Time to ACT: launching an Addiction Care Team (ACT) in an urban safety-net health system

Marlene Martin,1 Hannah R Snyder,2 Diana Coffa,2 Scott Steiger,1 Joseph P Clement,5 Sumant R Ranji,1 Soraya Azari,1 Oanh K Nguyen,1 Paula J Lum1

ABSTRACT

Across the USA, morbidity and mortality from substance use are rising as reflected by increases in acute care hospitalisations for substance use complications and substance-related deaths. Patients with substance use disorders (SUD) have long and costly hospitalisations and higher readmission rates compared to those without SUD. Hospitalisation presents an opportunity to diagnose and treat individuals with SUD and connect them to ongoing care. However, SUD care often remains unaddressed by hospital providers due to a lack of a systems approach and addiction medicine knowledge, and is compounded by stigma. We present a blueprint for launching an interprofessional inpatient addiction care team embedded in the hospital medicine division of an urban, safety-net integrated health system. We describe key factors for successful implementation including: (1) demonstrating the scope and impact of SUD in our health system via a needs assessment; (2) aligning improvement areas with health system leadership priorities; (3) involving executive leadership to create goal and initiative alignment; and (4) obtaining seed funding for a pilot programme from our Medicaid health plan partner. We also present challenges and lessons learnt.

INTRODUCTION

In 2018, 20.3 million people in the USA had an active alcohol or drug use disorder.1 Opioid overdose deaths have reached epidemic proportions, with alcohol and stimulant-related deaths also rising.2 3 Simultaneously, between 2009 and 2014 hospitalisations for people with substance use disorders (SUD) nearly doubled.4 These hospitalisations are long, costly and associated with high rates of readmission and self-discharge (discharge against medical advice).5 6

Hospitalisation is an opportunity to offer SUD care to patients and connect them to ongoing services, since many are motivated to reduce substance use during hospitalisation.7 Offering and initiating addiction treatment is associated with decreased substance use and readmission rates, and increased linkage to postdischarge care and retention in SUD treatment.8–10 Providing addiction treatment to inpatients also improves patient and provider experiences.11

In this landscape, a variety of acute care SUD models have been developed, including addiction medicine consult services (AMCS). However, funding them is challenging and only a few AMCS are embedded in safety-net health systems.12 We present our approach to launching the Addiction Care Team (ACT), an interprofessional AMCS, in an urban, integrated safety-net health system. We share key factors for successful implementation, the current state of addiction care in our hospital, and ongoing challenges.

SETTING

San Francisco General Hospital (SFGH) is a public hospital and the only Level 1 Trauma Centre in City and County of San Francisco and northern San Mateo County. There are about 75 000 emergency department (ED) visits and 16 500 hospitalisations annually. SFGH has 284 inpatient beds, 58 ED beds and 24 hour psychiatric emergency services. The hospitalised population is 27% Latinx, 26% White, 22% African American/Black, 18% Asian or Pacific Islander and 7% other.

SFGH is part of the San Francisco Department of Public Health (DPH) within the San Francisco Health Network, the city’s integrated health system, which includes primary care, jail health, behavioural health and a skilled nursing facility.

DEVELOPING A PLAN

Preintervention addiction care

Several SUD resources existed prior to the ACT. These included hospital guidelines for alcohol and opioid withdrawal monitoring and management, naltrexone coprescribing for overdose prevention, and protocols to initiate medications for addiction treatment (MAT), including naltrexone, methadone.
and buprenorphine. However, these practices were vari-
ably implemented and largely underutilised by providers.

One physician voluntarily staffed a pager to assist teams in initiating buprenorphine. The only funded programme was comprised of three DPH licensed vocational nurses (LVNs) who counselled hospitalised patients with tobacco or unhealthy alcohol use. LVNs offered nicotine replace-
ment therapy and referral to the California Smokers’ Hotline and assessed those with unhealthy alcohol use for alcohol use disorder and naltrexone candidacy.

