

Lessons Learned and Future Directions for Early Intervention and Youth Mental Health Paradigms Research for Reform

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Abstract

Until recent decades, early intervention seemed like a Utopian ideal, hopelessly out of reach. One of the prerequisites for intervening early is the availability of effective treatment. However, even when effective treatments for the major mental disorders emerged in the 1950s, the weight of pessimism, neglect, and discrimination in the care of the mentally ill buried all realistic notions of intervening early to modify the course of serious mental illness. In the 1980s, research began to focus on first-episode psychosis to seek greater clarity of the underlying etiopathology. The long delays in accessing initial treatment became immediately apparent, as did the fact that the treatment needs of early-stage patients and their families were dramatically different from those with long-term chronic illness. The harm suffered by patients through these delays and the crudeness of standard care was exposed and demanded a new approach. The therapeutic value of hope was rediscovered, and the erroneous nature of the nineteenth-century belief of inevitable deterioration or degeneration, also captured in the 1980s phrase “doomed from the womb,” became clear. Short- to medium-range outcomes were improved and shown to be heterogeneous and malleable. The world of schizophrenia research was transformed, and several stages of illness, each with their own treatment needs, were defined, from the earliest clinical features to enduring chronic illness. This paradigm shift paved the way for the creation of a transdiagnostic model of clinical staging that was capable of catalyzing early intervention across other diagnostic landscapes and congruent reform of systems of mental health care. An international scientific movement emerged under the banner of the International Early Psychosis Association (IEPA)

in 1997, and a new journal, *Early Intervention in Psychiatry*, was established in 2007 to sustain and extend the growth of knowledge in early intervention. With 75% of mental and substance use disorders emerging before the age of 25 years, this reform has focused especially on young people in transition to adult life, where the consequences of delayed and poor quality of care are greatest. Despite overwhelming logic, a compelling body of evidence, including cost-effectiveness data, reform, and investment, has been hampered by inertia, structural stigma, and a rearguard action, aimed at seeding doubt, by a small number of academic critics. The other major missing element is public engagement and mobilization in support of change. Reform is best informed by science, but it is in the end a sociopolitical process, and there are signs that this is becoming better understood. Early intervention provides a blueprint and launch pad to radically change the wider landscape of mental health care, to prioritize youth mental health, and to dissolve many of the barriers that have constrained progress for so long. This chapter captures the lessons learned and indicates avenues for further progress.

Introduction

For many decades, early intervention has been a central pillar of treatment in all the major physical noncommunicable disease areas. Early intervention can be defined as diagnosis at the earliest possible point, even presymptomatically, followed by proportional or stage-specific intervention, adapted and sustained for as long as necessary and effective. This strategy has been a major factor in the increased survival and better outcomes seen notably in cancer and cardiovascular disease. Mental illness is increasingly recognized as the noncommunicable disease with the greatest impact on human potential and economic productivity since, due to its timing early in the life span and consequent long period of impact, it results directly, and indirectly via physical illness, in a substantial reduction of life expectancy and is responsible for *the* most significant contribution to disability-linked disease burden (Bloom et al. 2011). Yet the curve of mortality and morbidity has not changed, even in developed countries. Given the lessons from cancer and cardiovascular disease, why has early intervention in mental health *not* been an absolutely top priority? We have effective treatments, but they are typically deployed late and without the strategic goal of reducing progression of illness. Provided that at each stage of illness, treatment is proportional (i.e., adapted to maximize benefits and minimize risks), early intervention in mental health care more than qualifies for a green light. This means offering psychosocial and safer biotherapies at earlier undifferentiated stages of illness, where diagnostic and therapeutic specificity has yet to be identified and indeed where it may or may not actually exist. On the other hand, while balancing risks and benefits, as in cancer, treatment should aim to be preemptive rather than reactive to worsening status. Our aim must be to achieve remission and recovery and then to sustain this. While it has been a long hard road to build momentum to make early intervention a standard feature of mental health care, there is a sense that we are at a tipping point. Only

high-quality translational research and advocacy will ensure that this is not a mirage or false dawn.

What Is Early Intervention?

