicine to ensure the safe stabilization of patients (American Psychiatric Association, 2013). According to ASAM (2017), Level I and II ambulatory settings can provide detoxification for AUD/ODD withdrawal.

The setting for this project was an ambulatory or outpatient ASAM-approved Level II facility located in the State of Alaska. ASAM (2019) criteria for Level II ambulatory detoxification refers to intensive outpatient/partial hospitalization services with the capability of meeting the complex needs of patients with addiction and co-occurring conditions. It delivers outpatient services, such as detoxification and counseling during the day, before and after work or school, and in the evening or weekend. For this project, outpatient medication-assisted treatment (MAT) was the setting of focus. The U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration (2019) defined MAT as the treatment of substance use disorder through combined therapeutic medication, counseling, and behavior modification. Although federal regulation allows outpatient detoxification, a huge shortage of qualified providers to provide outpatient detoxification exists. A qualified provider may be a physician, nurse practitioner, or physician assistant with at least 3 years of employment in an addiction setting to take the ASAM course to receive a waiver for the prescription of highly regulated drugs by the Drug Enforcement

Administration. The state of Alaska has approximately 88 agencies that provide treatment services, of which 20 are located in Anchorage, the largest city in Alaska, with most services provided in outpatient settings. This encompasses all programs for adults and youth and those in methadone clinics (Indian Health Services, 2018). A visit to the 20 outpatient MATs in Anchorage revealed that only one (South Central Foundation of Anchorage Alaska) currently provides AUD/OD detoxification for patients undergoing withdrawal in the outpatient addiction treatment center.

The cost of AUD/OD to the nation is about \$740 billion annually. The Alaska State Troopers report showed death related to alcohol and opioid overdose is on the increase, even with new training for the Anchorage law enforcement agency and naloxone kits to administer to patients (U.S. Department of Health and Human Services, National Institute of Mental Health and Substance Abuse and Mental Health Administration, 2019). From 2012 to 2017, the rate of out-of-hospital naloxone administrations by emergency medical service personnel more than doubled from 8.0 to 17.7 administrations per 1,000 emergency service calls, respectively. The rates of opioid-related inpatient hospitalizations were 28.5 per 100,000 persons in 2016 and 26.0 per 100,000 persons in 2017, with total inpatient hospitalization charges exceeding \$23 million (National Institute on Drug Abuse, 2019). Alaska's overdose death rate exceeded the national rate in 2015. According to the Alaska Division of Behavioral Health, the highest number of opioid-related deaths identified in 1 year in Alaska was 108 in 2017; between 2010 and 2017, 623 identified opioid overdose deaths were reported, and the opioid overdose death rate increased by 77% (as cited in Joshi, Weiser, & Warren-Mears, 2018). The inadequate number of detoxification centers to promote continuity of care for patients with AUD/OD contributes to the rampant rates of overdoses and deaths related to alcohol use (Schmidt et al., 2017). The

expansion of addiction treatment centers is notable for reducing opioid overdose and curbing the crisis (Babu, Brent, & Juurlink, 2019).

### **Clinical Significance**

The project is grounded in the essentials of the Doctor of Nursing Practice (DNP) program and, therefore, reflects the values central to advanced nursing practice in addictions. The data-informed approach reflects the use of a scientific strategy to practice advancement. The project reflects the leadership the project evaluator is undertaking in the provision of addiction care in Alaska. It also reflects provider advocacy for advancing addiction practice in Alaska, policy supporting the availability of addiction recovery, development of patient-centered intervention technology, and better organization of health care for people struggling with addiction, particularly AUD and/or OUD. The project reflects the practitioner evaluator's commitment to clinical scholarship in addictions recovery, the development of evidence-based intervention approaches, and the creation of models that support interprofessional collaboration in addiction practice.

The evolution of health care has moved highly centralized institutions into community-based nursing practice. Characterizing this evolution is the creation of models that are readily accessible, oftentimes provided at street level, flexible in use, and supporting maximum involvement of patients to encourage self-care. This patient-centered approach is now taking root in addiction recovery where the rehabilitation process begins with engagement in medically managed withdrawal during which the patient can address symptoms that would otherwise undermine their motivation to achieve a substance-free lifestyle. The sequencing of a given health technology moving from what was once delivered only in an inpatient setting into a community-based clinic can set the stage for continuity of care in recovery. This continuity may

involve the transition into formal counseling and behavioral health interventions, peer support, and personal development opportunities. The flexibility of outpatient detoxification can set the stage for a positive experience with few transitions, thereby contributing to a potentially seamless process of recovery.

The practitioner evaluator has focused on the Alaska Treatment Center (ATC) biopsychosocial model of addiction treatment by identifying and implementing an outpatient detoxification instrument. The approach was tested with 42 patients within the ATC organization, which encapsulated the eight DNP essentials.

The project allowed the practitioner evaluator the opportunity to expand the clinical investigation and development process. This is where patients' perceptions of the process become especially meaningful. By systematically testing the intervention, collecting data from users, and using this data in the process of clinical investigation and development, the practitioner evaluator created a model of effectiveness that could be established through subsequent systematic testing. In this case, as with intervention design processes, outcome studies are relevant when assessing an operational model. The practitioner evaluator has engaged in advanced practice through research and development in an actual treatment setting. A provisional approach to outpatient detoxification served as the focus of this project to improve the approach using feedback from patients. This improvement process incorporates the underpinnings of a scientific method in health-care research and development.

### **Problem Statement**

There is a tremendous need for outpatient detoxification in Anchorage, Alaska. The lack of a feasible model that guides providers in the managing of outpatient MAT programs has led to fatal consequences for patients and the involvement of law enforcement (United States

Department of Justice, United States Attorney's Office, & District of Alaska, 2019). The practitioner evaluator gathered information from providers in the community revealed that, in Anchorage, almost all the outpatient MAT clinics maintain patients on suboxone for over 2 years without consideration to taper them down. Also, most outpatient MAT programs do not provide detoxification to patients before they are started on maintenance drugs and counseling services. However, even at ATC where detoxification is offered, not all the patients continue care after stabilization. The literature revealed the lack of continuity of care after detoxification may be a result of a poor detoxification process, counseling without detoxification, and starting maintenance drugs without detoxification, which has a high risk of recidivism and fatality (Acevedo, Garnick, Ritter, Lundgren, & Horgan, 2016; ASAM, 2019; Rossi, Faroni, Tassorelli, & Nappi, 2013).

### **PICO and Clinical Evaluation Question and Rationale**

The PICO model is an evidence-based practice tool that helps in phrasing a clinical question directly related to the patient or problem at hand. The P stands for population of interest, the I stands for interventions, the C stands for comparison or alternative, and the O stands for the outcome being measured, improved, or affected (Dearholt & Dang, 2012). The clinical question guiding this project based on the PICO model is the following: What are the substantive improvements the practitioner evaluator can make to an existing model of outpatient detoxification to develop a more patient-responsive approach to care?

The population (P) of interest was patients diagnosed with AUD/ODD and treated for withdrawal symptoms. The intervention (I) was the model used for outpatient detoxification. The comparison intervention (C) was the current practice model as implemented at the ATC.

The expected outcome (O) of the project was an improved intervention model for outpatient detoxification provided at ATC.

### **Statement of Principal Evaluation Aim**

The purpose of this DNP project was to evaluate the patient experience in outpatient detoxification. Through data collection on the experiences of patients from the current model of outpatient detoxification, the practitioner evaluator engaged in a practice improvement of the model by using empirical data from participants. The subquestions guiding the preceding clinical question in this inquiry were the following:

1. How do the patients experience the current model of care?
2. How do patients rate their satisfaction and quality of the experience?
3. What are the correlates between how patients experience the current model of outpatient detoxification and the two principal outcomes of satisfaction and quality?
4. What characteristics of the population and their addiction history correlate with patient-centered outcomes of care, satisfaction, and quality?
5. What factors of the patient experience are predictive of patient-centered outcomes, which in this case are patient satisfaction and patient perceptions of quality?

Appendix A provides details of the Generic Short Patient Experience Questionnaire (GS-PEQ) chosen as the instrument for the project which aligns with the PICO.

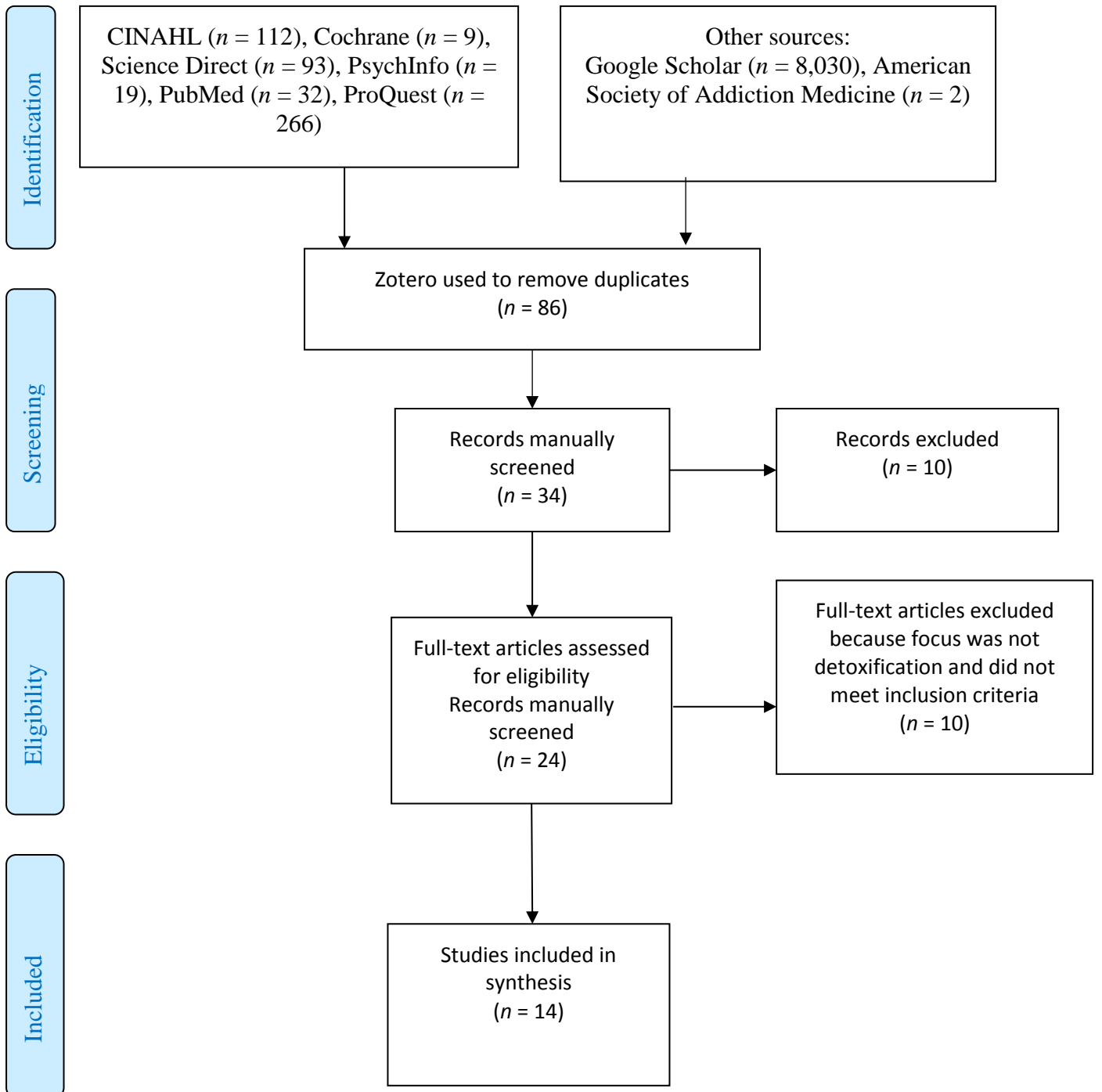
## Chapter 2. Literature Review

An extensive database search was performed to obtain the most recent innovative work in the field of AUD/OD. The most recent studies were selected to supplement the robust evidence previous studies have provided for outpatient detoxification as an alternative for detoxifying AUD/OD (Allan, 2000; Carnwath & Hardman, 1998; Isiadinso, 1977; Rabb, 1981). The databases used for this study were CINAHL, Cochrane Library, Science Direct, PubMed, PsychInfo, and ProQuest. Databases were accessed mainly through the University of Alaska, Anchorage (UAA) Consortium Library. Google Scholar and ASAM resources were also utilized. The inclusion criteria were (a) qualitative, quantitative, experimental, quasi-experimental, systematic, and meta-analysis studies; (b) published in English; (c) between 2013 and 2019; (d) with contents relevant to the chosen topic on addiction; (e) published in full length and in peer-reviewed scientific journals; and (f) abstracts only for articles for which the full article could be obtained from the UAA interlibrary loan. Exclusion criteria were (a) research not published in English; (b) research conducted by students and published in nonscientific journals; (c) partially published research without full abstract; and (d) studies published before 2013 and after 2019.

The search terms used were based on the PICO research question: What are the substantive improvements the practitioner evaluator can make to an existing model of outpatient detoxification to develop a more patient-responsive approach to care? Search terms used were patient experiences in outpatient detoxification and alcohol, outpatient detoxification experiences for patients, detoxification and opioids, outcome of outpatient detoxification, ambulatory detoxification, ambulatory management of opioids, and ambulatory management of alcohol. A combined result of all the articles collected from the databases entered into Zotero software



yielded 86 articles upon the removal of duplicates. An abstract review of each article led to the removal of 52 articles using the inclusion criteria. A manual review of the remaining 34 documents yielded 24 articles using the exclusion criteria to remove 10 articles. The 24 articles were examined for eligibility and yielded 14 articles because 10 of the 24 articles did not focus on outpatient detoxification. The selected 14 studies had strong evidence to support outpatient detoxification of alcohol/opioid withdrawal. The 14 studies selected were determined to be relevant, valid, reliable, and applicable to the PICO question. The level of evidence of the studies, the degree to which the studies were conducted, and how each study answered the PICO question were significant in selecting these studies to support the project. The chosen studies were 12 primary clinical studies and two systematic reviews. In addition to the 12 studies, two supporting articles on the criteria for assessing patient experiences in outpatient settings were included (Haugum, Iverson, Bjertnaes, & Lindahl, 2017; Sjetne, Bjertnaes, Olsen, Iversen, & Bukholm, 2011). One of the studies aligned well with ATC biopsychosocial model and was selected to be used as the instrument for evaluating patient experiences at ATC (Sjetne et al., 2011). Below are the components of the search in a Prisma.



Prisma of Literature Review for Outpatient Detoxification

**Literature Informing Relevance of Outpatient Detoxification Programs**

The literature provided substantial data to support outpatient detoxification (Johnson & Faraone, 2013; Mannelli, Wu, Peindl, Swartz, & Woody, 2014; Sanders et al., 2013; Schmidt et al., 2017), and most of the strongest studies compared outcomes of effectiveness, feasibility, and affordability in support of outpatient detoxification (Bisaga et al., 2018; Brett, Lawrence, Ivers, & Conigrave, 2014; Corace et al., 2019; Deacon, Hines, Curry, Tynan, & Day, 2014; Ho & Adcock, 2017). The rate of success in outpatient detoxification outcomes ranged from 50% to 100% across the studies, whereas inpatient detoxification rates ranged from 3% to 78% (Ho & Adcock, 2017; Nadkarni et al., 2017).

**Literature Informing Theory and Practice of Outpatient Detoxification**

None of the studies provided a direct theoretical basis for detoxification but alluded to detoxification as a principal treatment in the initial stage of AUD/ODD treatment. All of the studies, including independent government review findings provided strong evidential support of feasibility, affordability, and successful outpatient detoxification (Barry et al., 2013; Corace et al., 2019; Deacon et al., 2014; Ho & Adcock, 2017; Johnson & Faraone, 2013; Mannelli et al., 2014; Schmidt et al., 2017; U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019).

