



Wilderness Therapy

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Introduction & Instructions for Use

Introduction

Behavioral Clinical Policies are a set of objective and evidence-based behavioral health criteria used by medical necessity plans to standardize coverage determinations, promote evidence-based practices, and support members' recovery, resiliency, and wellbeing for behavioral health benefit plans that are managed by Optum®.

Instructions for Use

This guideline is used to make coverage determinations as well as to inform discussions about evidence-based practices and discharge planning for behavioral health benefit plans managed by Optum. When deciding coverage, the member's specific benefits must be referenced.

All reviewers must first identify member eligibility, the member-specific benefit plan coverage, and any federal or state regulatory requirements that supersede the member's benefits prior to using this guideline. In the event that the requested service or procedure is limited or excluded from the benefit, is defined differently or there is otherwise a conflict between this guideline and the member's specific benefit, the member's specific benefit supersedes this guideline.

Other clinical criteria may apply. Optum reserves the right, in its sole discretion, to modify its clinical criteria as necessary using the process described in Clinical Criteria.

This guideline is provided for informational purposes. It does not constitute medical advice. Optum may also use tools developed by third parties that are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

Optum may develop clinical criteria or adopt externally developed clinical criteria that supersede this guideline when required to do so by contract or regulation.

Benefit Considerations

Before using this policy, please check the member-specific benefit plan document and any federal or state mandates, if applicable.

Description of Service

Wilderness Therapy is a behavioral health intervention targeted at children and adolescents with emotional, addiction, and/or psychological problems. The intervention typically involves the individual being immersed in the wilderness or a wilderness-like setting, group-living with peers, administration of individual and group therapy sessions, and educational/therapeutic curricula including back country travel and wilderness living skill development. This therapy aims to remove children and adolescents from the negative influences and destructive patterns in their lives and placing them into a more therapeutic environment. These programs include wilderness boot camps, though many have attempted to differentiate themselves from such types of treatment, which rely heavily on punishment, confrontation, and deprivation in order to gain compliance and obedience. Certain wilderness programs may be nationally certified by agencies such as the Council of Accreditation and the Joint Commission on Accreditation of Health Organizations and/or licensed by state agencies. Wilderness Therapy may be identified by other terms in the research literature, including: "Wilderness Treatment," "Behavior Management Through Adventure," "Residential Wilderness," "Adventure Therapy," "Nature-Assisted Therapy," "Nature-Based Therapy," "Adventure-Based Counseling," "Wilderness Adventure Therapy," and "Outdoor Behavioral Healthcare."

Coverage Rationale

Wilderness Therapy is unproven and not medically necessary for the treatment of emotional, addiction, and/or psychological problems including, but not limited to:

- Adjustment Disorders
- Mood Disorders
- Anxiety Disorders
- Conduct Disorders
- Impulse Disorders
- Social Functioning Disorders
- Substance Related Disorders
- Attention-Deficit Hyperactivity Disorder
- There is inadequate evidence of the safety and efficacy of wilderness therapy for treating these mental health and substance-related conditions. Inadequate study designs, safety concerns, inadequately trained staff, and questions of long-term benefit are key limitations.
- The requested service or procedure must be reviewed against the language in the member's benefit document. When the requested service or procedure is limited or excluded from the member's benefit document, or is otherwise defined differently, it is the terms of the member's benefit document that prevails.
- Per the specific requirements of the plan, health care services or supplies may not be covered when inconsistent with clinical criteria.
- All services must be provided by or under the direction of a properly qualified behavioral health provider.

