

The Rise of Early Psychosis Care in California: An Overview of Community and University-Based Services

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Objective: California's Mental Health Services Act Prevention and Early Intervention funds provide a unique opportunity for counties to initiate programs focused on early intervention in mental health, including early psychosis. To explain the configuration of early psychosis programs and plan for a statewide evaluation, this report provides an overview of California's early psychosis programming, including service composition, funding sources, inclusion criteria, and data collection practices.

Methods: Following a comprehensive identification process, early psychosis program representatives were contacted to complete the California Early Psychosis Assessment Survey (CEPAS).

Results: The response rate to the CEPAS was excellent (97%, 29 of 30 active programs across 24 of 58 counties). Most programs (N=27, 93%) serve individuals with first-episode

psychosis between the ages of 12 and 25. Twenty-two programs (79%) provide more than half of the standard components of early psychosis care outlined in the First-Episode Psychosis Service Fidelity Scale. Sixty-four percent of programs collect client-level data at intake and follow up on five or more relevant outcome domains; however, these varied significantly across sites.

Conclusions: Substantial variability in services, inclusion criteria, and data recorded was evident across programs. Prior to conducting any large-scale evaluation, these findings highlight the significant challenges in retrospectively evaluating program effectiveness, need to harmonize program data collection methods, and importance of assessing the impact of program variability on outcomes.

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Across multiple countries, programs serving individuals with early psychosis have been found effective (1). Some countries (e.g., United Kingdom) have adopted top-down standardized models, whereas in the United States, several states have allowed for a bottom-up approach. In 2004, California passed the Mental Health Services Act (MHSA), which established specific mental health services funding, including Prevention and Early Intervention services. Funds are distributed at the county level with autonomy in how they are allocated. Many counties used these resources to develop early psychosis programs. Rather than implementing one treatment model across the state, California counties are permitted to adopt different evidence-based early psychosis care models, with the ability to modify some program details to appropriately address local needs. In 2014, state mental health block grant funds were allocated across the United States for early psychosis services, leading to the development of early psychosis programs using a variety of evidence-based treatment models that were executed at a state or local level. Although California has served as a

precursor to the national expansion of early psychosis programs in the United States, its county-driven mental health system led to implementation of diverse programs with little top-down coordination.

HIGHLIGHTS

- Over half of California's counties have developed (41%) or are developing (21%) early psychosis programs, with the majority serving both individuals with first-episode psychosis and at clinical high risk of psychosis.
- Significant variability was reported in clinical populations, data collection practices, and outcomes collected between programs, precluding statewide evaluation using retrospective data.
- Reported variability among programs in components of coordinated specialty care highlights the need for careful evaluation of service delivery at program level to understand the impact of such variation on client-level outcomes.

For U.S. programs, evidence-based treatment components include broad community-based outreach with rapid referral to reduce duration of untreated psychosis (2), comprehensive assessment to determine eligibility, and team-based coordinated specialty care (CSC) (3). Treatment includes case management, ongoing psychiatric or medical assessments and treatment, client and family psychoeducation and psychotherapy, educational and vocational support, and relapse prevention. Most programs provide services to individuals who recently developed a psychotic disorder or those at clinical high risk of psychosis to reduce the likelihood of developing full psychosis.

EARLY PSYCHOSIS PROGRAMMING IN CALIFORNIA

Though founded on existing evidence-based treatment models, California counties have discretion in how they implement their individual early psychosis programs. This approach allows counties to tailor services to the needs of the local population and the resources available (4). Although such customization may be practical for individual programs, this lack of consistency could dilute the measurable impact of these programs on client outcomes (5–10). A similar issue exists at a national level, given that individual states or local jurisdictions have chosen to implement early psychosis programming out of a variety of potential models (4). CSC is effective in improving outcomes in early psychosis (11, 12). However, it is not clear which particular components are key to improving outcomes. Additionally, although recent studies suggest that it is feasible to implement CSC in clinical practice (13), it is unclear how effective the intervention is when delivered in this setting, as opposed to within the more structured environment of a clinical trial. Evaluating the effectiveness of CSC across a range of existing heterogeneous community programs for early psychosis represents an important step toward determining the effectiveness of the model in standard clinical practice. Exploring the impact of program-level differences across these services may help to identify which particular components of care are key to improving specific outcomes. However, before an evaluation can be conducted, it is critical to understand the composition of the programs that may be included, their data collection practices, and the nature of the heterogeneity between programs.

