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HEDIS Initiation and Engagement Quality Measures of Substance Use Disorder Care:

Impacts of Setting and Health Care Specialty.

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RUNNING HEAD: Satisfying HEDIS Initiation and Engagement

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Abstract

Background: Many health care systems track the HEDIS measures of Initiation and Engagement in substance use disorder (SUD) care. However, the impacts of setting of care (inpatient vs. outpatient) and health care specialty (SUD, psychiatric, other) on the likelihood of patients meeting the Initiation and Engagement criteria are unknown. If the vast majority of Initiation and Engagement occurs within SUD specialty clinics, then these quality measures could be used to discriminate among and incentivize SUD clinic managers. However, if the Initiation and Engagement criteria are satisfied in different settings and specialties, then they should be considered characteristics of the entire facility, rather than just specialty SUD units.

Methods: Using a Markov model, the probabilities of advancing to treatment Initiation and Engagement given initial setting and specialty of care were estimated for of 320,238 SUD-diagnosed Veterans Health Affairs patients.

Results: Patients in SUD specialty units progressed more often (diagnosis to Initiation, Initiation to Engagement) than patients in other specialties. Progression through the criteria differed for inpatients vs. outpatients. Approximately 25% of Initiation and over 40% of Engagement occurred outside of SUD specialty care.

Conclusions: VA patients who have contact with SUD specialty treatment have higher rates of advancing to Initiation, and from Initiation to Engagement, compared to SUD-diagnosed patients in psychiatric or other medical locations. Even so, a substantial portion of Initiation and Engagement occurs outside of SUD specialty units. Therefore, these quality measures should be considered measures of facility performance rather than measures of the quality of SUD specialty care. The usual combining of inpatient and outpatient performance on these measures into overall facility scores clouds measurement and interpretation.

Healthplan Employer Data and Information Set (HEDIS) is the most widely used set of quality measures in the U.S. managed health care industry. Therefore many health care systems now track the HEDIS measures of Initiation and Engagement in Alcohol and Other Drug Dependence Treatment.^{1,2} The Initiation and Engagement measures were originally developed by the Washington Circle (WC), an organization supported by the federal Center for Substance Abuse Treatment then adapted for use as HEDIS measures.^{3,4} “Initiation” refers to the percentage of patients diagnosed with a substance use disorder (SUD) with (a) at least a 60-day SUD service-free period and (b) either an inpatient/ residential admission with a SUD diagnosis, or both an initial SUD-related outpatient visit *and* an additional SUD-related visit within 14 days. “Engagement” refers to the percentage of outpatients with diagnosed SUDs that (a) meet the Initiation criteria and (b) receive two additional SUD-related visits within 30 days following Initiation. Whether or not the patient initiates or engages after a qualifying visit, the patient is not eligible to qualify again during the same year. For those initiating in inpatient/residential settings, the two additional visits for Engagement must occur within 30 days of discharge.⁵

Although one might assume that the care indexed by these measures occurs in speciality SUD treatment units or is provided by clinicians trained to treat SUDs, this is not necessarily the case. The treatment speciality of the providing location or clinician are not included in the specifications of the measures. The measures’ specifications rely on combinations of Common Procedural Terminology (CPT), diagnosis-related group (DRG), and ICD-9 CM codes (primary or non-primary) to determine whether a visit or stay is SUD-related care. For example, an outpatient visit that contains a CPT code 90804

(individual psychotherapy) with a primary or secondary ICD-9 CM code of 303.0 (alcohol dependence) is considered care related to SUD, regardless of who provides the care (e.g., mental health counselor, psychiatrist, addictions counselor, primary care physician) or where it occurs (e.g., primary care, SUD specialty clinic, psychology clinic).

Little is known regarding how frequently the HEDIS Initiation and Engagement quality criteria are satisfied in different settings (i.e., inpatient vs. outpatient) or different types of health care specialties (e.g., SUD, psychiatric/mental health, and other medical specialties). In a prior study, we found that being first diagnosed (“identified” in HEDIS terms) in a SUD specialty setting was predictive of more subsequent Initiation and Engagement, but we did not estimate how often these measures were met in different treatment specialties within specific settings of care (inpatient vs. outpatient) or describe the flow of patients between different types of treatment settings and specialties.⁶ If the vast majority of Initiation and Engagement occurs within SUD specialty clinics, then these quality measures could be used to discriminate among and incentivize clinic managers. However, if the Initiation and Engagement criteria are satisfied in different settings and specialties, then they should be considered characteristics of the entire facility, rather than just specialty SUD units.

