



Research Report

Effectiveness of Mandated Treatment Programs for Professionals with Substance Use Disorders: A rapid review

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Introduction

In recent decades, specialized programs have been developed to address substance use disorders (SUDs) among professionals in high-risk occupations. These programs are designed for individuals whose impairment could pose significant risks to public safety, such as healthcare providers and aviation professionals. They aim to promote recovery, ensure public safety, and preserve the careers of affected professionals. A key feature of many of these programs, particularly in North America, is the component of mandated or coerced treatment. This approach often requires professionals to participate in the program as a condition of maintaining their license or avoiding more severe consequences. The mandated nature distinguishes them from voluntary treatment options and aims to ensure compliance and long-term recovery. These initiatives typically offer comprehensive support, including assessment, treatment referral, and ongoing monitoring. While each program has unique features tailored to its specific profession, they share common goals and structures. The programs have been implemented across various safety-sensitive professions, with notable examples in medicine, nursing, and aviation.

This document highlights the results of a rapid review of existing peer-reviewed literature on mandated treatment for professionals, examining their components and outcomes. By summarizing the best-available evidence, we aimed to provide insights into the effectiveness of these programs and identify areas for further research and improvement.

Research Question

In professionals in high-risk occupations with substance use disorders, what is the effect of mandated treatment programs compared to voluntary treatment or no treatment on outcomes such as program completion rates, occupational status, abstinence/relapse rates, and patient satisfaction over short-term and long-term periods, and what are the key components of effective mandated treatment programs.

Methods

The search strategy was conducted in two databases (Medline and Google Scholar) and limited to human studies written in English in the last 17 years (January 2008 – December 2024). The full search strategy is listed in Appendix I.

Eligibility Criteria

The eligibility criteria were established using the Population, Intervention/Exposure, Comparator, Outcomes, and Study design (PICOS) framework, as follows:

- Population: Working professionals in safety sensitive occupations who have received mandated treatment for SUD.
- Intervention/Exposure: Mandated treatment.
- Comparator: Voluntary treatment or no intervention.
- Outcomes: Outcomes for professionals who have received mandated treatment, as well as measures used in the studies.
- Study Design: Primary human studies of all designs (e.g. experimental studies, quasi-experimental studies, observational studies).

Results

Study Selection

The databases searched yielded 547 citations (Medline $k = 136$; Google Scholar $k = 411$). Titles and abstracts were screened by two reviewers (VG and AK) working independently using inclusion and exclusion criteria. Reference lists of assessed articles and citations of included articles were scanned to identify other potentially relevant articles. This was done until no new relevant articles emerged. We identified twenty-two evidence documents published between January 1, 2017, and December 31, 2024, relevant to the review question.

Study and Participant Characteristics

Most of the sources were from United States ($n=17$), with additional sources from the United Kingdom ($n=2$), Canada ($n=1$), Australia ($n=1$), and Spain ($n=1$). Studies included physicians ($n=16$), nurses ($n=4$), pharmacists ($n=1$), and dentists ($n=1$). Sample sizes ranged from 11 to 904 participants. Most participants were male, with percentages ranging from 60% to 100% in the studies that reported sex. Substance use patterns varied, with alcohol ($n=8$) and opioids ($n=8$) being the most reported substances of abuse. Other studies reported on polysubstance use or did not specify the type of substance. Most studies focused on monitoring programs for healthcare professionals with SUDs, with follow-up periods ranging from 2 to 7.8 years. The studies examined outcomes such as abstinence rates, work retention, and program completion rates.

Outcomes

Program Completion Rates

Evidence from systematic reviews and primary studies suggests that program completion rates for healthcare professionals with SUDs vary across professions and studies. A systematic review found that program completion rates were approximately 70-80% for physicians and 47-64% for nurses with SUDs (1). A large study of 904 physicians enrolled in 16 physician health programs in the United States reported that 80.7% completed the program (2). An Ontario study of 100 physicians found that 85% completed a 5-year monitoring program (3). A study from Spain reported that 87.3% of 126 healthcare professionals finished a 2-year long-term follow-up program (4). A study of nurses found a 61.5% completion rate for their program (5). For aviation professionals, the Flight Attendant Drug and Alcohol Program (FADAP) reported a treatment completion rate of 93.3% for flight attendants (6).

Overall, program completion rates for professionals with SUDs typically range from about 60-90%, with rates tending to be higher than those of the general population (7). These high completion rates suggest that programs for professionals who have been mandated or coerced into treatment are generally successful in retaining participants through completion.

Occupational Status

Two evidence syntheses and six single studies reported high rates of work retention for healthcare professionals after treatment for SUDs. A systematic review found that 78-95% of physicians were practicing medicine at follow-up (1). A meta-analysis calculated a pooled work retention rate of 77% (95% CI = 61-90%) across studies, with a follow-up of up to 8 years (8).