This article provides a descriptive summary of California's early psychosis programs, including the composition of program services, funding sources, data collection practices, inclusion criteria, and use of data collection system (e.g., electronic health records). Given recent interest in harmonized data collection and coordination for early psychosis programs nationally (14), this represents a necessary first step in developing an evaluation approach for the state's complex landscape of early psychosis programs.

METHODS

Design

From May to October 2016, active early psychosis programs were identified through a multiphase process that included review of mental health and county program Web sites, MHSA plans, Substance Abuse and Mental Health Services Administration (SAMHSA) mental health block grant applications, and stakeholder feedback. The MHSA coordinator in each county was contacted to confirm the existence of an early psychosis program and identify a program or county representative.

In October 2016, early psychosis program representatives were contacted via e-mail with a project overview and participation request, followed by a link to the California Early Psychosis Assessment Survey (CEPAS). In counties with more than one program, representatives were asked to complete separate surveys to capture the nuances between programs. If the representative failed to respond after 2 weeks, three courtesy calls were administered and additional reminder e-mails were sent to encourage survey completion. Once the surveys were completed, representatives were contacted to clarify vague responses, resolve discrepancies in the data, or resubmit missing data through May 2017. This evaluation was reviewed and approved by the University of California, Davis Institutional Review Board.

CEPAS

The CEPAS is a structured online survey designed to gather information about early psychosis program characteristics and the nature of the data collected (see Appendix 1, which is available as an online supplement to this article). The First-Episode Psychosis Services Fidelity Scale (FEPS-FS 1.0) (10, 15, 16), a standardized measure of fidelity to program best practices (see Supplemental Methods in the online supplement), was integrated into the CEPAS to assess both the presence and the absence of treatment model components. Additionally, the CEPAS includes multiple-choice and open-ended questions on the following areas: client age, diagnoses served, outcomes data collection methods, program funding sources, program outreach methods and family involvement, program treatment components, pharmacotherapy options offered, administrative program components (e.g., staff-to-client ratio, types of staff employed), use of Early Psychosis Clinical Services PhenX toolkit measures (17), challenges or barriers to program implementation, and opinions on each component of early psychosis care described within the FEP-FS.

Prior to CEPAS distribution, local stakeholders including early psychosis program managers, MHSA staff, and clients with lived experience reviewed the scale to confirm that items were understandable and captured the necessary data. Results of the presence or absence of treatment components are reported here, whereas program ratings of the importance of these components are reported elsewhere (18).

TABLE 1. Characteristics of 30 county programs for treatment of early psychosis in California^a