The methodology of the literature review covered the framework, theoretical perspective, sample characteristics, measurement of the major variables, data analysis of the findings, level of evidence and quality, and limitations in the literature. The measurements of the major variables were the Clinical Opioid Withdrawal scale (COW), Clinical Instrument Assessment Scale (CIWA), and Diagnostic Statistical Manual Fifth Edition (DSM-V), with outcomes of successful outpatient detoxification, continuity of care, and affordability of care. The population sample

ranged from 60 to 25,354 (Acevedo et al., 2016; Barry et al., 2013; Bisaga et al., 2018; Deacon et al., 2014; Ho & Adcock, 2017; Johnson & Faraone, 2013; Mannelli et al., 2014; Nadkarni et al., 2017; Sanders et al., 2013; Schmidt et al., 2017; Willey et al., 2018). Using the John Hopkins Nursing Evidence-Based Tool, six of the studies met Level I for Quality A evidence (Acevedo et al., 2016; Barry et al., 2013; Bisaga et al., 2018; Brett et al., 2014; Corace et al., 2019; Deacon et al., 2014; Ho & Adcock, 2017; Nadkarni et al., 2017).

Using the evidence-based nursing tool, two studies were rated at Level I with Quality B evidence. The two studies were randomized, double-blind studies with a sufficient samples for the studies but not enough for generalizability (Barry et al., 2013; Sanders et al., 2013). Six studies meeting Level II Quality A evidence were nonrandomized studies (Holt et al., 2017; Johnson & Faraone, 2013; Mannelli et al., 2014; McCarty et al., 2014; Schmidt et al., 2017). A table synthesizing the evidence can be found in Appendix C.

### **Gaps in Literature on Outpatient Detoxification Processes and Outcomes**

The gaps identified in the literature included a lack of utilization of the ASAM and SAMSHA criteria for outpatient detoxification and documented data about the patients' experiences to determine the best model for outpatient detoxification. Another gap in the literature was a lack of a specific theoretical framework for delivering outpatient detoxification.

### **Factors Limiting Knowledge of Outpatient Detoxification**

The factors limiting knowledge of outpatient detoxification include the lack of practitioner education and the perception and belief that detoxification occurs in only inpatient settings (Corace et al., 2019; Holt et al., 2017). Another principal factor is the lack of empirical data from patients' experiences to support the model of detoxification in outpatient MAT

programs (Corace et al., 2019; Holt et al., 2017; Kamal, van Iwaarden, Dijkstra, & de Jong, 2014).

### **Need for and Relevance of Project**

Patients diagnosed with alcohol and/or opioid withdrawal need detoxification to continue to the next phase of substance treatment but may lack access to an inpatient setting; moreover, the existing outpatient MAT programs are not equipped with the human resources and logistics to provide outpatient detoxification (Corace et al., 2019). High rates of recidivism and fatalities are seen among patients who do not continue treatment after the stabilization stage of detoxification (Sanders et al., 2013; Schmidt et al., 2017).

### **How the Project Advances Clinical Practice**

The outcome of the project will be used to create reliable and valid criteria for quality outpatient detoxification. The current practice model will be modified based on the findings from the project to customize care to patient needs and enact sustainable measures for quality outpatient detoxification. Identifying predictable variables of patients' experiences that influence quality outcomes for detoxification may lead to the development of a future decision tree for outpatient detoxification programs.

### **Chapter 3: Organizational Framework**

#### **Organizational Change Model**

Lewin's (1974a, 1974b) model of change dominated the 20th century as an effective model in social services and business organizations; however, in the early decade of the 21st century, the model endured criticism as being too simplistic (Burnes, 2004; Burnes & Cooke, 2013; Gold, 1999; Huarng & Mas-Tur, 2016). Notwithstanding, Lewin's model of change anchors the sustainable change needed in turbulent times and challenges facing the current health-care organization of the 21st century. Lewin's model theorized three stages of change: unfreezing, changing, and refreezing. The unfreezing stage identifies the restraints and driving forces. The driving forces are usually the facilitating factors, which include readiness, support of top executives, administrators, financial support, emotional, and psychological support. The restraining forces are entrenched cultural and traditional practices of the organization, including individual beliefs, norms, and values. The unfreezing stage destabilizes the current state of the organization and reinvents a need for change that resonates with the organization's vision, mission, and values.

Lewin's change incorporates the organizational change of readiness in management. The critics of Lewin's model neglect the shrink and expansion theme within the model, which is similar to the theory of shrinkage and expansion of the universe in physics. The change stage involves cognitive, behavioral, emotional, and psychological dynamic processes. It is a three-dimensional change that utilizes the component of the unfreezing stage while introducing new biopsychosocial management and organizational changes. The three dimensions of unfreezing are the top executives, employees at the bottom of the ladder, and customers. The changing stage examines the internal and external environment during implementation and ensures that the

internal environment will have a greater impact on the external environment. The final stage of Lewin's model involves refreezing. This stage focuses on solidification and sustainability. Lewin's model is the most appropriate model in addiction medicine to wedge and sustain a change from retrogressing to the old ways of operation both from the individual and organizational perspective (Gold, 1999).

### **Components of Model**

**Unfreezing stage.** The unfreezing stage is the first stage of Lewin's model. The concepts of unfreezing in this project involve surveillance and examination of the traditional and ongoing practices in the treatment of patients diagnosed with AUD/ODD withdrawal. The unfreezing stage asks thought-provoking questions and challenges the status quo based on current evidence-based practice. The unfreezing stage during its microscopic examination of the organization will destabilize the system of practice, making it clear to the organization and employees the danger of continuing in the old operational system. The unfreezing stage relies on two internal factors to influence the external market. The internal factors weighed against the external factors are the restraining and driving forces. The restraining forces within the organizations will either be removed or allowed to adapt to the new innovative practices. The driving factors within the organization use their authority to facilitate the breakdown of the barriers, while the early adopters of the organizational change influence their colleagues through collaboration and workplace support (Gold, 1999; Lewin, 1947a).

The stakeholders of the organization play a major role in destabilizing the organization; however, customers are the most active driving and restraining force. During its evaluation, the unfreezing stage places the customer at the center of decision-making. The unfreezing stage determines the readiness of the stakeholders, employees, and customers. Using collected internal

and external data, education is designed for employees, stakeholders, and customers. The model does not provide a specific process of collecting data and providing education: however, it indirectly infers that creating the perception for change requires the collecting of data to ensure top executives and key partners agree to a change. The designed education assists in identifying readiness for change and creating a plan to usher the organization into change. Without education, Lewin pointed out that there will be many people eager and ready to make the change but stagnant with unanswered questions concerning the present situation and next moves. This involves a stakeholder analysis that focuses on the overall needs and expectations of the primary and secondary stakeholders and determines their readiness for change while providing transitional education. Strategic design of the customers' needs and the landscape of the organization serve as a guide throughout the entire change process (Gold, 1999; Lewin, 1947a, 1947b).

**Moving/changing.** Moving/changing is the second stage of Lewin's model, which involves brainstorming, presenting ideas, modeling, coaching, and mentoring. The moving/changing stage also involves implementation and stakeholder engagement to create a cognitive, behavioral, and psychological change in the modus operandi of the organization. This stage utilizes careful planning, effective communication, and transformational leadership to inspire and encourage change in employees. The moving/changing stage aims to change the organizational culture, which epitomizes one of the overarching goals embedded in this DNP project: implementing a change in clinical practice (Burnes, 2004; Gold, 1999). The model asserts that change in organizational culture is a fundamental component of leadership and must penetrate all aspects of the organization, including employees' beliefs and values. Those beliefs,



values, norms, and goals must align with the organization's mission and vision of service (Burnes, 2004; Gold, 1999).

The overall moving/changing stage accelerates with resources from stakeholders, organizational structure and culture, primary consultants of change, and the interpersonal social and political skills to support the change process (Gold, 1999; Lewin, 1947a, 1947b). The primary investigator responsible for implementing the detoxification in this outpatient setting must possess the technical knowledge and expertise to execute the plan for change. The primary investigator must garner the economic resources, personnel, funds, and support in the internal and external environment with ethical guidelines for the change process, which is required by the UAA IRB.

**Refreezing-sustaining.** The final stage of Lewin's organizational model theorized that the sustainability of the change must be solidified as a habit encoded in the hearts and minds of the human resources of the organization and a new cultural code documented in the policies and procedures of the organization as the standard of procedure. This process involves communication, retraining, reward, benefits and costs analysis, and evaluation and use of key performance indicators to socialize new employees and members into the system. An organizational change model without a hedge of protection and sustainability risk not only administration and business loss but also, and most importantly, the customers' commitment to continue services. At the refreezing stage, positive reinforcement, reward, and acknowledgment of employees' and customers' efforts play a crucial role in the sustainability of the change implemented. These norms and values are cemented into the organization's culture to prevent individuals from reverting to the old ways (Gold, 1999; Lewin, 1947a). Although this project focuses on the first phase of detoxification in the disease of addiction treatment, the second phase

is an integral component. Lewin's organizational model has a dynamic and humanistic approach that fits well with an integrated health-care organization. The unfreezing stage will cause a shrink and create a sense of urgency and readiness for a model, supporting the momentum for change. This change thrives on numerous foreseeable factors, such as quality of care, safety, and a positive impact on the internal and external environment. The final stage ensures the new change becomes a habit and a culture that penetrates every aspect of the organization to establish equilibrium (Burnes, 2004; Gold, 1999).

ATC is an outpatient MAT program that also provides behavioral medicine services for patients of any ethnic background. The organization is licensed and approved to deliver MAT and behavioral medicine services by the Alaska Department of Drug Enforcement Agency and Healthcare Services. The ATC uses a biopsychosocial model for outpatient detoxification, which is explained and depicted in Appendix D. Lewin's organizational change model fits well with the ATC biopsychosocial model of treatment because it is a linear modality with three phases: evaluation, detoxification, and continuity of care. ATC biopsychosocial model refers to the three-dimensional process of detoxification to promote substance treatment and recovery; medical, psychological, and social support. The first phase presupposes that if the selection criteria for outpatient detoxification is accurate, the detoxification process will be imbued with quality processes and successful outcomes of stabilization and readiness for continuity of care. The evidence for the linear relationships or linkages between the phases of alcohol/opioid detoxification when established will lead to the development of strategic measures to buttress the model after implementation.

## **Chapter 4: Description of Methods and Procedures**

### **Evaluation Design and Survey Methods**

The practitioner evaluator designed the evaluation using a survey method to capture data from participants about their first-time experience in outpatient detoxification provided by the ATC. The instrument selected is a reliable and valid instrument for evaluating patient experiences in substance treatment (Sjetne et al., 2011). The questionnaire was used to evaluate the patients' experiences focusing on the outcomes they experience, the issues and challenges they face during treatment, and how they experience the linkages of the program to the next steps in the recovery process.

The evaluation incorporated a sample of participants who attempted or completed treatment during the period of December 10, 2020, to July 6, 2020. The design maximized sample size through the inclusion of those who attempted treatment, completed treatment, and entered treatment for AUD and/or OUD. In its letter of support, ATC indicated a willingness to supply the necessary information required by the UAA IRB and HIPAA. The center required IRB approval prior to allowing the practitioner evaluator to proceed with the data collection and evaluation.

ATC staff were responsible for the collection of informed consent from potential participants. The practitioner evaluator then proceeded to contact participants by email. The email provided a brief description of the project and asked patients who are interested in participating to click on a Qualtrics link below the email message to complete the survey. The evaluator followed up with patients two times before ceasing contact and, in the case of nonresponse, considered those as nonrespondents in the calculation of the response rate. The practitioner evaluator sought a response rate of 75%. To improve response rates, the practitioner

evaluator offered each potential participant an Amazon gift card when they completed the questionnaire.

**Management of data collection.** The practitioner evaluator entered the data into an Intellectus Statistics file as he received each completed and/or attempted questionnaire, noting an attempted questionnaire may contain missing data. The project evaluator assigned a unique patient identifier from 001 to 050 and treated each item as a variable. To ensure that a variable was assigned a name, label, and value, quantitative numeric values were completed. The practitioner evaluator coded all missing data as 9, so he could remove those from subsequent analysis.

**Questionnaire design.** The 45-item questionnaire was adopted from the Generic Short Patient Experiences Questionnaire and modified by removing not applicable items and adding nine questions (Sjetne et al., 2011). The GSPEQ is not a copyrighted questionnaire, and the public can modify and use it for clinical research and practice (Sjetne et al., 2011). The structured but open-ended items captured the experience of outpatient treatment at ATC in the participants' own words and phrases. The data analytic questions identified and captured the key concepts for each area of the generic questionnaire: patients' (a) initial relationship with ATC, (b) relationship during treatment, (c) relationship and impression after treatment. Demographic and severity of addiction history questions were placed at the beginning of the questionnaire. The questionnaire has been shown to be reliable and valid in evaluating patient experiences from substance treatment. A study that evaluated 516 patients in an outpatient setting using these questions reported statistically significant ( $p > .05$ ) results, and the relationship between each item showed a Spearman correlation coefficient range of 0.11 to 0.59, 17 out of 19 of its items (89%). When the remaining two items were removed, a statistical significance was still obtained

from a Spearman rank correlation coefficient recalculation, which reduced the p-value from .92 to .90 ( $p < .05$ ; Sjetne et al., 2011; Wong et al., 2015).

**Steps in the data analytic process.** Upon receiving responses in Qualtrics, a run of frequencies to investigate each of the principal data analyses and observe the general trends in the patients' responses in each area of the treatment process were performed. The next step was to measure central tendency, standard deviation, and skewness of items. The demographic and addiction history were used as dependent variables and detoxification was analyzed as the independent variable. The items were condensed into three models: (a) initial encounter relationship, (b) relationship during treatment, and (c) overall impression after treatment. The items were coded as problem scores, which provides a subjective evaluation of the area of care that could be improved. Construct validity was evaluated using Spearman rank correlation of the summative problem scores calculated. The Cronbach's alpha coefficient and the item-to-total coefficient were estimated to test the item internal consistency reliability of the instrument, which assessed whether the items measured the same concept. The analysis of the data explored the relationship of the categorical variables using Spearman correlation.

### **Implementation Plan**

**Project implementation objective.** The objectives for the implementation of the project were the following: (a) to obtain data on the experiences of patients from the designed model of outpatient detoxification at ATC, (b) to identify practice strategies for improvement of the model, and (c) to formulate strategic practice advancement using empirical data from participants to improve the model for clinical practice.

**Key project activities.** The pertinent activities of this project included selecting an appropriate survey questionnaire instrument that addresses the aims of the project, seeking approval of the committee, submitting to IRB for approval, distributing the survey questionnaires to qualified participants via email, collecting the data, coding, and running data analysis. The next step involved preparing the manuscript describing the project and using the empirical data to improve the model for clinical practice at ATC and dissemination of results to MAT programs.

**Cost-benefit analysis and budget.** A projected cost-benefit analysis of the project can be found in Appendix E. The main costs associated with the project were paper, printing, ink, statistical analysis review, and a \$25 Amazon gift card for each potential participant.

**Schedule for project completion: Implementation, evaluation, and dissemination.** This project was conducted between August 14 and September 2020 since IRB approved the project on August 12, 2020. The final project defense was changed from November 2020 to the spring semester of 2021 (see Appendix F for the project timeline).

### **Evaluation Plan**

The practitioner evaluator used the adapted survey questionnaire to conduct a systematic analysis of the responses and their importance to the improvement of the biopsychosocial model. The independent variables relevant to the outcome of outpatient detoxification were utilized to strategically improve the quality of clinical practice in detoxification at ATC outpatient detoxification program. The practitioner evaluator examined the statistical and clinical significance of the data to inform a sustainable outpatient detoxification practice change at ATC integrated health program.

**Implications for Advanced Practice**

**Theoretical implication for outpatient detoxification.** Based on the literature supporting evidence for outpatient detoxification, Lewin's change model will imperatively assert the need for change in outpatient MAT programs treatment of AUD/ODD to include detoxifications as the essential step in the initial stage of treatment. The biopsychosocial underpinning of detoxification illuminates the quality outcomes of the treatment process for patients.

**Implications for practice in outpatient detoxification.** The advancement of the current model may provide a holistic reliable selection criterion of appropriate patients for outpatient detoxification with a higher probability of continuing care after detoxification. The quality patient outcomes will enhance the promotion of outpatient detoxification in ATC and external MAT programs.

**Implications for Practice Improvement Through Action Learning**

ATC MAT program outcomes from the perspective of AUD/ODD patients' experience with detoxification will generate the need for reflection and utilization of findings to modify the current designed model with the potential to customize the unique needs of each patient. Sharing results with the clinical team of the organization may generate new ideas and create therapeutic and strategic advancement for clinical practice through modification of the current detoxification model.

