

Essential Components of Early Intervention Programs for Psychosis: Available Intervention  
Services in the United States

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### **Abstract**

Programs providing interventions for early psychosis are becoming commonplace in the United States (U.S.); however, the characteristics of existing services remain undocumented. We examined program characteristics, clinical services, and program eligibility criteria for outpatient early intervention programs across the U.S. using a semi-structured telephone interview. Content analysis was used to identify the presence or absence of program components, based in part on a recent list of essential evidence-based components recommended for early intervention programs (Addington, MacKenzie, Norman, Wang and Bond, 2013) as well as program characteristics, including eligibility criteria. A total of 34 eligible programs were identified; 31 (91.2%) program representatives agreed to be interviewed. Of the examined components, the most prevalent were individual psychoeducation and outcomes tracking; the least prevalent were outreach services and communication with inpatient units. The populations served by US programs were most frequently defined by restrictions on the duration of psychosis and age. This study provides critical feedback on services for the early psychosis population and identifies research to practice gaps and areas for future improvement.

*Keywords:* early intervention; psychosis; implementation; first-episode psychosis; clinical high risk; early psychosis

## **1. Introduction**

Early intervention programs for psychosis provide a number of benefits, including reduced morbidity, improved long-term prognoses, preserved social skills, higher quality of life, and a decreased need for hospitalization (Edwards et al., 2005; Marshall and Rathbone, 2011; McGorry et al., 2008). The mounting evidence in support for early intervention redefines the question from “should we intervene” to “what is the best intervention?” (Reading and Birchwood, 2005; Ruggeri and Tansella, 2011). While early intervention programs generally provide treatment and secondary prevention aimed at reducing relapse, coping with symptoms, and promoting recovery following the initial onset of psychosis (McGorry et al., 2008; Owen, 2003; Reading and Birchwood, 2005), little is known about the content of community-based early intervention services and how their target population is defined.

Early psychosis is used to describe a range of experiences, including early warning signs of psychosis (clinical high risk/prodromal), first-episode psychosis, and even multiple episodes early in the course of an illness (Addington et al., 2005). While no single determinant of early psychosis exists, three broad criteria are frequently used: duration from first treatment contact, duration of antipsychotic medication use, and duration of symptoms of psychosis (Breitborde et al., 2009). Acceptable duration varies among programs and countries; this lack of a clear definition can be problematic for determining study eligibility criteria and for understanding best treatment options (Breitborde et al., 2009; Keshavan and Schooler, 1992; Kirch et al., 1992). For example, intervention studies may be very specific, requiring subjects be diagnosed with non-affective psychosis within the last 12 months without prior antipsychotic treatment, or broad, including anyone

within 5 years of an initial onset (Bird et al., 2010; Malla et al., 2002). Identifying functional definitions used in early intervention settings may help narrow the focus to a single definition, which could improve comparability across programs and external validity of future early intervention studies.

Research findings support a number of key elements of early intervention programs, yet there is variability in their implementation (Catts et al., 2010; Ghio et al., 2012; McGorry et al., 2008; Srihari et al., 2012). Some programs stress the importance of case management, while others focus on medication or social and functional recovery (Garety et al., 2006; Spencer et al., 2001). Although variation exists, most studies indicate key components such as: pharmacological interventions, cognitive-behavioral treatment, family interventions, and vocational services (Allott et al., 2011; De Masi et al., 2008; Hill et al., 2012; Spencer et al., 2001). The extent to which each of these key components is used in practice has yet to be assessed, and the importance of other components has yet to be fully examined.

Recently, Addington, MacKenzie, Norman, Wang, and Bond (2013) developed a model of evidence-based, essential components for early psychosis services. The research team reviewed empirical articles focused on components of early psychosis intervention programs and came to consensus on components and terminology. Using a Delphi consensus model, experts were presented an operational definition and supporting evidence for each component and rated their importance on a 5-point scale. Consensus on importance was calculated, resulting in 32 components.