Name	County	Start of program ^b	Age (years)		DUP (months) ^c	Treatment model	Duration of care (years)	Intakes per month	Clinical populations ^d
			Minimum	Maximum					
Prevention and Recovery in Early Psychosis (PREP) Alameda	Alameda	2010	16	24	24	PREP	2	3–5	SZ
First Hope	Contra Costa	2013	12	25	na ^e	Other	2	8	CHR
First Episode Psychosis Clinic	El Dorado	2016	14	25	6	Recovery After an Initial Schizophrenia Episode (RAISE)	3	0–1	SZ, mood, OPSD
First Onset Team	Fresno	2010	18	28	24	Uncertain	3	37	SZ, mood, CHR, OPSD
Imperial Portland Identification and Early Referral (PIER)	Imperial	2015	12	25	12	PIER	2	3–4	Mood, CHR, OPSD
Early Psychosis Intervention	Los Angeles	2014	14	25	12	CAPPS	1	30	SZ, CHR, OPSD
University of California (UC), Los Angeles (UCLA) Aftercare Research Program ^f	Los Angeles	2014	18	45	24	Other	3	15	SZ
UCLA Center for the Assessment and Prevention of Prodromal States (CAPPS) Program ^f	Los Angeles	2001	12	30	nr ^g	Other	2	8	Mood, CHR, OPSD
First-Episode Psychosis Peer Support	Madera	2015	16	30	nr ^g	Other	1	4	SZ, mood, OPSD
First Episode Psychosis Program	Merced	2015	15	30	6	Uncertain	1	30	SZ, mood, CHR, OPSD
PREP Monterey	Monterey	2013	14	35	60	PREP	2	3–4	SZ
Napa Supportive Outreach and Access to Resources (SOAR)	Napa	2014	8	30	24	EDAPT	2	3	SZ, mood, CHR, OPSD
Orange County Center for Resiliency, Education, and Wellness	Orange	2011	12	25	24	EASA	4	9	SZ, OPSD
UC, Davis, Early Diagnosis and Preventative Treatment (EDAPT) Clinic ^f	Sacramento	2004	12	40	24	EDAPT	2	6–8	SZ, mood, CHR, OPSD
UC, Davis, Sacramento EDAPT Clinic	Sacramento	2011	12	30	24	EDAPT	2	6–8	SZ, mood, CHR, OPSD
Pathways–Kickstart	San Diego	2010	10	25	6	PIER	2	34	SZ, mood, CHR, OPSD
Cognitive Assessment and Risk Evaluation	San Diego	2012	12	30	24	PIER	2	8	SZ, mood, CHR, OPSD
Early Psychosis ^f	San Francisco	2009	12	35	60	PREP	2	10–20	SZ, mood, CHR, OPSD ^h
UC, San Francisco, Early Psychosis Clinic ^f	San Francisco	2008	No limit	No limit	60	PREP	No limit	5–6	CHR
Telecare Early Intervention Recovery Services ⁱ	San Joaquin	2015	16	25	12	PIER	2	3	SZ, mood, CHR, OPSD
Campus Residential Crisis Program	San Luis Obispo	2015	17	25	36	RAISE	1	15	SZ, mood, CHR, OPSD
PREP San Mateo	San Mateo	2012	14	35	24	PREP	2	5	SZ, mood, CHR, OPSD
Behavioral Wellness Transition Age Youth Program	Santa Barbara	2010	16	25	12	EDAPT	2	40	SZ, mood, CHR, OPSD
Raising Awareness and Creating Early Hope Program	Santa Clara	2011	10	25	12	PIER	1	3	SZ, mood, CHR, OPSD
Inspire Clinic–Stanford University ^f	Santa Clara	2014	No limit	No limit	nr ^g	Other	No limit	8	SZ, mood, CHR, OPSD
Prevention and Early Intervention Early Onset of Psychosis	Shasta	2012	15	25	12	Other	No limit	1–2	SZ, mood, CHR, OPSD

continued

TABLE 1, continued

Name	County	Start of program ^b	Age (years)		DUP (months) ^c	Treatment model	Duration of care (years)	Intakes per month	Clinical populations ^d
			Minimum	Maximum					
Solano SOAR	Solano	2015	14	25	24	EDAPT	2	6	SZ, mood, CHR, OPSP
Lasting Independence and Family Empowerment (LIFE) Path	Stanislaus	2011	14	25	12	Early Assessment and Support Alliance	2	Varies greatly	SZ, mood, CHR, OPSP
Ventura Early Intervention Prevention Services	Ventura	2011	16	25	18	PIER	3	7	Mood, CHR, OPSP
First-episode psychosis ^e	Lake	nr ^g	nr ^g	nr ^g	nr ^g	nr ^g	nr ^g	nr ^g	nr ^g

^a Results are from the California Early Psychosis Assessment Survey, completed by each program between October 2016 and May 2017.

^b Fiscal year.
^c Maximum allowed duration of untreated psychosis (DUP).
^d DSM-IV diagnostic groups: SZ, schizophrenia spectrum disorders (e.g., schizophrenia, schizoaffective disorder, schizophreniform disorder); mood, mood disorders (e.g., major depressive disorder, bipolar disorder) with or without psychotic features; CHR, clinical high risk of psychosis; OPSP, other psychotic spectrum disorders (e.g., psychotic disorder not otherwise specified, brief psychotic disorder, delusional disorder).
^e na, not applicable.
^f Not publicly funded.
^g nr, not reported.
^h Mood disorders included bipolar I disorder only.
ⁱ Only partial data received.
^j The program did not respond to the survey and was excluded from the analysis.

