Team-based Proactive C-L Psychiatry: Integrated care meets inpatient C-L psychiatry

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Introduction

Proactive C-L psychiatry (slide 3) is an **interdisciplinary model** of C-L psychiatry that incorporates **systematic screening** for mental health conditions and behavioral concerns, **early clinical intervention**, and real-time **integration with primary teams** or services. Its goals are to **facilitate efficient care** and **improve outcomes** in a **cost-effective manner**.

Unmet needs: Rethinking C-L psychiatry (slide 4)

Mental illness exacts a staggering toll (slide 5): it accounts for a third of all years lived with disability. Five of the top 20 causes of disability in high-income countries are mental health conditions, and mental illness disproportionately affects working-aged adults, leading to substantial hardship of individuals, their families, and communities at large. Mental illness also contributes to leading causes of death as well, including heart disease, cancer, and cerebrovascular disease. Suicide is the 10th leading cause of death in the US. Based on a meta-analysis from 29 countries across 6 continents, severe mental illness is associated with twice the relative risk of all-cause mortality. Additionally, serious mental illness and substance use disorders are associated with shorter life expectancy. Persons with serious mental illness live, on average, 10 years less; persons with substance use disorders live 25 years less; persons with both live 30 years less.

Mental illness imposes several costs in the general medical hospital as well (slide 6). First are the costs to the hospital itself. At the University of California Davis Medical Center, the hospital-specific cost attributable to mental illness was estimated to be $11 million annually. Common sources of costs include the use of constant companions and restraints, poorer health outcomes, longer hospitalizations and readmissions, and denied days due to delay in psychiatric admission. Next are the costs to staff. These can include lower job satisfaction and greater distress, personal concerns over lack of training in relation to caring for patients with mental illness, issues around caring for patients with a stigmatized patient population, and the potential for altered care due to implicit bias. These concerns can also have spillover effects to other patients. Most importantly, though, are the direct cost to patients, including compromised quality of care for a host of reasons including, for instance, mistrust that leads patients to avoid future medical care.

Roughly 40% of medical inpatients have psychiatric comorbidity (slide 7), which is associated with longer hospitalization, higher risk of re-admission, and higher overall healthcare costs. Nearly every psychiatric condition can compromise care in many ways (slide 8). For several examples see **Table** below.

Condition	Selected maladaptive features
Delirium	Agitation, restlessness, confusion
Dementia	Forgetfulness, sundowning, care refusal
Personality change due to TBI	Emotional lability, impulsivity
Developmental disorder	Nonverbal, oppositional, defiant
Eating disorder	Hiding food, manipulating weigh-ins
Substance use disorder	Exaggerating CIWAs, contraband
Psychotic disorder	Paranoia, cheeking medications
Anxiety disorder	Refusing workup, overuse of call button
Mood disorders	Suicidal, disruptive mania
Personality disorder	Demanding, hostile, “splitting”
Munchausen syndrome	Self-injury, deception

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Proactive C-L: A modern approach (slide 9)

In 2011, Desan *et al*. published the results of small-scale proactive psychiatric consult service (slide 10). The study employed an A-B-A design, and during the 30-day study phase (phase "B" in the A-B-A sequence) a psychiatrist was embedded on an internal medicine service. During the study phase, the psychiatric consult rate was roughly double what it was during the comparison "A" phases: 23% *vs* 11%, respectively. Roughly half of patients were assessed by the embedded psychiatrist to have an actionable mental health condition. The proactive C-L psychiatrist intervention was associated with a reduced length of stay (2.9 days *vs* 3.8 days) and a lower proportion of patients with a length of stay of 4 days or longer, relative to the comparison "A" phases. The authors concluded that there was a very high burden of psychiatric illness on internal medicine services and an under-utilization of psychiatric services.

Building on the success of this early work, the psychiatric services at Yale-New Haven Hospital studied the effect of a multidisciplinary psychiatric consult team on hospital length of stay (slide 11). In a pre–post study, a proactive psychiatric consult team known as the Behavioral Intervention Team (BIT) was implemented across three medicine units (92 beds). The team consisted of a half-time psychiatrist, a psychiatric nurse (initially a clinical nurse specialist and later an advanced practice registered nurse), and a psychiatric social worker with experience in acute psychiatric settings. The results of the study were positive: the length of stay among patients who received a psychiatric consultation was reduced with the team-based intervention (7.3 *vs* 6.7 days) and across the total unit population (5.9 *vs* 5.6 days).