Clinical Evidence

Summary of Clinical Evidence

The Wilderness Therapy literature contains a number of studies that suggest participants show some level of improvement on behavioral health outcomes and/or recidivism rates for juvenile offenses. However, these results are not conclusive, and there are considerable limitations in the research methodology used to examine many of these programs. Most notably, there is a lack of randomized controlled trials or well-designed cohort studies that would allow causal conclusions about the impact of wilderness therapy to be drawn. There is also a lack of demonstrated durability of effect; few of the reviewed studies included follow-up measures, none of which included follow-up of a comparison group. There is extensive variability in the length, design, and fidelity of the programs themselves as noted by many of the authors of the reviewed research studies. The

reviewed studies did not reveal that wilderness therapy was equivalent to or better than procedures currently in use. Overall, wilderness therapy research currently lacks clarity regarding the impact of different types of outdoor therapies for various populations and diagnoses (Harper et al., 2021; Hoag et al., 2016).

Systematic Reviews and Meta-Analyses

Beck & Wong (2022) conducted a meta-analysis on 11 studies to examine the effectiveness of wilderness therapy (WT) in managing youth delinquency. Both self-reported delinquency and caregiver-reported delinquency were analyzed. Participants (n=1874) were ages 11-26 years, with program duration of 10-90 days, and various forms of individual, group, or family therapy. Activities in the programs were hiking, camping, canoeing, rock-climbing, and shelter building and survival activities. Most of the individual studies reported positive, significant, and moderate to large effect sizes, with the exception of two studies that reported negative and nonsignificant effect sizes. A meta-analysis was calculated of caregiver-reported delinquency that comprised 5 independent studies and used a random-effects model. A large, positive effect size of 1.054 ($Z = 3.171$, $p < .003$) was found. The comprehensive results of the pooled effect showed that WT programming is effective in reducing caregiver-reported delinquency among youth. In the meta-analysis of self-reported delinquency, 9 individual studies found a large effect size of 0.832 ($Z = 5.103$, $p < .001$). These results suggest positive effects of WT programming on self-reported delinquency among youth. While the study shows the potential of WT as an effective tool for managing youth delinquency, numerous limitations and gaps in data were noted. Limitations include a small study pool with lack of moderator analyses, lack of durability data, large variability of interventions and activities, lack of addressing adverse effects, and many studies lacked information regarding sample size.

Stea and colleagues (2022) reviewed seven studies regarding outdoor therapy and family-based therapy. The included studies were experimental in design. Two studies comprised a comparison group, three studies had neither a control nor comparison group, one study included a control group, and one was a single case study. Participants were not randomized and were ages 6-18 years old. Sample size ranged from 221 children and adolescents with 124 families to 32 children and adolescents and families; participant children and adolescents were primarily male. The reasons for referral to therapy encompassed substance abuse problems, behavioral and family difficulties, and/or a psychiatric diagnosis. Interventions across a majority of studies (n=4) were considered wilderness therapy programs with the remainder of program interventions varying by lengths of stay, total time spent in nature, types of outdoor settings, participation of qualified therapists, therapeutic techniques, and intensity of family involvement. Outcomes were measured with various adolescent and family functioning assessment tools. Despite a lack of statistical analysis, the results of these studies showed positive outcomes for adolescents such as overall mental health, enhanced self-concept, greater school success with decreased delinquency rates, and improved family and peer relationships. Studies that included follow-up data ranged from 4 months to 12 months after initiation of the program. These durability data indicated a persistent concern in areas such as family relationships, mental health, and poor school performance. Limitations noted of the studies in this review render conclusive clinical recommendations difficult. Limitations include study design, lack of randomization, differences in characteristics of participants, variation of programs, and low participation of disadvantaged families due to the high treatment cost of wilderness programs. Stea and colleagues acknowledge although this review provides insight, future well-designed empirical studies are needed for guidance in clinical practice and generalizability.