**Implications for the Evaluator/Practitioner**

The findings from the project will be used to improve clinical decision-making for the detoxification of AUD/ODD patients. The empirical data results will be used to make changes for AUD/ODD patients and to educate and offer staff the opportunity to provide their input on

how to improve quality outcomes of detoxification. The modification of the current model of detoxification will be used to expand the practice to accept more patients for substance treatment. The findings will be used to improve quality patient outcomes to a logic model consistent with the six domains of health-care quality and Health Effectiveness Data and Information Set for AUD/OD treatment (Agency for Health Research and Quality, n.d.).



## **Chapter 5: Implementation Process and Procedures**

The implementation phase of the ATC biopsychosocial model of outpatient detoxification was facilitated by the following principles: theoretical, systematic, conceptual, implementation analysis, and empirical analysis. The central theme of these principles stems from the proposed method, which condensed the 45 items into three significant areas to evaluate the patient experience of the ATC biopsychosocial model of outpatient detoxification. These three items—initial encounter relationship, relationship during treatment, and overall impression after treatment—encapsulate the objectives of the implementation: (a) to obtain data on the experiences of patients from the designed model of outpatient detoxification at the ATC, (b) to identify practice strategies for improvement of the model, and (c) to formulate strategic practice advancement using empirical data from participants to improve the model for clinical practice.

### **Systematic Plans for Implementation**

The ethics of conducting a project at ATC was evaluated because the project lead is the owner of the center. A consultation with the Chair and committee of the project provided specific requirements to be met for the project to take place at the ATC. The board of directors' agreement to support the project and ensure the objectivity of the project was secured, allowing the project to commence. The clinical director provided a letter of support and guidelines to ensure that the collection of data would not compromise the patients' confidentiality and safety. The project could not start without the UAA IRB approval letter to the ATC's clinical director. The requirements of the UAA IRB were similar to those of the ATC except that UAA required the use of a Qualtrics instrument for collecting data without IP address tracing. The instrument selected to collect data and evaluate patients' experiences in the ATC outpatient detoxification program was reviewed again by ATC management to ensure it met the Health Insurance

Accountability Act (HIPAA) guidelines and that no patients' confidentiality and rights would be breached.

Potential participants were invited via email, and those who agreed to participate signed/refused to consent anonymously by a mouse click. The consent form was part of the Qualtrics website link sent to potential participants. This allowed those who agreed to participate to click on the link, which opened the consent for their review, after which they could click on “Yes, I agree” or “No, I do not agree.”

Participants had 2 weeks to respond to the survey items, and the questionnaire closed at the end of the second week. At the end of the second week, 42 responses were received out of 50 potential participants. The 45 items of the questionnaire were estimated to take less than 15 minutes to complete. A separate questionnaire was provided for participants to claim a \$25 Amazon gift card. Separating the questionnaire for claiming the gift card was an IRB requirement to ensure participants' anonymity was maintained. The first report was run in Qualtrics to review the descriptive statistics. The Excel files of the report were downloaded and cleaned, after which they were analyzed using SPSS version 26 software package. The Excel files of the report were downloaded because it cannot be cleaned in Qualtrics and transfer directly from Qualtrics to SPSS.

The statistical analysis was then interpreted and evaluated within the context of the ATC biopsychosocial model of detoxification. The statistical analysis was done based on the objectives of the implementation discussed in Chapter 4: (a) to obtain data on the experiences of patients from the designed model of outpatient detoxification at the ATC, (b) to identify practice strategies for improvement of the model, and (c) to formulate strategic practice advancement using empirical data from participants to improve the model for clinical practice. The

breakdown of these three objectives was *before detoxification, during detoxification, and after detoxification*. This was based on Q3. How would you rate the satisfaction of the following aspect of detoxification received from Alaska Treatment Center?

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
First encounter with a practitioner (Evaluation)				
Withdrawal and treatment (Detoxification)				
Readiness for continuity of care				

The findings from the project revealed some significant outcomes that are clinically relevant to patient experiences. This led to the modification of the ATC biopsychosocial detoxification for outpatients. The transformation included incorporating a decision tree (algorithm), a flow chart, and theory of change into the ATC model of detoxification and policy.

### **Implementation Process**

In Chapter 3, Kurt Lewin's organizational framework was discussed in detail to explain why it was the best framework for the implementation of this project. This project was

implemented using Kurt Lewin's organization framework in the following three stages: unfreezing, changing/moving, and refreezing/sustaining. The unfreezing stage in this project took place upon receiving approval from the IRB. The ATC biopsychosocial model of detoxification was evaluated, including the decision tree for detoxification and other assessment tools used by the organization. The organization's beliefs, values, and vision were at the center of the unfreezing process. This stage aimed to understand why the organization performs outpatient detoxification, what the organization aims to achieve, and how the model of ATC outpatient detoxification can be improved for quality delivery of services (Gold, 1999; Lewin, 1947a, 1947b).

The changing/moving phase of the project focused on three areas: management, staff, and patients. The readiness of management for this change was reflected in their willingness to review the instruments selected to examine patient detoxification experiences at ATC. The staff's willingness to support change was manifested by spearheading the invitation of potential participants and sending the questionnaire to participants. The availability of eligible participants and their willingness to participate accelerated the changing phase of implementation.

In addition to the resources from ATC management and staff, the project lead's technical knowledge and expertise in evaluating and modifying the instruments were important components in achieving the outcome of the implementation. The participants were promised \$25 Amazon gift cards, which were redeemable upon completing the main questionnaire and completing a separate questionnaire for claiming the Amazon gift card.

Refreezing/sustaining is the final stage of Lewin's organizational framework. Lewin asserted that to sustain implemented change, that change must be encoded and solidified into the

culture of an organization (Huarng & Mas-Tur, 2016). This process requires retraining, reward, benefits, cost analysis, and the use of key performance indicators to socialize new employees and members into the system. As part of the empirical implementation of a modified model of detoxification, ATC committed to hiring additional staff and counselors to ensure patients receive all their care from the same organization, thus enhancing continuity of care.

### **Barriers and Challenges**

The barriers to this project included the inability to administer the questionnaire in person, the population's vulnerability, and the difficulty in defining the project as either a quality improvement study or a project. Due to the COVID-19 pandemic, the UAA IRB prohibited all in-person research and projects. This precluded the possibility of performing observation research or a study. The population selected for this project was patients with AUD and/or OUD, who constitute one of the most vulnerable populations. Due to the stigmatization faced by this population and the sensitivity involved in researching this topic, many restrictions were required by the UAA IRB. Some of the IRB requirements, such as using a nontraceable IP address, posed considerable challenges, including securing a subscription to a version of Qualtrics that could not trace participants' IP addresses because the practitioner evaluator spent more than necessary time researching on how to accomplish this requirement. Another challenge emanating from the vulnerability of the target population was the use of staff rather than the primary investigator to send the invitation letter and Qualtrics link to potential participants. The controversy about whether the DNP project was a research study was a major barrier between the original project and the revised scheme.

Although the project was an empirical study, the use of the term "research" and the first proposed title (Algorithm for Selecting Appropriate Patients for Detoxification in an Outpatient

MAT Program) raised numerous concerns regarding aims, ethics, and methods. This led to the revision of the first proposal. Although the revision was a challenge that was eventually overcome, its timing was a barrier to developing an instrument that would have yielded variations in the responses. This lack of variation from the short generic metric is reflected in the results of the project's findings and motivates future studies to develop a metric for evaluating patient experiences of the ATC biopsychosocial model for outpatient detoxification.

The project's most challenging aspect was the effect of the COVID-19 pandemic on health-care organizations and businesses. Across the globe, COVID-19 has brought major changes to research and creative activities, especially those of educational institutions. The initial project was aimed at educating three central emergency departments in Anchorage to use the developed algorithm to identify patients seeking detoxification and refer them to ATC for treatment. In addition to raising theoretical issues with the use of the term “algorithm,” this initial project was ultimately impractical due to COVID-19. Generally, outpatient detoxification challenges include the risk of fatality, recidivism, and the perception that it cannot be accomplished in an outpatient setting. Although these were not the challenges of this project, the lack of any other outpatient detoxification clinic in Anchorage with which to do a comparison study was a concern.

## **Chapter 6: Evaluation and Synthesis of Outcomes**

### **Methods**

The primary purpose of this project was to examine patient experiences at ATC and determine what areas of care need the most improvement. Data were collected from 42 survey respondents. Descriptive statistics of demographic and survey responses were presented using frequencies and percentages for categorical and ordinal variables. Measures of central tendency, including mean, median, standard deviation, and skewness of each of the survey items were examined. The survey items were condensed into three models: initial encounter relationship, (b) relationship during treatment, and (c) overall impression after treatment.

The survey items were coded as problem scores, which provide a subjective evaluation of the area of care that could be improved. A principal component analysis (PCA) was first performed to assess if subdimensions existed in the survey items. If the PCA was uninformative and no natural groupings of variables were found in the data, Spearman's rho correlations were calculated between each of the individual survey items and the outcome detoxification ratings, and those with the strongest correlations were used to calculate the problem scores. The problem scores were calculated as the sum of the individual survey items having the strongest correlations with each of the outcomes. Cronbach's alpha coefficient was estimated to test the internal consistency of the instrument and assess whether the items measured the same concept. Construct validity was evaluated using Spearman's rank correlation between the calculated summative problem scores and each of the three detoxification outcomes: before, during, and after treatment. Statistical significance was defined as a p-value  $\leq .05$ . All analyses were performed in SPSS version 26.

## Results

Table 1 shows the descriptive statistics of the 42 respondents to the survey. Note that for the importance (Part B) questions in the survey, the majority of respondents rated each item as “*Extremely important.*”

Table 1

### *Descriptive Statistics of Sample*

Variable	Value	N	%
Q1: What was the severity rating of your condition?	Mild	16	38.1%
	Moderate	8	19.0%
	Moderate-Severe	11	26.2%
	Severe	6	14.3%
	Missing	1	2.4%
Q2: Did you have any of the following underlying conditions?	Major depressive disorder in full or partial remission	12	28.6%
	Anxiety disorder in full or partial remission	11	26.2%
	Type 2 diabetes with A1C >12	1	2.4%
	Hypertension with BP > 140/90	5	11.9%
	None	13	31.0%
Q3#1_1: How would you rate your satisfaction with the following aspect of detoxification received from Alaska Treatment Center: First encounter with practitioner (Evaluation)?	Very Dissatisfied	0	0.0%
	Dissatisfied	2	4.8%
	Very Satisfied	36	85.7%
Q3#1_2: How would you rate your satisfaction with the following aspect of detoxification received from Alaska Treatment Center: Withdrawal and treatment?	Satisfied	4	9.5%
	Very Dissatisfied	0	0.0%
	Dissatisfied	1	2.4%



## EVALUATING THE PATIENT EXPERIENCE IN OUTPATIENT

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Variable	Value	N	%
Q3#1_3: How would you rate your satisfaction with the following aspect of detoxification received from Alaska Treatment Center: Readiness for continuity of care?	Very Satisfied	36	85.7%
	Satisfied	5	11.9%
	Very Dissatisfied	0	0.0%
	Dissatisfied	0	0.0%
	Very Satisfied	35	83.3%
Q4: What is your gender?	Satisfied	7	16.7%
	Male	15	35.7%
	Female	26	61.9%
Q5: What is your ethnicity?	Missing	1	2.4%
	African American	6	14.3%
	Caucasian	30	71.4%
	Hispanic	2	4.8%
	Alaskan Native	0	0.0%
Q6: How old are you?	Mixed Race	3	7.1%
	Missing	1	2.4%
	18-29	13	31.0%
	30-39	8	19.0%
	40-49	14	33.3%
Q9: Did Alaska Treatment Center help you accomplish your treatment goal?	50-59	4	9.5%
	60 and above	3	7.1%
Q10b_A: Did the clinicians talk to you in a way that was easy to understand	Yes	41	97.6%
	No	1	2.4%
Q10b: How important was this topic to you?	Not at all	0	0.0%
	To a small extent	0	0.0%
	To a moderate extent	5	11.9%
Q10b: How important was this topic to you?	To a larger extent	37	88.1%
	Extremely important	35	83.3%
	Very important	5	11.9%
Q10b: How important was this topic to you?	Moderately important	1	2.4%

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Variable	Value	N	%
	Slightly important	1	2.4%
	Not at all important	0	0.0%
Q11a: Did you have confidence in the clinician's professional competence?	Not at all	1	2.4%
	To a small extent	0	0.0%
	To a moderate extent	4	9.5%
	To a larger extent	37	88.1%
Q11b: How important was this to you?	Extremely important	35	83.3%
	Very important	4	9.5%
	Moderately important	2	4.8%
	Slightly important	1	2.4%
	Not at all important	0	0.0%
Q12a: To what degree did you perceive that the clinicians cared about you?	Not at all	1	2.4%
	To a small extent	1	2.4%
	To a moderate extent	8	19.0%
	To a larger extent	32	76.2%
Q12b: How important was this to you?	Extremely important	37	88.1%
	Very important	1	2.4%
	Moderately important	3	7.1%
	Slightly important	1	2.4%
	Not at all important	0	0.0%
Q13a: Did you get enough time to talk and interact with the clinicians?	Not at all	1	2.4%
	To a small extent	1	2.4%
	To a moderate extent	8	19.0%
	To a larger extent	31	73.8%
	Missing	1	2.4%
Q13b: How important was this to you?	Extremely important	35	83.3%
	Very important	3	7.1%
	Moderately important	2	4.8%
	Slightly important	1	2.4%
	Not at all important	1	2.4%
Q14a: Did the other staff talk to you in a way that was easy to understand?	Not at all	0	0.0%
	To a small extent	2	4.8%
	To a moderate extent	10	23.8%
	To a larger extent	30	71.4%
Q14b: How important was this to you?	Extremely important	27	64.3%
	Very important	9	21.4%
	Moderately important	3	7.1%
	Slightly important	2	4.8%

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Variable	Value	N	%
	Not at all important	1	2.4%
Q15a: Do you have confidence in the other staff's professional skills?	Not at all	0	0.0%
	To a small extent	4	9.5%
	To a moderate extent	12	28.6%
	To a larger extent	25	59.5%
	Missing	1	2.4%
Q15b: How important was this to you?	Extremely important	28	66.7%
	Very important	7	16.7%
	Moderately important	4	9.5%
	Slightly important	2	4.8%
	Not at all important	1	2.4%
Q16a: To what degree did you perceive that the other staff cared about you?	Not at all	0	0.0%
	To a small extent	5	11.9%
	To a moderate extent	9	21.4%
	To a larger extent	28	66.7%
Q16b: How important was this to you?	Extremely important	25	59.5%
	Very important	8	19.0%
	Moderately important	5	11.9%
	Slightly important	1	2.4%
	Not at all important	2	4.8%
	Missing	1	2.4%
Q18a: Did you perceive the other staff to be interested in your description of your situation?	Not at all	1	2.4%
	To a small extent	5	11.9%
	To a moderate extent	8	19.0%
	To a larger extent	28	66.7%
Q18b: How important was this to you?	Extremely important	29	69.0%
	Very important	6	14.3%
	Moderately important	3	7.1%
	Slightly important	2	4.8%
	Not at all important	2	4.8%
Q19a: Did you get enough time to talk and interact with the other staff?	Not at all	1	2.4%
	To a small extent	3	7.1%
	To a moderate extent	8	19.0%
	To a larger extent	29	69.0%
	Missing	1	2.4%
Q19a: How important was this to you?	Extremely important	30	71.4%
	Very important	5	11.9%
	Moderately important	3	7.1%

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Variable	Value	N	%
	Slightly important	4	9.5%
	Not at all important	0	0.0%
Q20a: Were you given the necessary information about how detoxification would be carried out?	Not at all	0	0.0%
	To a small extent	1	2.4%
	To a moderate extent	2	4.8%
	To a larger extent	39	92.9%
Q20b: How important was this to you?	Extremely important	36	85.7%
	Very important	4	9.5%
	Moderately important	1	2.4%
	Slightly important	1	2.4%
	Not at all important	0	0.0%
Q21a: Did you get sufficient information about your diagnosis?	Not at all	0	0.0%
	To a small extent	0	0.0%
	To a moderate extent	6	14.3%
	To a larger extent	36	85.7%
Q21b: How important was this to you?	Extremely important	36	85.7%
	Very important	2	4.8%
	Moderately important	2	4.8%
	Slightly important	2	4.8%
	Not at all important	0	0.0%
Q22a: Did you perceive the treatment you received as suited to your situation?	Not at all	1	2.4%
	To a small extent	1	2.4%
	To a moderate extent	7	16.7%
	To a larger extent	33	78.6%
Q22b: How important was this to you?	Extremely important	34	81.0%
	Very important	4	9.5%
	Moderately important	3	7.1%
	Slightly important	1	2.4%
	Not at all important	0	0.0%
Q23a: Were you involved in any decision involving your treatment?	Not at all	0	0.0%
	To a small extent	3	7.1%
	To a moderate extent	6	14.3%
	To a larger extent	33	78.6%
Q23b: How important was this to you?	Extremely important	32	76.2%
	Very important	4	9.5%
	Moderately important	4	9.5%
	Slightly important	1	2.4%
	Not at all important	0	0.0%