Furthermore, if the probability of progressing through the criteria (from diagnosis to Initiation, and from Initiation to Engagement) varies substantially across settings or specialties, then this information can be used to better interpret the clinical meaning of performance on these quality measures and possibly to improve patient care. For these reasons, we focus here on describing the clinical setting characteristics associated with

meeting the Initiation and Engagement criteria as presently specified rather than on the patient characteristics (e.g., demographics, treatment history, timing of visits) that are potentially predictive of meeting the measures or on examining modifications to the measures.

Materials and Methods

Using the VA National Patient Care Database, we identified patients who received at least one of the HEDIS-specified SUD diagnoses during the fiscal year 2006.⁵ For each of these patients, we determined whether they progressed through Initiation and Engagement, capturing the associated VA clinic stop and bed section codes at each step. These codes indicate the setting (inpatient vs. outpatient) as well as health care specialty (SUD, Psychiatric/Mental Health, and other) of each encounter.

A Markov model was developed to estimate the probabilities of patients transitioning from diagnosis to HEDIS Initiation and from Initiation to Engagement.^{7 8} Markov models are described by states which are mutually exclusive and collectively exhaustive. This means that a patient must be in only one state at any given time. Subjects move from state to state by making transitions. The tendency to go from state to state j (e.g., from initiating in outpatient psychiatry to engaging in an outpatient SUD clinic) is represented by a transition probability. From the estimated transition probabilities, we can determine the setting and treatment specialties where Initiation and Engagement are more and less likely to occur. Furthermore, beyond describing the observed transition probabilities in these data, the Markov model can be used to simulate other scenarios of interest, such as the impact on total rates of Engagements of increasing

referral of patients identified with SUDs from other medical specialties to SUD specialty clinics and units.

Results

Initiation and Engagement for Patients First Diagnosed in Outpatient Settings

Of the 320,238 VA patients who received a SUD diagnosis in fiscal year (FY) 2006, 271,411 (85%) did so first in an outpatient setting. The transition probabilities and associated flow of these outpatients through the Initiation and Engagement criteria are presented in Figure 1. Of the SUD diagnosed outpatients, 17% did not have a 60-day SUD service-free period and thereby did not qualify to Initiate or Engage, 11% qualified (i.e., had a SUD diagnosis and a 60-day SUD service-free period) in a SUD specialty clinic, 24% qualified in a psychiatric/mental health setting, and 48% did so in other medical settings. Those who qualified in SUD treatment settings were much more likely to initiate than those who qualified in psychiatric and other specialties (44%, 15%, and 9%, respectively). Of particular note are the 118,113 (91%) of 129,793 patients who had a qualifying visit in an outpatient specialty other than SUD or psychiatry/mental health, but did not transition to Initiation. An example of such a qualifying visit is as follows: A patient in a primary care visit received a primary or secondary SUD diagnosis and a qualifying CPT code (e.g. for counseling, health risk assessment, etc), but did not receive another SUD-related visit within 14 days.

Outpatients who initiated in SUD treatment clinics were much more likely to Engage than those who initiated in Psychiatric and Other specialties (67%, 34%, and 31%, respectively). Of 32,728 out patients who Initiated, 16,239 (50.4%) Engaged, of

which 75%, 12.5% and 12.5% Engaged in SUD, Psychiatric, and Other specialties, respectively. Overall, of the outpatients with SUDs, only 7.3% advanced to Engagement.