Thomas and colleagues (2022) conducted a critical evidence review to determine the efficacy of green social prescribing interventions and develop recommendations for research and clinical practice. Measured outcomes were any biopsychosocial measures. Six publications were reviewed that included 3 mixed-methods studies, 2 qualitative studies, and 1 randomized controlled trial (RCT). Participants were adults with mental illness, ages 35-70 years, sample sizes were from 9 to 64, with a total of 334 adults across the studies. Intervention format largely varied such as horticulture, art activities, canoeing, and shelter-building. Duration also varied, from 1 week to 12 weeks. Individual study results revealed that all studies reported improvements in psychological wellbeing including mood, self-confidence, and self-worth. Many limitations are noted across the studies such as small sample sizes with lack of statistical power, wide ranging interventions and duration, lack of standardized measurement tools, lack of durability data, difficult to generalize, lack of addressing adverse effects, and lack of robust study design. The authors of the evidence review recommend future high quality research design such as RCTs with detailed information on intervention setting, participant characteristics, and recruitment strategies.

Coventry and associates (2021) completed a systematic review and meta-analyses to investigate the nature-based interventions (NBIs) that are most efficacious and which format and dose is most beneficial. Participants were adults, ages 18 and older, with or without mental health or physical health conditions. Nature-based interventions included independent or group-based

activities that are performed in outdoor green publicly accessible areas with natural vegetation, such as grass, plants, or trees and either man made (e.g., canals; boating lakes) or naturally occurring fresh water (e.g., rivers; ponds; lakes) or saltwater bodies, such as blue spaces. Sixteen studies were randomized controlled trials (RCTs); 18 were controlled studies; and 16 were uncontrolled before and after studies. Risk of bias for RCTs was low to moderate; and moderate to high for controlled and uncontrolled studies. Random effects meta-analysis of RCTs showed that NBIs were effective for improving depressive mood - 0.64 (95% CI: 1.05 to - 0.23), reducing anxiety - 0.94 (95% CI: 0.94 to - 0.01), improving positive affect 0.95 (95% CI: 0.59 to 1.31), and reducing negative affect - 0.52 (95% CI: 0.77 to - 0.26). The most effective interventions were administered between 8 and 12 weeks, and the optimal dose duration was from 20 to 90 minutes. Notable limitations include heterogeneity with insufficient studies to analyze by population subgroup to determine which specific populations benefited the most from participation in nature-based interventions. Additionally, samples sizes are unclear along with too few studies in each meta-analysis to assess publication bias. Lastly, the majority of studies measured short-term benefits at intervention end, lacking follow-up and durability data. The authors of this systematic review and meta-analyses recommend future RCTs to include the utilization of validated mental and physical health outcomes.

Harper and colleagues (2021) completed an umbrella review of existing systematic and meta-analytic reviews that included 14 studies regarding nature-based therapies, forest therapy, horticultural therapy, wilderness therapy, and adventure therapy. The objective of this review was to establish a theoretical framework for practice. Definitions were provided for wilderness therapy and adventure therapy. Wilderness therapy is described as a form of residential treatment, primarily for adolescents with an emphasis on wilderness locations. Adventure therapy is defined as utilizing outdoor activities combined with exploratory learning to help resolve psychological problems. Overall, key findings were positive across the studies. The wilderness therapy reviews evaluated outcomes for social, psychological, and behavioral constructs, and found positive treatment results in the areas of self-esteem, locus of control, behavioral changes, personal effectiveness, clinical symptomology, and interpersonal skills. The adventure therapy reviews suggested that adventure therapy produces moderate short-term outcomes and positive improvements which are durable over time. Limitations among the 14 studies include heterogeneity within interventions and measurement of outcomes; lack of longitudinal assessments; lack of addressing adverse effects; lack of empirical designs; varied populations with varied issues treated; vague indications regarding mechanisms of change. The authors of this systematic review and meta-analyses conclude that future rigorous research is required to formulate a theoretical framework for outdoor therapies practice.

