The Case for Integrating Addictions Treatment into Primary & Specialty Care Medicine

The SCVMC Heart Failure Program

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There is a growing body of research that demonstrates the many living examples of the benefits of integrating primary care services that directly helps the system of care meet and sustain the goals of the Triple Aim as established by the Institute of Medicine.

1. Improved care quality
2. Improved patient experience of care
3. Reduced health care costs
The Case for Integrating Substance Use Services and Primary & Specialty Care

Individuals living with a substance use disorders (SUD) often have one or more physical health problems such as pulmonary disease, hepatitis, HIV/AIDS, cardiovascular disease, cancer and mental disorders such as depression, anxiety, bipolar disorder, and schizophrenia.

In fact, research has shown that persons with SUD have:

* 9 times greater risk of congestive heart failure
* 12 times greater risk of liver disease
* 12 times the risk of developing pneumonia

Clinical trials have demonstrated that integrated care is more effective than traditional treatment delivery (i.e., separate, siloed primary care and substance abuse programs) in terms of clinical outcome and cost in treating patients with SUD who have one or more medical problems.

Integrated care results in better health outcomes in contrast to back-and-forth referrals between behavioral health and primary care offices that result in up to 80% of individuals not receiving any care.

The Case for “ROI”

Cost and utilization data show that the use of early identification of SUD in medical and primary care settings, together with collaborative care, can result in streamlined costs.

The case for a return on investment (ROI) includes specific areas of decreased overuse of medical care, avoided costs related to prevention, preventable hospital readmissions and improved disease management by a ratio of $4.00 in savings for every $1.00 spent on screening and treatment.

Objectives for today’s talk

• Review the scientific literature on substance use disorders (SUD)
• Highlight the evidence-based practices to treat substance use disorders
• Review the SCVMC Heart Failure Program and the planned integrated care approach for comorbid SUD
In just the last 5 – 10 years, advances in science have revolutionized our fundamental views of substance use disorders and allowed for the development of improved treatments!
The Journey of Scientific Discovery

• Disease model
  – 1930 AA is founded by a physician and businessman
  – 1956 AMA released formal statements supporting the definition of alcoholism as a disease”

• Reward center of brain (Olds and Milner, 1954)
  – Identified from work performed in animals

• Further Experimental results
  – Stimulation
  – Ablation
  – Blockade studies
  – Neuroimaging studies (PET Scans, SPECT scans)
Behaviors experienced as pleasurable are processed by an area of the brain, called the *mesocorticolimbic (MCLP)* pathway – the brain reward system

- Hardwired in all animals and fundamental for survival
- Activated by the ntx *dopamine*
- Produces pleasure which motivates behaviors needed for survival:
  - Eating
  - Drinking
  - Mating
  - Nurturing
Evidence for reward pathway

- Stimulation (electrical or chemical) of NA & VTA is intrinsically rewarding.
- Stimulation elsewhere is not
- Reward can be interrupted by
  - Severing NA-FC fibers
  - Using dopamine blockers
- Blocking can interrupt naturally rewarded behaviors
  - i.e., patients on drugs that block dopamine “look flat” to us and experience decreased emotions
Natural Rewards Elevate Dopamine Levels in the MCLP

All drugs of abuse target the brain’s reward circuitry and disrupt functioning

- Drugs change the brain’s balance
- The brain has mechanisms to oppose this change
- The balancing action overcompensates, and
- The stronger the drug, the higher the dosage and the longer the use, the more the impaired functioning
Dopamine Levels

**Methamphetamine**

- Prefrontal cortex
- Nucleus accumbens
- VTA

**Cocaine**

- % of Basal Release
- Time After Methamphetamine
- Time After Cocaine
Neuroadaptation

Example: alcoholism

- Long term adaptive changes to the inhibitory GABAergic system and to the excitatory glutamatergic systems are thought to underlie the development and maintenance of alcohol dependence.

- To compensate for the sedative effects of alcohol there occurs an up-regulation of the excitatory system and a down-regulation of the inhibitory system.

- In withdrawal the CNS is left in a hyperexcitable state: anxious, sleepless, tremulous, and tachycardic/hypertensive.
Research shows that . . .

Prolonged Drug Use Changes the Brain in Fundamental and Lasting Ways

And there is scientific evidence that these changes can be both structural and functional.
A critical part of SUD treatment is the prevention of recurring symptoms – managing craving behaviors.