In psychiatry, the term early intervention has been interpreted in various ways. Some use it to characterize interventions early in life, many of which are preventive rather than therapeutic. Others use it in relation to relapse prevention, where early means early in an episode of illness, not necessarily the initial one. Still others use it to focus on the early diagnosis and treatment of emerging mental disorders. Early intervention sits within a preventive psychiatry framework. Clearly, prevention is better than cure; however until prevention has been 100% successful, early intervention is the next best thing. When would early intervention not be a good thing? If there are no effective treatments or if the cure was worse than the disease (i.e., the treatments caused more harm than good, as in “the treatment was successful but the patient died”), then early intervention could be useless or worse. In diseases like Alzheimer, where unfortunately there is no effective treatment, early diagnosis is still justified so that the patient and family can be better prepared and supported in relation to the progress of the illness. In psychiatry, even after the discovery of much more effective treatments, a range of factors conspired to create the impression that they might do more harm than good, thus undermining any momentum for early intervention until the past two decades.

Origins of Early Intervention

Despite the overhang of nineteenth-century thinking, embedded in concepts like “degeneration,” “dementia praecox,” and even “schizophrenia” itself, there were some early pioneers who dared to dream of early intervention. For example, the American social psychiatrist, Harry Stack Sullivan, stated: “I feel certain that many incipient cases might be arrested before the efficient contact with reality is suspended, and a long stay in institutions made necessary” (Sullivan 1927:106–107). Such pioneers were stymied by the lack of effective treatments, but even so, there was a level of naturalistic remission and recovery that began to challenge the Kraepelinian paradigm, even in the latter’s own lifetime. Recovery, almost despite contemporary treatment, was clearly possible in schizophrenia, though partially concealed by the *clinician’s illusion* (Bleuler et al. 1976; Cohen and Cohen 1984). The clinician’s illusion refers to the fact that clinicians’ perception of any illness and its prognosis is powerfully shaped by the setting in which they work. In particular, since clinicians are typically more heavily exposed to the more severely and persistently ill subgroup of patients, they form a much more pessimistic mind-set than accords with

the true spectrum of outcomes. The advent of effective antipsychotic drugs, developed in the 1950s and the rise of first-generation community psychiatry should have been much more potent in dispelling pessimism and paving the way for early intervention; however, the immature and divided state of psychiatry, the deep stigma and discrimination, the disastrous mismanagement of deinstitutionalization, and the crude way that new medications were used in routine practice combined to sink this possibility. It was not to be until the 1980s when the focus of schizophrenia research would turn to the early stages of psychotic illness and the notion of early diagnosis would become a realistic proposition. Initially, this was driven purely by a research agenda, which proposed that studying first-episode patients who were free of the many confounding variables present in chronic and multi-episode samples would shed more light on etiopathological questions. However, the establishment of streamed, or discrete, early psychosis programs (McGorry 1985; McGorry et al. 1996), intended to facilitate such research, starkly revealed the clinical imperatives both from a harm reduction perspective and as an opportunity to reduce premature death and disability, and enable more complete functional recovery. The value of hope was rediscovered, and although traditionalists dubbed the new approach a “rescue fantasy” (suggesting an unrealistic optimism deriving from the needs of the clinician), an increasing number of rescues were successfully and routinely performed as care evolved, supported by hope and a growing research base.

Progress: Research for Reform

During the 1990s, early intervention for psychosis became a new paradigm. I have previously described in detail how this scientific paradigm developed and spread (McGorry 2015). A phalanx of like-minded and collegial leaders in Australia, Europe, North America, and Asia developed streamed early detection and intensive early intervention programs for psychotic patients, which also functioned as innovation platforms for new research in both neurobiology and novel therapies. Many focused on schizophrenia, but the most successful programs included all forms of early psychosis, presaging the wider transdiagnostic shift that is now underway in early intervention. Factors that enabled this successful paradigm shift were that it

- became a “movement,” albeit scientifically grounded;
- was patient and family centered;
- was led by clinician-scientists and not pure researchers or pure clinicians, but was highly inclusive;
- created platforms like the IEPA and later a journal, *Early Intervention in Psychiatry*, to organize the field and build interest, commitment, talent, and careers; and

- engaged in the process of advocacy and reform, and could be characterized as “research for reform,” not merely for publication success (which nevertheless certainly occurred as a by-product as the field expanded exponentially).