Initiation and Engagement for Patients First Diagnosed in Inpatient Settings

For inpatient/residential settings, the specifications for Initiation and Engagement differ from the outpatient specifications. Patients who are first diagnosed in an inpatient setting and have a prior 60-day SUD service-free period automatically qualify for and meet the Initiation performance measure without the requirement of additional care after the inpatient stay. The Engagement additional care criterion for patients initiating in inpatient settings usually refers to outpatient care in the 30 days after discharge, but can also include new inpatient episodes. Of the 320,238 VA patients who received a SUD diagnosis in FY 2006, 48,827 (15%) did so first in an inpatient setting. The transition probabilities and associated flow of these inpatients through the Initiation and Engagement criteria are presented in Figure 2. Of patients identified in inpatient settings, 8% did not have a 60-day SUD service-free period and were therefore not eligible to initiate or engage. By definition, the rest Initiated, 10% in SUD specialty units, 41% in psychiatric units, and 40% in other medical settings.

Patients who initiated in SUD inpatient units were much more likely to subsequently engage than patients who initiated in psychiatric or other inpatient specialties (35%, 18%, and 8%, respectively). Furthermore, among patients who engaged, more did so in SUD units compared to psychiatric and other medical specialties (58%, 21% and 21%, respectively). Overall, of patients qualifying/initiating in inpatient settings, 7,468 (15.7%) went on to meet the Engagement criterion.

Using the Markov Model to Simulate Other Scenarios

Beyond describing the observed transition probabilities in these data, the Markov model can be used to simulate other scenarios, such as exploring the effect of successfully referring patients first identified in other medical specialties to SUD specialty clinics within 14 days, thereby meeting the Initiation criterion. For this simulation, we assumed that patients identified in other outpatient medical specialties ($n = 129,794$), but failing to initiate (91%; $n = 118,112$) are instead successfully referred to a SUD specialty clinics. Currently, the probability of a patient identified in other outpatient medical settings transitioning to Initiation in a SUD specialty unit is .03. Figure 3 presents the expected Engagement rate as this transition is increased from .03 to .50. If, for example, the transition probability from this state is increased to .20, the expected rate of Engagement would be 12% compared to the current rate of 7.4%.

The overall rate of Engagement for VA in FY 2006 was 7.6%, including inpatient and outpatient care. In terms of benchmarking, how should this percentage be compared to a system with no inpatient care? One simple approach would be to use the observed transition probabilities in Figure 1 in which 7.4% of outpatients engage. Another approach would be to use the Markov model to simulate the transition probabilities if the inpatients were forced through the outpatient system (i.e. the transition probability for the inpatient arm, now .15, is set to .00). This assumption results in an estimated probability for a randomly selected patient (from the 320,238 identified) to meet the Engagement criteria in any outpatient setting of .063. This result implies that health care systems without inpatient services, or systems that close their inpatient units, would have lower rates of Engagement than the same system with inpatient services. This simulation does

not take into account the fact that the inpatients that are “forced” into the outpatient system are clinically more severe and may be more or less likely to Initiate and Engage.

Discussion

Within VA, most SUDs are first diagnosed in psychiatric or other non-SUD specialty outpatient settings. However, patients diagnosed in outpatient SUD specialty units are generally much more likely to subsequently meet the Initiation criterion compared to other diagnosed outpatients. This finding is not surprising given that patients do not present to SUD specialty clinics unless they are seeking or have been referred to SUD treatment. Furthermore, patients who meet the Initiation criterion in SUD specialty units (outpatient and inpatient) are more likely to Engage compared to patients initiating elsewhere. These results suggest that contact with SUD specialty treatment improves the probability of advancing to Initiation and Engagement. Administrators may improve rates of Initiation and Engagement by increasing patient contact with SUD specialty treatment units by screening and referring from psychiatric and other types of care.

A major caveat to this conclusion is the fact that, unlike patients in SUD outpatient clinics, among all the patients who Initiate in inpatient settings, the smallest proportion do so in SUD units, but those who do are more likely to engage. This is not surprising. Inpatients who have surgery may have their SUD withdrawal symptoms managed during their stays, but may be unlikely to be referred to, or follow-up on a referral to, specialty SUD treatment where they would have a higher probability of Engagement. Thus, although it would be relatively easy to further increase rates of inpatient Initiation by expanding screening, detection, and coding of SUDs in psychiatric

and other medical inpatient units, raising the rates of Engagement would require active SUD-related outpatient follow-up.