While Addington and colleagues (2013) suggest their list of components may lead to the development of an evidence-based fidelity scale, little is known about how these

components are currently used. Further, unlike some countries (e.g., Australia (Edwards and McGorry, 2002; McGorry et al., 1996), Italy (De Masi et al., 2008), United Kingdom (Department of Health, 2001)), the United States does not have a systematic approach to defining and treating this population. Moreover, no study within the U.S. has examined services being offered at early intervention programs nationwide.

In the current study, we examined whether specific components are being implemented in early intervention programs across the U.S. This list of 32 components (Addington et al., 2013) has the capacity to act as a comprehensive starting point for a previously unexamined area. Moreover, as the list was derived from an empirically-sound, systematic literature review and consensus process with early psychosis experts, this study may inform the gap between research and practice that is occurring within U.S. early intervention programs. In addition to documenting current use of the 32 evidence-based components, we also explored program characteristics, definitions of the target population by means of program eligibility criteria, client requests, and perceived essential components.

## **2. Methods**

### *2.1 Sample*

Early intervention programs were identified via three processes. Initially, 37 programs were identified from online searches of each U.S. state using a combination of the state name and the following search terms: “early intervention,” “early psychosis,” “first-episode psychosis,” “prodromal intervention,” and “clinical high risk intervene.” An additional two programs were identified through literature searches, and seven programs

were identified by snowball sampling. Programs were eligible for inclusion if they provided specialized services for early psychosis. Programs not providing specialized services or providing only assessment without intervention services were excluded. Programs providing services for recent-onset psychosis, clinical high risk for psychosis, and both subpopulations were included; as program identification progressed, it became apparent that many U.S. programs are serving both populations simultaneously; thus justifying the inclusion of clinical high risk programs. Whenever possible, initial study eligibility was assessed based on publically available information (e.g., websites). We contacted programs directly if eligibility could not be determined from external sources. For each eligible program, we recruited one key program employee (such as a program director) who was willing to complete an audio-recorded telephone interview.

## *2.2 Measures*

We developed a semi-structured interview guide (available from the first author) with items asking about the 32 essential practices outlined by Addington et al. (2013), program characteristics (i.e. location, number of sites), and program eligibility criteria. Additionally, two open-ended questions were included to gain insight into the perceived client needs/requests and perceived essential components of early intervention programs (“What are the most common requests you are getting from clients?” and “What components or aspects of your program do you think are essential?”). The interview guide was piloted with a research team member who recently worked with an early intervention program and was revised as necessary throughout the interview process to ensure completeness. We created an on-line survey to ask the dichotomous questions; participants

were offered the option of completing a full telephone interview or the online survey and an abbreviated telephone interview.

All interviews were conducted by a doctoral student in clinical psychology, digitally recorded, and professionally transcribed. Participants were offered compensation of \$20.00. All procedures were approved by our Institutional Review Board.

### *2.3 Data Analyses*

Transcripts were analyzed using directed content analysis, applying pre-defined categories of interest, as well as conventional content analysis (Hsieh and Shannon, 2005). Pre-defined categories were generated from the list of 32 essential evidence-based components and program characteristics (Addington et al., 2013). All transcripts were coded for the presence or absence of the pre-defined categories by at least two independent coders (all doctoral students in clinical psychology), who then came to consensus.

Data for program characteristics, identified components, and program eligibility criteria were entered into SPSS 20.0. We examined descriptive statistics to explore use of essential components, program characteristics, and to summarize program eligibility definitions.

For the open-ended questions regarding perceptions of essential components and common client requests, we used conventional content analysis (Hsieh and Shannon, 2005). Responses to these questions were extracted from the transcripts and systematically reviewed by the first author. Emergent themes were identified through

iterative readings; identified themes were developed into codes and systematically applied to all transcripts.

