# Outcomes of Substance Use Disorder Monitoring Programs for Nurses

**Richard Smiley, MS, MA, and Kyrani Reneau, MA**

**Introduction:** Substance use disorder (SUD) continues to be a leading public health concern for state boards of nursing (BONs). **Aims**: To assess the SUD program completion rates and determine the program characteristics associated with program completion. **Methods:** A retrospective cohort study of 7,737 nurses participating in SUD programs between the years 2007 and 2015 was conducted. Bivariate analyses explored variables of successful program completion, and a forward stepwise logistic regression model was run to assess predictors of program success or failure. **Results:** Successful program completion correlated with the number of years in the program ($r = 0.30$). The highest percentage of nurses completing a program was at around the 5-year mark. Additionally, 26 random drug tests, 25 support group meetings, and 55 to 60 mutual support group meetings per year were associated with successful program completion. **Conclusions:** Bimonthly random drug tests, daily check-ins, and a minimum 3-year length of stay in a program were associated with successful program completion. Attending structured support group meetings and mutual support meetings were also useful. Convening an expert panel to review these results and develop formal guidelines that can be tested by BONs are recommended next steps.

Substance use disorder (SUD) continues to be a leading public health concern in the United States. Annually, substance abuse costs the United States an estimated $740 billion (National Institute on Drug Abuse, 2020). Evidence confirms the prevalence of SUD among nurses is similar to the general population (Dittman, 2015; Dunn, 2005; Kunyk, 2015; Monroe & Pearson, 2009; Monroe et al., 2013; Servodidio, 2011). In fact, substance abuse is the most common reason for a state board of nursing (BON) to take disciplinary action against a nurse (Zhong et al., 2016). As the largest occupation in healthcare (US Bureau of Labor Statistics, 2015), preventing SUD and treating impaired nurses is crucial not only for the well-being of nurses, but also for the safety of their patients (Kunyk et al., 2016).

To address substance use within the nursing profession and to promote nurses' rehabilitation and safe return to practice, some BONs have turned to alternative-to-discipline (ATD) programs. Under the ATD approach, nurses are referred to SUD monitoring programs for treatment. ATD programs receive 75% more new enrollees than discipline-based programs (Monroe et al., 2013). Compared to nurses in traditional disciplinary programs, nurses in ATD programs have better long-term recovery rates, program retention rates, and healthcare outcomes (Bettinardi-Angres et al., 2012; Worley, 2017). To date, more than 40 states have ATD programs (some not exclusive to nurses), with great variability existing from state to state (Bowen et al., 2012; Monroe & Kenaga, 2010).

Typically, SUD monitoring programs are administered by a third party through a contractual agreement with the BON (Emergency Nurses Association [ENA] & International Nurses Society on Addictions [IntNSA], 2016). While enrolled in an ATD program, the nurse ceases to practice in order to undergo treatment and establish sobriety (ENA & IntNSA, 2016). Treatment may include frequent and random drug tests, attendance at mutual support groups (such as Alcoholics Anonymous [AA] and Narcotics Anonymous [NA]), caduceus meetings with other health professionals, worksite monitoring, and random check-ins (Bettinardi-Angres et al., 2012; ENA & IntNSA, 2016). Ongoing treatment and monitoring may continue for up to 3 to 5 years (Crowley & Morgan, 2013). While nurses in one state's ATD program may avoid probation, suspension, or revocation with full compliance of their contract, nurses in a different ATD program may still face disciplinary action (Monroe et al., 2008).

Unlike SUD programs for nurses, programs for physicians with SUDs are standardized in 48 states and the District of Columbia, and each is affiliated with the state's medical licensing board. Physician health programs (PHP) were established to:

> {P}revent substance abuse problems among physicians and to detect, intervene, refer to treatment and continuously monitor recovering physicians with SUDs. These PHPs do not provide formal addiction treatment themselves but instead function as active, long-term case managers and monitors for physician participants (DuPont et al., 2009a, p. 5).

Generally, physicians are referred to abstinence-oriented residential treatment for 60 to 90 days (DuPont et al., 2009a). During this phase, participants attend intensive sessions of individual, group, and family counseling as well as required AA, NA, and caduceus meetings (DuPont et al., 2009a). In the first year of the program, physicians are tested four times per month (48 times per year), and in the fifth year, they are tested 20 times per year (DuPont et al., 2009a). Once treatment is complete, every PHP program develops a continuing care contract with participants to support long-term monitoring for 5 years (DuPont et al., 2009a). This includes continued drug testing, appointments with the PHP for clinical care and evaluation, unannounced work-site visits, and status reports to employers, insurers, and state licensing boards (DuPont et al., 2009a; DuPont et al., 2009b). Because the programs are affiliated with the board of medicine, these programs can track the long-term licensure, discipline, and mortality outcomes of their participants. A longitudinal study of 16 states' PHPs demonstrated that the programs effectively managed SUD among physicians. For example, after 5 years of the program, 72% of physicians were licensed and working, with the rates of employment and active licensure being highest among physicians who were considered "contract completers" (McLellan et al., 2008).