In addition to the limited lateral expansion beyond schizophrenia into psychotic mood disorders, the focus was extended: earlier than the first episode into the subthreshold or prodromal stage, and later through the “critical period” (Birchwood and Fiorillo 2000) of the first 2–5 years after the first episode, where the major impact of the illness was understood to occur and set the course over the long term. This formed the foundation of our later transdiagnostic clinical staging model (McGorry et al. 2006), which has the potential to reorient all mental health care and research and facilitate prevention, early intervention, and indeed long-term and palliative care.

Lessons Learned

Lesson 1: The need for mental health care precedes the emergence of the major DSM syndromes of interest, and proportional, preemptive treatment is safe and effective

“The onset of a mental illness is generally a gradual one...” (Kraepelin 1909). “Schizophrenia rolls in like a slow fog, becoming imperceptibly thicker as time goes on.” (Saks 2007)

Sullivan (1927) and later Meares (1959) wrote eloquently about the prodromal phase of schizophrenia, and Häfner et al. (1992) mapped the evolution of the onset phase of schizophrenia and depression, showing that subthreshold symptoms preceded the current diagnostic threshold in most patients for months or even many years. As early psychosis programs developed, the breakthrough, therapeutically speaking, was to recognize that this subthreshold state caused distress and functional impairment, and therefore a “need for care,” and that a subset at least of people in this stage of illness sought help or were prepared to do so. This led to a *prospective* definition of what was termed an “at-risk mental state” (McGorry and Singh 1995; Yung and McGorry 1996), which indicated both the current need for intervention as well as the risk of a more severe stage of illness. Special clinics in stigma-free locations were established to provide care and to study this stage of illness (Phillips et al. 2002a; Yung et al. 1995). An essential feature of this at-risk or ultra-high risk (UHR) concept was that it did not connote *inevitable* risk for a more severe stage psychosis or for schizophrenia. There was a lateral and future valence for other syndromes as well as stasis and remission.

This looser linkage with schizophrenia allowed critics to question the value of the concept from two perspectives. Some misrepresented the whole notion by stating that patients were not ill at all, implying their symptoms were absent

or trivial, and that they were not functionally impaired, thus raising the issue of the boundary of mental health care with “normality.” These critics used data from population health surveys to suggest that since the lower reaches of the psychosis phenotype appeared to be benign, there was a risk of inappropriate treatment of “normal” people (Frances 2012; van Os and Guloksuz 2017). It has now become clear, however, that low-grade psychotic symptoms, if persistent and associated with anxiety and depression, represent a poor prognostic sign (Kelleher et al. 2012a; van Os et al. 2009). Other critics focused on the partial specificity or valence that the syndrome possessed for future sustained psychotic disorder and argued the “false positive” rate was too high, especially as the rate of transition to psychosis steadily fell. This was one of the key reasons why the endeavor to embed a specific psychosis risk syndrome ultimately failed. However, the false positive rate for psychosis transition not only varies with the degree of serial enrichment of the sample, but when the false positive rate for *any* current or future disorder was revealed (Lin et al. 2015); this turned out to be very low, since those who failed to develop a psychotic illness frequently developed another disorder or comorbid blends. This partial specificity and low false positive rate for any disorder, with overlap of psychosis with other syndromal outcomes, has opened the door to a broad concept of initial common pathways and stages and the clinical staging model (for a recent review of this issue, see McGorry et al. 2018a).

There are two pathways for future research. The first, which appeals especially to those still with confidence in the validity and utility of the schizophrenia concept, is to seek greater precision in prediction of the single syndromal outcome of psychosis or schizophrenia using serial enrichment, biomarkers, and more potent statistical tools (Clark et al. 2016). The second, which is compatible with the first, is to move to a transdiagnostic approach with a broad set of entry criteria (Hartmann et al. 2019) and look at progression rates to several late phenotypes. This has major advantages in terms of yield or power to predict as well as treatment capacity and reflects the major progress that has been achieved in this field: we now have Cochrane level 1 evidence revealing that it is possible to achieve better symptomatic and functional outcomes in the subthreshold or prepsychotic UHR stage and to reduce the one- to two-year risk of progression to full threshold psychosis (Schmidt et al. 2015; van der Gaag et al. 2013, 2019).