Drug craving behaviors are triggered by a conditioned response of the nervous system when re-exposed to an environmental cue it has associated with drug use and increased dopamine activity.

And...this conditioned response can last a lifetime.
The Memory of Drugs

Front of Brain

Amygdala not lit up

Back of Brain

Amygdala activated

Nature Video

Cocaine Video
A Conditioned Response
Brain activity changes in response to cocaine-related cues – from normal to craving behaviors (elapsed time)

Composite slide – N=23, cocaine addicted men with min. 6 years clean and sober.

Childress. 2003.
Vulnerability

Why do some people become addicted while others do not?
We know there’s a genetic contribution to addiction… overlapping with environmental influences that help make addiction a complex disease.

IFH + high tolerance = 60%

IFH + low tolerance = 15%

Marc Schuckit. UCSD. 2002.
Dopamine D2 Receptors are Lower in Addiction

Cocaine
Meth
Alcohol
Heroin

Control
Addicted
As a group, subjects with low receptor levels found MP pleasant while those with high levels found MP unpleasant.

Adapted from Volkow et al., Am. J. Psychiatry, 1999.
How is substance abuse defined after 30 years of robust scientific study?

- Called Substance Use Disorders (SUDs), it more accurately describes a continuum of severity from misuse, to problem use, dependence, and addiction.

- Addiction, the most severe form of SUDs, is a chronic and relapsing condition much like diabetes, hypertension and asthma. Treatment success and relapse rates for SUD mirror those other chronic disorders.

- Addiction is a primary disease and not the result of other emotional or psychiatric problems.

American Society of Addiction Medicine, 2011.
From decades of outcomes, we know that Treatment works!

- Compulsive illicit drug use: 40-60%
- Criminal activity: 40-60%
- Unemployment: 60%

NIDA. 2006.
How do treatment outcomes compare?

Comparison of Relapse Rates Between Drug Addiction and Other Chronic Illnesses

<table>
<thead>
<tr>
<th>Illness</th>
<th>Percent Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 Diabetes</td>
<td>30 to 50%</td>
</tr>
<tr>
<td>Drug Addiction</td>
<td>40 to 60%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>50 to 70%</td>
</tr>
<tr>
<td>Asthma</td>
<td>50 to 70%</td>
</tr>
</tbody>
</table>

Chronic Illness Relapse Rates  
(after diagnosis, treatment and stabilization)  

McLellan et al., JAMA, 2000
The National Institute of Drug Abuse (NIDA), National Institute of Alcohol Abuse and Addiction (NIAAA), and the Institute of Medicine (IOM) have each articulated explicit evidence-based standards for effective SUD treatment services.

The cornerstones of these guidelines are:

- Addiction is a chronic disease
- Addiction is treatable
- Addiction treatment must be on-going and continuous
- No single treatment is effective for all individuals
- Co-occurring medical and psychiatric conditions must be addressed

California Society of Addiction Medicine. 2011
The National Quality Forum

The National Quality Forum (NQF), dedicated to improving the quality of health care in the United States, has identified and endorsed 8 evidence-based standards of care for the treatment of substance use disorders:

| 1. Screening & case finding       | 5. Withdrawal management          |
| 2. Diagnosis & assessment        | 6. Psychosocial interventions     |
| 4. Promoting engagement in       | 8. Continuing care management     |
| treatment                        | (methadone, buprenorphine,        |
|                                 | naltrexone, acamprosate, etc.)    |
Substance Abuse Treatment Effectiveness

Insufficient Evidence of Effectiveness

- Alcoholics/Narcotics Anonymous (not treatment)
- Hypnosis
- Psychedelic medication therapy (i.e. Ibogaine)
- Non-SSRI antidepressant therapy (i.e. bupropion)
- Milieu Therapy
- Anxiolytic therapy (i.e. alprazolam)
- Relaxation training
- Confrontational counseling
- Psychotherapy
- General alcoholism counseling (i.e. 12 Steps)
- Educational lectures and films
Substance Abuse Treatment Effectiveness Evidence-Based Practices

- Cognitive-behavioral intervention
- Community reinforcement
- Motivational enhancement therapy
- Manualized treatment (MATRIX Model)
- Contingency management
- Pharmacotherapy
- SBIRT