While studies have established the effectiveness of the PHP system and the appropriateness of a 5-year monitoring period for physicians (McLellan et al., 2008; Merlo & Gold, 2009), comparable evidence for nursing SUD programs is limited. Although state-level program examples of high recovery and return-to-practice rates are well documented (Clark & Farnsworth, 2006; Trossman, 2003; Fogger & McGuinness, 2009; The Intervention Project for Nurses, 2018; Mumba et al., 2019), determining the effectiveness of specific SUD program components is difficult due to the lack of national standardization (National Council of State Boards of Nursing [NCSBN], 2011; Bettinardi-Angres et al., 2012). Furthermore, the literature cites random and required drug tests (Merlo & Gold, 2009; Fitzsimons et al, 2018), mutual support groups (Snow & Anderson, 2000; Moos & Moos, 2005; Shaw et al., 2004), and risk of relapse (Bettinardi-Angres & Garcia, 2015; Angres et al., 2013; Davis et al., 2014; Mumba et al., 2019) as crucial to a health professionals' ability to combat SUD. However, studies have yet to identify what elements and interventions yield the best outcomes *solely* for nurses enrolled in a large sample of SUD programs.

The aims of this study were to (a) assess the completion rates of nursing SUD programs and (b) determine what program characteristics are associated with program completion. An assumption is made that program completion is in and of itself a good thing that leads to positive future outcomes for participants.

## Methods

To gain a comprehensive understanding of the factors related to substance use intervention, a retrospective cohort study of nurses

TABLE 1

**SUD Programs Collaborating With Affinity Online Solutions and Selected for the Study**

**Name of SUD Program**
Intervention Project for Nurses (IPN) – Florida
Georgia Nurses Association Peer Assistance Program (GNAPAP)
Indiana State Nurses' Assistance Program (ISNAP)
Kansas Nurses Assistance Program (KNAP)
Kentucky Alternative Recovery Effort (KARE)
Recovering Nurse Program (RNP) – Louisiana
Mississippi Board of Nursing
Recovery and Monitoring Program (RAMP) – New Jersey
Oklahoma Board of Nursing Peer Assistance Program
South Dakota Health Professionals Assistance Program (HPAP)
Tennessee Professional Assistance Program (TNPAP)
Texas Peer Assistance Program for Nurses (TPAPN)
Washington Health Professional Services (WHPS)

*Note.* SUD = substance use disorder.

participating in SUD programs between 2007 and 2015 (to allow time for completion of a 5-year program) was conducted. Data on SUD programs were provided by Affinity Online Solutions (AOS), a company that supports both BON contractor-run programs and external SUD programs. AOS provides drug testing services and the monitoring and supervision software used to collect personal and program information on all program participants. Permission was obtained to study the 13 AOS programs shown in Table 1.

Western Institutional Review Board (WIRB) approval was obtained. Each SUD program was contacted with a letter explaining the study, a copy of the IRB-approved protocol, and data use agreement form, which each program signed. All BONs involved gave their permission to use the data.

### Analysis Sample

The data extracted from the AOS files flagged 9,196 nurses who had an intake into one of the programs during the designated study period. Nurses who were still undergoing treatment (905) and who had an intake into the system prior to 2007 (554) were removed from the sample. The remaining 7,737 nurses formed the analysis file.

The nurse records were evaluated individually to determine whether nurses successfully completed their program. The determination of whether the nurse successfully completed was made by the individual programs. Approximately 61.5% (program range = 51.9%, 87.5%) of the nurses in the sample file successfully completed their program.