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Variable	Value	N	%
Q24a: Did you perceive the institution's work as well organized?	Missing	1	2.4%
	Not at all	0	0.0%
	To a small extent	3	7.1%
	To a moderate extent	6	14.3%
Q24b: How important was this to you?	To a larger extent	33	78.6%
	Extremely important	32	76.2%
	Very important	3	7.1%
	Moderately important	3	7.1%
Q25a: To what extent did Alaska Treatment Center prepare you for continuity of care after the detoxification?	Slightly important	4	9.5%
	Not at all important	0	0.0%
	Not at all	0	0.0%
	To a small extent	2	4.8%
Q25b: How important was this to you?	To a moderate extent	3	7.1%
	To a larger extent	37	88.1%
	Extremely important	35	83.3%
	Very important	4	9.5%
Q26a: To what extent did the organization work with other facilities to ensure your smooth transition to the next phase of substance treatment after detoxification?	Moderately important	0	0.0%
	Slightly important	1	2.4%
	Not at all important	2	4.8%
	Not at all	0	0.0%
Q26b: How important was this to you?	To a small extent	2	4.8%
	To a moderate extent	3	7.1%
	To a larger extent	37	88.1%
	Extremely important	32	76.2%
Q27a: Did you have to wait after your initial evaluation to be scheduled for detoxification at ATC?	Very important	5	11.9%
	Moderately important	3	7.1%
	Slightly important	1	2.4%
	Not at all important	1	2.4%
Q27b: How important was this to you?	No	24	57.1%
	Yes, but not long	6	14.3%
	Yes, quite long	3	7.1%
	Yes, much too long	9	21.4%
Q27b: How important was this to you?	Extremely important	34	81.0%
	Very important	5	11.9%
	Moderately important	3	7.1%
	Slightly important	0	0.0%
	Not at all important	0	0.0%

Variable	Value	N	%
Q28a: Overall, what benefit have you had from the care at the institution?	No benefit	0	0.0%
	Small benefit	0	0.0%
	Some benefit	2	4.8%
	Great benefit	17	40.5%
	Huge benefit	23	54.8%
Q28b: How important was this to you?	Extremely important	37	88.1%
	Very important	4	9.5%
	Moderately important	1	2.4%
	Slightly important	0	0.0%
	Not at all important	0	0.0%

Tables 2a (Appendix H) and 2b (Appendix I) are the results of the oblique-rotated PCA loadings of each of the Part A and Part B questions, respectively. The PCA analysis used three components to assess if natural groupings existed that could represent the before, during, and after treatment problem scores. The PCA results were minimally informative, as most items are loaded onto one principal component (PC1) due to the lack of variability in the responses across items.

Spearman's rho correlations between each of the individual survey items and the before (Q3#1\_1), during (Q3#1\_2), and after (Q3#1\_3) detoxification ratings are shown in Table 3. Items Q15a, Q16a, and Q24a have significant correlations with the detoxification rating before treatment. Items Q10b\_A and Q20a have significant correlations with the detoxification rating during treatment. Items Q11a, Q12a, Q13a, Q19a, Q22a, Q23a, and Q28a have significant correlations with the detoxification rating after treatment. Q14a and Q21a have the highest correlations with the detoxification rating before treatment, although these correlations were not statistically significant. Likewise, Q18a has the highest correlations with the detoxification rating after treatment, although not significant. Q25a and Q26a were the questions most relevant

to detoxification rating, although the correlations with that outcome were weak. Q27a had a weak correlation with all the detoxification rating outcomes.

Table 3.

*Spearman's rho Correlations between Individual Survey Items and Detoxification Outcomes*

Variable	Detoxification Rating Outcome	Spearman's Rho	p-value
Q10b_A: Did the clinicians talk to you in a way that was easy to understand	Q3#1_1	-0.150	0.344
	Q3#1_2	-0.310	0.046
	Q3#1_3	-0.230	0.143
Q11a: Did you have confidence in the clinician's professional competence?	Q3#1_1	0.257	0.100
	Q3#1_2	-0.097	0.540
	Q3#1_3	-0.436	0.004
Q12a: To what degree did you perceive that the clinicians cared about you?	Q3#1_1	0.106	0.505
	Q3#1_2	0.026	0.871
	Q3#1_3	-0.391	0.011
Q13a: Did you get enough time to talk and interact with the clinicians?	Q3#1_1	0.109	0.498
	Q3#1_2	0.030	0.851
	Q3#1_3	-0.388	0.012
Q14a: Did the other staff talk to you in a way that was easy to understand?	Q3#1_1	0.214	0.174
	Q3#1_2	0.032	0.842
	Q3#1_3	0.147	0.353
Q15a: Do you have confidence in the other staff's professional skills?	Q3#1_1	0.332	0.034
	Q3#1_2	0.082	0.611
	Q3#1_3	-0.114	0.478
Q16a: To what degree did you perceive that the other staff cared about you?	Q3#1_1	0.362	0.018
	Q3#1_2	0.097	0.543

## EVALUATING THE PATIENT EXPERIENCE IN OUTPATIENT

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Variable	Detoxification Rating Outcome	Spearman's Rho	p-value
	Q3#1_3	-0.203	0.198
Q18a: Did you perceive the other staff to be interested in your description of your situation?	Q3#1_1	0.255	0.103
	Q3#1_2	-0.089	0.577
	Q3#1_3	-0.288	0.065
Q19a: Did you get enough time to talk and interact with the other staff?	Q3#1_1	0.252	0.113
	Q3#1_2	-0.092	0.566
	Q3#1_3	-0.308	0.050
Q20a: Were you given the necessary information about how detoxification would be carried out?	Q3#1_1	0.287	0.065
	Q3#1_2	0.319	0.040
	Q3#1_3	-0.136	0.391
Q21a: Did you get sufficient information about your diagnosis?	Q3#1_1	0.231	0.141
	Q3#1_2	0.092	0.560
	Q3#1_3	-0.183	0.247
Q22a: Did you perceive the treatment you received as suited to your situation?	Q3#1_1	0.099	0.535
	Q3#1_2	-0.176	0.265
	Q3#1_3	-0.424	0.005
Q23a: Were you involved in any decision involving your treatment?	Q3#1_1	0.095	0.549
	Q3#1_2	-0.175	0.267
	Q3#1_3	-0.409	0.007
Q24a: Did you perceive the institution's work as well organized?	Q3#1_1	0.378	0.013
	Q3#1_2	-0.026	0.870
	Q3#1_3	-0.265	0.090



## EVALUATING THE PATIENT EXPERIENCE IN OUTPATIENT

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Variable	Detoxification Rating Outcome	Spearman's Rho	p-value
Q25a: To what extent did Alaska Treatment Center prepare you for continuity of care after the detoxification?	Q3#1_1	0.253	0.107
	Q3#1_2	0.103	0.518
	Q3#1_3	-0.234	0.135
Q26a: To what extent did the organization work with other facilities to ensure your smooth transition to the next phase of substance treatment after detoxification?	Q3#1_1	0.253	0.107
	Q3#1_2	0.103	0.518
	Q3#1_3	-0.234	0.135
Q27a: Did you have to wait after your initial evaluation to be scheduled for detoxification at ATC?	Q3#1_1	-0.135	0.396
	Q3#1_2	-0.006	0.969
	Q3#1_3	-0.071	0.656
Q28a: Overall, what benefit have you had from the care at the institution?	Q3#1_1	-0.079	0.618
	Q3#1_2	-0.090	0.570
	Q3#1_3	-0.436	0.004

As an overall scale, items Q10b\_A through Q28a showed strong reliability, with a Cronbach's alpha of 0.889. Using the strength of Spearman's rho correlations, the survey items were used to compute problem scores representing each of the detoxification rating outcomes. The "Before" (initial encounter) problem score was computed as the sum of Q14a, Q15a, Q16a, Q21a, and Q24a. The "During" treatment problem score was computed as the sum of Q10b\_A, Q20a, and Q27a. The "After" treatment problem score was computed as the sum of Q11a, Q12a, Q13a, Q18a, Q19a, Q22a, Q23a, Q25a, Q26a, and Q28a. Cronbach's alpha was computed for each of these problem scores to assess scale reliability, shown in Table 4. The reliability of the Before and After problem scores were high, while the reliability of the During problem score was low. Analyses comparing the Cronbach's alpha if one item was deleted from the scale were performed for each of the scales, and neither scale (Before and After) showed a significant increase in Cronbach's alpha if any of the items were deleted from those scales. Since there were only three items in the During treatment scale, and none of those items were particularly strongly correlated with each other or the outcome they represent, Cronbach's alpha was always low for that scale.

Table 4

*Cronbach's Alpha of Problem Scores*

Variable	Minimum	Maximum	Mean	SD	Skewness	Cronbach's Alpha
"Before" Problem Score	13	20	18.27	2.19	0.93	0.786
"During" Problem Score	8	12	10.86	1.30	0.63	0.080
"After" Problem Score	15	41	37.75	4.86	2.94	0.921

Results showing Spearman's rho correlations between the problem scores and their respective detoxification outcomes are shown in Table 5. The Before problem score had a

significant medium positive correlation with the detoxification rating before treatment,  $\rho = 0.414$ ,  $p = .007$ . The After problem score had a significant medium correlation with the detoxification rating after treatment,  $\rho = 0.439$ ,  $p = .005$ . The correlation of the During problem score and the detoxification rating during treatment was weak and not significant,  $\rho = 0.047$ ,  $p = .769$ .

Table 5

*Spearman's Rho of Problem Scores with Detoxification Ratings*

Variable	Outcome	Spearman's Rho	p-value
"Before" Problem Score	Q3#1_1	0.414	.007
"During" Problem Score	Q3#1_2	0.047	.769
"After" Problem Score	Q3#1_3	0.439	.005

The results in Table 5 should be interpreted with caution. Due to the small sample size used and minimal variability in the survey responses leading to uninformative PCA results, this approach was taken out of necessity. Further study should include running the problem score correlations with the detoxification ratings on a new sample to avoid overfitting.

**Discussion**

There were 17 responses to items Q7 and Q8. The responses were similar, and address issues of location visibility, provider flexibility, onsite lab, trust, additional staff, and schedules. The most common issue patients wanted to see resolved was not having enough staff to answer their phone calls and attend to them when they needed help. Other issue is the visibility of the treatment center; it is overshadowed by the mortgage company located nearby, and patients have difficulty seeing the ATC sign. Another important result indicated by responses is that patients prefer having their laboratory testing performed at ATC rather than being referred to LabCorp, which is approximately a 15-minute drive from the ATC location.

These responses point to a need for change in the criteria used by ATC to select patients for detoxification in an outpatient setting. The names of other facilities with which the patients compared ATC have been removed from all quotations. Below are unedited quotes from patient responses:

*Trust your patients. I felt you were not going to change your mind about sending me to the hospital to detox even though I had insisted I do not want to go to the hospital.*

*Refusing us medications when the inpatient detox services you recommended are not ready for us is not good.*

*Stop telling patients desperate for detox they need to be willing to go for counseling services after detox. I wanted only detox. I am high functioning person who does not need all these years of pitying about my past addiction.*

*Be flexible to allow all clients who needs your services.*

*Add home treatment, most of us can do well at home going through withdrawal with the right guidance.*

*Give more suboxone and stop being overly strict with giving the meds, we need those meds, that's why we come to you. You told me during my first visit that the maximum I can get was three per day, but I was never given three strips even when I was screaming the pain is too much. It was a painful treatment but better than first experience at ...*

These responses form a basis for building a theoretical and logical model for the ATC detox program that addresses and enhances patient experiences and points to the need for changes to operations and organizational structure. The structural change most needed is relocating the practice to an easy-to-see but private location, which will require funding. On average, the practice is currently seeing four to six patients per week. Additional funding

sources through either grants or loans will need to be explored to mitigate the issues of inadequate staffing and delayed return of phone calls even though this issue was indirectly inferred from the responses. The theoretical framework will focus on improving practitioners' engagement with patients, building trust, and helping patients gain insight into and understand their addiction and symptoms. The overall goal of this model will be to increase patient motivation for detoxification adherence and help prevent poor patient experiences at ATC, as reflected in the foregoing responses and statement below from a participant response to Item 8:

*I relapsed four times, and I was refused the opportunity to continue treatment at ATC, I was told my situation requires inpatient. I learned from some friends they relapsed 20 times and they are still given their medications at ... I think this program is overly strict.*

The creation and improvement of the logical model require evaluation of the operational inputs from the perspective of patient responses. The ATC model of detoxification currently addresses only patients with AUD and OUD; extending the service to patients with dependence on methamphetamine and other substances will increase accessibility to more individuals. A biopsychosocial ATC model encompassing treatment for all patients with substance/AUD necessitates increasing the number of practitioners and supporting staff. The hiring of specialists, such as chemical dependency staff to perform initial ASAM screening, nurses, and medical assistants to facilitate the detoxification processes, counselors, and other supporting staff, are key to achieving the outcomes of the logic model. The current outcomes depicted in the logic model reveal the physiological, social, and economic benefits to the individuals, family, and community. The logic model outcomes are evaluated vis-a-vis current Alaska outcome measures for OUD/AUD, which illuminate the social determinants of alcohol and substance use disorders as remediable through the ATC modified biopsychosocial model of detoxification.

The modification of the ATC logic model seeking to include structural and organizational operational factors is consistent with the PICO question seeking to utilize the outcome of the existing model to develop a more responsive approach to care.

The overall results are in agreement with studies supporting outpatient detoxification as feasible and cost-effective (Barry et al., 2013; Corace et al., 2019; Deacon et al., 2014; Ho & Adcock, 2017; Johnson & Faraone, 2013; Mannelli et al., 2014; Schmidt et al., 2017). The ATC model of outpatient detoxification addresses the feasibility of outpatient detoxification. Of the 42 participants, none of the patients reported safety concerns during detoxification, and there was a 100% completion rate for detoxification.

Two of the interventions encompassing all the items for initial biopsychosocial evaluation and continuity of care after detoxification revealed a significant positive correlation with after-detoxification results,  $\rho = 0.1414$ ,  $p = .007$ , and a significant negative correlation,  $\rho = -0.439$ ,  $p = .769$ . The after-detoxification results are consistent with other studies reporting a similar rate of completion of outpatient detoxification (70%–100%) and rate of continuity of care after detoxification (50%–70%; Acevedo et al., 2016; Barry et al., 2013; Bisaga et al., 2018; Brett et al., 2014; Corace et al., 2019; Deacon et al., 2014; Ho & Adcock, 2017; Nadkarni et al., 2017).

The overwhelmingly positive response of patient experience with detoxification and the homogeneity of responses contributed to the weak correlation significance,  $\rho = 0.047$ ,  $p = .769$ . This is the first project known to evaluate the patient experience during detoxification. Although the during-detoxification results lack statistical significance, their clinical relevance cannot be ruled out. The significance of the before-detoxification results could have contributed to the homogeneity of the responses during detoxification. The initial evaluation and its criteria

for identifying patients appropriate for outpatient detoxification are the determinants of the during detoxification outcomes, which are reflected in the after-detoxification results. In other words, the patient experience during detoxification is partially reliant on the initial evaluation, which involves using specific criteria to select the appropriate patients for outpatient detoxification. The patients' experiences from the data responses show that the criteria were accurate in selecting the appropriate patients. The positive outcomes of those at the borderline of exclusion but allowed into the detoxification process pave the way for modifying the criteria to extend outpatient detoxification to more patients in the future. The items in the questionnaire highlighted trust, motivation, organization, education, time, care, safety, and accessibility. Based on these critical principles, during detoxification, addressing care, trust, and time was utilized to help in developing the theory of change. The pre and post detoxification items addressing trust, motivation, safety, and how organized the institution was used to develop and modify a flow chart, decision tree, and logic model. The decision tree had minor modifications based on item 7 and 8 quality responses to making it flexible for more patients to have access to outpatient detoxification.