### Substance Abuse Treatment

#### Effectiveness

**Evidence-Based Practices**

**Medication-Assisted Treatment**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Medications/Therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol:</td>
<td>Naltrexone, nalmefene, disulfiram, acamprosate, odansetron, topiramate</td>
</tr>
<tr>
<td>Opiates:</td>
<td>Methadone, buprenorphine, naltrexone</td>
</tr>
<tr>
<td>Nicotine:</td>
<td>Nicotine replacement (gum, patches, spray), Zyban, Chantix</td>
</tr>
<tr>
<td>Cannabinoids</td>
<td>Rimonabant, cannabinoid replacement therapy, (Gabapentin maybe?)</td>
</tr>
<tr>
<td>Stimulants:</td>
<td>None to date (3 in the pipeline)</td>
</tr>
</tbody>
</table>
How can medications help treat substance use disorders?

Different types of medications may be useful at different stages of treatment to help a patient stop compulsive illicit drug use, stay in treatment, and avoid relapse.

**Treating Withdrawal.** When patients first stop abusing drugs, they can experience a variety of physical and emotional symptoms, including depression, anxiety, and other mood disorders; restlessness; and sleeplessness.

**Staying in Treatment.** Some treatment medications are used to help the brain adapt gradually to the absence of the abused drug. These medications act slowly to treat cravings and to have a calming effect on body systems.

**Preventing Relapse.** Science has taught us that stress, cues linked to the drug experience (e.g., people, places, things, moods), and exposure to drugs is the most common triggers for relapse. Medications are being developed to interfere with these triggers to help patients sustain recovery.
Persons with SUDs are not just a homogenous group of people who use/drink in excess.
The typical alcoholic?

No
People like to party
But managing it can be a problem for some.
It often starts here...
But may progress to various severity ranges in some people
And sometimes, addiction...
Most people recover...
But some do not.

Rethinking the “drug abuser”
Distribution of Substance Abuse Problems

- Severe
- Substantial
- Moderate
- Mild
- None

- Specialized Treatment
- Brief Intervention
- Prevention
2M people (0.8%) receiving treatment*

21M people (7%) have problems needing treatment, but not receiving it*

≈ 60-80M people (≈20-25%) using at risky levels

US Population:
307,006,550
US Census Bureau, Population Division
July 2009 estimate

*NSUDH, 2008

Rawson, R. UCLA ISAP
2011
In need of treatment (21 Million)

- Reported problems associated with use
- Not in treatment currently
  - 1.1% Made an effort to get treatment
  - 3.7% Felt they needed treatment, but made no effort to get it.
  - 95.2% Did not feel that they needed treatment

Rawson, R. UCLA ISAP 2011
Using at risky levels (60-80 Million)

- Do not meet diagnostic criteria
- Level of use indicates risk of developing a problem.
- Some examples:...

- Drinks 3-4 glasses of wine a few times per week
- Pregnant woman occasionally has a shot of vodka to relieve stress
- Adolescent smokes marijuana with his friends on weekends
- Occasionally takes one or two extra Vicodin to help with pain

These people need services, but will never enter the treatment system
Implications

As long as referral to specialty care treatment is the only way to address substance use disorders:

– most people with severe SUD will not receive treatment.

– virtually everyone with risky SUD will not receive any professional attention.
If the majority of persons with risky substance use disorders are not in or interested in treatment - Where Are They???????
The link between substance use disorders and physical health has been well established.

Addiction disorders affect 20% to 50% of hospitalized patients, and up to 30% of patients seen in primary care settings, yet in most patients the addiction disorder remains undiagnosed and untreated.

More than two thirds of individuals with substance use disorders have seen a primary care physician for a problem.

*JAMA*;2001;286:1764-1765.

About 20% of patients seen by family physicians have substance abuse problems (excluding tobacco use).

Health systems and practice standards are changing!

The National Association of Public Hospitals and Health Systems (NAPH)

NAPH has made reducing hospitalization readmissions a priority, motivated by a range of factors from patient satisfaction to cost reimbursement.

The most frequently cited significant contributors of readmissions are: *patient drug/alcohol abuse*; patients not following up with appointments; and homelessness.
In January 2012, the Joint Commission developed an added core measure set for hospitals to meet their four core measure set accreditation requirement.

The new core measure set focuses on routine substance abuse screening, brief intervention, and referral to treatment (SBIRT) for all hospitalized patients.