FEPS-FS items were scored in a present or absent manner for 23 of the 30 items assessed. The exceptions were items 21–27, in which a FEPS-FS score of 3 or higher was scored as endorsing the item (see Table 1 in the online supplement for a description of the endorsement criteria for each item).

RESULTS:

Across 58 California counties, 24 (41%) reported having at least one active program for treatment of early psychosis, with five counties reporting multiple programs. Twelve counties (21%) reported having programs in development, and 22 counties (38%) reported no early psychosis program. Of the 30 active programs identified (Table 1), 28 programs (93%) provided complete data on the CEPAS, one county provided partial data, and one county did not provide data. The final analysis includes the 29 programs that provided complete or partial data on the CEPAS (Figure 1 in the online supplement).

Client Population Characteristics

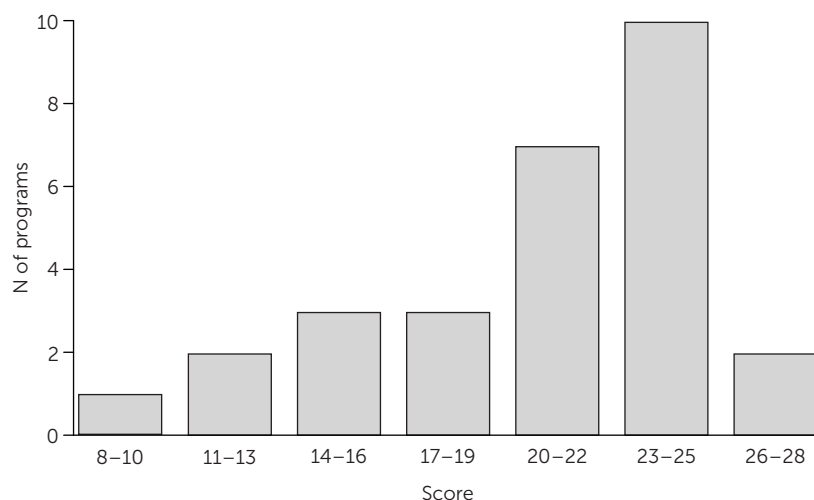
Program-level details are reported in Table 1. Of the 29 programs, 22 (76%) serve both clients with first-episode psychosis (FEP) and clients at clinical high risk of psychosis, five (17%) serve FEP clients only, and two (7%) serve CHR clients only. Twenty-five programs (86%) reported serving clients diagnosed as having a DSM-IV schizophrenia spectrum disorder, whereas 86% serve those having any psychotic spectrum disorder. Twenty-one programs (72%) serve clients diagnosed as having mood disorders with psychotic features (e.g., major depressive disorder with psychotic features, bipolar disorder with psychotic features), and six programs (21%) serve clients with a diagnosis of mood disorders without psychotic features. One program reported that it provides services to clients diagnosed as having mood disorders only if they meet criteria for bipolar disorder I, with or without psychotic features.

The most common reason for ineligibility for services was intellectual disability (N=22 programs, 76%), followed by a diagnosis of a substance-induced psychotic disorder (N=19, 66%). Eighteen programs (62%) excluded individuals if they are not county residents, and 13 programs (45%) exclude individuals because of substance dependence. Almost all programs provide services to uninsured clients (N=25, 86%) or undocumented clients (N=23, 79%). Twenty-two programs (76%) provide services to privately insured clients, whereas only two programs (7%) do not serve any of these types of clients.

Characteristics of Program Services and Model Elements

Twenty-eight programs provided data regarding number of eligibility evaluations, with a median of seven individuals per program receiving evaluations per month (mean ± SD=11.45 ± 11.54, interquartile range [IQR]=4–15, range

FIGURE 1. Distribution of preliminary scores on the First-Episode Psychosis Services Fidelity Scale (FEPS-FE) among 28 county programs for treatment of early psychosis^a



^a Score was based on the number of FEPS-FE components endorsed by the program.