### **Chapter 7: DNP Essentials**

The project addressed each DNP essentials from I to VIII. The overarching goal of the project was to evaluate the experiences of patients from the designed model of outpatient detoxification at ATC, identify innovative practice strategies for improvement of the model, and formulate strategic practice advancement using empirical data from participants to improve the model for clinical practice (American Association of College of Nursing, 2006).

#### **DNP Essentials I and II**

DNP Essentials I and II highlight the project's scientific underpinning and organizational and systems leadership for quality improvement and systems thinking. The scientific underpinning of addiction disease and detoxification is detailed throughout the project based on evidence and a comprehensive description of the biopsychosocial model of detoxification (American Association of College of Nursing, 2006). Thus, the projects' outcome addresses the clinical question that seeks to improve the model of detoxification based on patient experiences. The focus on ATC demonstrated the organizational and systems leadership for quality improvement and system thinking. The primary investigator started ATC, reflecting NSG 684 (Organizational Leadership), and hired experts from the health-care industry in the early years of operation. These early actions and the quality improvement implemented recently from the outcome of this project attest to his transformational leadership. The project's outcome leading to the modification of the ATC model includes modifying the treatment process for patients and organizational systems, such as environment, staffing, and resources that impact patients' experiences. The ATC start-up and the project undertaking are an accomplishment borne out of the DNP essentials that promote the advanced nurse practitioners' autonomy as a full and equal



provider in health care and leadership in the health-care organization beyond this project (American Association of College of Nursing, 2006).

**Contextual and conceptual utilization: Theory of change.** The contextual and conceptual utilization of the project encompasses DNP Essentials I and II. The ATC detoxification model is based on the neurobiology of the brain and science of addiction. Although each substance of abuse has specific pathways, established scientific evidence shows that when addiction substances reach the brain, the area of action is usually the limbic system, also known as the reward center. ATC interventions' logic is based on the crucial dopaminergic receptor pathways from the limbic system, specifically the ventral tegmental, nucleus accumbens, and striatum, which are correlated with the frontal cortex (Stahl, 2013). In other words, the dopamine pathway from the limbic system projects to the frontal cortex, and the dopamine projections from the frontal cortex must be intact to regulate the reward center. The ventral striatum is associated with impulsive actions that automatically stimulate the human system to fulfill physiological needs without the involvement of the frontal cortex, while the dorsal striatum is associated with compulsive actions activated to synchronize with the nucleus accumbens after repeated use of synthetic substances. The use of alcohol and opioids changes the action potentials that stimulate neurotransmitters' release from pre- to postsynaptic receptors. The changes in action potential lead to the fluctuation of receptors as the individual continues to require more of the substance to satisfy their insatiable need for dopamine. This phenomenon is called tolerance, which is the underlying reason for addiction and leads to withdrawal, cravings, and obsessive thoughts of obtaining the substance by any means (Sadock, Sadock, & Ruiz, 2014; Stahl, 2013).

ATC recognizes the complexity of addiction and physiological withdrawal effect throughout the body. Ceasing to use a substance that an individual has built a tolerance for in the brain and body increases the risk of fatality and unpleasant physiological effects. Gradual removal of toxins through detoxification is medically necessary to prevent fatality, unpleasant physiological effects, and early relapse (ASAM, 2019).

A central tenant of the ATC model is that detoxification is the first and most fundamental phase of successful recovery treatment for individuals who have developed a tolerance for opioids and alcohol to the extent that they cannot stop using on their own. The ATC outpatient detoxification model rests on a comprehensive understanding of addiction neurobiology and symptomatologic treatment of withdrawal using approved medications. At the same time, it aims to ensure that each component of nonpharmacological interventions addresses the quality of care for patients and ultimately enhances the continuity of the recovery process. The outcome of the project based on the patients' experiences revealed that outpatient detoxification is feasible and can be adopted to promote health treatment of alcohol and substance abuse nationwide.

The theory of change provides strong support for DNP Essentials I and II. The theory of change provides the patient with the opportunity to meet practitioners and support staff. The practitioners and support staff work in collaboration to educate patients on withdrawal symptoms and the dangers of withdrawal, enhancing the patient's cognitive ability to cope with the symptoms in an active way.

During the patient's withdrawal experience, the practitioner collaborates with the support staff to ensure the patient receives appropriate and customized treatment for withdrawal symptoms.

The timely assessment and administration of medications to prevent withdrawal symptoms allow the body to excrete toxins via the sweat glands, lungs, kidneys, and intestines without a traumatic effect on the brain and heart. A continuous, thorough assessment and appropriate administration of the correct medications for withdrawal symptoms alleviate symptoms by Day 5, on average. The modification includes additional support staff and comfort medications to the FDA approved drugs to minimize dysphoric experience expressed during detoxification responses (Q3#1\_2, Q7, Q8) and shown in the decision tree. This modification from during detoxification experiences aligns with the DNP essential on clinical scholarship and promoting nationwide health care (American Association College of Nursing, 2006).

After withdrawal, the next goal is to ensure the patient will succeed in the continuity of care recovery process. This is the final step in the detoxification process and focuses on re-evaluating the patient for their readiness to transition into individual therapy, group counseling, and support groups. The practitioner assesses and educates the patient about maintenance phase medications and transition into individual and group therapy. The four crucial areas of assessment are the patient's motivation to continue care and emotionally self-regulate and their cognitive flexibility and physical readiness to start perceiving themselves as a nonuser who needs to continue the use of counseling services and support groups as part of their journey toward recovery. The after-detoxification evaluation and continuity of care involve counseling services to educate the patient to think differently and redefine themselves not by their disease of addiction but their role in society and sense of human dignity and purpose (American Association College of Nursing, 2006).

**DNP Essentials III and IV**

**Flow chart and decision tree (algorithm for detoxification).** DNP Essentials III and IV cover the clinical scholarship and analytical methods for evidence-based practice, including patient care and informational systems/technology and to improve and transform health care (American Association of College of Nursing, 2006). The primary investigator's continuous research and practice is a bridge for this project and directs to the DNP essential at clinical scholarship and analytical methods for evidence-based practice. Integrating the ATC biopsychosocial model of detoxification into the electronic records and policy of ATC reflects the following DNP essential: informational systems/technology and patient-care technology for improvement and transformation of health care and health-care policy for advocacy in health care.

DNP Essentials III and IV encapsulate the outcome modification of the system flow chart (Figure 1) and decision tree (Figure 2). Outpatient detoxification can be done either in the patient's home or at a practitioner's office. The ATC performs the majority of office-based detoxification, with a few at-home detoxifications, and follows a biopsychosocial model of detoxification encompassing physiological, psychological, and social determinants. The detoxification model at ATC has three stages: evaluation, detoxification, and readiness for the next phase of substance treatment, which linearly responds to Kurt Lewin's organizational change framework. The first stage requires a full psychiatric, medical, and ASAM chemical dependency assessment. Based on the evaluation, a diagnosis of AUD and/or OUD with relevant specifications is made. Evaluation of patients' past and current medical conditions is crucial in determining eligibility. Laboratory tests and screenings are done to determine medical conditions, psychiatric disorders, and the impact of substance use on the individual. During this

initial evaluation, patients are provided with information about enrollment in or continuation of counseling and support groups after detoxification (American Association College of Nursing, 2006).

The evaluation categorizes patients according to inclusion and exclusion criteria. The inclusion criteria are moderate AUD/ODD dependency, history of moderate withdrawal, frequency of use greater or equal to every 4 hours, common psychiatric disorders with moderate severity, and social determinants. The exclusion criteria are pregnant women undergoing alcohol or opioid withdrawal, unmanaged diabetes with A1C >12 mg/dl and/or hypertension with BP >160/100, severe somatic disorders, history of epilepsy, history of delirium tremors, acute mania, severe psychosis, severe panic attacks, history of late Alzheimer's with AUD/ODD, unresolved traumatic brain history with AUD, history of conversion disorder, and the social factors of living alone and having no support person (Kamal et al., 2014). The inclusion and exclusion criteria are a crucial aspect of the decision tree for selecting patients for outpatient detoxification.

Once an individual is determined eligible for outpatient detoxification and expresses the willingness to participate then education and resources about detoxification are provided to the patient. A support person accompanies the patient with AUD to the clinic 1 hour before they experience withdrawal symptoms. The patient brings their own food to the clinic. The CIWA protocol is applied to assess and manage the patient using approved medications for detoxification. Patients are usually discharged to return home after 4 to 6 hours of detoxification, showing a consistent CIWA score below 8 for at least 2 hours. The patient returns to the clinic the following morning to undergo the CIWA protocol process (U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019).

The patient with OUD arrives at the clinic in a state of mild to moderate withdrawal. The COW protocol is used to assess and manage the patient using approved medications. The patients are usually discharged home after consistent COW scores below 6 for 2 hours.

Detoxification at the stabilization stage is determined successful when the AUD patient's CIWA score consistently stays below 8 for 2 days, and the OUD patient's COW score remains consistently below 6 for 2 days. The use of FDA-approved medications for this stage of detoxification is essential for an optimal outcome (U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019).

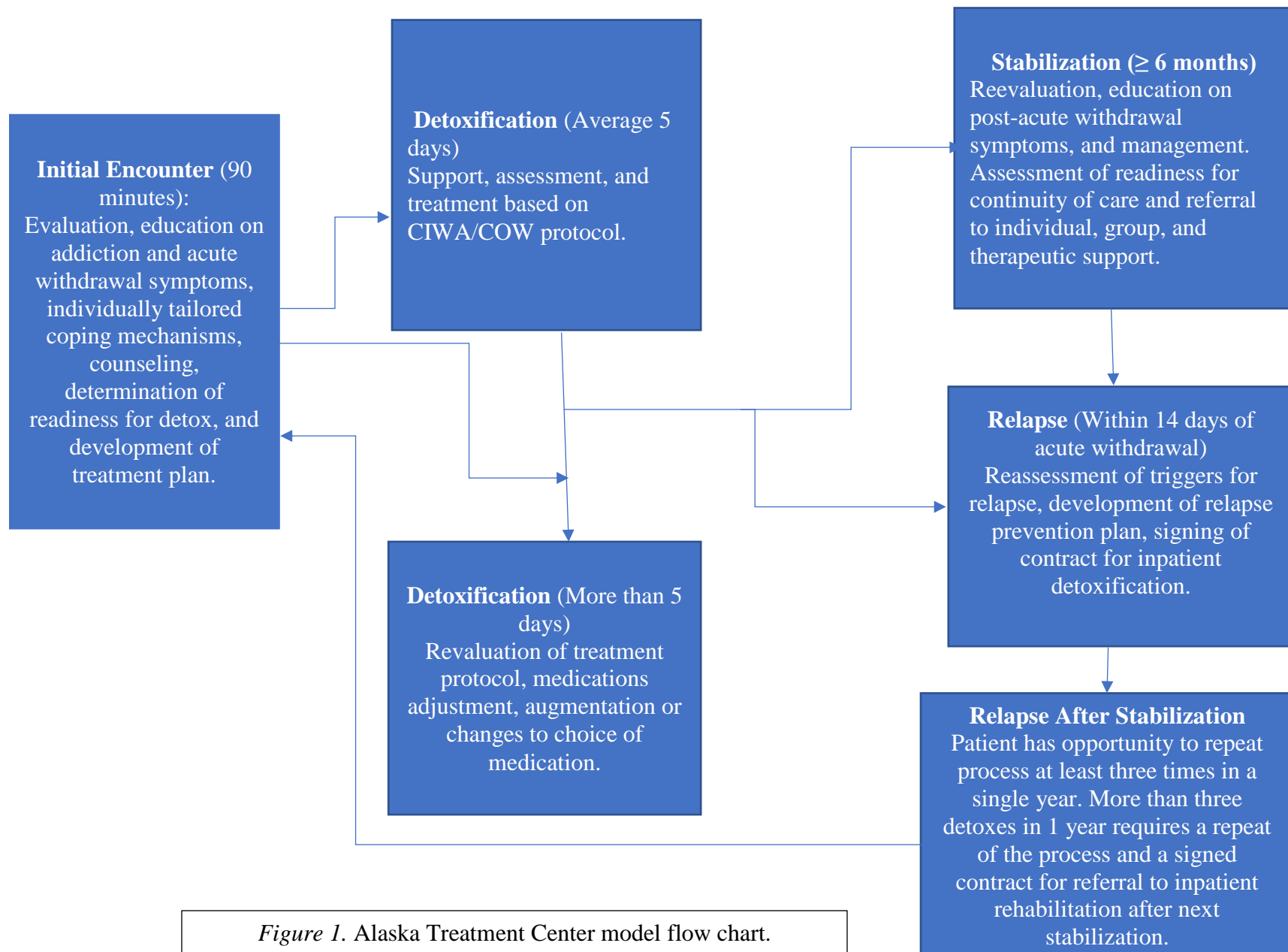
Assessment of readiness to continue to the next phase of substance treatment is vital to a patient's recovery because detoxification is not substance treatment; it is a principal foundation for successful substance treatment. Education and resources are provided to patients on maintenance drugs, individual therapy, and group therapy. Some patients elect to receive only maintenance drugs monthly or daily for AUD or biweekly to monthly for OUD. Most patients receive maintenance drugs and continue counseling and behavioral modifications through group and individual therapy (U.S. Department of Health and Human Services, National Institute of Mental Health, and Substance Abuse and Mental Health Administration, 2019).

Numerous studies have reported that post-acute withdrawal symptoms, such as depression, anxiety, insomnia, and negative alterations in emotions, linger for a substantial period after detoxification (Bondi, 2016; Economidou et al., 2011; Heilig et al., 2010).

Implementing a relapse prevention plan has been a strong predictor of long-term recovery. The modified ATC model based on the significant findings of after treatment ( $\rho = 0.439$ ,  $p = 0.005$ ) integrates relapse prevention strategies that include assessment of physical, social, and

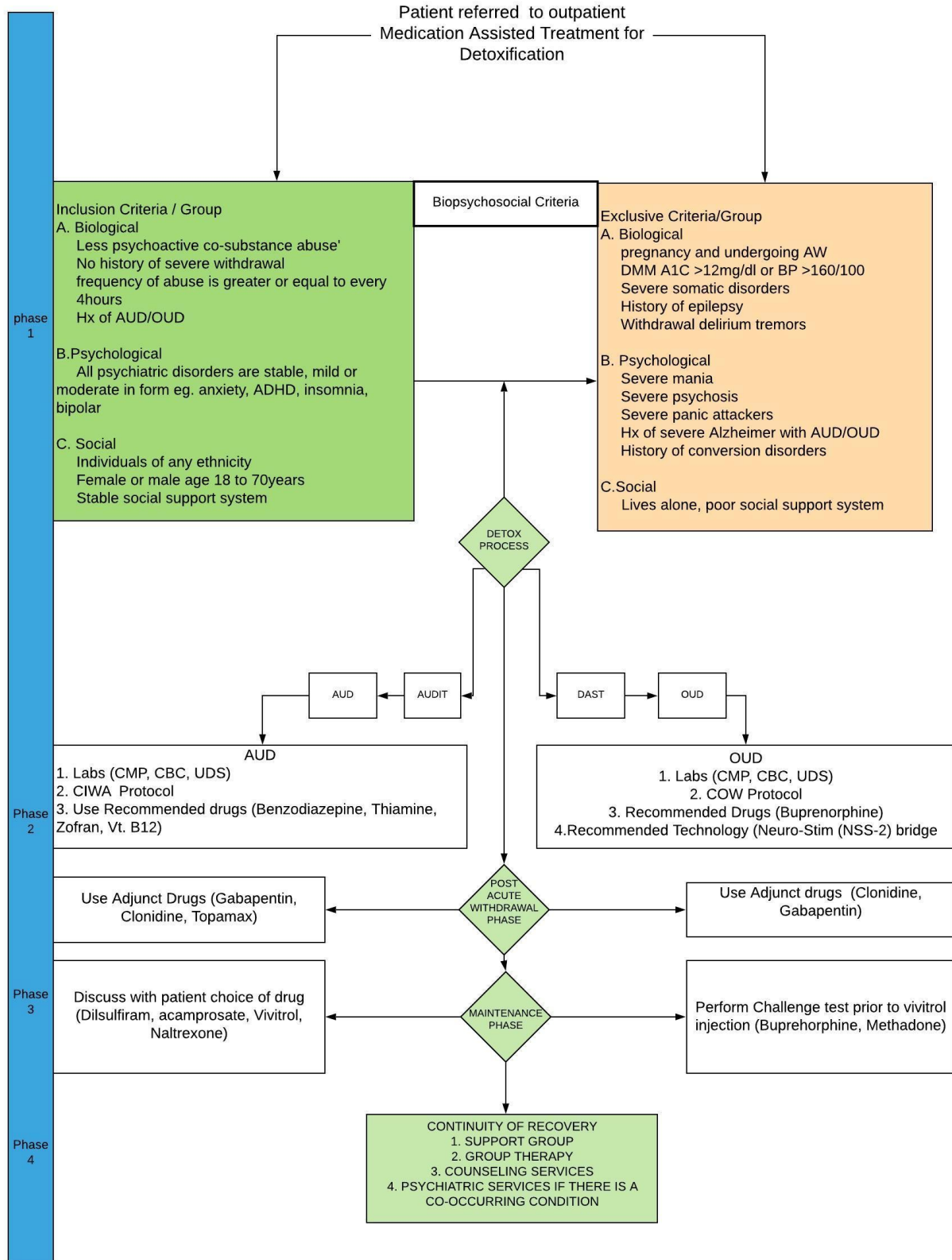
psychological factors that will contribute to post-acute withdrawal symptoms, identification of triggers, plan development, and the signing of a contract providing for referral to long-term inpatient treatment if the patient relapses more than three times within 1 year of detoxification. The prevention and management of post-acute withdrawal symptoms are revisited and emphasized after stabilization when the patient is cleared to start pharmacological maintenance therapy. Following this process will address some of the concerns expressed by participants indicated in Q7 and Q8.