According to Overbey et al. (2021) nature-based interventions show potential viability for vulnerable youth with mental, emotional, developmental, behavioral, or social difficulties. This evidence review included peer-reviewed studies with the focus on ages 10 through 24 years, with individuals that could be described as vulnerable and at-risk for poor psychosocial outcomes due to mental health diagnoses. A total of 35 wilderness therapy studies were identified; 31 original studies and 4 evidence-synthesis reviews. In the 31 original studies, data were obtained from youth in treatment programs (N = 29), parents or caregivers (N = 9), and/or staff members (N = 3). Approximately 18 of the original 31 studies analyzed stand-alone wilderness therapy programs that ranged from 3 – 22 weeks in duration. Largely positive effects were noted throughout these studies on a wide range of measures such as pre and post treatment, symptom distress, self-esteem, self-efficacy, locus of control, problem behaviors, substance use, social interaction, school attendance, recidivism, other psychosocial well-being indicators, and frequently revealed medium to large effect sizes. In addition, follow up durability data ranging from 6 weeks to 18 months, indicated maintenance of positive changes. Limitations of these wilderness therapy studies include small sample sizes, variation of settings such as residential versus community, and lack of clear descriptions of interventions and therapies. The authors of this evidence review encourage future research to include robust study designs to enhance external validity, a thorough analysis of specific interventions, and an emphasis of generalizability.

Atkins et al. (2020) completed a systematic literature review of 39 articles regarding nature-based therapy (NBT) for adolescents. Common findings throughout the articles suggested that NBT decreased psychosocial symptoms. In addition, NBT showed increased durability when compared to traditional psychotherapy. Interventions considered effective included strong therapeutic alliance, encouraged introspection, reinforcement of self-efficacy, improved social skills, and a high-accountability milieu. Future research is needed to standardize NBT evidence-based interventions and guidelines. The authors of this literature review conclude that future larger controlled trials are required to investigate the efficacy of NBT and its relation to psychiatry.

According to Weeland et al. (2019), particularly in children, increased exposure to nature appears to have positive benefits to cognitive, affective, and behavioral self-regulation. Two meta-analyses were conducted on the effect of exposure to nature on

self-regulation of schoolchildren (Mean age=7.84 years; SD=2.46). The studies included reviewed the association between exposure to nature and cognitive and affective self-regulation, or behavioral manifestations, the children in the studies were ages 4-12 years old, and the studies were peer-reviewed journals written in English. The 3-level meta-analyses showed small, but significant positive overall relationships of nature with self-regulation in both correlational (15 studies, $r = .10$; $p < .001$) and (quasi-) experimental (16 studies, $d = .15$; $p < .01$) studies. Moderation analyses revealed no differential associations based on most sample or study characteristics. However, in correlational studies the type of instrument used to measure exposure to nature (index score of nature vs. parent-reported exposure) significantly moderated the association between nature and self-regulation. Stronger associations were identified when exposure to nature was assessed via parent-reports than via an index such as by a normalized difference vegetation index (NDVI). The results reveal that nature may be a promising tool in stimulating children's self-regulation, and perhaps preventing child psychopathology. The authors emphasize that nature interventions can easily be implemented in a variety of settings and exposure to nature is affordable and safe. The authors of this meta-analysis acknowledge that limitations exist with a need for more rigorous experimental studies, using theoretically based conceptualizations of nature, and validated measures of nature and its recognized outcomes.

Djerneris et al. (2019) completed a systematic review and meta-analysis on 25 studies, examining 2990 participants regarding nature-based mindfulness. The included studies revealed that nature-based mindfulness has a positive effect on psychological, physical, and social conditions. When compared to mindfulness conducted in non-natural settings, nature-based mindfulness revealed moderately superior outcomes. The analysis showed that forests/wild nature and informal mindfulness were found to increase positive health outcomes based on large differences in effect size. However, limitations noted that these outcomes lacked significance due to the small number of studies. The authors recognize that the overall low quality of the included studies poses a risk to the outcome's validity. In addition, the generalizability is limited due to the heterogeneity of the participants and intervention characteristics. Lastly, the authors of this systematic review and meta-analysis acknowledge that more research and investigation is needed regarding mindfulness in the setting of nature.