0–40), yielding approximately 84 clients per program per year. All 29 programs provided data regarding number of individuals engaged in ongoing treatment services per month, with a median of 35 individuals per program receiving services per month (mean=50±62.10, IQR=18–50, range 2–300). Sixteen programs (55%) reported the target duration of services was up to 2 years. Five programs (17%) reported a target treatment duration of 1 year or less, four programs (14%) reported a target duration of 3 years, and one program reported a target duration of up to 4 years (3%). Three programs (10%) reported treatment was available indefinitely based on need.

The most frequently adopted CSC model was Maine’s Portland Identification and Early Referral (PIER) model (N=6, 17%) (19, 20), followed by the Felton Institute Prevention and Recovery in Early Psychosis model (N=5, 17%); the University of California, Davis, Early Diagnosis and Preventative Treatment model (N=5, 17%); the Recovery After an Initial Schizophrenia Episode model (N=2, 7%); and the Oregon-based Early Assessment and Support Alliance model (N=2, 7%) (4). Eight programs reported using other models that include various CSC components. For example, Los Angeles reported using the University of California, Los Angeles, Center for the Assessment and Prevention of Prodromal States model; Contra Costa County reported using the PIER model with some adaptations; and Madera County reported using a “peer supportive service” within a full-service partnership to support linkage to medications and therapy. Two programs (7%) were “uncertain” about their model.

Twenty-eight of 29 programs provided sufficient data to evaluate the number of FEPS-FS components offered (Table 2). The most commonly reported components of early psychosis programs included explicit admission criteria, targeted outreach and education across community

for referrals, assignment of a case manager to each client, individualized treatment plans, and client and family involvement in initial assessment. Twenty-two programs reported providing at least half of the FEPS-FS components of evidence-based FEP care. These data and programs’ reported CSC models suggest that many California early psychosis programs are providing a reasonable level of evidence-based care, although fidelity levels required for good outcomes is unclear.

Program Funding Sources

Twenty-eight programs reported funding data, with 15 programs (54%) receiving MHSA funding. Twelve programs (43%) reported receiving Medi-Cal or Early and Periodic Screening, Diagnosis and Treatment funding for children under age 21, 10 (36%) receive SAMHSA mental health block grant funding, six (21%) receive funds from private insurance, six (21%) receive self-pay funds, five (18%) receive research grants funding, five (18%) receive philanthropic funding, and one program reported county-specific funding for early bipolar disorder treatment. Based on responses from 22 programs, 14 programs (64%) reported that they are reimbursed per unit of service, four (18%) programs reported reimbursement from the SAMHSA mental health block grant, one program (5%) reported monthly reimbursement, and one program did not provide data.

Methods for Collection of Outcome Data

Programs were asked to report the types of data they collect and collection time points (Table 3). Of the 28 programs that provided data, 18 programs (64%) reported collecting data on at least five relevant outcome domains at both intake and at least one follow-up point. All 28 programs reported collecting basic demographic data at intake. The most commonly reported types of information collected at both intake and follow-up were substance use information (21 programs, 75%), risk assessment data (19 programs, 68%), psychosocial data (18 programs, 64%), medication data (17 programs, 61%), hospitalization data (16 programs, 57%), and emergency room or crisis services use (15 programs, 54%). Notably, only four programs collected data at intake and follow-up on a maximum of 15 of the 20 domains assessed, with only 9 domains in common. This suggests a significant lack of overlap between programs in the longitudinal outcome data collection.

