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Prevention and Recovery in Early Psychosis (PREP®): Building a public-academic partnership program in Massachusetts, United States☆,☆☆

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ABSTRACT

Recently, there has been increasing emphasis on early intervention (EI) for psychotic disorders. EI programs in public mental health settings have been established in countries such as Australia, the United Kingdom, and Canada. However, there are relatively few EI programs in the United States (U.S.). Here we describe the conceptual origins and practical development of the PREP program, i.e., Prevention and Recovery in Early Psychosis, as it evolved in a public academic psychiatry setting in Boston, Massachusetts, U.S. PREP developed over a decade through a partnership between the Massachusetts Department of Mental Health and academic institutions within the Harvard Department of Psychiatry. We discuss the evolution, programmatic features, funding mechanisms, staffing, and the role of clinical training in PREP. The key principles in developing the PREP Program include the focus on early, evidence based, person-centered and phase-specific, integrated and continuous, comprehensive care. This program has served as a foundation for the emergence of related services at our institution, including a research clinic treating those at clinical high risk or within the putative "prodromal" period preceding frank psychosis. This account offers one possible blueprint for the development of EI programs despite the lack in the U.S. of a national mandate for EI or prevention-based mental health programs.

1. Conceptual origins

Mental health leaders around the world are increasingly focused on identifying and treating severe mental illness at the earliest possible stage (Johnstone et al., 1986; Keshavan & Schooler, 1992; McGorry et al., 2002). Most attention has centered either on the clinical high-risk period characterized by attenuated positive symptoms prior to the first frank psychotic episode or on the first years following the initial episode (Freudenreich et al., 2007; Morrison et al., 2011). Motivating this shift is the obvious benefit of placing resources where they may have the greatest impact as well as the growing scientific support for the effectiveness of early intervention (EI) for psychotic disorders, including affective disorders and schizophrenia (Birchwood and Macmillan, 1993; Howes and Falkenberg, 2011). The rationale for EI has spurred nationwide mental health service reform in the United Kingdom, Australia, New Zealand, Germany, Scandinavia, Canada as well as among Asian countries (McGorry, 2012). In the U.S., lacking a national mandate for the development of EI or prevention-based programs, most EI programs have been established by individual university research teams.

The stage was set for the development of EI for psychosis in the early 1990s. A review by Wyatt (1991) indicated better outcome in first episode patients when earlier initiation of antipsychotic medication improved results. Subsequently, relationships were noted between the duration of untreated psychosis and outcome

☆ PREP is a trademark of the Massachusetts Department of Mental Health, registered in the U.S. Patent and Trademark Office.

☆☆ We have learned of another program in California using the same name; however, the two programs are completely unrelated and developed independently, ours founded in 2003 and the California program some time later (Hardy et al., 2011).

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(Perkins et al., 2005) and time to symptom remission (Lieberman et al., 1996), suggesting that the early phase of illness might offer a "window of opportunity" for achieving disproportionately favorable outcomes (Birchwood et al., 1998). Simultaneously, neuroimaging research indicated that progressive gray matter losses occur early in psychotic illness (Thompson et al., 2001). Such findings, emerging shortly after the introduction of atypical antipsychotics in the U.S., supported the possibility that earlier treatment might lessen neurocognitive decline during this critical phase. Pharmacologists suggested that atypical antipsychotics might prevent neurotoxicity (Olney and Farber, 1994) and enhance long-term cognition (Sharma, 1999). Although not all of these claims for better outcomes proved valid, optimism spread among those studying and treating people with psychosis. In 1996, reflecting these developments, the International Early Psychosis Association was founded.

EI programs have since proliferated, especially in countries with nationalized health care systems (Mihalopoulos et al., 1999, Phillips et al., 2000). Reports from around the world (Yung et al., 1996; Chong et al., 2004; Killackey and Yung, 2007; Malla et al., 2001; Cullberg et al., 2006; Valmaggia et al., 2009) have indicated that outpatient EI programs reduce hospitalization rates and improve quality of life, leading to significant cost savings even when patients later develop psychosis. These findings suggested that funding EI programs might improve the course of illness, lessening public expenditures while reducing the distress, functional disability, and financial burden affecting patients and their families (Mihalopoulos et al., 2009).