A description of the variables analyzed is shown in Table 2. Considering the interpretation of most of the variables could be distorted by the differing number of days that clients were in pro-

**Substance Use Disorder Programs in Nursing: Analysis of Study Samples**

| Variable | $n^a$ | M | SD | Mdn | Q25 | Q75 |
|---|---|---|---|---|---|---|
| Number of days in program | 7,737 | 1,078 | 719 | 985 | 457 | 1,703 |
| Number of days selected for drug testing per year | 7,737 | 11 | 8 | 11 | 4 | 17 |
| Number of positive drug tests per year | 3,599 | 0.9 | 2.6 | 0.0 | 0.0 | 0.6 |
| Number of abnormal drug tests per year | 3,599 | 0.6 | 1.0 | 0.0 | 0.0 | 0.8 |
| Number of structured support group meetings attended/year | 6,762 | 11 | 22 | 0 | 0 | 16 |
| Number of mutual support group meetings attended per year | 6,762 | 27 | 46 | 0 | 0 | 44 |
| Number of check-ins per year | 7,737 | 111 | 120 | 72 | 0 | 216 |
| Number of check-ins missed per year | 7,737 | 7 | 20 | 1 | 0 | 5 |
| Number of noncompliances per year | 6,183 | 7 | 18 | 1 | 0 | 6 |
| Number of relapses per year | 6,183 | 0.09 | 0.34 | 0.00 | 0.00 | 0.00 |

*Note.* Q = quartile.
[a] *n* represents the number of nurses who had data for a given variable.

grams, data collected over the entire length of a stay in the program were adjusted by number of days in the program.

### Statistical Analysis

Using SAS Enterprise 7.1, bivariate analyses were conducted on the variables to explore their relationships to successful program completion. The variables were plotted to highlight trends and correlations were calculated. Receiver operating characteristic (ROC) curves were generated using the data to see whether threshold levels could be identified, at which point an impact on program completion could be observed. ROC curves illustrate the diagnostic ability of a binary classifier system as its discrimination threshold is varied. Area under the curve (AUC) estimates were also reported as a measure of how well each program characteristic distinguishes between the two levels of the outcome (e.g., success vs failure).

To assess which program features were the most predictive of program success or failure, a forward stepwise logistic regression model was run using program success as the dependent variable and all of the program variables as the independent variables. Findings were checked to make sure that colinearity was not a factor, and program effects were examined but were found to be nonsignificant.

## Results

The bivariate variable relationships are depicted in Figure 1. Figure 1A shows that the percentage of nurses successfully completing a program correlated with the number of years in the program *(r* = 0.30). It shows a steady increase and suggests that the highest percentage of nurses successfully completing a program was at around the 5-year mark. ROC analysis placed the cut point at 715 days (about 2 years), at which time the bulk of those who did not complete the program was below that number of days while the

bulk of those who completed was above that number of days. The AUC estimate for the analysis was 0.69 (95% CI = 0.68–0.70).

Figure 1B shows that the percentage of nurses successfully completing a program also correlated with the number of times she or he was selected for a drug test *(r* = 0.29). It shows that after 26 tests per year (twice per month), there was no longer an increase in the proportion who successfully completed the program. ROC analysis placed the cut point at 9.8 test selections per year (AUC = 0.68, 95% CI = 0.67–0.69).

The percentage of nurses successfully completing a program was inversely correlated with the number of positive drug tests *(r* = -0.14) (Figure 1C). Additionally, after 1.5 positive tests per year, there was not much of a decrease in the proportion who successfully completed the program. ROC analysis placed the cut point at 0.21 tests per year (AUC = 0.66, 95% CI = 0.67–0.69). These analyses suggest zero positive drug tests is an appropriate threshold.

As shown in Figure 1D, the percentage of nurses successfully completing a program weakly correlated with the number of abnormal drug tests *(r* = 0.09). ROC analysis placed the cut point at 0.13 tests per year (AUC = 0.61, 95% CI = 0.59–0.63). These analyses suggest zero abnormal drug tests is an appropriate threshold.

Figure 1E shows the proportion of nurses successfully completing a program correlated with the number of times a nurse attended a structured support group meeting *(r* = 0.16). After 25 meetings per year (approximately twice per month), there was not much of an increase in the proportion of those who successfully completed the program.

The proportion of nurses successfully completing a program correlates with the number of times a nurse attends a mutual support meeting, such as AA *(r* = 0.19) (Figure 1F). After 55 to 60