Fleischer and colleagues (2017) completed a meta-analysis which includes 30 studies; 53 effect sizes, 1802 subjects, 39 adventure therapy samples and 21 control samples. Participants had a mean age of 18 years and 69% were male. Participants were either at risk or in treatment for behavioral or mental health issues. This meta-analysis examines adventure therapy programs on three components regarding self-concept: locus of control, self-efficacy, and self-esteem. The results revealed that short-term effect sizes of the impact of adventure therapy on self-concept were moderate for both uncontrolled effects ($g = 0.51$) and controlled effects ($g = 0.56$). There was no evidence for a difference between the effects on locus of control, self-efficacy, or self-esteem. The identified high heterogeneity of effect sizes could not be explained by any of the examined moderating variables. The follow-up effects confirmed long-term self-concept changes. Fleisher et al., conclude that psychological processes involved in adventure therapy should be the emphasis on future research, in addition to a goal of high methodological quality.

Clinical Trials & Studies

Roberts and colleagues (2017) conducted a 3-year longitudinal assessment of outcomes in outdoor behavioral health (OBH) care. The study involved a convenience sample of 186 volunteer participants (age 18-32), drawn from clients of an OBH program in the southwestern United States. Participants were eligible if they completed the program's 35-day minimum length of stay requirement. Length of stay decisions (ranging from 5-22 weeks) were made on the basis of client progress and establishment of a discharge plan. Participants mostly had a primary diagnosis of either a mood disorder, substance use disorder, or anxiety disorder. All participants completed the Outcome Questionnaire (OQ[®] 45.2) six times, between week 1 and 18-months post-discharge follow-up. Treatment was provided weekly in individual and group therapy sessions facilitated by a therapist. The therapist oversaw the clinical assessment, treatment planning, and service delivery. The weekly treatment plan provided structure and guidance for the wilderness staff and clients in how to merge therapeutic and relational goals into the daily wilderness therapy. Results found participants to show statistically and clinically significant change in their time in OBH care, and gains were maintained up to 18 months post-discharge. These gains appeared to be maintained as participants integrated back into the community. Roberts and colleagues note that the use of self-report data and only one outcome measure limit the findings of the study. Additionally, the study used a convenience sample and a within-subjects design without a control group, allowing potential threats to internal validity.

Bowen and colleagues (2016) evaluated Wilderness Adventure Therapy (WAT) outcomes based on participants' pre-and post-program and follow-up responses to self-report questionnaires. A sample of 36 adolescents, ages 12-18 years old with mental health issues all completed a 10-week manualized WAT intervention. The WAT intervention is described as a 10-week, part-time

program, which is facilitated by three WAT practitioners for six to eight participants. WAT has four components that includes week 1 of screening, assessment, engagement, orientation, and discussion of client goals. Treatment weeks 2–9 involves seven day-based adventure activities (e.g., bushwalking, rock-climbing, cross-country skiing, and white-water rafting), plus two-day and five-day training excursions. Parents, teachers, and support workers also participate in up to eight weekly indoor adventurous problem-solving activities integrated into group therapy. Termination at week 10 includes a review of met and unmet goals, identification of post-treatment goals and strategies, and identifying psychosocial supports. Results found the short-term standardized mean effect size to be small, positive, and statistically significant. Additionally, moderate, statistically significant improvements were seen in psychological resilience and social self-esteem. Short-term changes were largely retained at the three-month follow-up period. The authors conclude that while these findings indicate WAT to be effective for clinically symptomatic people, future research utilizing a comparison or wait-list control group and a larger sample size would be necessary to demonstrate the effectiveness of WAT interventions. Additional limitations noted include the evaluation design, reliance on self-reported data, regression to the mean, missing data, and use of non-validated questionnaires.