Among the single studies, McLellan et al. (2008) reported that 78.7% were licensed and working at 5-year follow-up (2). Other studies reported rates between 82% and 90% for physicians practicing

medicine at follow-up (9-12). Fogger et al. (2009) reported similarly high rates for nurses (90% were in active employment post treatment) (10).

For aviation professionals, the Human Intervention Motivational Study (HIMS) program for pilots reported that approximately 85% of participants successfully completed the program and return to flying duties (6). FADAP reported that 93.3% of flight attendants who completed treatment and were not lost to follow-up had returned to work at 1-year post-treatment (6).

Overall, these studies consistently show high rates of return to practice and work retention for healthcare and aviation professionals who complete SUD treatment and monitoring programs, typically ranging from about 70% to 95%.

Health Related Outcomes

Two evidence syntheses and nine single studies reported on abstinence or relapse rates for healthcare professionals with SUDs who participated in rehabilitation programs. Weenik et al. (2017) reported rates of abstinence across all studies ranging from 56-86% for physicians, 60-94% for nurses, and 75-81% for healthcare professionals in general (1). The overall pooled abstinence rate across studies in a meta-analysis by Geuijen et al. (2021) was 72% with a follow up duration of up to 8 years (9). The single studies from the USA also reported positive outcomes, with abstinence rates typically between 70-95% (2, 10, 13, 15, 16). Studies from Canada, UK and Spain report abstinence rates between 71-78% (3, 5, 12). For aviation professionals specifically, HIMS for pilots reported high rates of abstinence of 86% (6). FADAP found that a majority of treatment episodes did not result in relapse (16% of all unique treatment episodes were relapse episodes) (6). Several studies noted that these rates were comparable to or better than those seen in the general population receiving SUD treatment (2,16). Multiple authors highlighted that the structured monitoring and support provided by these programs likely contributed to the high rates of sustained abstinence (2, 15).

Two studies reported on mental health outcomes for healthcare professionals participating in remediation programs. One study observed significant reductions in psychological distress at 8 and 26-week follow-ups among doctors and dentists in the UK (11). Another study found that mental health scores showed substantial improvement (16).

Overall, the literature suggests that mandated treatment programs for physicians, nurses and aviation professionals can achieve favorable abstinence outcomes for participants with SUDs, with rates typically ranging from about 70% to 95%. These positive outcomes should be considered in the context of the unique advantages and resources available to these professional groups compared to the general population seeking SUD treatment. Healthcare and aviation professionals typically have access to Employee Assistance Programs (EAPs), coverage for treatment costs, and relatively immediate access to care. These factors, combined with the structured monitoring and support provided by specialized programs, likely contribute to the high rates of sustained abstinence observed.

Patient Satisfaction

Two studies reported high satisfaction levels among doctors and dentists participating in a physician health program for mental health and substance abuse issues. Brooks et al. (2013) reported satisfaction scores of 91.8% at 8 weeks and 98.9% at 26 weeks (11). Merlo et al. (2010) reported that participants were generally satisfied with the program, and 92.5% indicated that they would recommend it to others (13). For aviation professionals, FADAP reported that 93.3% of flight attendants who completed treatment and were not lost to follow-up were satisfied with the program at 1-year post-treatment (6).

Factors Affecting Outcomes

Three studies reported on factors that influenced treatment outcomes. Smiley et al. (2021) found that successful program completion for nurses correlated with longer time spent in group meetings and more frequent check-ins (4). Bruguera et al. (2020) reported that good adherence to follow-up psychotherapy groups predicted lower risk of relapse and higher rates of abstinence among physicians (5). Angres et al. (2013) identified that antisocial personality, female gender, and alcohol dependence were associated with poorer outcomes in a univariate analysis (8).

General Components of Programs

Program Structure and Governance

Physician Health Programs (PHPs) are typically independent, non-profit organizations or components of state medical associations or licensing boards. A national survey of 42 PHPs found that 54% were independent non-profits, 35% were part of state medical associations, and 13% were components of licensing boards (18). PHPs have written agreements with state licensing boards to manage addicted physicians and 59% have independent legal authority based on state laws. For nursing programs, a document analysis of 27 alternative-to-discipline (ATD) programs for nurses with SUDs found that 14 were overseen by the state board of nursing and 13 were contracted to outside entities (19). For aviation professionals, HIMS program for pilots is overseen by a steering committee with representatives from airlines, pilot unions, the Federal Aviation Administration (FAA), and addiction specialists (6). FADAP is funded by the FAA and administered by the Association of Flight Attendants-Communications Workers of America union (6).