FIGURE 1

## Percentage of Nurses Successfully Completing a Substance Use Disorder Program by Program Variables
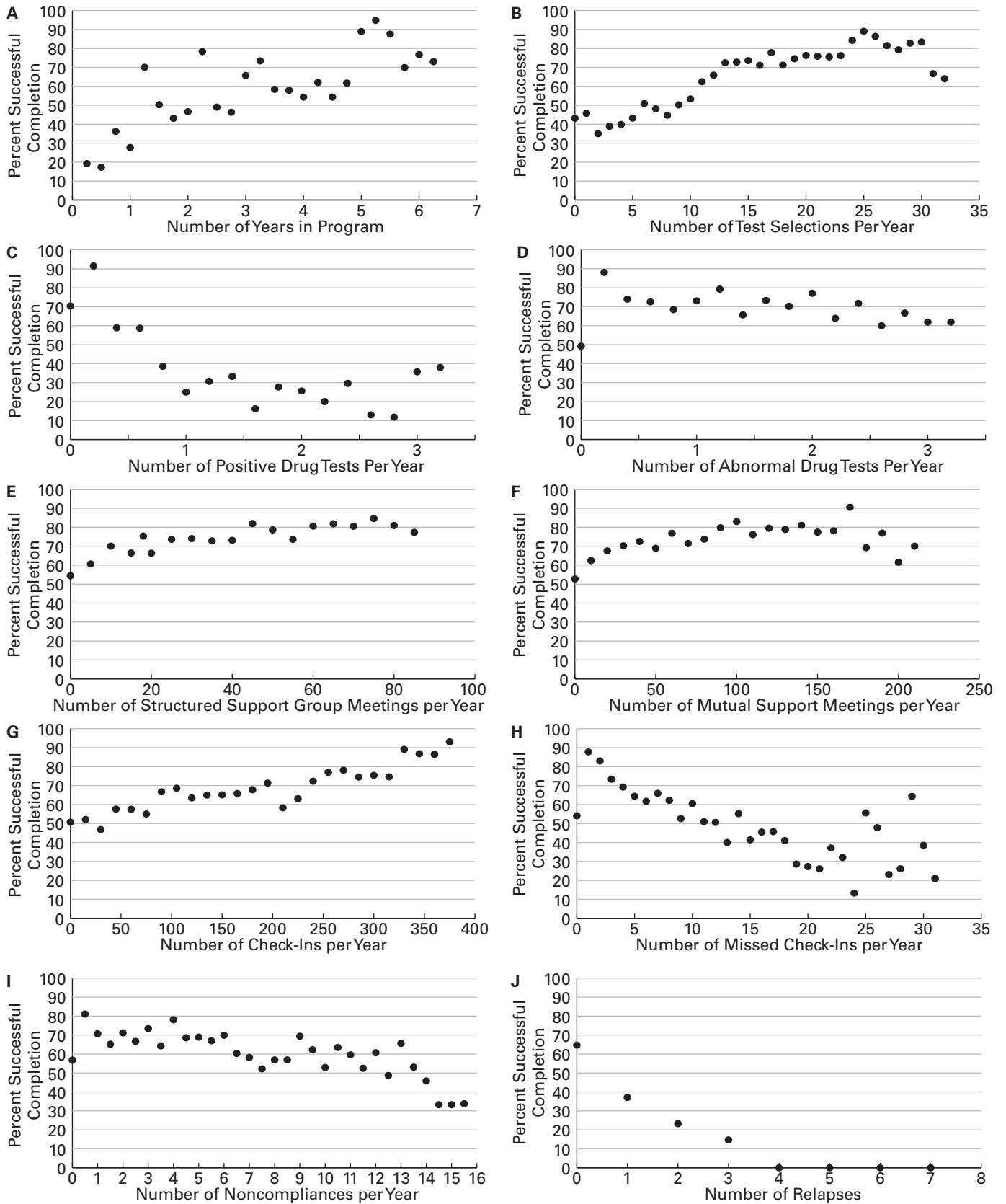
**TABLE 3**

**Percent Successful Completion of SUD Program Using Logistic Regression Model**

| Parameter | OR | 95% CI | p |
|---|---|---|---|
| Number of times selected for a drug test | 1.040 | 1.037–1.043 | < .0001 |
| Had a relapse | 0.101 | 0.082–0.124 | < .0001 |
| Number of noncompliances | 0.987 | 0.985–0.989 | < .0001 |

*Note.* SUD = substance use disorder; CI = confidence interval.

meetings per year (one per week), there was little increase in the proportion of those who successfully completed the program.

As shown in Figure 1G, the proportion of nurses successfully completing a program correlated with the number of times a nurse checked in with the monitoring program (r = 0.24). There is a steady increase, and the highest proportion of nurses successfully completing a program was at around the 360-day (1-year) mark. This implies that having daily check-ins (including weekends and holidays) is highly effective.

Figure 1H shows the proportion of nurses successfully completing a program negatively correlated with the number of times a nurse missed checking in with the monitoring program (r = -0.20). It shows a steady decrease and reveals that after 2 missed check-ins per year, the successful completion percentage drops to near the average successful completion percentage.

The proportion of nurses successfully completing a program also correlated negatively with the number of noncompliances (r = -0.17) (Figure 1I). Noncompliances include late reports, missing reports, missed check-ins, no shows, and positive drug tests. The figure shows that after 6 noncompliances per year, the percentage of nurses completing the program starts to decline. ROC analysis placed the cut point at 6.3 noncompliances per year (AUC = 0. 54; 95% CI = 0.53–0.56).