Hoag et al. (2016) conducted a study over 3 years to measure the efficacy of wilderness therapy and identify the associated mechanisms of change. Between 2007 and 2010, 332 adolescents between the ages of 13-17 years participated in at least 5 weeks of a wilderness program. Included in the 332, a total of 118 adolescents and their parents participated. The most common category of primary diagnoses of participants was mood, behavior, substance-related, and anxiety. The Youth Outcome Questionnaire Self-Report 2.0® (Y-OQ®SR 2.0), Life Effectiveness Questionnaire (LEQ), the Hope Scale (HS), and the Treatment Expectancy/Credibility Questionnaire (CEQ) were used for adolescent outcomes, while the Y-OQ® 2.01 was used for parent outcome results. Significant improvement ($P < .001$) was noted on the self-assessments from intake to discharge for HS, LEQ, and CEQ. The parent scores on the Y-OQ®2.01 from intake to discharge was clinically and statistically remarkable ($P < .001$). The authors of this study note that the outcome differences for their sample between males and females was near significant and requires further research. The authors of this study report low post-discharge follow-up rates, and no statistical analyses could be completed. The limitations of the study were identified as overall low parent participation and post-discharge follow-up rates.

Zachor and colleagues (2016) examined the effectiveness of an outdoor adventure program in children with autism spectrum disorders (ASD). The study included 51 participants (age 3-7) who were currently enrolled in ASD special education programs. All individuals used the same educational protocols, and the intervention group ($n = 30$) also participated in the outdoor adventure program for 13 weeks. The control group was not significantly different in age, sex, cognitive or adaptive behavior measures. Each session lasted 30 minutes and occurred in community parks near the participants' schools. Four devices were used in each session: two-way climbing rope ladder, rope elevator, rope bridge, and a hammock and rope swing. Each session began with an opening song, followed by the children using the rope devices, moving from one to another throughout the session. These activities required communication between the child, instructor, and peers. At the end of the session, everyone gathered for a short closing meeting, in which the children were asked, 'how was it' and, 'what activities did you enjoy doing.' Lastly, the group sang a closing song together. The results found the outdoor adventure program intervention to have a significant impact on ASD symptom severity, as measured by subdomains of the Social Responsiveness Scale. The authors of this study conclude that the outdoor adventure program may be an effective intervention in addition to traditional treatments in young children with ASD. They encourage future studies to examine the outcome of such programs delivered for longer periods of time and maintenance of the achievements over time.

Guideline & Consensus Statements

American Academy of Child and Adolescent Psychiatry (AACAP)

- The AACAP published principles of care for treatment of children and adolescents with mental illness in residential treatment centers (Houston et al., 2010). The AACAP notes that some state statutes define “boot camps” or “wilderness therapy programs” as residential treatment centers. These programs, however, frequently do not provide the range or intensity of services that would meet the definition of a clinical residential treatment center. Additionally, many of these programs do not engage in the use of a multidisciplinary team including psychologists, psychiatrists, pediatricians, and licensed therapists who are constantly involved in the treatment plan of the individual.

Other Reports

An UpToDate review, Bukstein, O. (2022) states:

Longer-term treatment for adolescents with SUD in residential programs, therapeutic communities, and wilderness/adventure programs such as Outward Bound may be available for some adolescents with SUD who have failed

less intensive treatment. There are no randomized clinical trials of the efficacy of these interventions in adolescents. Observational study of substance use before and after these programs (more extensive for therapeutic communities) provides limited support for them.

U.S. Food and Drug Administration

Wilderness Therapy programs are not subject to regulation by the FDA.

Centers for Medicare and Medicaid Services

Medicare National Coverage Determinations (NCDs) and Local Coverage Determinations (LCDs) for Wilderness Therapy programs could not be identified.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member-specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other clinical criteria may apply.

Procedure Codes	Description
	There is no specific procedure code for Wilderness Therapy
T2036	Therapeutic camping, overnight, waiver; each session
T2037	Therapeutic camping, day, waiver; each session

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Revision History

Date	Summary of Changes
03/15/2021	Annual Update
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Appendix

Additional resources considered in support of this policy:

Tucker, A.R., Norton, C.L., DeMille, S.M., & Hobson, J. (2015). The impact of wilderness therapy: Utilizing an integrated care approach. *Journal of Experiential Education*, 39(1), 1-16.