Health. 2012.
Trauma Centers and Emergency Departments

Alcohol interventions are associated with a reduction of alcohol intake and a reduced risk of trauma recidivism. Given the prevalence of alcohol problems in trauma centers, screening, intervention and counseling for alcohol problems should be routine.


Patients who receive brief intervention (BI) during a trauma center admission are less likely to be arrested for DUI within 3 years of discharge. BI represents a viable intervention to reduce DUI after trauma center admission

*Journal of Trauma*. 2006;60:29-34.

Screening and brief intervention for alcohol problems in trauma patients is cost effective (an ROI of 1:4) and should be routinely implemented.

What does this mean?
Avoidable Hidden Costs

Assumptions that SUD treatment is too costly or ineffective are incorrect and do not reflect the reality of advancements in treatment and health care management over the last two decades.

When coverage for treatment is limited or denied, insurers and health plan sponsors shoulder hidden costs through emergency room, hospital and other expenses that result from insufficient treatment of the disease of addiction.

SUD treatment expansion and parity benefit not only patient populations through improved care but also insurers through reduced outlays.
Substance Use & Per Capita Medical Costs

Targeting non-traditional healthcare settings for locating individuals with SUDs

- Primary care settings
- Emergency rooms/Trauma centers
- Prenatal clinics/OB/Gyn offices
- Medical specialty settings for diabetes, liver and kidney disease transplant programs
- Pediatrician offices
- College health centers
- Mental health settings
Conclusions

• Addiction is a treatable chronic condition where research has identified many of the biological mechanisms involved

• Increased understanding of neurobiology has allowed for the development of effective, targeted medicines

• Medication-assisted treatment (MAT), combined with behavioral therapies, is an evidence-based practice with superior outcomes than with either alone

• SUD is a demonstrated value-based purchase for reducing the costs of health care overall through integrated services with primary care
How to integrated SUD Treatment into Primary & Specialty Care Medicine

The SCVMC Heart Failure Program
Heart Failure (HF) is a complex condition associated with considerable morbidity and mortality with readmission rates as high as 50 percent within one year of initial hospitalization for HF.

Despite advances in the medical management of HF, drug related problems, such as non-adherence, remain a major factor for hospital readmissions. In addition, poor continuity of discharge care with cardiology can also contribute to HF hospital admissions.
Recent randomized controlled trials prove that a multidisciplinary approach to HF management leads to significant reductions in all cause hospitalizations and HF hospitalizations.

As a public institution located in the San Francisco Bay Area, the patient population of Santa Clara Valley Medical Center (SCVMC) is ethnically diverse, with many complicated medical and socioeconomic obstacles, which differs from populations represented in earlier studies that consisted primarily of Caucasian males.
The main objective of this study is to assess the impact of having a multidisciplinary HF team, consisting of cardiologists, hospitalists, a nurse, a pharmacist, a health education specialist, and a social worker, on HF hospitalizations and HF emergency department or Observation visits, over a six month period.

It is estimated that approximately 50% of patients within the HFP have co-occurring substance use disorders and a large cohort of this group are methamphetamine addicted.

Therefore, having specialty SUD treatment is an important component to the program.
Most Integrated Behavioral Health and Primary Care Medicine use the approach called **SBIRT**

- **Screening, Brief Intervention and Referral to Treatment**
- Evidence-based early intervention strategy
- Designed to identify and intervene with at-risk and high-risk users in the healthcare/hospital and other settings.
Screening

Involves the use of specific, evidence-based questionnaires in verbal, written or electronic formats that are designed to detect risky alcohol and/or drug use.

The questions asked in formal screening are intended to measure quantity and frequency of substance use over defined periods, as well as the occurrence of its adverse consequences.

These screenings are designed to be quick, often lasting only five to fifteen minutes.
• Screening is universal (everyone) for patients in primary care, emergency room/trauma and other healthcare settings.

• Little attention has been paid to the large group of individuals who use drugs but are not, or not yet, dependent and who could successfully reduce their drug use through "early intervention" (Klitzner et al., 1992; Fleming, 2002).

• SBIRT targets those with nondependent substance use and provides effective strategies for intervention prior to the need for more extensive or specialized treatment.