Based on the project's findings, the ATC model modifies the decision tree to facilitate the appropriate responses of patients to care as indicated in the PICO. Development of the flow chart into the electronic system to improve the during treatment aspect based on a weak and insignificant result of the findings,  $\rho = 0.047$ ,  $p = .769$ , translates into the DNP essential for the clinical scholarship and analytical method for evidence-based practice including the utilization of information technology. This aspect of the project is a critical clinical analysis of the before-treatment responses, which inevitably reflects the patients' experiences during detoxification but shows low statistical significance because of inadequate variability (American Association College of Nursing, 2006).



*Figure 1.* Alaska Treatment Center model flow chart.





An Algorithm for Detoxification of Alcohol/Opioid Withdrawal in an Outpatient MAT Program

Figure 2.

**DNP Essentials V and VI**

Health-care policy for advocacy in health care and interprofessional collaboration for improving patient and population health outcomes represents DNP Essentials V and VI, respectively (American Association of College of Nursing, 2006). This project led to building a new network and collaborating with different disciplines to ensure the quality of care for patients who undergo outpatient detoxification at ATC. The interprofessional team include a family nurse practitioner, psychiatric nurse practitioner, behavioral medicine physician, and a Ph.D. prepared psychologist.

The project's findings led to bringing other experts onboard and a potential collaboration with Providence Family Medicine to consider starting a fellowship in addiction medicine that will train medical and nurse practitioners interested in outpatient detoxification to provide quality care for individuals diagnosed with the disease of addiction (American Association College of Nursing, 2006).

Limiting DNP Essential VI (Interprofessional collaboration for improving patient and population health outcomes) solely to the DNP project period will rule out what the DNP programs prepare graduates to accomplish in this area. The program's organizational leadership component provided the opportunity to explore entrepreneurship and leadership skills through interprofessional collaboration to accomplish the Institute of Medicine's (IOM) mandate in a safe, timely, effective, efficient, equitable, and patient-centered care in a complex environment. The platform to accomplish these mandates has been created through interprofessional collaboration with the School of Social Work and Human Services that led to a SAMSHA grant of \$250,000 to develop and promote substance abuse education in Alaska. Supporting the SAMSHA grant's work with outcomes of this project will enhance the consultative and

leadership skills of the intra- and interprofessional teams so they may create change in the promotion of alcohol and substance abuse education and treatment (American Association College of Nursing, 2006).

According to the IOM Committee on Quality of Health Care in America (2001), which serves as the foundation for the DNP essential on health-care policy, the graduate is expected to design, implement, and influence health-care policies defining financing, practice regulation, access, safety, quality, and efficacy. This project implementation addressed the practice regulation, quality, and efficacy revealing data that shows areas where ATC provides quality of care and areas needing organizational change. Identifying the strategic improvement areas that led to the biopsychosocial detoxification model's modifications provides the opportunity to address access, safety, and financing in outpatient detoxification (IOM Committee on Quality of Health Care in America, 2001).

### **DNP Essentials VII and VIII**

Essential VII refers to clinical prevention and population health for improving the nation's health. Outpatient detoxification is a secondary preventative service that saves patients from fatality and recidivism and enhances relapse prevention through continuity of care. The data collection and analysis of the data from participants who underwent outpatient detoxification supports the transformation of alcohol and opioid treatment in outpatient settings. A promotion of outpatient detoxification resulting from this project contributes to reducing fatality from OUD and AUD. A comprehensive strategic improvement area determined from the data analyses led to the modification of the biopsychosocial model and the logic model that provided futuristic insight based on the ATC impacts on individuals struggling with the disease of addiction who underwent detoxification. A detail of the logic model aligning with DNP

Essential VII is detailed in the implication and empirical analysis (American Association of College of Nursing, 2006).

DNP Essential VIII refers to advanced nursing practice. Essential VIII is threaded throughout the entire DNP program. The nursing practice's project advancement encompasses all the seven objectives for a graduate DNP program under Essential VIII. This project's most unique accomplishment in advancing nursing practice is that it introduces specialty focus: addiction medicine missing in graduate nurse practitioner programs; although some nurse practitioners have waivers to prescribe Suboxone for patients with OUD. There is inadequate knowledge in providing quality addiction treatment for patients. This lack of education continues to increase opioid and benzodiazepine prescription among providers without training in the fundamentals of addiction medicine. The designing of the components of the biopsychosocial model (i.e., flow chart, theory of change, and logic model) illustrate the advanced nursing practice knowledge and analytical skills in implementing change in the organization, administration, and education (Ho & Adcock, 2017). The dissemination of this project to MAT and primary health-care centers will continue to advance nursing practice in addiction medicine (American Association of College of Nursing, 2006).

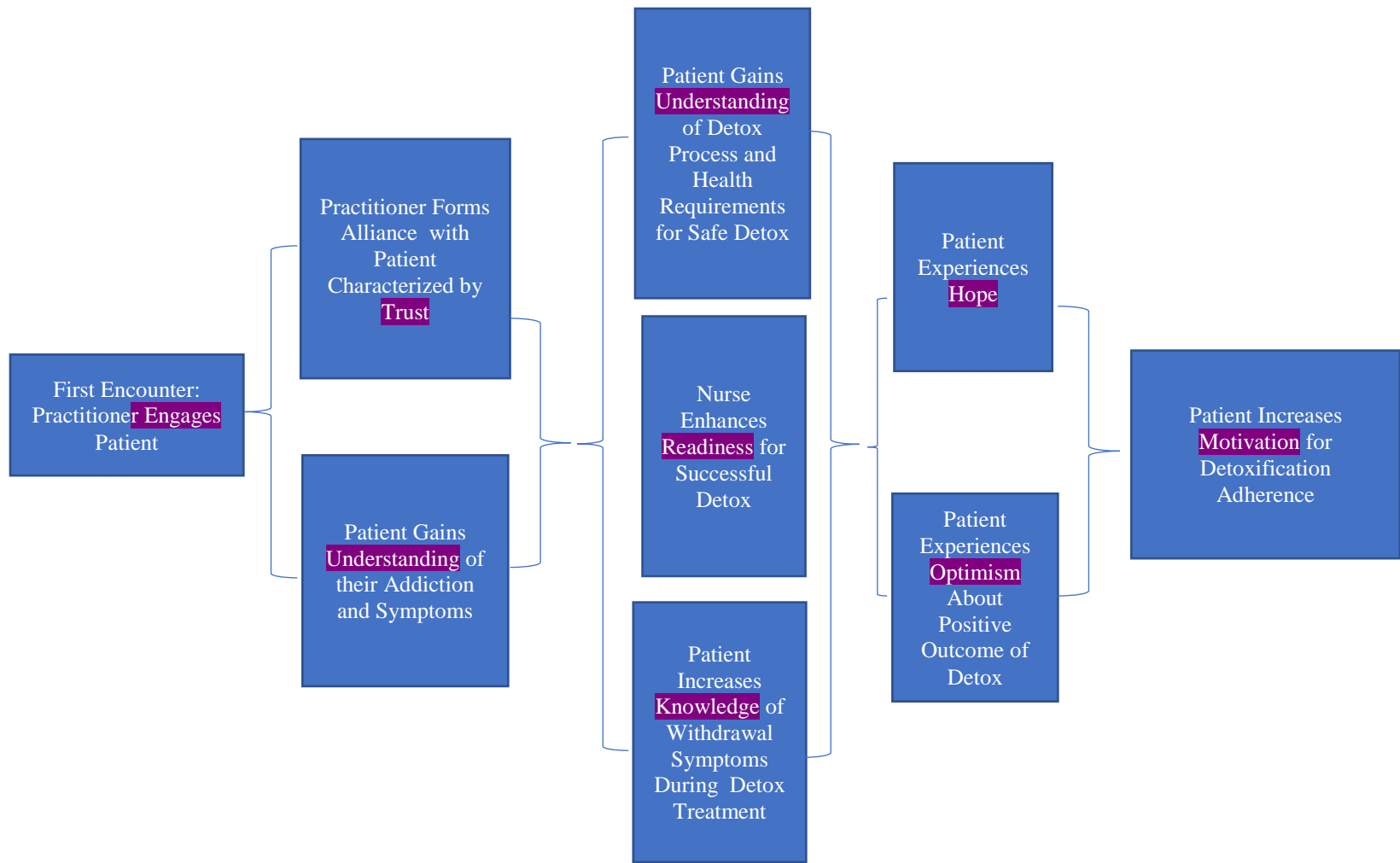


Figure 3. Theory of change for the Alaska Treatment Center Outpatient Detoxification Program/Outcome A.

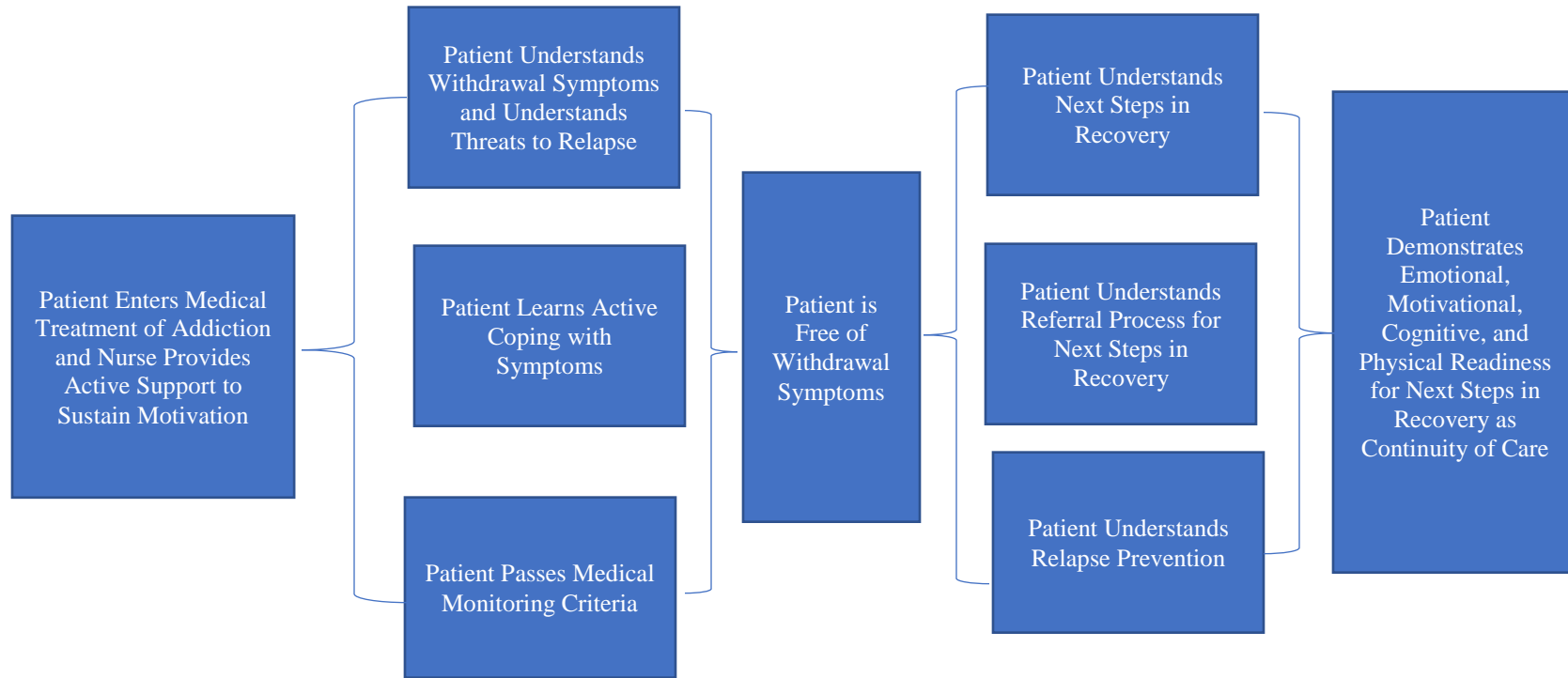


Figure 4. Theory of change for the Alaska Treatment Center Outpatient Detoxification Program/Outcome B.

**Implications and Empirical Analysis: The ATC Logic Model**

DNP Essential VII (clinical prevention and population health for improving the nation's health) is echoed throughout the project but more so in the implication and empirical analysis of the ATC logic model (American Association of College of Nursing, 2006). The design of the logic model encompasses health promotion and risk reduction deduced from the outcomes of the biopsychosocial model of detoxification. The logic model of the ATC is an overview of the problem, available resources, operational activities, outcomes, outcome measures, and impact on the individual, family, and community. The different areas of specialty of the three ATC practitioners address the biopsychosocial needs of the patients. Other specialty clinics in the community refer their patients to ATC mainly for substance treatment. The Narcotic Drug Treatment Center of Anchorage refers most of its patients to ATC for biopsychosocial evaluation and management. The key activities of the model flow in a linear chronological manner are initial evaluation, treatment of withdrawal symptoms, and promotion of continuity of care. The patient's underlying mental health, medical, family, and relationship issues are also addressed. The linear flow of care seeks to follow variables from the initial evaluation to after detoxification. A revised clinical question for the findings in this project would be, "Do the experiences of patients in the initial evaluation influence the outcome of detoxification and continuity of care?"

The observed outcomes of ATC's holistic approach to patient care are stabilization, improvement in emotional regulation, involvement in productive activity, housing stabilization, gaining a driver's license, increased job placement, reduction in suicide, and reduction in accidental death from drug and/or alcohol use. The most apparent impacts of the ATC model of detoxification are the ripple effects of treatment experienced by the patient's family and

consistent referrals from the community by word of mouth. These impacts are particularly significant given the prevalence of opioid and alcohol abuse in the state of Alaska.

The ATC model of treatment has significantly impacted patients. Of the 42 participants, 40 responded that their goals had been met and that they were satisfied with their experience at ATC. We have seen reduced recidivism in patients who underwent detoxification compared to those who did not, many individuals are still attending counseling services, and most have joined a support group.

The sustainability of the ATC model of detoxification focuses on the *why* of outpatient detoxification, followed by the *what* and *how*. A leadership presentation on why some organizations excel pointed out that organizations that are successful in a turbulent market are not solely data- or outcome-driven but share a belief or dream with their customers (Sinek, 2004). ATC believes that outpatient detoxification is feasible, safe, and affordable, a vision shared by most of its customers (patients). Investigating the experiences of these customers buttresses the biopsychosocial model of outpatient detoxification and provides the necessary support for sustainability. The flow chart, theory of change, and logic model derived from the outcomes of the project implementation are means of ensuring a sustainable future for the ATC model of outpatient detoxification. The logic model extrapolates from the design of the aims of the project outcomes in Chapter 1, specifically Aim 4: “What characteristics of the population and their addiction history correlates with patient-centered outcomes of care, satisfaction, and quality?” This is evidenced by the features of the *before* and *after* detox from the project implementation; however, the inferences from the *before*, *during*, and *after* detoxification to modifying the biopsychosocial model are the vehicles for sustainability.