As shown in Figure 1J, the percentage of nurses successfully completing a program negatively correlated with the total number of relapses (r = -0.22). Specifically, 64.7% of the nurses who did not have a relapse successfully completed the program, while only 35.4% of the nurses who had at least one relapse successfully completed the program ($\chi^2$ = 302.0, p < .0001). This suggests that an appropriate threshold is no relapses.

A stepwise logistic regression model was run using successful completion as the dependent variable and all program factors as the independent variables. The final model (Table 3) identified that the most predictive factors of success were the number of times selected for a drug test (positive factor), having a relapse (negative factor), and number of noncompliances (negative factor).

As the only set of measures programs can proactively manipulate, the association between number of times a nurse was selected for a drug test per year and successful program completion was further investigated (Table 4). Even those who were in the

program for only 2 to 3 years had a completion rate of over 90% if they were selected for drug tests at least 24 times per year.

## Discussion

Data from this study shed light on some important characteristics of nursing SUD monitoring programs. The proportion of nurses successfully completing the ATD program is about 15% to 20% less than that of physicians in the PHP program (DuPont et al., 2009a). The data show that nurses who successfully completed the program stayed in the program longer, had a higher number of clean drug tests, attended more structured support group meetings, attended more mutual support meetings, and checked in more often than those who did not complete the program. Nurses and physicians have long attributed their successful treatment to mutual support groups (Snow & Anderson, 2000; Brown et al., 2002; Shaw et al., 2004; Stanford, 2018).

The data further suggest that numerical thresholds exist for these program features, at which point most of the gains have accrued to the nurse (Table 5). The factor most strongly associated with successful program completion is the number of times the nurse was selected for a drug test. Even those only in a program for 2 to 3 years had high completion rates if they were being tested at least twice per month. This same threshold is recommended by the Recovery Management Working Group (Institute for Behavior and Health, 2014). While the benefits of frequent drug testing are well cited in the field of anesthesiology (Wilson & Compton, 2009; Wright et al., 2014; Fitzsimons et al., 2018), prior research for nurses enrolled in SUD programs has yet to set a threshold for drug testing. When combined with other recommended program attributes, such as daily check-ins and few noncompliances, the data suggest that the most effective programs feature intense testing and monitoring from the start (Fogger & McGuinness, 2009; Bettinardi-Angres & Garcia, 2015).

The data from this study suggest that having a relapse at any time is associated with program noncompletion. For nurses who had a relapse, being in a program for 2 to 3 years still produced high completion rates if accompanied by testing at least twice per month. Other research reinforces that sustained participation in SUD monitoring programs is a deterrent against relapse for nurses and physicians (Horton-Deutsch et al., 2011; Baldisseri, 2007; McLellan et al., 2008; Mumba et al., 2019).

Regarding program length, the literature on nursing monitoring programs suggests 1 to 3 years (Bettinardi-Angres & Garcia, 2015) or 5 years or more (Vaillant, 2003; Clark & Farnsworth, 2006). This study confirms the best results were achieved for nurses who were in a program at least 5 years and were tested at least twice per month. But if it this is not feasible, the data suggest that the length of stay in the program should be scaled back before reducing the frequency of drug testing. While the ROC analysis suggests that the minimum length of stay in a program could be as low as 2 years, further comparison of the data support a 3-year

minimum. Raising the minimum from 2 to 3 years increases the probability of correctly identifying noncompleters from 54.5% to 70.5%. Identifying nurses likely to fail is of greater priority than those likely to complete given the possible implications for patient safety.

The adoption of ATD approaches are largely supported due to their intent of retaining, rehabilitating, and re-entering nurses into safe, professional practice (NCSBN, 2011; ENA & IntNSA, 2016). Sporadic state-level success has not ignited widespread national adoption because success rates of a large sample of programs have not been published. The findings from this study help bridge this gap and provide evidence for which distinct program factors contribute to successful completion. Most notably, our finding on the influence of drug testing, even for those who relapse, suggest that "starting the clock over" for the nurse can still lead to desired results. Evaluating impaired nurses closely for external factors (Rojas, Jeon-Slaughter, et al., 2013a) and personality characteristics (Brown et al., 2002) known to increase the risk of relapse, as well as tailoring interventions to be more gender sensitive (Angres et al., 2013) should be considered when structuring or restructuring SUD monitoring programs. As evidenced by the literature, family history of SUD and psychiatric comorbidities may contribute to a nurse's inability to successfully complete a program (Snow & Anderson, 2000; Merlo & Gold, 2009; Rojas, Brand, et al., 2013b).