A cost-benefit analysis of this pre–post study was similarly positive (slide 12). The two sources of cost savings considered were average direct cost per case and backfill. (1) The average direct costs per case were calculated to be $6760 prior to the BIT intervention and $6550 during the BIT intervention, suggesting $210 cost savings per case where BIT was involved. Across the 509 patients evaluated by the BIT service, the estimated savings was $107k. (2) A lower average length of stay means a higher number of patients admitted over a given period, and higher patient flow means that additional patients are being admitted to "backfill" the fractions of days freed up by shorter average length of stay (LOS). Assuming 100% occupancy, backfill means more revenue generated. An estimated 57 more patients were admitted due to reduced LOS among patients on whom BIT consulted, resulting in an estimated $724k additional revenue during the 11 months of the intervention. Subtracting the salary costs of the BIT service members from the gross cost benefit yielded a net benefit of $525k for the 11 months, or $572k annualized (slide 13).

A recent systematic review evaluated the effect of proactive consultation on hospital LOS (slide 14). In that review, proactive models whose screening was guided by clinical expertise in mental health care and where care delivery was integrated with primary services were associated with reduced LOS. It also found "favorable returns on investment that more than offset the increased costs of providing this level of enhanced care." The proactive model of C-L differs from the traditional model of C-L in several ways (slide 15), see **Table** at right.

Characteristic	Traditional C-L	Proactive C-L
Service delivery	Reactive (often to crises)	Proactive
Personnel	Single discipline	Multidisciplinary
Case identification	Primary team orders a consultation	Screening-driven Enriched by nursing interactions
Mode of intervention	Recommendations to primary team	Collaboration with patients treatment team (providers, nurses, social work)
Service goals	Treatment recommendation Risk reduction Crisis management	Preventing behavioral barriers to care Crisis prevention
Location	Across the hospital (typically)	Dedicated hospital units or services

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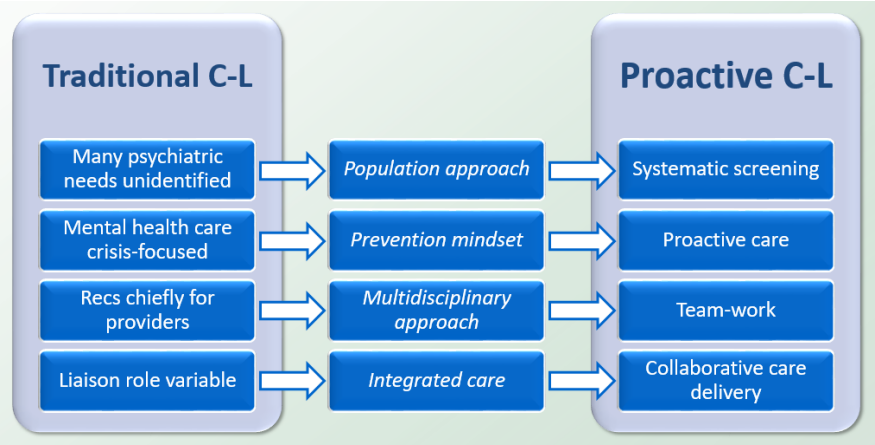
The cardinal principles of proactive C-L

The four cardinal principles of proactive C-L psychiatry derive from well-established principles of collaborative care models in other settings (slide 16), see **Figure** at right. In practice, though, proactive C-L benefits not only from each of these in isolation but in how they reinforce one another to enhance the value of care provided.