Inputs	Activities	Outcomes	Outcome Measures	Impact
<p><b>Alaska Treatment Center (ATC) provides outpatient detoxification for patients with opioid- and alcohol use disorder.</b></p>	<p>ATC model provides biopsychosocial assessment and ASAM screening.</p>	<p>Individuals experience alleviation of withdrawal symptoms.</p> <p>More than 50% of those who undergo detoxification continue to receive individual and group therapy.</p>	<p>Current Alaska data shows 64 people died from opioid overdose in 2018.</p>	<p>Reduction in hazardous drinking and death from overdose of alcohol and opioids.</p>
<p><b>ATC has two prescribing nurse practitioners, a psychologist, and supporting staff.</b></p>	<p>Implementation of the ATC model involves three tenets: evaluation, detoxification, and continuity of care.</p>	<p>Many individuals express a sense of meaning.</p> <p>Increase in participation in voluntary and productive community work.</p>	<p>The rate of opioid-related hospitalization is 28.5 per 100,000. Total charges for inpatient hospitalization in 2017 were \$23 million.</p>	<p>Reports revealed a significant substantial increase in self-efficacy.</p>
<p><b>ATC provides detoxification for patients seeking detoxification from alcohol and opioids use but some potential patients are unable to</b></p>	<p>ATC model of evaluation employs specific tools such as ASAM criteria, AUDIT, and DAST. The detoxification utilizes CIWA,</p>	<p>Increased avoidance of legal issues, such as DUIs, and reinstatement of driver's licenses.</p> <p>Increase in employment.</p>	<p>Alcohol-induced death in 2018 was 26.2 per 100,000.</p>	<p>Decrease recidivism and improvement in the quality of life.</p>

<b>access this service due to backlog.</b>	COW, and supportive care. The continuity of care focuses on reevaluation of readiness, risk of recidivism, mental illness and function level, innovative recovery support programs, peer support group, individual and group therapy.			
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*Figure 5.* Alaska Treatment Center logic model.

### **Implications for Clinical Practice**

The ATC biopsychosocial model of outpatient detoxification data analysis highlights five strategic pathways to implement change at the organization. These strategic pathways are theoretical, systematic, conceptual, contextual, implementational, and empirical analysis. The flow chart, decision tree, change theory, and logic model—with their key concepts, including the implementation and empirical analyses—provide clinical relevance to the clinical question of the project: What are the substantive improvements the practitioner evaluator can make to an existing model of outpatient detoxification to develop a more patient-responsive approach to care?

The expected outcome from the PICO was an improved intervention model for outpatient detoxification at ATC. The approach used in this project responded to all the subquestions in the clinical inquiry. The subquestion for clinical inquiry 5. What factors of the patient experience are predictive of patient-centered outcomes, satisfaction, and quality of care? The data analyzed from these items provided a clinically relevant tool in developing a logic model as part of the improved intervention model for ATC outpatient detoxification. The logic model will provide concrete and measurable outcomes when utilized with the biopsychosocial model of detoxification.

Although the project revealed limitations, such as a small sample size and lack of variations in data responses, the patients' responses were generally positive regarding the services they received at ATC. Implementation analysis revealed that the services are clinically relevant to patients based on the positive responses from the 42 participants. Further, all responses of Q7 and Q8 substantiate the utilization of the applied criteria for selecting appropriate patients for outpatient detoxification.

The overwhelmingly positive homogeneity of the patient experiences during detoxification is attributable to the fact that the initial evaluation successfully selected patients who were eligible for outpatient detoxification based on the inclusive criteria posited by the project from ASAM criteria and DSM-V. The strategic modification of the ATC model of outpatient detoxification from this project led to the designing of a flow chart, decision tree, theory of change, and logic model to improve clinical practice at the ATC and other addiction treatment facilities and provide education to addiction practitioners. ATC practitioners will find detoxification easy to implement using this flow chart, decision tree, and model. MAT programs, primary health-care facilities, and other addiction treatment programs will benefit from the ATC biopsychosocial model, as will nurse practitioners, physician assistants, and medical doctors interested in the treatment of addiction. The decision tree, for instance, provides the practitioner with a quick guide to the process of detoxification, including specific pharmacology that should be considered.

### **Limitations**

The theoretical framework and logic model evaluation propose different metrics of the patient experience. The results of the analysis of the short generic questionnaire revealed limitations in the instrument for evaluating patient experiences in outpatient detoxification. The items lack variation, which is reflected in the responses and correlation analysis of the data. Although the response rate was 84%, which was greater than the expected response rate of 75%, the instrument and method used for the project require a larger sample size. The sample size from this project was too small to draw general conclusions regarding clinical relevance. Designing a new instrument that incorporates sufficient variations into the assessment of

patients' detoxification experiences is needed. Future studies should focus on designing an instrument that generates variation in patient responses.

Also, this project focused solely on patients with AUD and/or OUD, while a wide variety of substance use disorders exists, which future studies should consider. Future studies should consider examining the outcome variables extrapolated from the logic model, which is beyond this project, to determine the predictive variables for preventing relapse after detoxification and during the continuity of care.

## **Chapter 8: Summary & Conclusion**

The introduction of the MAT program by the SAMHSA with the support of federal administration-approved medications, including counseling and behavior services, is aimed at reducing AUD/ODU across the nation. Anchorage is among the cities across the nation besieged by the alcohol and opioid crisis. The city has numerous outpatient MAT programs and outpatient substance treatment settings that could provide more outpatient detoxification programs. Although the literature supports outpatient detoxification as feasible, safe, and affordable, it does not provide a specific outpatient detoxification model. ATC, located in the heart of the city, is the only treatment center that offers outpatient detoxification based on the biopsychosocial model of detoxification. Since the ATC model of outpatient detoxification seeks to expand treatment through this model, it is necessary to evaluate the patients' experiences to improve clinical practice at ATC and substance treatment.

### **Project Goals**

The overarching goal of the project was to evaluate the experiences of patients from the designed model of outpatient detoxification at ATC, identify innovative practice strategies for improvement of the model, and formulate strategic practice advancement using empirical data from participants to improve the model for clinical practice. The goal epitomizes a discovery in action from the Boyer model of scholarship, in which the search for new knowledge starts with a purpose for that knowledge, a purpose that will address problems, aid society, and brings system change to an organization (Boyer et al., 2015).

### **Methods**

Descriptive statistics of demographic and survey responses were presented using frequencies and percentages for categorical and ordinal variables. Measures of central tendency,

including mean, median, standard deviation, and skewness of each of the survey items were examined. The 45 survey items were condensed into three areas: the initial encounter, the relationship during treatment, and overall impression. Cronbach's alpha coefficient was estimated to test the internal consistency of the instrument, and construct validity was evaluated using Spearman's rank correlation. Statistical significance was set at  $p \leq .05$ . All analyses were conducted using SPS version 26.

### **Implementation & Resources Utilized**

The Generic Short Patient Experiences Questionnaire was modified and approved for use in this project by the UAA IRB. The survey instrument was administered to 42 participants who received outpatient detoxification from ATC and had accepted to participate in the project via email. The findings revealed 100% successful completion rate of detoxification, with a significant correlation between before detoxification,  $\rho = 0.1414$ ,  $p = .007$ , and after detoxification,  $\rho = -0.439$ ,  $p = .769$ .

### **Significance of Results**

The results from the project revealed a variety of experiences of patients who underwent outpatient detoxification at ATC have some similarities and differences. The similarities are consistent with the participants' responses to the before and after treatment experience. The before and after treatment variables revealed that the model utilized needed some modifications and that the majority of patients had a positive experience and would like to see services expanded to other patients.

The during detoxification experiences responses show treatment was safe and effective for patients. The project encapsulates the four stages of the Boyer model of scholarship. A comprehensive literature review was done to guide the project's purpose, design, and

implementation, and discoveries from the results led to modifications of the ATC model of detoxification.

The literature provided a comprehensive interpretation of knowledge in outpatient detoxification of alcohol and substance abuse and the general substance treatment of patients who struggle with addiction and other comorbidities. The project is pragmatic—the modification of the biopsychosocial detoxification is being implemented at ATC to provide quality care for individuals struggling with alcohol and substance use disorder. The application of the implementation of the project's outcomes is expanding the clinic and it is growing at a more rapid rate than anticipated. ATC has started accepting students interested in addiction medicine to intern at the clinic. The teaching aspect of Boyer's model of scholarship is highlighted in the overarching goal of the project, as it contributes to advancing nurse practitioners' practice and education. The ATC biopsychosocial model modification materials allow for future project to test the materials and continue to use them to enhance patient experiences for detoxification.



### **Reflection**

The DNP project undertaken for the past 2 years involved several didactic courses and clinical practicum. In this section, I reflect on my experiences throughout the program and highlight the essentials of the DNP outcomes illuminated in the project: Evaluating the Patient Experience in Outpatient Detoxification: Implications for Improvement of the Early Stages of Alcohol and/or Opioid Use Disorder and Recovery Treatment Process. The impact of the project on both patients and practice will be reflected upon below.

### **Professional Body of Knowledge**

Like other education, the benefits, even if not apparent immediately, eventually manifest in the student's career path. The DNP curriculum has added to my career as an academic and psychiatric nurse practitioner. Pursuing the DNP led to growth in areas of interest in research and practice. My interest in addiction medicine was enhanced through some of the DNP courses that focus on organizational leadership. ATC, a dual outpatient treatment clinic, is a product of the DNP curriculum. I currently have some articles under journal review that emanated from the DNP curriculum.

The DNP curriculum has contributed to my clinical practice but did not reframe my thinking about clinical practice. The curriculum contributed immensely to how I use evidence-based resources in practice—the opportunity to seek grants to promote research utilization in areas of interest and quality patient care.

### **A Summary of the Project and Collegial Relationship**

The DNP project focused on evaluating the patient experience in an outpatient treatment program. This was a retrospective data collection of the patients who underwent detoxification at ATC. The project's purpose included collecting data, identifying strategies from the

improvement of the model that was used to detoxify patients, and formulating strategic advancement using empirical data from the participants to improve the model for clinical practice. Descriptive statistics of demographic and survey responses were presented using frequencies and percentages for categorical and ordinal variables. The survey instrument was administered to 42 participants who received outpatient detoxification from ATC. Analyses of the data revealed 100% successful completion of the detoxification, a significant correlation of the before detox,  $\rho = 0.1414$ ,  $p = .007$ , and after detoxification,  $\rho = 0.439$ ,  $p = .769$ .

My committee chair, Dr. Burdette-Taylor, and members, Dr. David Moxley and Dr. Kristerra Yawea, contributed in diverse ways to this project's success through their guidance and support. My clinical counterpart, Mr. Kevin Barrette, provided the support letter and the staff to facilitate the IRB requirement and the project implementation at ATC.

Dr. Burdette-Taylor edited and guided in many areas. Dr. Yawea also edited and guided in many areas. Dr. Moxley guided in designing the project, giving feedback, and meeting every Monday evening to evaluate and provide guidance. He played a vital role in evaluating the statistical analysis to ensure the chosen method was the most appropriate. Dr. Moxley orchestrated ATC networking with Providence Breakthrough Bridge Program director Dr. Ryan Wallace, who plans to implement an addiction fellow program and collaborate with ATC's expertise. The network with Dr. Wallace offers the opportunity to collaborate with a physician who has expertise in addiction medicine in Alaska. Lastly, the DNP course professor's feedback for NSG 696C has helped put the finishing touches on the project.

### **Outcomes and DNP Essentials**

DNP Essentials I to VIII were integral and foundational to the DNP project. DNP Essential I (scientific underpinning for practice) illustrates how the biopsychosocial model of

detoxification was modified at ATC based on the project's outcome. DNP Essentials II and III highlight the strategic improvement of detoxification by designing the flow chart, theory of change, and utilize a logic model for improving organizational and system leadership and based on clinical scholarship and an analytical method for evidence practice. The incorporation of the biopsychosocial model into the ATC electronic medical record, ICAnotes, and into the policies and procedures of ATC detoxification are outcomes of DNP Essentials IV and V. DNP Essential VI is represented in the continued expansion of ATC and collaboration with JT Morgan Counseling Services, Arctic Recovery, Dena A Coy Rehabilitation, and Providence Family Medicine Breakthrough Bridge Program. DNP Essential VII is also aligned with the outcome logic model development, which postulates how recovery and prevention of relapses through detoxification will improve population health. DNP Essential VIII encapsulates the project's overarching goal by advancing nursing practice to promotes quality of care and disseminates findings to other providers. The DNP project and the course on organizational leadership and system thinking were essential in propelling entrepreneurship in the health-care industry.

### **Perception of the DNP Degree**

I conducted and published some research work before enrolling in the DNP program. I initially wanted to pursue a Ph.D. in clinical pharmacology, but schools of interest required being on campus. As a result, I decided to pursue the DNP degree because I realized genetics and pharmacology courses are included in the DNP curriculum. My thought at the beginning was that it would be a highly clinical focus program in genetics, pharmacology, and other innovative treatments in medicine. It was a challenge because it requires faculty equipped in those areas. Within the last 2 years, the faculty turnover rate created an overly challenging goal. My current view of the DNP degree is the utilization of research for clinical practice improvement.

## **Conclusion**

Evaluating the experience of patients who underwent outpatient detoxification provided the opportunity to examine the current model. The results of the implementation illustrate DNP Essentials I to VIII. The implication of the outcomes cannot be overemphasized for the promotion of quality patient care at ATC. The project has led to a modification of the model concerning the prevention of recidivism and management of relapse as a crucial component of substance use disorder/AUD treatment, which is an underpinning essential of the DNP. Each of the modifications of the model based on patient experiences correlates with the scientific underpinning of practice, organizational systems leadership for quality improvement and systems thinking, clinical scholarship and analytical methods for evidence-based practice, informational systems/technology, and patient-care technology for the improvement and transformation of health care, health-care policy for advocacy in health care, interprofessional collaboration for improving patient and population health outcomes, clinical prevention and population health for improving the nation's health, and advancing nursing practice.

The mining and analysis of the data from the project implementation led to a modification of the ATC biopsychosocial model to encompass theoretical, contextual, conceptual, systematic, empirical, and implementational analysis. The strategic areas of improvement needed yielded the flow chart, modified decision tree, theory of change, and logic model, which are integrated into ATC policies and electronic medical record. Organizational changes such as hiring additional staff and sharing the model with other MAT programs are still in progress. Overall, the project revealed that detoxification is a vital step in substance treatment and may be successfully provided in outpatient treatment settings using the right model of treatment.

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**Appendix A**

**The Generic Questionnaire and Experiences (GS-PEQ)**

1. What was the severity rating of your condition?

- Mild
- Moderate
- Moderate-severe
- Severe

2. Did you have any of the following underlying conditions:

- Major depressive disorder in full or partial remission
- Anxiety disorder in full or partial remission
- Type 2 diabetes with A1C <12
- Hypertension with BP <140/90
- None
- Other. If other, please indicate

3. How would you rate the satisfaction of the following aspect of detoxification received from Alaska Treatment Center?

	<b>Very</b>	<b>Satisfied</b>	<b>Dissatisfied</b>	<b>Very</b>
	<b>Satisfied</b>			<b>Dissatisfied</b>
First encounter with a practitioner (Evaluation) Withdrawal and treatment (Detoxification) Readiness for continuity of care				

4. What is your gender?

- Male
- Female

5. What is your ethnicity?

- African America
- Caucasian
- Hispanic
- Alaskan Native
- Mixed race

6. How old are you?

- 18-29
- 30-39
- 40-49
- 50-59
- 60 and above

7. In your own words how would you describe your detoxification experience at Alaska Treatment Center?

8. Did Alaska Treatment Center help you accomplish your treatment goal?

- No
- Yes

9. How can we improve the quality of detoxification we offer?

10a. Did the clinicians talk to you in a way that was easy to understand?

- Not at all
- To a small extent
- To moderate extent
- To a large extent

10b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

11a. Do you have confidence in the clinician's professional competence?

- Not at all

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To a small extentTo a moderate extentTo a large extentNot applicable

11b. How important was this to you?

Not importantA little importantImportantVery importantOf utmost importance

12a. To what degree did you perceive that the clinicians cared about you?

Not at allTo a small extentTo a moderate extentTo a large extent

12b. How important was this to you?

Not importantA little importantImportantVery importantOf utmost importance

13a. Did you get enough time to talk and interact with the clinicians?

Not at allTo a small extentTo a moderate extentTo a large extent

13b. How important was this to you?