Because most efforts were unfunded, siloed and uncoordinated, many care gaps remained. These were especially apparent in care transitions (ie, psychosocial treatment referral and follow-up), MAT initiation and harm reduction counselling. These gaps contributed to high readmission rates among patients with SUD.

Identifying shared priorities

In September 2017, we launched a taskforce composed of stakeholders dedicated to improving health system addiction care. This workgroup included nurses, pharmacists, social workers, physicians and SUD community-based organisation representatives. Importantly, we also invited executive leadership from our integrated health network and the San Francisco Health Plan, a Medicaid managed care plan and the major Medicaid insurer for our health network patients.

Meeting monthly, the taskforce conducted a two-
pronged needs assessment. First, we emailed an anony-
mised survey (online supplemental appendix 1) to hospital trainee, nurse, attending physician and social worker listservs. Using a Likert scale, we inquired about staff and provider satisfaction with inpatient SUD care, comfort delivering addiction care, and what features would be most important in an AMCS.

Second, we extracted electronic health record (EHR) data of hospitalisations between 1 January 2016 and 31 December 2016. To identify substance use-related hospitalisations, we categorised hospitalisations into those with SUD International Classification of Disease (ICD) 10 code(s) and those without one. We also compared demo-
graphic and psychosocial factors, and acute care utilisa-
tion between these groups.

The taskforce then matched SUD improvement areas with our health network’s priorities of equity, safety, quality, care experience, developing staff and providers, and financial stewardship. We also reviewed AMCS litera-
ture and interviewed existing service directors about the funding and composition of their consultation teams.

Needs assessment results

Survey

Of the 128 respondents, 79% thought SFGH probably or definitely needed to transform its approach to SUD care and 89% thought an AMCS would be very or extremely useful for staff, providers and patients. Respondents thought it would be very important for an AMCS to provide assistance with: (1) SUD discharge planning and care transitions (84%); (2) cooccurring mental health disorder management (72%); (3) motivational interview-
ing and counselling services (69%); (4) MAT advice (62%); (5) staff and provider addiction education (56%); and (6) withdrawal management (52%).

EHR data

Among 12 580 adult acute care hospitalisations, 28% had SUD ICD 10 code(s) in the top 10 discharge diagnoses. Alcohol-, amphetamine-, opioid- and cocaine-related diagnoses were found in 54%, 27%, 26% and 23% of SUD-related hospitalisations, respectively (not mutually exclusive).

Primary insurance for SUD-related hospitalisations was 73% Medicaid, 16% Medicare, 5% private, 2% Medicare–Medicaid and 4% other and 43% were unassigned to primary care. Compared with those without SUD-related hospitalisations, those with were more likely to experience homelessness (42% vs 9%), mental illness (30% vs 17%), 30-day readmissions (16% vs 11%) and self-discharges (11% vs 2%).

EXECUTING THE PLAN

Obtaining executive sponsorship and funding

We presented needs assessment results and taskforce recommendations in a Lean A3 format, our health system’s preferred problem-solving process, to hospital, health network and health plan leadership in May 2018. The higher readmission rates among those with SUD-
related hospitalisations alarmed executive leadership. In addition, the disproportionate rates of people experi-
encing homelessness and mental illness, as well as over-
representation of people of colour (data not shown) highlighted inequities in our health system and tied to health system priorities of reducing inequities. Because our proposed AMCS aimed to improve care linkages and potentially reduce readmissions, and because meeting California’s Medicaid incentive programme metric of reducing 30-day readmissions as well as reducing inequities were organisational priorities, supporting an AMCS became a funding priority for executive leadership.

Our efforts coincided with the health plan’s Quality Improvement Programme to advance clinical quality and patient safety for people with SUD. As part of its response to the opioid overdose epidemic, the health plan sought to support local health systems to increase their capacity to initiate MAT. Using strategic reserve funds, the health plan awarded our health network a 3-year US$900 000 grant to pilot the ACT at SFGH.