### **3. Results**

#### *3.1 Participants*

Of the 47 potentially eligible programs identified, 34 met study criteria. Programs were excluded for: closing prior to contact ( $n = 2$ ), not providing interventions ( $n = 6$ ), not having a specialized treatment team ( $n = 1$ ), or in the planning phase ( $n = 2$ ). Contact information could not be obtained for the final two programs. Representatives from 31 (91.2%) programs agreed to be interviewed and were included for analyses.

#### *3.2 Program Characteristics*

Eleven programs served the early psychosis population, 8 served the clinical high-risk population, and 12 served both populations. Most programs were located on the West coast (see Table 1), with the East coast being the second most prevalent region. More than half of programs were directly providing substance abuse support, supported employment, and education in-house. More than half of the programs were conducting research in addition to providing treatment ( $n = 19$ , 61.3%).

All programs in this study were specialized treatment teams that were providing phase specific services on an outpatient basis. These programs were located within university medical centers ( $n = 20$ ), teaching hospitals ( $n = 4$ ), and specialized community based centers ( $n = 7$ ). While 24 programs were affiliated with larger institutions or universities, no program was integrated within a general mental health care setting.



Programs were initially created through a variety of mechanisms, with the majority of programs starting from individual initiatives of an interested psychiatrist or psychologist ( $n = 11$ ) or through a state lead initiative to increase mental health services ( $n = 11$ ).

### *3.3 Essential Component Use*

Overall, use of essential components was common across programs (see Table 2). All programs reported using two components: individual psychoeducation and outcomes tracking. At least 80% of programs endorsed using an additional 16 components, including: comprehensive assessments upon enrollment (96.8%), family therapy (96.8%), weekly team meetings (96.8%), and care plans that included psychosocial needs (93.5%; see Table 1 for additional components). The remaining 14 components were used by 71% or fewer programs (see Table 2). The only component used by less than half of the programs was having a communication protocol with inpatient units (45.2%).

### *3.4 Population Definitions*

Almost all programs had an age restriction (96.8%; see Table 3). The lowest age for most programs ( $n = 13$ ; 43.3%) was between 10 and 12 years old, but some programs had age limits starting at 16-18 years old. The upper end of the age restriction for most programs ( $n = 18$ ; 60.0%) was between 25 and 32 years old, with the highest age being 45. All but 2 programs restricted admissions on the basis of the duration of psychosis (see Table 3). The most common restriction was presence of psychotic symptoms for less than one year ( $n = 10$ ; 34.5%). Most programs did not place a restriction on antipsychotic medication use ( $n = 22$ ; 71.0%), prior treatment history ( $n = 23$ ; 74.2%), or substance use ( $n = 22$ ; 71.0%).

### *3.5 Emergent themes: Perceived Client Requests*

A number of themes emerged from staff members' reports on clients' requests, including functional recovery, social recovery, practical needs, symptom reduction, and diet/exercise. The most common theme that emerged from the data was the concept of functional recovery, which was requested by clients in 20 programs. The category included returning back to school or work, applying to college, or determining the supports needed to allow clients to remain in work and school settings.

Social recovery was another highly emergent theme. More than half of the programs mentioned client requests that included a social element ( $n = 14$ ). This ranged from social skills groups to help making friends or dating.

The remaining themes of client requests were endorsed less frequently (<10 times). Seven programs identified clients wanting help with practical needs such as finding housing or obtaining Medicaid coverage/Social Security benefits. Symptom reduction or means of coping with symptoms, particularly positive symptoms (i.e., voices, hallucinations), was a theme that emerged from six programs. Two programs mentioned diet/exercise as well as Assertive Community Treatment type services. One program reported clients requested cognitive behavioral therapy.

### *3.6 Emergent themes: Perceived essential components*

When program directors were asked to describe which aspects of their program they considered "essential," most responses could be mapped onto the components described by D.E. Addington et al. (2013), including medication management, individual therapy, and family therapy, which emerged in more than half of transcripts.