Daily operations: The principles of proactive C-L in action (slide 17)

1. Population approach: systematic screening (slide 18). Important considerations include:
    a. **Goal**: to identify patients for whom early psychiatric intervention is likely to preempt crises, clinical deterioration, or compromised care.
    b. **Systematic**: reviewing every patient on certain hospital units or services
    c. **Standardized**: using a consistent, reproducible strategy
    d. **As early as feasible**: prompt screening to prevent a cascade of complications
    e. **Sliding threshold**: adaptable interventions based on patient volume
    f. **Step-wise**: may be done in one step (*e.g.*, positive/negative on chart review) or multi-step (*e.g.*, screening those positive on chart review with nursing/primary team)
    g. **Human vs machine**: can be by hand or automated (*e.g.*, a report that can be generated as needed), though electronic medical records often need to be optimized
2. Prevention mindset: proactive care (slide 19), with a **tailored degree of involvement**. That is, interventions can be carried out by any number of proactive CL team members and titrated to the need of specific patients, teams, or clinical scenarios. Common ways of delivering care include:
    a. **Curbsides**: targeted recommendations w/o formal consultation often adequate
    b. **Care/behavioral plans**: develop plans to address maladaptive interactions between patients and staff, care-compromising behaviors, or non-adherence
    c. **Nurse interventions**: provide personalized recommendations for nurses to treat patients (*e.g.*, delirium precautions, poor sleep hygiene)
    d. **Psychiatric disposition**: prompt facilitation of disposition if psychiatric needs are anticipated (*e.g.*, psychiatric admission, partial hospitalization)
    e. **Aftercare planning**: ensuring adequate aftercare supports, community resources, and mental health referrals
3. Multidisciplinary approach: teamwork (slide 20). The proactive C-L service works as a mental health team, and each member has specific roles. For example:
    a. **C-L psychiatrist**: Serves as the medical director and provides supervision of care, including as the collaborating physician for nurse practitioner(s) on the service. The

psychiatrist is chiefly involved in consultations, especially where there is medical or neuropsychiatric complexity, where legal documentation is required (*e.g.*, in support of probate court proceedings or for involuntary commitments), or where hospital policy requires psychiatric evaluation (*e.g.*, requests for capacity evaluations).

   b. **Nurse practitioner**: Serves as the team "quarterback." The NP coordinates the service and work-flow, including triaging of new consultations and requests for assistance. The NP performs consultations and follow-ups and may also support the screening process.
   c. **Social worker**: Serves as the primary screener, conducts targeted clinical assessments and provides care within the scope of their practice. The SW also oversees coordination with community resources and assists with arranging aftercare and aftercare disposition. The psychiatric SW on a proactive C-L service will often need to develop a collaborative relationship with existing SW coverage on any units served by a proactive C-L service.
   d. **Potential team members**: Several other team members may be considered for inclusion on a proactive C-L service. Examples include: clinical nurse specialist, RN coordinator, patient service manager, health psychologist, and trainees. In general, inclusion of additional team members is based on availability, scope of practice, and specific roles that are desired based on the population being served.

4. Integrated care: collaborative care delivery (slide 21)
   a. **Corresponding expertise**: physician to physician; NP to NP/RN; SW to SW/care coordinator
   b. **Aligning workflow**: psychiatric care tailored to medicine & nursing workflow on dedicated units/services
   c. **Flexible intensity**: not all patients
   d. **Real-time communication**: the effect of which supports efficiency and develops healthy relationships, bidirectional education, and mutual trust

Common steps in performing a "screen" (slide 22)

1. Ideally, screening is performed as early as possible during the course of a patient's care. When doing this "by hand" (as opposed to an automated, digital screen performed by the electronic medical record itself), charts of admitted patients are reviewed each morning for psychiatric comorbidity or other behavioral concerns. The criteria for screening are generally tailored to the population and the composition of the proactive C-L team, based on their expertise.
2. The proactive C-L SW or NP then discusses any patients identified on chart review with nursing staff, including the patient's bedside RN, the charge nurse, or both (slide 23). At this step, the screener is inquiring about active issues, whether the patient is at their baseline, or answering basic questions that the nurse may have regarding mental health issues. If the SW is performing screens, they may visit the patient to perform a brief clinical evaluation to identify specific behavioral or mental health concerns, solicit information about current or anticipated mental health care, or other relevant mental health issues.
3. The next step is for the screener (again, often the SW or NP) to review the patient with the primary medical or surgical team (or, where applicable, provider singular) (slide 24). At this stage, based on the information gathered in previous steps of screening and the conversation with the primary provider/team, one of three outcomes is usually selected:

a. No changes in care are warranted. For instance, the patient may have a stably treated depression, bipolar disorder, *etc*. and be connected with care.
b. Curbside advice or targeted recommendations provided. For instance, the team may have a question about medication dosing, side effects, *etc*. Or, based on the proactive C-L team composition, there may be a variety of clinical opportunities that do not rise to the level of a formal consultation (*e.g.*, aftercare arrangement, substance abuse counseling, behavioral plans).
c. If there is an acute concern or one that requires an in-person evaluation by a licensed mental health provider (NP or MD), the primary team/provider orders a formal psychiatric consultation request.