Of the 29 programs, 17 (59%) reported using a mix of paper and electronic records, five programs (17%) reported using a paper-only system, and seven programs (24%) reported using a solely electronic system. Eight programs (28%) began prior to electronic record implementation, with

TABLE 2. Components of care offered by 28 programs for treatment of early psychosis in California^a

Item	Component	Programs (N)
1	Patient is seen within 2 weeks of referral	23
2	Patient and family involved in initial assessment	27
3	Comprehensive initial/intake assessment	12
4	Psychosocial needs incorporated into treatment plan	16
5	Individualized clinical treatment plan developed after initial assessment	27
6	Antipsychotic medications prescribed (considering patient preference)	25
7	Antipsychotic medication dosing is within government-approved guidelines	13
8	Guided antipsychotic dose reduction if patient achieves remission after 1 year	10
9	Clozapine offered for medication-resistant symptoms	12
10	Patient is provided psychoeducation on illness management by clinician (individual or group format)	25
11	Family members are provided education and support (individual or group format)	24
12	Individual or group cognitive-behavioral therapy (CBT)	23
13	Individual or group treatment to address weight gain	1
14	Annual comprehensive reassessment	4
15	Psychiatrist assigned to each patient	18
16	Case manager assigned to each patient	27
17	Motivational enhancement or CBT provided to address comorbid substance use disorders	14
18	Supported employment and/or supported education provided	17
19	Proactive outreach with community visits to maintain engagement	20
20	Community living skills addressed	19
21	Crisis intervention services delivered by program and program links clients to appropriate crisis services	20
22	Patient-to-provider ratio less than 30:1	25
23	Master's-level team lead oversees program	22
24	Psychiatrist as active team member who participates in team meetings	19
25	Multidisciplinary team provides case management and specific service elements (e.g., medication, therapy, etc.)	24
26	Treatment provided for 2 or more years	7
27	All team members attend weekly meetings to review cases	23
28	Targeted outreach and education across community for referrals	27
29	Coordination of care with inpatient to support discharge planning	25
30	Program has explicit admission criteria	28

^a Results are from the 30-item First-Episode Psychosis Services Fidelity Scale. Only programs that provided completed data are included.

2 to 4 years of early records remaining in a paper-only format.

DISCUSSION

This report provides a descriptive summary of California early psychosis programs funded through a variety of entities, the individuals served and services provided, the types of data they collect, and the data collection systems they use. In terms of populations served, 22 of the 29 programs included provide care for both FEP and CHR clients, five programs serve FEP only, and two serve CHR only. A variety of funding streams, from federal, state, and donor sources, is used to support services. The majority of programs serve individuals between the ages of 12 and 25 years, include clients who have experienced psychosis for up to 24 months, and provide services for up to 2 years. Twenty-two programs reported providing at least half of the FEPS-FS components of evidence-based FEP care. Of the 28 programs that provided sufficient data, 18 programs collect data on five or more relevant outcome domains at intake and follow-up, although which outcomes were collected and when varied substantially between programs. Finally, 24 programs have at least some data stored in an electronic format.

Strengths and Limitations

To our knowledge, this is the first report on the landscape of California early psychosis programs and provides a previously unrecorded insight into the similarities and differences between these programs and the types of data being collected throughout the state. This descriptive summary could inform large-scale evaluations and provides a clear methodology for gathering data across a wide array of programs at the state or national level. Because of the extensive follow-up procedure, the response rate to the CEPAS was exceptional, with 97% of active early psychosis programs providing data as well as clarifications or additional information as needed, significantly improving data reliability.

Regarding limitations, this descriptive assessment was based on survey data reported by staff associated with the early psychosis programs and counties; thus, the findings are contingent on the accuracy and completeness of the self-reported information. For some data (e.g., sources of funding), missing data precluded analysis or reporting. Importantly, the FEPS-FS data were not collected by an external evaluator as would be standard practice (10, 15). Consequently, FEPS-FS program components are only reported at the group level because of the preliminary nature of this approach. Future evaluations examining the impact of

TABLE 3. Types of data collected by 28 programs for treatment of early psychosis, by time of collection^a