IMPLEMENTATION

We designed the ACT based on available funding, needs assessment results and existing AMCS models. The ACT was rolled out in January 2019 in a stepwise fashion to pilot and improve workflows, build capacity, and develop collaborations with hospital services. The team consisted of a half-time attending, full-time patient navigator and
a rotating addiction medicine fellow. The three alcohol and tobacco focused DPH LVNs were integrated into the ACT and onsite 7 days a week. All other ACT providers are onsite Monday–Friday. Fellows provide telephone support afterhours on weekdays and attendings cover weekends.

ACT attendings include addiction medicine board-certified and board-eligible providers.14 Providers were recruited from family medicine, internal medicine, toxicology, obstetrics and gynaecology, addiction psychiatry and adolescent medicine based on having addiction medicine board-certification or committing to obtaining it. Table 1 details ACT roles and responsibilities.

The ACT is unique in both responding to primary team consults and LVNs proactively seeing patients with unhealthy substance use. Like other AMCSs, our team has led system-wide addiction care improvements via interprofessional education, creating EHR SUD ordersets, and petitioning the hospital formulary committee to increase the availability of evidence-based addiction pharmacotherapies.12 In its first year of service, despite a staggered roll-out, the ACT

<table>
<thead>
<tr>
<th>Team member</th>
<th>Needs addressed</th>
<th>Workflow</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVN 2.9 FTE</td>
<td>➤ Assessment of unhealthy substance use</td>
<td>➤ Visit triggered if patient screens positive for smoking or unhealthy alcohol use</td>
<td>➤ Assess people with unhealthy alcohol use for alcohol use disorder</td>
</tr>
<tr>
<td></td>
<td>➤ Motivational interviewing and counselling</td>
<td>➤ 7-day a week coverage</td>
<td>➤ Assess interest in naltrexone for alcohol use disorder and nicotine replacement therapy, varencline or bupropion for tobacco use disorder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>➤ Refer to California Smokers’ Hotline and groups</td>
</tr>
<tr>
<td>Patient navigator 1.0 FTE</td>
<td>➤ Discharge planning</td>
<td>➤ Weekday coverage</td>
<td>➤ Communicate with primary teams when patients express interest in medications for alcohol or tobacco use disorder</td>
</tr>
<tr>
<td></td>
<td>➤ Motivational interviewing and counselling</td>
<td></td>
<td>➤ Provide motivational interviewing for substance use</td>
</tr>
<tr>
<td></td>
<td>➤ Coordination with social work to refer to mental health support</td>
<td></td>
<td>➤ Request ACT patient navigator, fellow and/or attending consult when patient requires specialty motivational interviewing, outpatient linkage, initiation of medication for stimulant or opioid use disorder or extended-release naltrexone</td>
</tr>
<tr>
<td>Fellow 0.75 FTE</td>
<td>➤ SUD evaluation and diagnosis</td>
<td>➤ Visit triggered if primary team consults for postdischarge linkage or ACT fellow, attending or LVN request</td>
<td>➤ Administer extended-release naltrexone</td>
</tr>
<tr>
<td></td>
<td>➤ Motivational interviewing and counselling</td>
<td></td>
<td>➤ Use motivational interviewing to evoke patient goals and guide patients towards healthier behaviours</td>
</tr>
<tr>
<td></td>
<td>➤ Treatment recommendations</td>
<td></td>
<td>➤ Provide harm reduction counselling</td>
</tr>
<tr>
<td></td>
<td>➤ Staff and provider education</td>
<td></td>
<td>➤ Refer to outpatient primary care and addiction treatment including peer support groups, harm reduction, intensive outpatient and residential treatment programmes</td>
</tr>
<tr>
<td>Attending 0.5 FTE</td>
<td>➤ Supervision</td>
<td>➤ Visit triggered if primary team consults or LVN requests</td>
<td>➤ Provide postdischarge navigation support for barriers encountered by providing patients ACT phone number</td>
</tr>
<tr>
<td></td>
<td>➤ Motivational interviewing</td>
<td>➤ Weekday coverage</td>
<td>➤ Follow-up with patients who have a phone once via phone after discharge to check in regarding care transition</td>
</tr>
<tr>
<td></td>
<td>➤ Treatment recommendations</td>
<td></td>
<td>➤ Communicate and coordinate plans with primary teams and outpatient programmes</td>
</tr>
<tr>
<td></td>
<td>➤ Staff and provider education</td>
<td></td>
<td>➤ Refer to outpatient mental/behavioural health services</td>
</tr>
<tr>
<td></td>
<td>➤ Billing</td>
<td></td>
<td>➤ Call patients who have a phone once after discharge to check in regarding care transition</td>
</tr>
</tbody>
</table>