Notes about daily workflow (slide 25)
The workflow may vary considerably based on the setting, team composition, and the workflow of the services or units in which proactive C-L psychiatric services are integrated. An illustrative workflow is provided below.

- **Before proactive C-L rounds**, the screening process begins. Charts are reviewed, or an automated screening mechanism is reviewed.
- **Proactive C-L rounds**, these are run very similar to traditional C-L rounds where each patient on the consult list are reviewed. However, in addition to reviewing patients on whom there are active consultation orders, the proactive C-L team also reviews any patients identified on chart review so that screens can be distributed to appropriate team members. It also allows the team to plan their day and prioritize specific patients.
- **Care delivery**, varies based on the role of the proactive C-L team member, number of screens, and current volume of active consultations. In general, this proceeds as follows:
  - Nursing care, primary team, or interdisciplinary rounds: screeners review patients identified on chart review with nursing teams, primary teams, or—where these occur—on interdisciplinary rounds.
  - Prioritize patients for care efficiency (e.g. care-compromising behaviors)
  - Consultations performed, and these can be done jointly by the licensed provider on the proactive C-L team along with SW for care collaboration
  - Ongoing, real-time conversations with primary teams and nursing staff
  - This approach, by advancing the workload to the morning, cuts down dramatically on the "discharge dependent" consult, leaving the afternoons for opportunities for educational investment

Future horizons (slide 26)
The field awaits the results of the first modern randomized trial of proactive, integrated C-L, the UK HOME Study (Walker *et al*. The HOME Study. *Trials* 2019) (slide 27). The field of proactive C-L psychiatry is also beginning to explore opportunities to expand to settings with higher costs per patient such as critical care, oncology, and surgery, where the value of proactive C-L services might be even greater than on internal medicine or hospital medicine services. Additionally, within the context of value-based care and especially within single-payer systems (*e.g.*, VA), greater vertical integration stands to improve a variety of care metrics.

Several outcomes of interest in relation to proactive C-L psychiatry also deserve further attention (slide 28). These include the following:

- Financial impact beyond reduced length of stay
  - Cost of sitters & security
  - Cost of nursing turnover
  - Re-admission rates
  - Enhanced RVU
- Satisfaction: providers, nurses, patients, families
- Medical staff burnout
- Medical staff performance
- Patient symptoms, functioning, and outcomes
- Care quality: injuries (patients & staff) and falls
- Handoff to outpatient providers (vertical integration)

Several questions about proactive C-L psychiatry remain (slide 29). Among these include:

- Which elements of proactive C-L are required for which benefits?
- Are there more effective ways of operationalizing the four principles of proactive C-L?
- Which patient-specific factors (*e.g.*, age, population) and hospital contexts (*e.g.*, critical care, surgery) might experience differential benefits from different ways of delivering proactive C-L?
- What factors are associated with successful implementation and delivery of proactive C-L models?

For those interested in learning more about this model of care, networking with others who are practicing in proactive C-L care services, or implementing this at their institution, the ACLP has a vibrant Proactive C-L Psychiatry Special Interest Group (SIG) (slide 30). This group represents a growing community of providers currently practicing in this model of care, and it offers an active Listserv for real-time communication so that members can learn from one another. Within the SIG, members can receive peer or professional consultation from other members. The SIG website (www.clpsychiatry.org/sigs/proactive-cl-sig/) offers information on this model as well as a variety of resources in the Resource Center (…/proactive-cl-sig-resources). Notable resources include:

- An **overview** of Proactive C-L Psychiatry
- **Curated materials** from sites with Proactive C-L services, such as business plans, executive summaries, and job descriptions
- A regularly **updated bibliography** on Proactive C-L
- A review of **previous ACLP presentations** (symposia, workshops, *etc*.)