### Limitations

This study was limited by the quality and quantity of some of the data being collected. By the nature of being automatically generated, the data gathered on check-in history, drug test selection history, drug test history, and noncompliance history were generally superb. However, not all of the programs tracked data on drug test resolution (e.g., positive, abnormal). The data sourced by service programs on mutual support and group support meeting history were mostly complete.

Data requiring manual entry were not as consistent. The manually generated dates that showed up on some files were not always reliable. When merging the data from various sources, assumptions needed to be made that the date given on the file accurately reflected the date on which the event occurred and not the date on which the data were entered into the system. That was not always the case. In most instances, such differences did not alter the data in a significant manner.

Additionally, relapse data were available for only six of the programs.

### Conclusion

Prior to this study, no study had identified what elements and interventions yielded the best outcomes solely for nurses enrolled in a large sample of SUD programs. In this study, we were able to demonstrate the importance of random drug tests twice per

**TABLE 4**

**Successful Completion of SUD Program by Number of Years in Program and Number of Times Selected for a Drug Test per Year ($N = 7,737$)**

| Number of Years in Program | Number of Test Selections per Year | | |
|---|---|---|---|
| | < 12 | 12 to < 24 | ≥ 24 |
| < 2 years | 37.2% ($n = 1,928$) | 53.5% ($n = 746$) | 56.9% ($n = 146$) |
| 2 to < 3 years | 47.0% ($n = 634$) | 78.3% ($n = 593$) | 91.2% ($n = 159$) |
| 3 to < 4 years | 58.6% ($n = 739$) | 70.6% ($n = 378$) | 96.3% ($n = 80$) |
| 4 to < 5 years | 62.7% ($n = 354$) | 74.4% ($n = 312$) | 95.5% ($n = 111$) |
| ≥ 5 years | 72.4% ($n = 497$) | 89.9% ($n = 996$) | 95.3% ($n = 64$) |

*Note.* SUD = substance use disorder.

**TABLE 5**

**Substance Use Disorder Among Nurses: Thresholds for Successful Program Completion**

| Program Attribute | Recommendation |
|---|---|
| Length of stay in program | At least 3 years |
| Frequency of selection for drug testing | At least twice per month at random times using different tests (e.g., hair, nails, urine, etc.) |
| Frequency of check-ins (for possibility of being tested) | Daily (including weekends and holidays) |
| Structured group support meeting attendance | At least two per month |
| Mutual support meeting attendance | At least one per week |
| Noncompliances (late reports, missing reports, missed check-ins, no shows, and positive drug tests) | No more than six times per year |
| Missed check-ins | No more than two times per year |
| Relapses | No relapses |

month in successful program completion, including nurses who have a relapse. We also showed that daily check-ins and a minimum 3-year length of stay are associated with successful program completion. In accordance with other findings, we also showed the usefulness of attending structured support group meetings and mutual support meetings.

We recommend convening an expert panel to review these results and develop formal guidelines. We then recommend recruiting BONs to test the guidelines in their monitoring program. Data collection will need to be precise and include additional data points along with a longitudinal analysis following

participants 5 years after program completion. These data should then be used to facilitate further understanding of what produces effectiveness in SUD monitoring programs.

# References

Angres, D., Bologeorges, S., & Chou, J. (2013). A two year longitudinal outcome study of addicted health care professionals: An investigation of the role of personality variables. *Substance Abuse: Research and Treatment*, 7, 49–60. https://doi.org/10.4137/SART.S10556

Baldisseri, M. R. (2007). Impaired healthcare professional. *Critical Care Medicine*, 35(2 Suppl), S106–S116. https://doi.org/10.1097/01. CCM.0000252918.87746.96

Bettinardi-Angres, K., Pickett, J., & Patrick, D. (2012). Substance use disorders and accessing alternative-to-discipline programs. *Journal of Nursing Regulation, 3*(2), 16–23. https://doi.org/10.1016/S2155-8256(15)30214-3

Bettinardi-Angres, K., & Garcia, R. (2015). A consistent approach to treatment and reentry for CRNAs with substance use disorder. *Journal of Nursing Regulation*, 6(2), 47–51. https://doi.org/10.1016/S2155-8256(15)30388-4

Bowen, M. K., Taylor, K. P., Marcus-Aiyeku, U., & Krause-Parello, C. A. (2012). An examination of stress, coping, and adaptation in nurses in a recovery and monitoring program. *Journal of Addictions Nursing*, 23(3), 159–166. https://doi.org/10.1097/JAN.0b013e31826f4bd6

Brown T. G., Seraganian P., Tremblay J., & Annis, H. (2002). Matching substance abuse aftercare treatments to client characteristics. *Addictive Behaviors*, 27(4), 584–605. https://doi.org/10.1016/S0306-4603(01)00195-2

Clark, C., & Farnsworth, J. (2006). Program for recovering nurses: An evaluation. *Medsurg Nursing*, 15(4), 223–230.