The at-risk mental state or UHR concept stimulated great controversy as it revived old controversies around labeling and the risks of overtreatment (Frances 2012). This, in turn, raises key questions of obvious interest in early intervention: When can we say a mental disorder is present? How do mental disorders emerge and evolve? Defining some kind of boundary is necessary, because it is linked to a categorical decision of whether treatment or at least some kind of help is indicated and should be offered. I argue that this should be a fuzzy boundary in which the patient also has a major say, not only health professionals, funders, and polemicists (Frances 2013; Greenberg 2013). There

should be a soft entry policy but safeguards linked to proportional treatment, balancing benefits versus risks, guided by the maxim *primum non nocere*. Clinical staging enables this to occur.

Defining a boundary or border zone must be complemented by an understanding of the dynamics of how people move from being “well” to “ill” (Scott 1973). Eaton (2001) has described how this occurs in very clear terms: People develop symptoms through the intensification of existing traits or features within the normal range of experience (e.g., anxiety or sadness), the acquisition of novel subjective experiences (e.g., hallucinations or obsessional thoughts), or a combination of the two. Syndromes or constellations of symptoms develop through the concurrent or sequential accumulation of such experiences and behaviors as well as when they manifest some coherence and stability.

Severity and persistence are the key characteristics for determining whether there is a disorder (McGorry and van Os 2013), although some argue that distress and/or functional impairment must also be present. In real life, these phenomena emerge in sporadic or gradual ways, often ebbing and flowing, sometimes following familiar trajectories and sequences, other times in a more fluid and reversible manner. How they stabilize or fade, and how they attract other features, comorbid patterns, and behaviors has not yet been systematically studied.

In the early stages of mental ill-health, diffuse and unstable subthreshold states of anxiety and depression are common, but often comingle with other features (including psychotic-like disturbances of salience and perception) and emotional dysregulation to produce a kaleidoscopic series of microphenotypes (McGorry and van Os 2013). We have not yet defined which set of variables to include in systematic studies of this stage of illness development, but they could include traditional symptom concepts, momentary emotional and perceptual states, self or corporeal disturbances, and sleep and motor activity changes. Prospective studies can reveal exactly how these microphenotypes resolve or intensify, cohere, and evolve into macrophenotypes such as mania, psychosis, major depression, borderline personality disorder, or blends of these.

In addition to the emergence and evolution of symptoms and syndromes, patienthood, help-seeking, and need for care are influenced and defined by sociological factors, notably prejudice, stigma, and illness behavior (Pilowsky 1969, 1978). Financial constraints can have a strong influence on where the bar is set by governments, social welfare agencies, and health insurers for access to financial coverage for care. Ideological forces also seek to deny the reality of need for care by asserting against all available evidence that mental ill-health is actually part of the human condition (the “worried well”) and naturally heals through “resilience.” The same could be said about limb fractures, which are common, subject to a natural healing process, and yet require professional intervention for optimal healing. These factors are arguably more potent in the mental health field in distorting the definition of need for care and the boundary between health and illness. More subtle variants of this invalidation

involve the unhelpful distinction between high- and low-prevalence disorders. Neglect is common to both. The former are trivialized, the latter sold short.

Lesson 2: There are long delays or failure of access to care, despite reaching diagnostic threshold for serious mental illness, and these can be reduced by community education and early detection