2. The need for public-academic partnerships and the role of the Massachusetts Mental Health Center (MMHC)

Given the lack of a nationalized health care system, EI programs in the U.S. developed more slowly. Most arose within academic settings and were associated with research programs. Indeed, it has been suggested that in the U.S., public-academic partnerships may have greater sustainability than other models (Srihari et al., 2009). The Prevention and Recovery in Early Psychosis (PREP) program represents a successful collaboration among MMHC, the Harvard Medical School Department of Psychiatry and affiliated hospitals, and the Massachusetts Department of Mental Health (DMH). Founded in 1912 by agreement between the DMH and Harvard Medical School, MMHC (formerly Boston Psychopathic Hospital), traditionally positioned itself at the forefront of academic research, public psychiatry, and multi-disciplinary training (Tsuang, 1997; Salzman et al., 2012). It has promoted community-based care and independence and recovery for the severely mentally ill, thus providing a rich setting for the development of PREP.

In the mid-1990s, Harvard/MMHC researchers increasingly focused on prevention and EI (e.g., Faraone et al., 2001; Stone et al., 2003, 2005), including examining the effectiveness of clozapine and other novel antipsychotic medications in first-episode schizophrenia (Green and Schildkraut, 1995; Keefe et al., 2006). While interacting with research participants and their families, the first authors (BC, SZ) were inspired by key clinical experiences that in turn shaped the development of PREP. First, patients and families often faced the devastating effects of a first episode of psychosis without professional support (Onwumere et al., 2011). Second, reduction in psychotic symptoms with antipsychotic medications, while necessary, was rarely sufficient for successful functional outcome. Young patients frequently continued to have prominent negative symptoms, cognitive deficits, poor social skills, and/or high rates of substance misuse. Nonetheless, when referred to community mental health centers for outpatient care, these young people were often refused entry because their presentation was not sufficiently "severe" compared to the older clients for whom these programs had been devised. Moreover, whenever allowed to enter such programs, they were unlikely to remain, frightened away by the profound deterioration of some persistently mentally ill clients. There seemed to be no venue specifically designed to assist young adults and their families at this distressing juncture.

3. Development of PREP

In 1997, a nascent, inpatient-based EI program took shape at MMHC in conjunction with a first-episode research program (Green and Schildkraut, 1995). This program provided developmentally geared support for all participants in psychopharmacologic research studies, including an individual psychotherapist and a weekly psychoeducational group designed to counteract stigma and isolation. Following discharge, participants were offered weekly peer group meetings led by a familiar clinician, and relatives were offered monthly psycho-education and support sessions. However, the requirement of being enrolled in research limited the number of young people reached by the new services.

Subsequently, promising data from EI programs abroad were used to marshal support for developing an *outpatient* EI program at MMHC. The first authors, called upon by DMH and private hospitals to consult on complex cases where early psychosis might be present, established a reputation for diagnostic expertise. They also educated clinicians and community groups on early detection and intervention. In 2003, a research-oriented outpatient program (PREP) began as a clinical service with a collaborative mix of support organized primarily through the Commonwealth of Massachusetts funded Commonwealth Research Center (CRC), a research program emphasizing early intervention and prevention (Seidman, PI). The DMH initially provided a few hours per week of three MMHC clinicians' time. Trainees came from MMHC academic programs in psychiatry, psychology, social work, nursing, and occupational therapy. In 2004, a DMH fellowship was secured to support a post-doctoral psychologist, who spent half time in clinical work and half in research. Although painstakingly pieced together, PREP's multi-disciplinary team placed it within the best tradition of MMHC's innovations in treatment and clinical training.

Several challenges were met during PREP's early days. First, significant community education was required to convince clinicians that first-episode patients were sufficiently ill to require intensive services. Second, substantial advocacy efforts with DMH led to a policy change allowing non-chronic, first-episode patients to be eligible for state services. Next, the requirement that individual's enroll in research before entering PREP proved a major barrier, as many patients were ineligible for or declined research participation. In 2005, this requirement was lifted, resulted in a significant increase in referrals, leading MMHC to increase PREP's dedicated staffing. Subsequently, referrals increased dramatically, often from inpatient units urgently seeking follow-up care for first episode patients. Notably, when the CRC and thus PREP were threatened with state budget cuts in 2003–2006, PREP families came out in full force appealing to their elected representatives and testifying at the Massachusetts State House about the profound impact of PREP. In 2007, DMH increased its investment by relocating PREP within a non-stigmatizing, storefront youth center, modeled on clinics developed for early psychosis programs in Australia (Yung et al., 2007).

4. Current PREP program

4.1. Overview and mission

PREP is an outpatient program dedicated to specialty treatment and training which aims (a) to provide *early and evidence-based*