The remaining, “new” themes included case management, practical needs, social skills, CBT, and client engagement. Case management was a core theme for some programs ( $n = 8$ ; 25.8%). Key personnel discussed the importance in coordinating the needs of the clients. Additionally, key personnel discussed that education and community advocacy services for clients were essential. In addition, client engagement was presented as an essential element in four of the responses. These programs often indicated that they believed successful outcomes were at least in part tied to their ability to engage and maintain clients in services.

#### **4. Discussion**

This is the first study we are aware of that examines the characteristics and components of early intervention programs for psychosis in the United States. Of the 31 programs identified and interviewed, most reported using a majority of the 32 essential components identified by D.E. Addington et al. (2013). The most prevalent components were individual psychoeducation and outcomes tracking, suggesting that programs are striving to improve individuals’ understanding of their emerging disorders and make a measureable impact on observable outcomes.

The geographic distribution of early intervention programs in the United States appears to be skewed towards the West Coast. This distribution is largely driven by a recent shift in funding within the state of California. California’s Mental Health Service Act (MHSA, Proposition 63), allocated 20% of all funds generated by a specific tax to be spent on prevention and early intervention in mental health. With this specialized increased funding, California has been able to generate a large number of new community based early

intervention programs. As other states move towards allocating specific funds for the creation of these programs, it is likely we will see a rapid increase in the early intervention programs operating within the U.S.

Our findings reveal that typical U.S. early intervention for psychosis programs are providing a range of services, including treatment lasting at least two years, family and individual interventions, medication management, integrated addictions treatments, and thorough assessments. Underutilized components included vocational planning and outreach services. Given that clients most frequently request help with social and vocational functioning, programs should consider incorporating (or expanding) supported employment and education components. To address the frequent social functioning requests, future research should examine the effectiveness and feasibility of implementing interventions aimed to improve social cognition in this population (Bertrand et al., 2007). For example, recent interventions such as SocialVille online gaming or Social Cognition and Interaction training, may lead to greater social and functional recovery and be appealing to this age group (Bartholomeusz et al., 2013; Nahum et al., 2014).

We also found that several of the original 32 essential components were underutilized. The least reported components were outreach services and communication protocols with inpatient units. It is possible that both of these components were reported less because a large number of programs (two-thirds of the sample) providing services to the clinical high risk population; these individuals may experience less severe symptoms and fewer hospitalizations, making the inclusion of inpatient communications an ineffective means of program recruitment (Yung and McGorry, 1996). Further, this population may not be perceived as requiring intensive outreach services. Outreach

services can be labor intensive and may be difficult to fund. However, given the importance of treatment engagement (Lecomte et al., 2008; McGorry et al., 2007), it may be beneficial for more programs to offer outreach services to foster a sense of security and enhance treatment engagement.

Another important finding was the identification of eligibility criteria for early intervention programs. Almost all programs reported age restrictions, ranging from 10 to 45 years of age. Although psychosis most commonly begins in early adulthood (Kessler et al., 2007), the onset of a psychotic disorder may occur at varied ages. While restricting based on age may be a functional requirement for programs, it is possible that we are excluding individuals who would still benefit from treatment. Another defining factor of program eligibility is the duration of untreated psychosis; almost all programs limit eligibility in this domain, with most serving clients within one year of the initial onset episode. Future research should further examine differences in treatment efficacies between different stages of early psychosis to determine the best cut point for interventions. Also, few programs reported placing restrictions on antipsychotic medication use or prior treatment; although there may be reasons for research protocols to limit exposure to prior antipsychotics and treatments, our findings suggest that this practice may restrict the external generalizability of such studies.