ACT, Addiction Care Team; FTE, full-time equivalent; LVN, licensed vocational nurse; SUD, substance use disorder.

Table 1 ACT Members, Roles and Responsibilities
experienced a rapid uptake with 631 consultation requests (Figure 1) and more than 20 direct discharges to residential treatment programmes.

**Billing**

The ACT bills using consultation codes under time-based or element-based documentation and recoups professional fees. As a county hospital in a Medicaid expansion state, most ACT patients are insured by a managed Medicaid plan and the hospital is reimbursed via capitated payments. Uninsured and undocumented patients may qualify for Healthy San Francisco, a programme for San Francisco residents financed by the city’s general fund which includes access to preventative, primary and hospital care within the city.

**Challenges**

In its first year, the ACT’s key challenge was expanding capacity to meet overwhelming service demand. More than a quarter of consults remained unstaffed, and we were unable to offer services to psychiatry and ED patients. We achieved our current capacity by augmenting health plan seed funding with additional time-limited grants and philanthropic support.

Although the service addresses core needs identified by our taskforce, financial sustainability remains uncertain. Billing revenue is severely inadequate to finance the ACT and this is an ongoing and growing concern in the context of the COVID-19 pandemic. While EDs and hospitals reported decreased patient volumes, the ACT’s consult requests increased by over 30% (data not shown) when shelter-in-place orders were implemented in San Francisco on 17 March 2020, and we expect volume to only increase with a worsening addiction epidemic.

Finally, also due to financial limitations, the ACT is currently unable to support a dedicated addiction medicine mental health provider. Per needs assessment results, 30% of patients with SUD-related hospitalisations have a co-occurring mental health disorder and this is the second highest need identified by survey respondents. While a psychiatric consultation service exists, its bandwidth is limited to psychiatric emergencies.

We are currently completing a 3-year ACT pilot and evaluating impact to secure sustainable funding and continue improving care for hospitalised patients with SUD.

**LESSONS LEARNED**

A SUD taskforce led to a unified, system-based approach to addressing SUD during hospitalisation via the ACT at SFGH. Key contributors to successfully launching the ACT were: (1) demonstrating the scope and impact of SUD in our health system through a needs assessment that incorporated EHR data and staff and provider perspectives; (2) aligning improvement areas identified by our needs assessment with health network priorities; (3) early involvement of executive leadership, which created goal and payer initiative alignment; and (4) obtaining seed funding from our health plan to support the ACT.

This perspective presents a blueprint for health systems to launch their own AMCS. As the SUD epidemic continues taking its toll on our society, exacerbating existing inequities, and the isolation and trauma caused by COVID-19 continues, complications of substance use rise. It is more important than ever for health systems to provide high-quality, equitable and evidence-based care for people with SUD by expanding the number of AMCS.

**Twitter** Marlene Martin @MarleneMartinMD

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13 Shook J. Managing to learn: using the A3 management process to solve problems, gain agreement, mentor and lead. Cambridge, MA Lean Enterprise Institute; 2008.