Crowley, K., & Morgan, C. (2014). *Re/entry: A guide for nurses dealing with substance use disorder*. Sigma Theta Tau International.

Davis, K., Powers, C., Vuk, J., & Kennedy, R. (2014). Predictors of substance use recidivism among Arkansas nurses. *Journal of Nursing Regulation*, 5(2), 39–44.

Dittman, P. W. (2015). Chemical dependency and nursing students: A complicated process calling for nurse educator involvement. *Journal of Addictions Nursing*, 26(2), 58–61. https://doi.org/ 10.1097/ JAN.0000000000000072

Dunn, D. (2005). Substance abuse among nurses: Defining the issue. *AORN Journal*, 82(4), 573–596. https://doi.org/10.1016/S0001-2092(06)60028-8

DuPont, R. L., McLellan, A. T., Carr, G., Gendel, M., & Skipper, G. E. (2009a). How are addicted physicians treated? A national survey of physician health programs. *Journal of Substance Abuse Treatment, 37*(1), 1–7. https://doi.org/10.1016/j.jsat.2009.03.010

DuPont, R. L., McLellan, A. T., White, W. L., Merlo, L. J., & Gold, M. S. (2009b). Setting the standard for recovery: Physicians' Health Programs. *Journal of Substance Abuse Treatment, 36*(2), 159–171. https://doi.org/10.1016/j.jsat.2008.01.004

Emergency Nurses Association, & International Nurses Society on Addictions. (2016). Substance use among nurses and nursing students. Retrieved from https://www.ena.org/docs/default-source/resource-library/practice-resources/position-statements/joint-statements/substanceuseamongnurses

Fitzsimons, M. G., Baker, K., Malhotra, R., Gottlieb, A., Lowenstein, E., & Zapol, W. M. (2018). Reducing the incidence of substance use disorders in anesthesiology residents: 13 years of comprehensive urine drug screening. *Anesthesiology*, 129(4), 821–828.

Fogger, S. A., & McGuinness, T. (2009). Alabama's nurse monitoring programs: The nurse's experience of being monitored. *Journal of Addictions Nursing*, 20(3), 142–149.

Horton-Deutsch, S., McNelis, A., & O'Haver Day, P. (2011). Enhancing mutual accountability to promote quality, safety, and nurses' recovery from substance use disorders. *Archives of Psychiatric Nursing*, 25(6), 445–455. https://doi.org/10.1016/j.apnu.2011.02.002

Institute for Behavior and Health, Inc. (2014, March). The new paradigm for recovery: Making recovery—and not relapse—the expected outcome of addiction treatment. http://www.williamwhitepapers.com/ pr/IBH%20New%20Paradigm%20for%20Recovery%20 Report%202014.pdf

Intervention Project for Nurses. (2018). IPN Fact Sheet. Retrieved from https://www.ipnfl.org/resources-and-links/

Kunyk, D. (2015). Substance use disorders among registered nurses: Prevalence, risks and perceptions in a disciplinary jurisdiction. *Journal of Nursing Management*, 23(1), 54–64. https://doi.org/10.1111/ jonm.12081

Kunyk, D., Inness, M., Reisdorfer, E., Morris, H., & Chambers, T. (2016). Help seeking by health professionals for addiction: A mixed studies review. *International Journal of Nursing Studies*, 60, 200–215. https://doi.org/10.1016/j.ijnurstu.2016.05.001

McLellan, A. T., Skipper, G. S., Campbell, M., & DuPont, R. L. (2008). Five year outcomes in a cohort study of physicians treated for substance use disorders in the United States. *BMJ, 337*(7679), 1154–1156. https://doi.org/10.1136/bmj.a2038

Merlo, L. J., & Gold, M. S. (2009, August 28). Successful treatment programs for physicians with addictions. *Psychiatric Times*, 26(9). https://www.psychiatrictimes.com/addiction/successful-treatment-physicians-addictions/page/0/2

Monroe, T., & Kenaga, H. (2010). Don't ask don't tell: Substance abuse and addiction among nurses. *Journal of Clinical Nursing*, 20(3–4), 504–509. https://doi.org/10.1111/j.1365-2702.2010.03518.x

Monroe, T., Pearson, F., & Kenaga, H. (2008). Procedures for handling cases of substance abuse among nurses: A comparison of disciplinary and alternative programs. *Journal of Addictions Nursing*, 19(3), 156–161.