While this study offers several important insights into U.S. early intervention for psychosis services, it is not without its limitations. We had a guide for the essential components (Addington et al., 2013), but coding may remain a subjective process. We reduced the level of subjectivity by developing a codebook, engaging in independent, duplicate coding, and conducting consensus meetings. Another potential limitation is that

programs were not repeatedly interviewed, which resulted in some information not being collected from the first programs; however publically available data was utilized to supplement interviews whenever possible. Finally, it should be noted that these results are based on telephone self-report of program staff. Self-report can be an effective means of initial investigation and is able to provide reliable program data (McGrew et al., 2011); however, once fidelity measures have been established for early intervention programs in the United States, work should be done to determine the degree of observed use, beyond self-report, for these components.

This study can aid researchers, policy makers, and administrators alike by presenting a comprehensive picture of existing U.S. services; these results can act as a starting point for consistent program development. We have described the variety of early intervention programs for psychosis across the US, highlighting the key components being used (e.g. individual psychoeducation, outcomes tracking, comprehensive assessments), as well as areas worthy of further investigation (e.g. interventions for social and functional recovery, the role of case management, and means of client engagement). Additionally, our findings suggest that both age and duration of psychosis are key defining variables that early intervention programs are using to determine their service population. These results can provide direction for future program guidelines and fidelity scales; they also highlight areas such as supported employment and education, outreach and crisis intervention services which may require targeted implementation strategies.

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**Table 1. United States Early Intervention Program Characteristics**

<b>Characteristic</b>	<b>n</b>	<b>%</b>
<b><i>Population Served</i></b>		
First Episode Psychosis Only	11	(35.5%)
Clinical High Risk Only	8	(25.8%)
Both FEP and CHR	12	(38.7%)
<b><i>Research or Clinical Programs</i></b>		
Research Programs	19	(61.3%)
Clinically Programs	12	(38.7%)
<b><i>Regional Distribution of Programs<sup>a</sup></i></b>		
East Coast	9	(29.0%)
West Coast	16	(51.6%)
Midwest	2	(6.5%)
South	4	(12.9%)
<b><i>Total Number of Locations by Region</i></b>		
East Coast Total Locations	12	(19.7%)
West Coast Total Locations	39	(63.9%)
Midwest Total Locations	6	(9.8%)
South Total Locations	4	(6.6%)
<b><i>Services Offered In-House</i></b>		
Substance Abuse Services	17	(54.8%)
Supported Employment & Education Services	16	(51.6%)

<sup>a</sup> If a program had several locations, it was only counted once if all locations were operating under the same modality and services.