Should Inpatient and Outpatient Performance Be Combined?

Combining inpatient and outpatient rates into overall facility rates can cause measurement and interpretive issues for several reasons: (a) the definitions of Initiation and Engagement differ by level of care, (b) the overall rates of Initiation and Engagement are different for inpatient and outpatients, thereby possibly confounding product mix with system performance, and (c) the link between meeting these criteria and clinical outcomes has been shown to be statistically significant for outpatients but not for inpatients.⁹ In fact, when adapting the Initiation and Engagement measures for use in state SUD treatment systems, the Washington Circle Public Sector Workgroup recently decided to focus the measures on outpatient care, and develop another measure (continuity of care) to focus on outpatient follow-up to a inpatient stay.¹⁰

As an example of the interpretative issues that may arise, consider two facilities with identical outpatient care patterns, but only one that provides inpatient services. What effect will this difference in “product mix” have on rates of Initiation and Engagement? If the transition probabilities found in this study generalize to the two hypothetical facilities, we would expect the Initiation and Engagement rates to be higher in the facility with inpatient services because 100% of the inpatients with a SUD diagnosis and a 60-day SUD service free period will meet the Initiation criteria, and the rates of engagement are over twice as high in inpatient settings compared to outpatient settings (15.3% vs. 7.4%). Our simulation of the VA without inpatient services reduced the overall engagement rate from 7.5% to 6.3%.

The administrative implications of the potential confound between performance and product mix are not completely clear. On the one hand, they suggest a performance advantage for facilities with proportionately more inpatient services, especially on Initiation. However, inpatient services are likely to be associated with a higher cost per increased unit of performance. Also, comparisons between facilities with and without inpatient services are complicated by differences in case mix factors, especially symptom severity. Limiting these measures to outpatient services, or reporting them separately for the two types of settings, would eliminate these confounds and simplify the interpretation and application of the measures.

For outpatients, most Initiation and Engagement occurred in SUD specialty clinics (53% and 74%, respectively). Although these percentages are high, they also highlight the perhaps surprising extent to which Initiation (47%) and Engagement (26%) occur outside of SUD specialty settings. Clearly, clinical managers of SUD specialty programs cannot be held fully accountable (or given full credit) for their facilities' performance on the Initiation and Engagement criteria.

Conclusion

VA patients who have contact with SUD specialty treatment have a higher rates of advancing from identification/diagnosis to Initiation, and from Initiation to Engagement compared to patients with SUD diagnoses seen in psychiatric or other medical locations. The SUD clinics themselves may be facilitating the progression to Initiation and Engagement, or there may be characteristics of the patients who go to SUD clinics (e.g., motivation, prior treatment history, problem severity) that explain this pattern of results. Through simulation, we determined that rates of Engagement might be