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Appendix 1

This appendix contains the survey we used. It includes a modified version of the Shortened Alcohol and Alcohol Problems Perception Questionnaire (SAAPPQ).[1]

This survey is to determine the utility and feasibility of an inpatient addiction medicine consultation service at SFGH. The service would be staffed by an attending physician, with the possibility of residents and medical students, social workers, and nurse team members as well. Services might include initiation and maintenance recommendations for buprenorphine and methadone, medications for alcohol cravings or withdrawal, motivational interviewing, and discharge planning support.

1. What is your professional role?
   a. Nurse
   b. Resident/Fellow
   c. Faculty Physician
   d. Social Worker
   e. Nurse Practitioner or Physician Assistant
   f. LVN
   g. Medical Student
   h. Other ________________________________________________

2. Which inpatient service do you most commonly work with?
   a. Medicine
   b. Family medicine
   c. Pediatrics
   d. OB/Gyn
   e. General surgery
   f. Orthopedic surgery
   g. Psychiatry
   h. ICU
   i. Variable (general med/surg)
   j. Emergency department
   k. Other ________________________________________________

3. How satisfied are you with the care that we currently provide to people with substance use disorders at SFGH?
   a. Extremely dissatisfied
   b. Somewhat dissatisfied
   c. Neither satisfied nor dissatisfied
   d. Somewhat satisfied
   e. Extremely satisfied

4. Do we need to change our approach to treating substance use disorders at SFGH?
5. How useful would an addiction medicine consultation service be for you and your patients?
   a. Not at all useful
   b. Slightly useful
   c. Moderately useful
   d. Very useful
   e. Extremely useful

6. Please rate the importance of the following features of an addiction medicine consultation service as a) not important, b) a little important, c) fairly important, or d) very important.
   a. Medication advice
   b. Assistance with drug related medical conditions (e.g. withdrawal, chest pain)
   c. Discharge planning
   d. Patient counseling and motivational enhancement
   e. Staff and provider education
   f. Management of coexisting psychiatric conditions

7. How comfortable do you feel with the following activities? Please answer with respect to your discipline, ie for a physician managing alcohol withdrawal might mean writing prescriptions vs for a nurse it might mean administering CIWA scales. Options: a) very uncomfortable, b) somewhat uncomfortable, c) neither comfortable nor uncomfortable, d) somewhat comfortable, e) very comfortable.
   a. Screening for substance use disorders
   b. Managing patients in opioid withdrawal
   c. Managing patients in alcohol withdrawal
   d. Performing motivational interviewing
   e. Discussing buprenorphine and methadone with patients
   f. Discussing medications to reduce alcohol cravings with patients

8. What resources do you need to help improve care for your patients--either during the hospitalization or at the time of discharge?
   a. Free text

9. If an addiction medicine consultation service were available, how many of your current patients would you refer today? Please only answer if you are currently working in the inpatient setting.
   a. Free text

10. I feel I know enough about the causes of drug use and drinking problems to carry out my role when working with people with drug or alcohol problems.
    a. Strongly agree
    b. Agree
    c. Somewhat agree
    d. Neither agree nor disagree
    e. Somewhat disagree
11. I feel I can appropriately advise my patients about drugs and alcohol, and their effects.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

12. I feel I do not have much to be proud of when working with people who have drug or alcohol problems.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

13. All in all I am inclined to feel I am a failure with people with drug or alcohol problems.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

14. I want to work with people with drug or alcohol problems.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

15. Pessimism is the most realistic attitude to take towards people with drug or alcohol problems.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree
16. I feel I have the right to ask patients questions about their alcohol or drug use when necessary.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

17. I feel that my patients believe I have the right to ask them questions about drug or alcohol use when necessary.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

18. In general, it is rewarding to work with people who have drug or alcohol problems.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

19. In general, I like people who have drug or alcohol problems
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

20. Please add any additional comments, including your name if you would like to be contacted.
   a. Free text

Reference