Utilization of the Electronic Medical Record to Assess Morbidity and Mortality in Veterans Treated for Substance Use Disorders

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Substance use disorder treatment poses many challenges to clinicians

- Patients with poor impulse control often leave treatment early
- Patients are often homeless and have poor contact information
- Patients may be non-compliant with treatment and use multiple facilities

The VHA Electronic Health Record can help with both tracking prior treatment and outcomes!!!
SUBSTANCE USE TREATMENT OUTCOME MEASURES

Negative Outcomes

• Morbidity
  • Relapse rate
  • Rehospitalization
  • Medical complications
• Mortality
• Use of (Social Security) Disability

Positive Outcomes

- Aftercare attendance (Substance use disorder)
- Mental Health treatment compliance
- Medical treatment compliance
- Medication compliance (psychiatric, medical)
- Days of (competitive) employment
- Quality of life
- Housing
Program Description (DAP)

- Program is a 85 bed Inpatient Substance Use Rehabilitation Program (Drug Abuse Program = DAP)
- Program duration is 60-120 days
- Transitional Residence (TR) duration is 6 months (maximum) AFTER successful completion of DAP (≥60 days)
- Located in Hampton Roads, home of NN shipbuilding, >6 military bases
- Highest proportion of homeless in Virginia 312/716 for all Virginia which EXCLUDES vets at HVAMC and HR largest homeless shelter (Union Mission, Norfolk) which adds an additional 150 +120 (January, 2013 survey)
- HR demographics: higher % African-American than Virginia (50% vs. 19%)
- Changing HVAMC demographics: >70% AA, % OIF/OEF/OND increasing, % female increasing
## POPULATION CHARACTERISTICS

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ALL PATIENTS</th>
<th>REGULAR DISCHARGES</th>
<th>IRREGULAR DISCHARGES</th>
<th>TRANSITIONAL RESIDENCE</th>
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</thead>
<tbody>
<tr>
<td>Age (Mean)</td>
<td>50</td>
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<td>50</td>
<td>49</td>
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<tr>
<td>Ethnicity (% AA)</td>
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<tr>
<td>Gender (% Male)</td>
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<tr>
<td>Mean Arrests</td>
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<td>Mean Prior Inpatient Treatments</td>
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</tbody>
</table>
PRIOR STUDIES: HOUSING PROGRAMS

- Follow-up after TR: measure competitive employment days, use of SSDI, ASI, abstinence (self-report)-improved on all

- 50% of veterans “lost to follow-up” within 3 months (by telephone recontact): (this is one of the benefits of EHR)
  (Rosenheck, 2005)

- Compared with ICM alone, HUD-VASH was associated with more positive housing outcomes for Caucasians, veterans with co-occurring mental disorders, and veterans who were active substance users.
  (O’Connell, 2012)

OUTCOME I: Abstinence

Patients remaining abstinent after residential treatment for substance use disorders (%)
OUTCOME II: Aftercare Attendance

Why measure aftercare attendance?

- Patients who attend aftercare do better!!
  - Fewer rehospitalizations
  - Fewer relapses

Previous studies

- Cacciola et. al.
LONG-TERM (VA) AFTERCARE ATTENDANCE

# Aftercare Sessions

- **30 Days**: 0.5 (IRREGULAR), 2.3 (REGULAR)
- **1 Year**: 1.6 (IRREGULAR), 7.8 (REGULAR)
- **5 Years**: 2.3 (IRREGULAR), 10.3 (REGULAR)

Legend:
- IRREGULAR DC
- REGULAR DC
OUTCOME III: MORTALITY

- Deaths within 5 years:
  - **11%** of regularly discharged (n=117)
  - **21%** of those irregularly discharged (n=48)
  - **0%** of those discharged to Transitional Residence (n=42)
  - *P* < 0.001

- Aftercare attendance in those who died:
  - Regular discharge: 44% of deceased did not attend aftercare
  - Irregular discharge: 100% of deceased did not attend aftercare
  - Transitional Residence: “non-count” (aftercare is in-house)
OUTCOME IV: REHOSPITALIZATION

PSYCHIATRIC

- TR: 38
- Regular Discharge: 18
- Irregular Discharge: 19

MEDICAL

- TR: 2
- Regular Discharge: 21
- Irregular Discharge: 7

Mean Bed Days: 25
Can we prevent irregular discharges?

- AWOL: 44%
- RELAPSE: 29%
- STAFF REQUEST: 25%
- AMA: 2%

Type of discharge
Chicken or egg?

- Do non-compliant patients fail to keep aftercare OR do patients receive support in aftercare which helps them remain abstinent and improve treatment compliance?

- Factors which are no longer “barriers” to admission: motivation, severity of illness, impulse control have resulted in more severely ill patients in residential treatment

- How do we prove treatment effects vs. internal changes?

- Is it ethical to “randomize” to TR?
Medication noncompliance was significantly associated with an increased risk of rehospitalization, emergency room visits, homelessness, and symptom exacerbation.

Noncompliant patients were found to have prior noncompliance, poor insight and substance use disorders.

OTHER OUTCOMES:

- FOLLOW-UP WITH MENTAL HEALTH
- FOLLOW-UP WITH PRIMARY CARE
- QUALITY OF LIFE
- DAYS OF COMPETITIVE EMPLOYMENT
PEOPLE ARE COMPLEX PUZZLES

- PTSD
- Resilience
- Integrity
- Change
- Work ethic
- Chronic pain
- Orthopedic problems
- Substance use disorders
- Mood disorders
- Impulse control
- Dedication
- Medical problems
- Combat wounds
CAUTIONS ABOUT ANALYSIS OF DATA OBTAINED FROM EHR

- Entries may be missed due to coding differences
- Diagnoses may be “buried” in clinical notes, ranked differently
- “Medical issues” are always complicated by substance use
- Variability in interview styles can result in missing info (e.g. legal history)
- Always an underestimate of relapse and utilization, can always go outside the VA and still spotty cross-communication between healthcare systems
- “Homelessness”: patients benefit if they endorse being “homeless” in a number of ways
THE FUTURE

- Statewide and (eventually) nationwide Controlled Substance use tracking

- Improved communication between VHA and other healthcare electronic records

- Increased international standardization of diagnosis and billing codes will allow better comparisons (ICD-10)

- Addition of standardized rating scales to DSM-V (DONE!)

- Standard of care in VHA includes ASI, BAM, other standard rating scales at useful intervals (DONE!)
COLLABORATORS

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