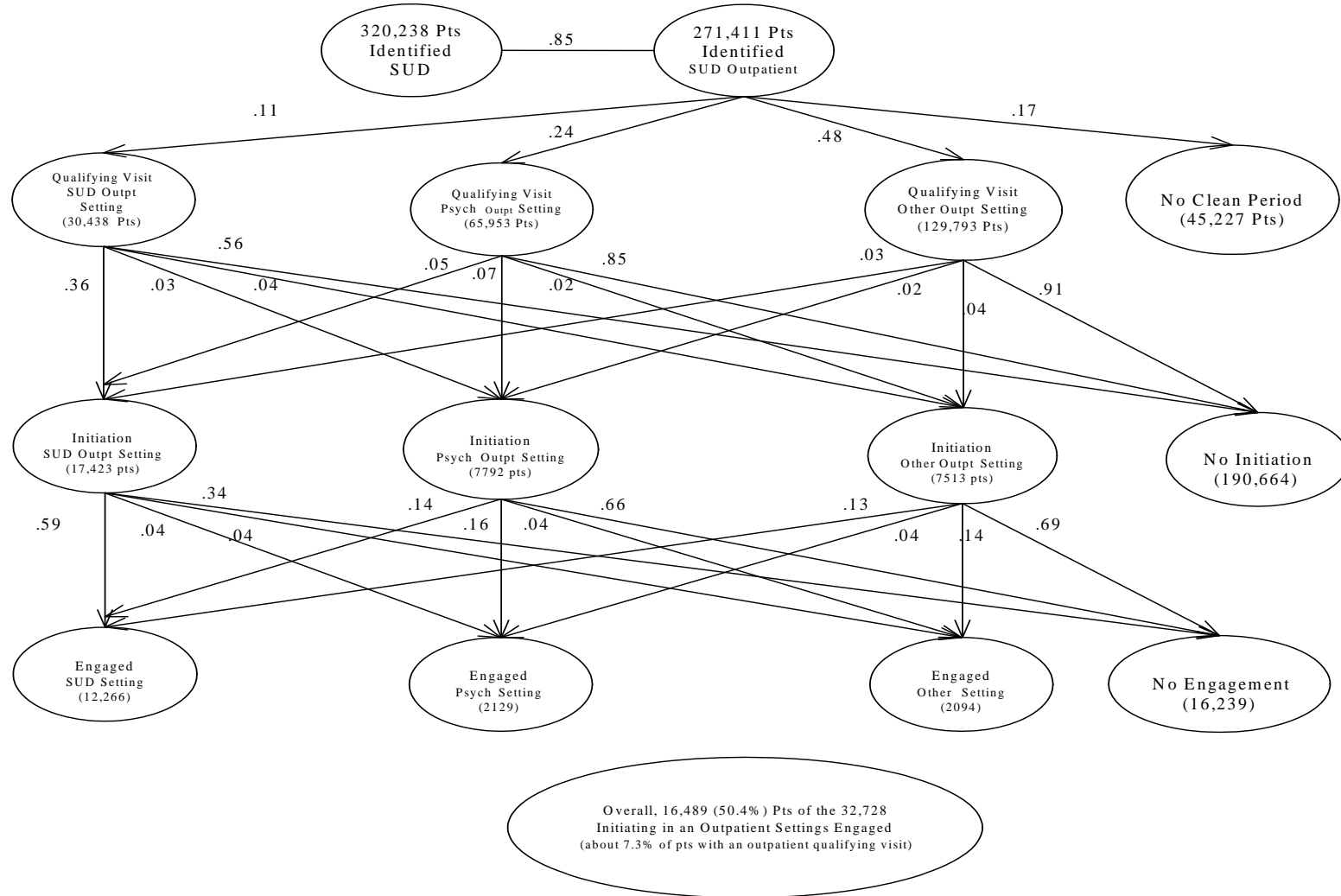
substantially increased if patients first identified in other medical settings were successfully referred to SUD specialty care within 14 days. Even so, a substantial portion of the Initiation and Engagement occurs outside of SUD specialty units. Therefore, one important administrative implication of this study is the conclusion that these quality measures should be considered measures of facility performance rather than measures of the quality of SUD specialty care. The differences in measure specifications, transition probabilities, and links to outcomes between inpatient and outpatient settings⁹ raise questions regarding the wisdom of combining rates of performance into one facility-level metric. Perhaps calculating the measures only for patients who qualify in outpatients settings would solve the measurement and interpretative issue we identified. As noted earlier, the Washington Circle Public Sector Workgroup has already made this modification in adapting the Initiation and Engagement measures to state SUD agencies.

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Clinically, these results illustrate the enormous room for improvement in getting patients who are diagnosed with SUDs into and engaged in treatment. The results highlight the importance of screening in all medical settings and either providing treatment in the settings where SUDs are most often identified (e.g., primary care and mental health/ psychiatric settings) or providing referrals and other support to involve patients in specialty SUD treatment settings. For example, this study describes Initiation and Engagement in the VA system during a time when screening for alcohol misuse was a carefully monitored performance measure. However, the performance measure did not require an indicated response to positive screens (e.g., advice to reduce use, brief treatment, or referral to SUD specialty care). A new performance measure now requires

indicated clinical responses to positive screens. Although the data to evaluate the impact of this change are not yet available, we suspect that rates of Initiation and Engagement will increase.