• There are a number of effective tools available to health professionals for screening. The SCVMC Heart Failure Program uses the CAGE-AID screen.
Make screening a routine practice: CAGE-AID

When thinking about drinking or drug use, including illegal drug use and using prescription drugs in ways other not prescribed:

1. Have you ever felt you ought to cut down on your drinking or drug use?
   - Yes (1)
   - No (0)

2. Have people annoyed you by criticizing your drinking or drug use?
   - Yes (1)
   - No (0)

3. Have you ever felt bad or guilty about your drinking or drug use?
   - Yes (1)
   - No (0)

4. Have you ever had a drink or used drugs first thing in the morning to steady your nerves or get rid of a hangover?
   - Yes (1)
   - No (0)
Brief Intervention

Generally consists of a nonconfrontational encounter between a health professional and a patient that is designed to help improve chances that the patient will reduce risky alcohol consumption or discontinue harmful drug use.

A brief intervention goes beyond the sharing of simple advice.

Evidence-based approaches are used to give the patient tools for changing his/her beliefs about substance use and coping with everyday situations that exacerbate his/her risk for harmful use.
SBIRT is all about creating a meaningful conversation.

One interviewing technique is known as the FRAMES model of intervention.

• Give **Feedback** regarding drug and alcohol use
• Leave **Responsibility** for change to the patient
• Give **Advice** to make a change
• Provide a **Menu** of options
• Use an **Empathic** conversational style
• Boost the patient’s **Self-efficacy** to make a change
Next Steps

**Brief Treatment:** for individuals at moderate to high risk, brief treatment emphasizes motivations to change and client empowerment.

Brief Treatment consists of a limited number of highly focused and structured clinical sessions with the purpose of eliminating hazardous and/or harmful alcohol and/or substance use.

**Referral to Treatment:** for those whose screening indicates a severe problem or dependence or who find themselves unable to limit drinking, the next step is referral to specialized treatment for substance use disorders.
SCVMC Heart Failure Program – Patient Flow SUD

Score 1
Possible SUD. RN/LCSW reviews and discusses w/ pt

Patient education about use and medical dx
Explain how health problems can be caused by or exacerbated by substance use.
Monitor and review use patterns at f/u visits

Score 2
Probable SUDs or at-risk use. RN/LCSW reviews w/ pt and refer for assessment

Assessment and ASAM level of care (LOC) placement.
If LOC 0.5 - 1.0, use brief intervention/brief tx on site at VSC
If LOC > 1, consider referral to DADS system of care

Score >2
Suspected high SUDs. RN/LCSW reviews w/ pt and refer for assessment & tx

Brief Intervention/Brief Tx (ASAM 0.5—1.0)

Refer to treatment admission (ASAM > 1)

Successful brief intervention

Brief intervention unsuccessful

Pt refuses treatment

Motivational interviewing and watchful waiting

Continuous recovery management (CRM) – chronic care
Routine screening for early identification of substance use disorders (SUD)

- Screen all primary care patients for SUD using the CAGE-AID.
- Patients can self-administer the screen, although be mindful of language/reading concerns.
- Offer assistance.
- Inform patients that this is now being asked of all patients in order to help accomplish their health goals.
- RN or LCSW reviews U-Tox and CAGE-AID screen with patient and clarifies frequency and duration of use.
- Assessments using the American Society of Addiction Medicine (ASAM) tool.
Routine screening for early identification of substance use disorders (SUD)

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Results of SBIRT

SBIRT programs decrease illicit-drug use rates by 67.7 percent and heavy alcohol use rates by 38.6 percent.

Researchers from the Office of National Drug Control Policy, National Institute on Drug Abuse and the Substance Abuse and Mental Health Services Administration (SAMHSA) analyzed data from 459,599 patients who were screened for alcohol and other drug use at a variety of health-care facilities, and followed up with subjects six months later to track changes in drug-use rates.

The report showed that of the illicit-drug users participating in SBIRT programs, 64.3 percent reported fewer arrests, 45.8 percent who were homeless said they were no longer homeless and 31.2 percent reported fewer emotional problems.

Applying SBIRT to SCVMC HFP patients with SUD will result in improved compliance with their post discharge care plan, reduced preventable complications, and avoidable hospital readmissions.
Bibliography and Resources

Evidence-based treatment for substance use disorders
http://www.samhsa.gov/ebpWebguide/appendixB_Treatment.asp


A Guide to Substance Abuse Services for Primary Care Clinicians
http://www.ncbi.nlm.nih.gov/books/NBK64827/

Integrating Addiction and Primary Care Services

Screening, Brief Intervention, and Referral to Treatment (SBIRT)
http://www.samhsa.gov/prevention/sbirt/
Thank you!