Type of data	Intake		Follow-up		Intake and follow-up	
	N	%	N	%	N	%
Client characteristics	28	100	7	25	7	25
Diagnosis	25	89	16	57	14	50
Symptom severity	19	68	15	54	15	54
Physical health	26	93	10	36	10	36
Metabolic parameters	13	46	18	64	11	39
Vital signs	17	61	18	64	13	46
Family history of mental health conditions	27	96	5	18	5	18
Cognitive functioning	14	50	5	18	5	18
Psychosocial data	24	86	18	64	18	64
Premorbid functioning	15	54	3	11	3	11
Medication data	26	93	17	61	17	61
Medication side effects	20	71	14	50	13	46
Substance use data	27	96	21	75	21	75
Hospitalizations	27	96	16	57	16	57
Crisis utilization	27	96	15	54	15	54
Legal involvement	27	96	14	50	14	50
Risk assessment data	27	96	19	68	19	68
Impact of care received	7	25	17	61	4	14
Treatment satisfaction	5	18	16	57	4	14
Other	4	14	6	21	4	14

^a Only programs that provided completed data are included.

fidelity on client outcomes should include a comprehensive evaluation of program treatment components to determine the actual type and amount of care received by program participants. California's MHSA funding allows substantial flexibility in how funds can be used to support mental health services, which may not be available in other states. However, these study procedures could be replicated within or across other states to identify common program features and outcome data elements as a first step in developing a nationwide evaluation of early psychosis services, which is of growing interest at the federal level (14).

Implications

With early psychosis programs expanding nationwide, states are increasingly looking to evaluate the impact of these programs. However, lack of consistency between programs may dilute the measurable impact of these programs on client outcomes (5–10). For example, 83% of California early psychosis programs serve individuals at clinical high risk of psychosis; the impact of CSC care among patients at clinical high risk has not been evaluated and the inclusion of these individuals in broad outcomes evaluation of early psychosis programming will affect findings. The reported variations in clinical populations, service structure, data collection practices, and outcomes collected between programs found in this study highlight the need to first accurately survey the programs under evaluation to determine what potential impact variations between sites may have. Additionally, this study also highlights the significant challenges of using retrospective data to evaluate program effectiveness.

This study identified large variations in maximum duration of psychosis used in the inclusion criteria. This is important, given that recent findings suggest that CSC is more effective than usual care only when treatment is initiated early (i.e., within 74 weeks) (12). In addition, large variations in the length of treatment provided—ranging from 1 year to indefinite—were also noted. This is inconsistent with current national recommendations for treatment to be available for at least 2 years (3) and evidence that treatments over an even longer period may be necessary for a subset of individuals to maintain long-term significant improvements (21, 22). As a result, treatment of such relatively short duration may reduce both the short- and long-term effectiveness of early psychosis services.

Programs reported significant variations in the components of care delivered across the various services according to the FEPS-FS checklist. One site reported delivering 27 of the 30 FEPS-FS components assessed, whereas another program reported delivering only nine (Figure 1). Although there is evidence to suggest that CSC is effective (11, 12), it is still unclear which specific components of care affect client outcomes and whether variations in components offered affect treatment effectiveness. As a result, any large-scale evaluation of existing services requires careful examination of care components delivered by each service, both to aid interpretation of heterogeneity of treatment outcomes across services and to understand what components of the CSC may be key to improving outcomes.

CONCLUSIONS

This study indicates that there is considerable variability between early psychosis programs across California, including the components of care provided, inclusion criteria for service users, and data programs routinely collected. As a result, it is important to evaluate what impact these variations may have on treatment outcomes. In addition, this study highlights the significant challenges to conducting a retrospective statewide evaluation of early psychosis services, instead suggesting that prospective evaluation with synchronized data collection would be necessary for statewide or nationwide evaluation. Currently, multiple California counties are embarking on a collaborative effort to harmonize data collection across their early psychosis programs. Results of this project were used to identify the approaches and data elements that these programs already have in common, as well as areas in which additional standardization will be needed. Comprehensive fidelity evaluations of program components will enable evaluation of program-level differences on client outcomes. The collaboration hopes that evaluation results will inform the development and funding of future early psychosis programs across the United States and suggest the minimum standards necessary for programs to yield positive outcomes.