**Table 2. United States Early Intervention Programs' Use of the Components**

Component	Using		Not Using		Use Unknown <sup>a</sup>	
	N	%	N	%	N	%
Individual Psychoeducation	31	100.0%	0	0.0%	0	0.0%
Outcomes and Process Tracking	31	100.0%	0	0.0%	0	0.0%
Comprehensive Assessment upon Enrollment	30	96.8%	0	0.0%	1	3.2%
Family Therapy	30	96.8%	1	3.2%	0	0.0%
Weekly Team Meetings	30	96.8%	0	0.0%	1	3.2%
Care Plan Includes Psychosocial Needs	29	93.5%	0	0.0%	2	6.5%
Duration of Services Lasting at Least 2 years	29	93.5%	1	3.2%	1	3.2%
Psychiatrist as Part of Team	29	93.5%	2	6.5%	0	0.0%
Staff Supervision and Education	29	93.5%	1	3.2%	1	3.2%
Acceptance of Referrals with Substance Use	28	90.3%	3	9.7%	0	0.0%
Informed Decision Making	28	90.3%	0	0.0%	3	9.7%
Monitoring Metabolic Changes	28	90.3%	2	6.5%	1	3.2%
Assessment of Suicidal Thinking/Behavioral	27	87.1%	3	9.7%	1	3.2%
Informed Consent	27	87.1%	2	6.5%	2	6.5%
Targeted Public Education	27	87.1%	2	6.5%	2	6.5%
Targeted Health/Social Service Provider Education	26	83.9%	5	16.1%	0	0.0%
Low Dose, Slow Increment Medication (N=30) <sup>b</sup>	25	83.3%	1	3.3%	4	13.3%
Selection of Antipsychotic Meds (N=30) <sup>a</sup>	25	83.3%	2	6.7%	3	10.0%
Integrated Mental Health and Addictions	22	71.0%	9	29.0%	0	0.0%
Mode of Antipsychotic Administration (N=30) <sup>c</sup>	22	73.3%	7	23.3%	1	3.3%
Monitoring Other Side Effects	21	67.7%	2	6.5%	8	25.8%
Proactive Steps to Prevent Metabolic Effects	20	64.5%	6	19.4%	5	16.1%
Timely Contact after Referral (within 2 weeks)	20	64.5%	3	9.7%	8	25.8%
Multifamily Groups <sup>b</sup>	19	61.3%	11	35.5%	1	3.2%
Supported Employment	19	61.3%	12	38.7%	0	0.0%
Clozapine for Treatment Resistance (N=30) <sup>a</sup>	18	60.0%	7	23.3%	5	16.7%
Use of Single Antipsychotic (N=30) <sup>a</sup>	18	60.0%	3	10.0%	9	30.0%
Crisis Intervention Services	17	54.8%	13	41.9%	1	3.2%
Individually Centered Assessments	17	54.8%	14	45.2%	0	0.0%
Vocational Plan	17	54.8%	9	29.0%	5	16.1%
Outreach Services for Participants	16	51.6%	9	29.0%	6	19.4%
Communication protocol with inpatient units	14	45.2%	8	25.8%	9	29.0%

<sup>a</sup>A code of "unknown" if the interviewee from the program was unsure of the component's use or if enough information was not present to make a clear determination of presence or absence.

<sup>b</sup>One program did not engage in any medication management and thus they were not included in the total for these categories. All components marked with an (\*) have a total N of 30.

<sup>c</sup>Multifamily group includes programs providing any multifamily style groups.

**Table 3. United States Early Intervention Programs' Eligibility Criteria**

<b>Eligibility Criteria</b>	<b>n (%)</b>
<b>Age Restriction</b>	
Programs with Age Restriction	30 (96.8%)
Age Range Lower Limit	
10-12 Years Old	13 (43.3%)
13-15 Years Old	9 (30.0%)
16-18 Years Old	8 (26.7%)
Age Range Upper Limit	
25-32 Years Old	18 (60.0%)
33-39 Years Old	7 (23.3%)
40-46 Years Old	5 (16.7%)
<b>Duration of Psychosis Restriction</b>	
Programs with DUP Restriction	29 (93.5%)
DUP Restriction Length	
Unknown	9 (31.0%)
15 days – 12 Months	10 (34.5%)
13 Months – 24 Months	6 (20.7%)
25 Months – 36 Months	1 (3.4%)
37 Months or More	5 (17.2%)
<b>Prior Antipsychotic Medication Restriction</b>	
Programs without Medication Restriction	22 (71.0%)
Programs with Medication Restriction <sup>a</sup>	9 (29.0%)
<b>Prior Treatment for Psychosis Restriction</b>	
Programs without Treatment Restriction	23 (74.2%)
Programs with Prior Treatment Restriction <sup>b</sup>	4 (12.9%)
Unknown	4 (12.9%)
<b>Substance Use Restriction</b>	
Programs without Substance Use Restriction <sup>c</sup>	22 (71.0%)
Programs with Substance Use Restriction	9 (29.0%)

<sup>a</sup> Restrictions on medication included being completely medication naïve or a restriction on the length of time antipsychotic medication could be used.

<sup>b</sup> Restrictions on prior treatment included never receiving treatment for a psychiatric disorder, never receiving treatment for psychosis, or a specific restriction on the duration of treatment received.

<sup>c</sup> Substance Use restriction did not include substance induced psychosis. No programs accepted individuals with substance induced psychosis.

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