In an influential paper, Wyatt (1991) showed that not only were long delays in access to treatment the norm in schizophrenia but there was a correlation between the length of the duration of untreated psychosis and outcome. The new information that in high-income countries people with fully fledged psychosis had not been able to access treatment for an average of one to two years (Loebel et al. 1992) created a profound effect. It seemed obvious to all that in view of the suffering and obvious risks of untreated illness that access time to treatment should be reduced. Yet some appeared to question this and debated the direction of causality in relation to the link of duration of untreated psychosis (DUP) with outcome. While treatment delay could allow the illness to exert damaging psychosocial effects and possibly neurobiological damage as well, the worse outcome associated with treatment delay could also be explained by those patients with an intrinsically more severe illness presenting later, due to features such as an insidious onset which was more difficult to detect. The latter view arose within the fatalistic mind-set of inevitable deterioration, and essentially suggested that earlier treatment was only justified if longer-term outcomes could be shown to be improved. Systematic reviews and meta-analyses of nonexperimental studies were conducted to try to resolve the issue (Marshall et al. 2005; Perkins et al. 2005); however, only an experimental design in which the DUP variable was manipulated was capable of doing this. From 1992 onward, we have shown at the Early Psychosis Prevention and Intervention Centre in Melbourne that if an early detection team was established and referral sources in the community were educated, then the DUP could be reduced to a matter of weeks (McGorry et al. 1996). Importantly, the Stavanger group—led by Jan-Olav Johannessen, Thomas McGlashan, and T. K. Larsen, who used a quasi-experimental design and employed intensive and sustained community education and detection teams—found that a major reduction of DUP produced better outcomes that were maintained over a long-term period of ten years (Hegelstad et al. 2012). The amount of outcome variance that DUP accounts for is only around 10–15%, but around twice as many patients were found to have achieved recovery at ten years in the experimental group whose DUP was reduced to a matter of weeks. When this experimental intervention was withdrawn at the end of the study, the DUP once again lengthened (Joa et al. 2007). Both community education and mobile case detection were shown to be necessary to achieve a reduction in DUP. If DUP reduction had been combined with sustained intensive stage-specific care, then further improvements could have been expected. What is notable is that despite this issue having been

resolved, few services, even early psychosis programs, invest in community education and mobile case detection. This is an excellent example of a failure to implement hard won scientific evidence. Long delays are also seen in other serious mental disorders, notably bipolar disorder, anorexia nervosa, and borderline personality disorder (Chanen 2015; Dagani et al. 2017; de Girolamo et al. 2012; Neubauer et al. 2014).

Lesson 3: Stage-specific interventions are needed in the critical early years post diagnosis

There are numerous examples of this principle (McGorry et al. 2008a). An array of randomized control trials have demonstrated that antipsychotic medication is not appropriate as a first-line treatment during the subthreshold or UHR stage of illness. First-episode psychosis studies have shown that substantially lower doses of antipsychotic medications are effective in achieving remission in drug-naïve patients than are required in multi-episode patients (McGorry et al. 2011; Merlo et al. 2002). The evidence base for maintaining remission and recovery during the critical period post first-episode psychosis is incomplete and a current focus of research attention (Alvarez-Jimenez et al. 2013). When to reduce dosage, in whom, and what other psychosocial interventions support such dose reduction and discontinuation strategies are unclear. The role of long-acting injectables and the timing of clozapine therapy are both active areas of focus within a staged model of treatment (O'Donoghue et al. 2019). Psychosocial interventions have similar stage-related features. The needs of patients and families vary according to illness stage. Family interventions are very different early in the course of illness, and vocational interventions have a more central place and are more effective in the “critical period” in early psychosis (Killackey et al. 2008). Similar issues exist in mood disorders, where less stage-specific research has been conducted (Berk et al. 2017).

Lesson 4: A streamed and flexible early intervention culture of care for first-episode psychosis, with tenure of at least two years for all and up to at least five years for most, is essential to optimize and sustain remission and functional recovery

In contrast to treatment as usual for first-episode psychosis, the value of specialized early psychosis services in producing better outcomes across a wide range of indicators is now fully supported by Cochrane level 1 evidence (Correll et al. 2018). The potency of this effect has probably been underestimated (McGorry et al. 2018c). The studies captured by Correll et al. (2018) in their meta-analysis, while valuable and demonstrative of the genuine value of this approach, may not have revealed the full potential of early intervention. Timeliness, dose, stage specificity, and tenure could all be enhanced. The RAISE study (Kane et al. 2016) illustrated that early intervention is time

sensitive and more effective than treatment as usual only if the DUP was less than a median of 74 weeks, which represents a very long DUP. It is likely that much better early remissions and functional recoveries are achievable if DUP can be reduced to a matter of weeks. The median DUP for the Correll et al. (2018) meta-analysis was lower than in RAISE, but further reductions must be possible because few of these models did what is necessary to reduce DUP to a matter of weeks; namely, intensive community education and mobile detection teams. Timing can also be optimized if a clinical high-risk or, better still, a youth-friendly enhanced primary care service is included in the new system of care and a higher percentage of patients can be engaged at this stage of illness. This helps to delay onset, reduce DUP, and ensure patients are well engaged with clinicians at the point of transition, should it occur, or even in some cases to prevent full expression of the vulnerability to psychotic disorder and other comorbidity.