Monroe, T. B., Kenaga, H., Dietrich, M. S., Carter, M. A., & Cowan, R. L. (2013). The prevalence of employed nurses identified or enrolled in substance use monitoring programs. *Nursing Research*, 62(1), 10–12. https://doi.org/10.1097/NNR.0b013e31826ba3ca

Monroe, T. B., & Pearson, F. (2009). Treating nurses and student nurses with chemical dependency: Revising policy in the United States for the 21st century. *International Journal of Mental Health and Addiction*, 7, 530–540. https://doi.org/10.1007/s11469-009-9208-2

Moos, R. H., & Moos, B. S. (2005). Paths of entry into Alcoholics Anonymous: Consequences for participation and remission. *Alcoholism: Clinical and Experimental Research*, 29(10), 1858–1868.

Mumba, M. N., Baxley, S. M., Cipher, D. J., & Snow, D. E. (2019). Personal factors as correlates and predictors of relapse in nurses with impaired practice. *Journal of Addictions Nursing*, 30(1), 24–31.

National Council of State Boards of Nursing. (2011). *Substance use disorder in nursing: A resource manual and guidelines for alternative and disciplinary monitoring programs.* Author. https://www.ncsbn.org/SUDN_11. pdf

National Institute on Drug Abuse. (2020, February). Trends & statistics. https://www.drugabuse.gov/related-topics/trends-statistics#supplemental-references-for-economic-costs

Rojas, J. I., Brand, M., Fareed, S., & Koos, E. (2013). Psychiatric comorbidity in health care professionals with substance use disorders. *Addictive Disorders & Their Treatment, 12*(2), 51–57. https://doi. org/10.1097/ADT.0b013e318250a3d2

Rojas, J. I., Jeon-Slaughter, H., Brand, M., & Koos, E. (2013). Substance abuse patterns and psychiatric symptomatology among three health-care provider groups evaluated in an out-patient program for impaired healthcare professionals. *Journal of Addictive Diseases, 32*(1), 99–107. https://doi.org/10.1080/10550887.2012.759857

Servodidio, C. A. (2011). Alcohol abuse in the workplace and patient safety. *Clinical Journal of Oncology Nursing, 15*(2), 143–145. https://doi.org/10.1188/11.CJON.143-145

Shaw, M. F., McGovern, M. P., Angres, D. H., & Rawal, P. (2004). Physicians and nurses with substance use disorders. *Journal of Advanced Nursing, 47*(5), 561–571. https://doi.org/ 10.1111/j.1365-2648.2004.03133.x

Snow, D., & Anderson, C. (2000). Exploring the factors influencing relapse and recovery among drug and alcohol addicted women. *Journal of Psychosocial Nursing and Mental Health Services, 38*(7), 8–19.

Stanford, C. (2018). *Addiction in the lives of registered nurses and their wake-up jolt to recovery*. Hamilton Books.

Trossman, S. (2003). Nurses' addictions: Finding alternatives to discipline. *American Journal of Nursing, 103*(9), 27–28.

U.S. Bureau of Labor Statistics. (2015, July 13). Registered nurses have highest employment in healthcare occupations; Anesthesiologists earn the most. https://www.bls.gov/opub/ted/2015/registered-nurses-have-highest-employment-in-healthcare-occupations-anesthesiologists-earn-the-most.htm

Vaillant, G. E. (2003). A 60-year follow-up of alcoholic men. *Addiction, 98*(8), 1043–1051. https://doi.org/10.1046/j.1360-0443.2003.00422.x

Wilson, H., & Compton, M. (2009). Reentry of the addicted certified registered nurse anesthetist: A review of the literature. *Journal of Addictions Nursing, 20*(4), 177–184.

Wright, E. L., McGuinness, T., Schumacher, J. E., Zwerling, A., & Moneyham, L. D. (2014). Protective factors against relapse for practicing nurse anesthetists in recovery from anesthetic opiate dependency. *Journal of Addictions Nursing, 25*(2), 66–73.

Worley, J. (2017). Nurses with substance use disorders: Where we are and what needs to be done. *Journal of Psychosocial Nursing and Mental Health Services, 55*(12), 11–14.

Zhong, E. H., McCarthy, C., & Alexander, M. (2016). A review of criminal convictions among nursing 2012–2013. *Journal of Nursing Regulation, 7*(1), 27–33.

---

**Richard Smiley, MS, MA,** is a Senior Statistician, Research Department, National Council of State Boards of Nursing, Chicago, IL. **Kyrani Reneau, MA**, is a Research Associate, Research Department, National Council of State Boards of Nursing.