Figure 1: HEDIS Initiation and Engagement: Flow of VA Identified in Outpatient Clinics (FY06)



Note: 2791 pts (1%) who had outpatient qualifying visit Initiated in a inpatient settings and therefore "leaked" to the inpatient flowchart

Figure 2: HEDIS Initiation and Engagement: Flow of VA Identified in Inpatient Units (FY06)

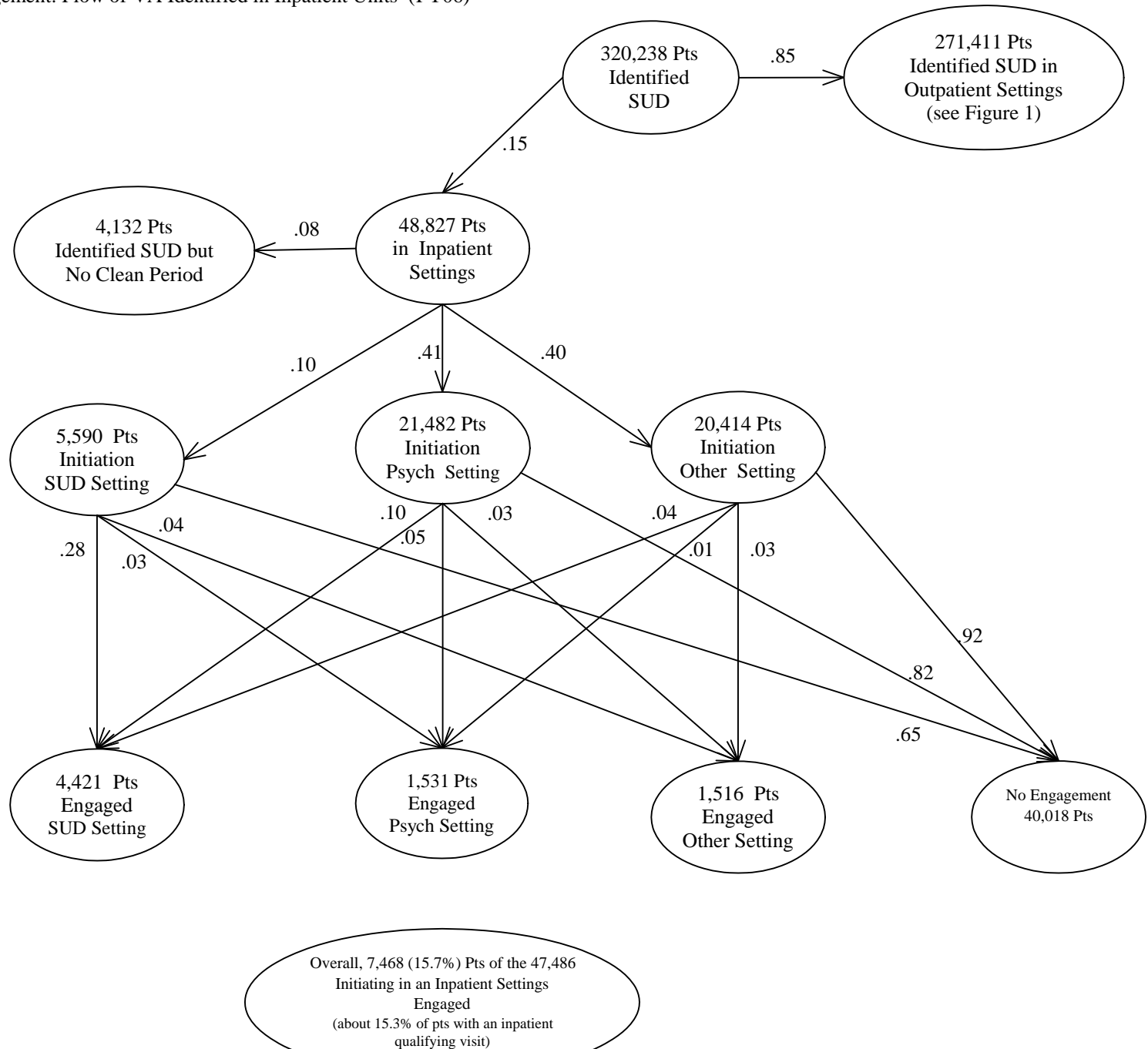
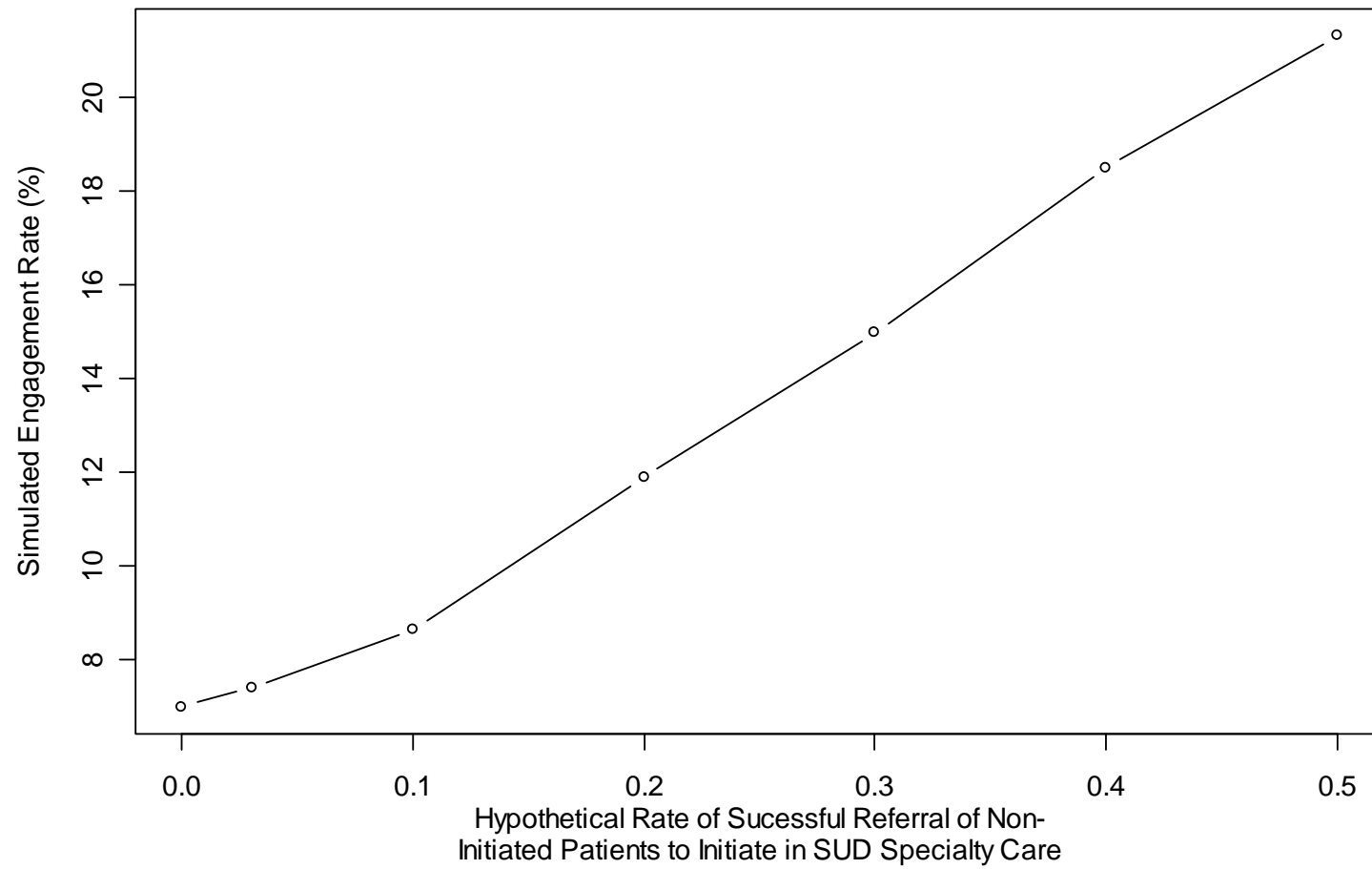


Figure 3

Simulated Engagement Rate with Better Referral to SUD Care

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