Intake and Assessment

All PHPs required comprehensive assessment upon entry, typically including clinical status, psychiatric history, and may involve specific tests and examinations (20). Similarly, 70% of nursing ATD programs identified intake assessments in their program materials, with most using outside professionals (19).

For HIMS, pilots undergo a comprehensive medical and psychiatric evaluation by HIMS-trained specialists (6). FADAP conducts initial screenings and refers flight attendants for professional evaluations as needed (6).

Referral, Treatment and Monitoring

PHPs typically refer participants to abstinence-based residential treatment for 60-90 days, followed by outpatient care (18). Regarding pharmacotherapy, DuPont et al. (2009) reported that use of maintenance or antagonist medications was rare in PHPs (18). Russell (2020) reported that nursing ATD programs varied more in treatment approaches, with some requiring inpatient treatment and others using intensive outpatient care (19). The study found that 18 out of 27 programs allowed the use of mood-altering medications for psychiatric or medical conditions while participating in monitoring. Regarding medication-assisted treatment (MAT), 10 programs included information on buprenorphine use and 7 on naltrexone use, with varying policies on whether MAT was allowed during practice. HIMS generally requires 28-90 days of residential treatment for pilots, while FADAP uses a wider range of treatment options based on individual needs (6).

All programs emphasized long-term monitoring, typically lasting 5 years for PHPs and 3 to 5 years for nursing ATD programs (19,22). HIMS monitors pilots for at least 3 years, while FADAP monitoring varies based on individual circumstances (6).

Support Groups and Continuing Care

Participation in peer support groups was emphasized across programs. PHPs required attendance at 12-step or other support groups in 95% of programs (18, 22). Nursing ATD programs commonly required attendance at 12-step or peer support meetings (19). HIMS strongly encourages participation in peer support groups for pilots, while FADAP provides access to peer support through volunteers and group meetings (6).

A review of physician health programs internationally found that while specific components varied, most shared core elements of early detection, comprehensive evaluation, abstinence-based treatment, and long-term monitoring with contingencies (21). This aligns with the general structure seen in U.S. programs for healthcare professionals and aviation personnel.

Discussion

This review found that mandated treatment approaches are highly effective for professionals with SUDs. Studies consistently demonstrate positive outcomes, with participants maintaining high rates of abstinence and successfully returning to work. These results significantly exceed typical recovery rates in the general population. Key factors contributing to PHP success include comprehensive assessment, intensive treatment, long-term monitoring with frequent random drug testing, and use of contingency management.

There are several limitations of this review. Due to the brief timeline of this rapid review, methods were used to streamline the literature search process by limiting results to those published in the last 17 years and exhaustive searches for 'grey' literature (e.g., sources not indexed in research databases) were not conducted and only two databases were used.

Conclusion

Results of this rapid review suggest that based on available evidence, mandated treatment programs for professionals, including healthcare workers and commercial pilots, have demonstrated significant success in promoting long-term recovery and career retention. The physician health program model, with its emphasis on comprehensive evaluation, intensive treatment, and sustained monitoring, provides a promising framework that could be adapted to improve addiction treatment outcomes in other safety-sensitive professions, as well as in the general population.

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Appendix I – Search Strategy

MEDLINE Search

Table 1. Medline Search Query conducted on December 11th, 2024.

Step	Query	Results
1	exp Health Personnel/ or exp Occupations/ or (health personnel or professional* or physician* or nurse* or pilot*).tw, kf, ab.	1,769,251
2	exp Substance Abuse Treatment Centers/ or exp Rehabilitation/ or exp Substance Abuse Detection/ or (treatment or rehabilitation or intervention).tw, kf, ab.	6,661,435
3	exp Substance-Related Disorders/ or (addiction* or substance abuse).tw, kf, ab.	372,158
4	((Coercion/ OR Mandatory Programs/) OR (mandat* OR coerce* OR compulsory OR involuntary).tw, kf, ab.)	131,268
5	Treatment Outcome/ or Program Evaluation/ or (outcome* or efficacy or effectiveness or evaluation).tw, kf, ab.	5,834,408
6	(physician health program* or nurse health program* or professional impairment program* or safety sensitive occupation* or occupational health program*).tw, kf, ab.	419
7	1 and 2 and 3 and 4 and 5	136
8	limit 7 to yr="2008 -Current"	93
9	limit 7 to "review articles"	18
10	3 and 5 and 6	32
11	limit 9 to yr="2008 -Current"	30

Google Scholar Search

Table 2. Google Scholar Search Query conducted on December 12th, 2024.

Query	Results
All of the words: professional mandated treatment outcome	411
Exact phrase: "physician health program" OR "nurse health program" OR "professional impairment program" OR "safety sensitive occupation" OR "occupational health program"	
At least one of the words: coerced involuntary compulsory mandatory	
Limit to yr="2008 -Current"	