Not importantA little importantImportantVery importantOf utmost importance

14a. Did the other staff talk to you in a way that was easy to understand?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

14b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

15a. Do you have confidence in the other staff's professional skills?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

15b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

16a. To what degree did you perceive that the other staff cared about you?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

16b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

17a. To what degree did you perceive that the other staff cared about you?

- Not at all
- To a small extent

- To a moderate extent
- To a large extent

17b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

18a. Did you perceive the other staff to be interested in your description of your situation?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

18b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

19a. Did you get enough time to talk and interact with the other staff?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

19b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

20a. Were you given the necessary information about how detoxification would be carried out?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent



20b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

21a. Did you get sufficient information about your diagnosis?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

21b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

22a. Did you perceive the treatment you received as suited to your situation?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

22b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

23a. Were you involved in any decisions regarding your treatment?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

23b. How important was this to you?

- Not important
- A little important

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- Important
- Very important
- Of utmost importance

24a. Did you perceive the institution's work as well organized?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

24b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

25a. To what extent did Alaska Treatment Center prepare you for continuity of care after the detoxification?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

25b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

26a. To what extent did the organization work with other facilities to ensure your smooth transition to the next phase of substance treatment after detoxification?

- Not at all
- To a small extent
- To a moderate extent
- To a large extent

26b. How important was this to you?

- Not important
- A little important
- Important

- Very important
- Of utmost importance

27a. Did you have to wait after your initial evaluation to be scheduled for detoxification at Alaska Treatment Center?

- No
- Yes, but not long.
- Yes, quite long.
- Yes, much too long

27b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

28a. Overall, what benefit have you had from the care at the institution?

- No benefit
- Small benefit
- Some benefit
- Great benefit
- Huge benefit

28b. How important was this to you?

- Not important
- A little important
- Important
- Very important
- Of utmost importance

## Appendix B

## Synthesis of Evidence

Author/Date	Setting/type of substance use Disorder	Treatment	Cost	Continuity of care	Success/relapse rate	Risk/signs/symptoms	Successful completion of detoxification	Evidence Level	Quality
RCT Acevedo, Garnick, Ritter, Lundgren, & Horgan, 2016	Outpatient OUD and AUD	Detoxification and engagement	N/A	80% of patients who received detoxification whether inpatient or outpatient continue outpatient engagement.	21% lower rate of relapsing compared to clients who received detoxification without outpatient counseling and psychotherapy.	Patients who continue treatment after outpatient detoxification had lower hazard (hazard ratio = 0.87, $p < .01$ ).	100% of patients with AOW.	1	A
RCT Barry, Vinayaga-Pavan, Turner, & Wong, 2013	Outpatient and inpatient AUD	Detoxification (Benzodiazepines)	Inpatient = €2183.47 Outpatient = €1352.57	Not reported.	N/A	Reported symptoms nausea, anxiety, tremor.	Outpatient 100%. Inpatient 100%.	1	B
Bisaga et al., 2018 RCT	Outpatient OUD	Induction and maintenance (Buprenorphine and naltrexone)	N/A	56% continue care after induction.	Heroin users had a high risk of relapsing (HR 1.81) compared to opioid prescription users during the 7-day transition.	No overdosed or death. The adverse effect was similar in all groups. The NTX/BUP ( $n = 126$ ) rate was 34.9%. NTX/PBO-B ( $n = 126$ ) rate was 24.6%, PBO-N/PBO-B. The adverse effects were symptoms of opioid withdrawal.	90% of patients.	1	A
Corace et al., 2019 RCT	AUD OUD Cocaine	Detoxification	N/A	80% continued care.  8.11% reduction in total number of alcohol-related ED visits.	82% reduction ED revisits in one month ( $p < .001$ ). Significant reduction in alcohol use, depression, and	No risk reported. 95% of patients reported their needs were met.	100% of the patients completed detoxification.	I	A

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Deacon, Hines, Curry, Tynan, & Day, 2014 RCT	Outpatient AUD OUD Cannabis Benzodiazepines	Detoxification Buprenorphine and naloxone, methadone	The authors noted it is feasible and less costly compared to inpatient, but no specific data was given to support the claim.	76% of those who completed detoxification continue care.	76% of those older than 35 years completed compared to 50% of those below age 35.	Not reported.	63% of patients completed detoxification.	I	A
Ho & Adcock, 2017 Systematic review	Outpatient and inpatient AUD OUD	Detoxification	N/A	Two studies reported no difference in the number of patients that continue care after detoxification.  The remaining three studies did not address this outcome.	The rate of completion of detoxification in outpatient was 20% higher than inpatient completion.	The four clinical trials reported no adverse effects in the outpatient setting. The systematic review saw no difference in safety issues between outpatient and inpatient.	Of the 5 studies, 4 reported outpatient rates of completion above 90% and inpatient rates of completion 50% to 78%.	I	A
Johnson & Faraone, 2013	Outpatient OUD	Detoxification (Clonidine, dicyclomine, chlorpromazine, trazodone, bupropion)	N/A	90% of the patients continue psychotherapy. 5% of the patients declined psychotherapy after receiving detoxification. 65% continue to follow treatment.	For sobriety (60%; 95% CI: [49%, 72%]).	Reported symptoms gut cramps, diarrhea, increased pain, sweating, and anxiety.	For completion (92%; 95% CI [83%, 97%])	II	A
Mannelli, Wu, Peindl, Swartz, & Woody, 2014	Outpatient OUD	Induction Maintenance (naltrexone hydrochloride, ibuprofen, cyclobenzaprine, acetaminophen, trazodone, doxepin, lorazepam, hydroxyzine, promethazine, loperamide, clonidine)	N/A	65% continue to follow treatment.	Significant improvement in drug use ( $t = 6.22, p = .0001$ ).	Two patients reported worsening withdrawal symptoms few hours after leaving the clinic	75% of the patients completed induction	II	A
McCarty et al., 2014	Intensive outpatient and inpatient AUD	Detoxification	N/A	Continuity of care 81% outpatient, 37% inpatient at 18 months.	Similar data improvement both outpatient and inpatient.	Not reported.	91% rate of completion for both inpatient and outpatient.	II	A

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Nadkarni et al., 2017	Inpatient and outpatient OUD AUD	Detoxification	N/A	50% for the outpatient group, 36.4% for the inpatient group.	Outpatient group: 33.3%, inpatient group: 14.3% (data from 1 RCT; follow-up 1 month).  Drinking outcomes Outpatient group: 45% good outcome, 17% improved, 28% unimproved, 10% unknown.  Inpatient group: 31% good outcome, 3% improved, 44% unimproved, 19% unknown, 3% dead.	Suicidal ideation: One patient with schizophrenia in the outpatient setting. No difference in the rate of hallucinations Outpatient: 8% Inpatient: 10%.	90% for the outpatient group, 78% for inpatients.	I	A
Sanders et al., 2013	Outpatient OUD	Induction (gabapentin, placebo)	N/A	N/A	Participants had significant reduction of opioids in urine during buprenorphine induction (OR = 0.73, $p = .004$ ).	Mild nausea/vomiting ( $n = 3$ ), sleep disturbance ( $n = 2$ ) increase sweating ( $n = 1$ ) tense muscle ( $n = 1$ ).	The completion rate was similar for both treatment gabapentin ( $n = 10$ ) and placebo ( $n = 11$ ).	I	B
Schmidt et al., 2017	Inpatient and outpatient OUD AUD	Detoxification	N/A	Of 25,354 patients, 39.58% ( $n = 10,034$ ) continue care.	Patients who continue outpatient treatment after detoxification had lower odds of 2-year mortality ( $p < .0001$ for all).	No specific risk related to detoxification was reported.	The completion rate for detoxification was 100% for both inpatient and outpatient.	II	A

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AUD: Alcohol Use Disorder, OUD: Opioid Use Disorder, NTX/BUP: Naltrexone/Buprenorphine, NTX/PBO-BP: Naltrexone/Placebo-Buprenorphine, PBO-N/PBO-B: Placebo-Naltrexone/Placebo-Buprenorphine

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## Appendix C

### Description of the Detoxification Model

Outpatient detoxification can be done in either of these settings: the patient's home and the practitioner's office. Alaska Treatment Center (ATC) performs mostly office-based detoxification and few home detoxifications. ATC has a biopsychosocial model of detoxification. The biopsychosocial model encompasses physiological, psychological, and social determinants.

The detoxification model at Alaska Treatment Center has three stages. The stages are evaluation, stabilization, and readiness for the next phase of substance treatment. The first stage requires a full psychiatric, medical, and ASAM chemical dependency assessment. Based on the evaluation diagnosis of alcohol use disorder (AUD) and/or opioid use disorder (OUD) and its specificity is made. The evaluation of the patient's past and current medical conditions is crucial to determining eligibility. Laboratory tests and screens are done to rule in and out the medical conditions, psychiatric disorders, and the impact of substance use on the individual.

The preceding evaluation categorized patients into the inclusion and exclusion criteria. The inclusion criteria are AUD/OUD moderate dependency, history of moderate withdrawal, frequency of use is greater or equal to every 4-hours, common psychiatric disorders with moderate severity, and the social determinants include males, females, other, African American, Caucasians, Hispanics, age range 18 to 70, and a support person. The exclusion criteria are pregnant women undergoing alcohol or opioid withdrawal, unmanaged diabetes with A1C >12 mg/dl and or hypertension with BP >160/100, severe somatic disorders, history of epilepsy, history of delirium tremors, acute mania, severe psychosis, severe panic attacks, history of late Alzheimer with AUD/OUD, Unresolved traumatic brain history with AUD, history of conversion disorder and the excluding social factor is living alone and having no support person.

When an individual is determined eligible for outpatient detoxification, and readiness is expressed. Education and resources about the process of detoxification are provided to the patient. The patient with AUD is accompanied by a support person and arrives at the clinic one hour before they experience withdrawal symptoms. The patient brings their own food to the clinic. The CIWA protocol is used to assess and manage the patient using approved medications for detoxification. Patients are usually discharged home between 4 to 6-hours of detox after consistent CIWA scores below 8 for at least 2 hours. The patient returns to the clinic the following morning to undergo the CIWA protocol process. The patient with OUD arrives at the clinic in a state of mild to moderate withdrawal. The COW protocol is used to assess and manage the patient using approved medications. The patients are usually discharged home after consistent COW scores below 6 for two hours. Detoxification at the stabilization stage is determined successful when AUD/OUD patient's CIWA score consistently stays below 8 for 2 days and COW scores consistently below 6 for 2 days. The use of FDA-approved medications for this stage of detoxification is essential for a better outcome (ASAM, 2013; SAMHSA, 2019)

Assessment of readiness to continue to the next phase of substance treatment is important to a patient's recovery because detoxification in itself is not substance treatment. Education is provided to patients and resources about maintenance drugs, individual therapy, and group therapy are given to patients. Some patients elect to receive only maintenance drugs monthly or daily for AUD, biweekly to monthly for OUD patients. Most patients receive maintenance drugs and continue with counseling and behavioral modifications learning from group therapy (SAMHSA, 2019).

#### Alaska Treatment Center Biopsychosocial Model for Detoxification Stages



**Appendix D****Cost-Benefit Analysis**

<b>Cost</b>	<b>Month 1</b>	<b>Month 2</b>	<b>Month 3</b>			<b>Total Cost</b>
Paper and ink	\$0	\$0	\$20			\$20
Potential participants	\$25 per person					\$1,250
Second statistician to review data	\$0	\$0	\$50			\$50
Data storage	\$0	\$0	\$0			
Benefit	\$0	\$0	\$0			
Overall Cost	\$1,320					



**Appendix E****Project Time Frame for Completion**

<b>Date Proposed</b>	<b>Activity</b>	<b>Time Frame/Due Date</b>	<b>Expected Outcome</b>
July 6, 2020	Project proposal presentation	1 day	To complete the proposal presented by the end of July 6, 2020.
July 7, 2020	Prepare IRB application	1 week	To complete the IRB forms and have all signees signed and ready for submission within 1 week.
July 20, 2020	Submit full IRB application	1 to 4 weeks	To submit IRB forms by July 20 and receive approval by the end of August 20.
August 20, 2020	Distribute survey and collect data	1 to 2 weeks	To complete the distribution of surveys by the end of August 25 and collect data by September 2, 2020.
August 21, 2020	Notify IRB of any changes	1 week	To notify IRB if the data collection may need some additions beyond the previous request by the end of August 25, 2020.
September 2, 2020	Meeting with Chair and committee	1 week	Submit data collected and data analysis to Chair and committee for review and plan to implement by the end of September 7, 2020.

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September 7, 2020	Implementation Final data collection, analysis and write up	3 weeks	To implement the project at Alaska Treatment Center by the end of September 12, 2020. To complete the final data collection, analysis, and write-up by September 30, 2020.
September 27, 2020	Expert review of analysis and statistics	1 week	To complete expert review and edit by the end of September 30.
November 2, 2020	Meeting with Chair and committee	1 day	To receive approval for selected journals for publication by the end of November 2, 2020.
November 3, 2020	Preparation for publication	2 weeks	To complete publication write-up and submit to at least one peer-reviewed journal by the end of November 20.
February 20, 2021	Preparation for PowerPoint presentation	1 week	To complete the write-up for PowerPoint presentation within 1 week.
April 21, 2021	DNP project defense	2 weeks	To pass the project defense and complete all recommended additions and subtractions the next day.

**Appendix F**

Table 2a

*Oblique-Rotated Principal Component Analysis Loadings—Part A Survey Items*

Variable	PC1	PC2	PC3
Q10a: Did the clinicians talk to you in a way that was easy to understand	0.213	0.198	0.564
Q11a: Did you have confidence in the clinician's professional competence?	0.880	-0.248	-0.051
Q12a: To what degree did you perceive that the clinicians cared about you?	0.749	-0.186	0.383
Q13a: Did you get enough time to talk and interact with the clinicians?	0.695	-0.322	0.422
Q14a: Did the other staff talk to you in a way that was easy to understand?	0.259	0.672	-0.273
Q15a: Do you have confidence in the other staff's professional skills?	0.536	0.735	-0.018
Q16a: To what degree did you perceive that the other staff cared about you?	0.724	0.465	0.149
Q18a: Did you perceive the other staff to be interested in your description of your situation?	0.858	0.271	0.132
Q19a: Did you get enough time to talk and interact with the other staff?	0.802	0.040	-0.062
Q20a: Were you given the necessary information about how detoxification would be carried out?	0.796	-0.226	-0.245
Q21a: Did you get sufficient information about your diagnosis?	0.634	-0.240	-0.265
Q22a: Did you perceive the treatment you received as suited to your situation?	0.816	-0.309	-0.160
Q23a: Were you involved in any decision involving your treatment?	0.748	-0.171	-0.070
Q24a: Did you perceive the institution's work as well organized?	0.758	-0.037	-0.461
Q25a: To what extent did Alaska Treatment Center prepare you for continuity of care after the detoxification?	0.742	0.077	-0.006
Q26a: To what extent did the organization work with other facilities to ensure your smooth	0.678	0.016	-0.284

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transition to the next phase of substance treatment  
after detoxification?

Q27a: Did you have to wait after your initial evaluation to be scheduled for detoxification at Alaska Treatment Center?	-0.076	-0.616	0.020
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Q28a: Overall, what benefit have you had from the care at the institution?	0.542	-0.006	0.640
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**Appendix G**

Table 2b

*Oblique-Rotated Principal Component Analysis Loadings—Part B Survey Items*

Variable	PC1	PC2	PC3
Q10b: How important was this to you?	0.721	-0.276	0.406
Q11b: How important was this to you?	0.818	-0.214	0.366
Q12b: How important was this to you?	0.708	-0.228	0.457
Q13b: How important was this to you?	0.845	-0.102	0.092
Q14b: How important was this to you?	0.670	0.677	0.111
Q15b: How important was this to you?	0.577	0.641	0.253
Q16b: How important was this to you?	0.738	0.547	0.112
Q18b: How important was this to you?	0.842	0.211	0.241
Q19b: How important was this to you?	0.857	-0.072	-0.103
Q20b: How important was this to you?	0.832	0.041	-0.310
Q21b: How important was this to you?	0.837	0.007	-0.065
Q22b: How important was this to you?	0.863	-0.184	-0.001
Q23b: How important was this to you?	0.841	-0.245	0.110
Q24b: How important was this to you?	0.819	0.032	-0.460
Q25b: How important was this to you?	0.709	-0.084	-0.470
Q26b: How important was this to you?	0.687	0.114	-0.610
Q27b: How important was this to you?	0.613	-0.311	-0.032
Q28b: How important was this to you?	0.691	-0.363	-0.058