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REFERENCES

- De Maio M, Graham P, Vaughan D, et al: Review of international early psychosis programmes and a model to overcome unique challenges to the treatment of early psychosis in the United States. *Early Interv Psychiatry* 2015; 9:1-11
- Lynch S, McFarlane WR, Joly B, et al: Early detection, intervention and prevention of psychosis program: community outreach and early identification at six U.S. sites. *Psychiatr Serv* 2016; 67:510-516
- Heinssen R, Goldstein A, Azrin S: Evidence-Based Treatments for First Episode Psychosis: Components of Coordinated Specialty Care. Bethesda, MD, National Institutes of Mental Health, 2014
- NASMHPD Research Institute: An Inventory & Environmental Scan of Evidence-Based Practices for Treating Persons in Early Stages of Serious Mental Disorders. Alexandria, VA, National Association of State Mental Health Program Directors, 2016
- Cullberg J, Mattsson M, Levander S, et al: Treatment costs and clinical outcome for first episode schizophrenia patients: a 3-year follow-up of the Swedish "Parachute Project" and two comparison groups. *Acta Psychiatr Scand* 2006; 114:274-281
- Dewa CS, Trojanowski L, Cheng C, et al: Potential effects of the choice of costing perspective on cost estimates: an example based on 6 early psychosis intervention programs. *Can J Psychiatry* 2016; 61:471-479
- Hastrup LH, Kronborg C, Bertelsen M, et al: Cost-effectiveness of early intervention in first-episode psychosis: economic evaluation of a randomised controlled trial (the OPUS study). *Br J Psychiatry* 2013; 202:35-41
- Mihalopoulos C, Harris M, Henry L, et al: Is early intervention in psychosis cost-effective over the long term? *Schizophr Bull* 2009; 35:909-918
- Wong KK, Chan SK, Lam MM, et al: Cost-effectiveness of an early assessment service for young people with early psychosis in Hong Kong. *Aust N Z J Psychiatry* 2011; 45:673-680
- Addington DE, Norman R, Bond GR, et al: Development and testing of the First-Episode Psychosis Services Fidelity Scale. *Psychiatr Serv* 2016; 67:1023-1025
- Essock SM, Nossel IR, McNamara K, et al.: Practical monitoring of treatment fidelity: examples from a team-based intervention for people with early psychosis. *Psychiatr Serv* 2015; 66:674-676
- Kane JM, Robinson DG, Schooler NR, et al: Comprehensive versus usual community care for first-episode psychosis: 2-year outcomes from the NIMH RAISE early treatment program. *Am J Psychiatry* 2016; 173:362-372
- Dixon LB, Goldman HH, Bennett ME, et al: Implementing coordinated specialty care for early psychosis: the RAISE Connection Program. *Psychiatr Serv* 2015; 66:691-698
- Heinssen R: Early Psychosis Intervention Network (EPINET): A Learning Healthcare System for Early Serious Mental Illness. Bethesda, MD, National Institute of Mental Health, 2015
- Addington D: First Episode Psychosis Services Fidelity Scale (FEPS-FS-1.0) Fidelity Review Manual. Calgary, Alberta, Canada, University of Calgary, 2015
- Addington DE, McKenzie E, Norman R, et al: Essential evidence-based components of first-episode psychosis services. *Psychiatr Serv* 2013; 64:452-457
- Phen X: Toolkit, 2016. <https://www.phenxtoolkit.org/>
- Savill M, Sardo A, Patel P, et al: Which components of specialized early intervention for psychosis do senior providers see as most important? *Early Interv Psychiatry* (Epub ahead of print, June 8, 2018)
- McFarlane WR: FACT: integrating family psychoeducation and assertive community treatment. *Adm Policy Ment Health* 1997; 25: 191-198
- McFarlane WR, Lukens E, Link B, et al: Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Arch Gen Psychiatry* 1995; 52:679-687
- Bertelsen M, Jeppesen P, Petersen L, et al: Five-year follow-up of a randomized multicenter trial of intensive early intervention vs standard treatment for patients with a first episode of psychotic illness: the OPUS trial. *Arch Gen Psychiatry* 2008; 65:762-771
- Norman RM, Manchanda R, Malla AK, et al: Symptom and functional outcomes for a 5 year early intervention program for psychoses. *Schizophr Res* 2011; 129:111-115