Many of the early intervention programs included in the Correll et al. (2018) meta-analysis were not well separated in terms of clinical pathways or culture from treatment as usual and chronic mental health settings. The dose and tenure of care was variable, and some programs failed to adapt interventions to stage of illness, merely increasing intervention “dose.” Another way that outcomes could be improved in early psychosis is by extending the tenure of care from two to at least five years. Two recent studies have shown that if better quality care is delivered for up to five years, the outcome benefits can be safeguarded (Albert et al. 2017; Malla et al. 2017). Finally, we should be able to optimize outcomes and survival by ensuring that physical and sexual health and substance use are integral components of early intervention services.

In summary, it is conceivable that larger effect sizes favoring early intervention could be observed if all components of early intervention services were optimized. In Australia, six such fully-fledged early psychosis systems linked to the headspace primary care system are now in operation and are under evaluation. This body of research should be transformative for health systems everywhere, because it shows that even with existing knowledge and treatments we can “bend the curve” of outcome in a positive direction, reduce suicide rates, and potentially reduce the risk of premature mortality through medical causes. This approach has not yet been extended to other variants of potentially severe and persistent mental illness, but should be the focus of future research.

Lesson 5: Vocational interventions are essential for functional and social recovery

Forty-eight percent of people who ultimately develop a serious mental illness, especially psychosis, will have failed to complete secondary education (Jablensky et al. 1999). A much higher proportion of young people who are seeking help for emerging mental disorders from the general population

will already be “not in education, employment or training” (O’Dea et al. 2014). Without specialized individual placement and support interventions, offered within the clinical governance of the mental health service, there will be little or no improvement in vocational outcomes. Clinical trials have shown that safeguarding or restoring vocational trajectories is a highly successful strategy within early intervention services focused on young people (Killackey et al. 2008). Once again, funding models to integrate such approaches horizontally within multidisciplinary teams remain weak and piecemeal; however there are major opportunities for better outcomes and greater cost-effectiveness.

Lesson 6: Early intervention is the best buy in mental health reform

Campion and Knapp (2018) recently reported on the return on investment for various evidence-based elements of mental health care. For both depression and psychosis, early intervention was prominent among the best buys, with early psychosis intervention returning £17.97 for every £1 invested. Many other studies have produced similar results, with savings flowing from direct health care as well as, even more strongly, from indirect savings, notably reduced welfare, prison, suicide, homicide, and housing costs, and increased taxation receipts (Hamilton et al. 2017).

Lesson 7: Early intervention is effective in other mental disorders, not solely psychosis

Evidence from depression, borderline personality disorder, and other diagnoses suggests that there is merit in extending this paradigm across the board in mental health care (Chanen and McCutcheon 2013; Clarke et al. 1995; Hetrick et al. 2017; Stockings et al. 2016). What is striking, however, is the apparent inertia and ambivalence in doing so despite the success of the paradigm in psychosis. In depression, there is a strong appetite for prevention and for increasing the coverage for people with established illness. Early intervention or indicated/targeted intervention for subthreshold depression has been successfully developed (Beardslee et al. 1993; Clarke et al. 2001; Garber et al. 2009) but not widely implemented. The reasons for this may have to do with the extent of unmet need in depression, which obscures the value and undermines the capacity for early intervention. The higher incidence and prevalence of depression means that systems of primary care with high throughput capacity will be a central feature of early intervention for mood disorders. Strangely, although bipolar disorder is a low incidence condition, there is ambivalence in that field regarding the feasibility of early intervention, even though there are long delays before it is diagnosed (for recent discussion, see Duffy 2018; Malhi et al. 2017; McGorry et al. 2018b). A possible solution, one that is transdiagnostic, is outlined in the next two sections.

Lesson 8: Clinical staging provides a heuristic tool for safe, preemptive intervention and etiological research

One of the urgent challenges for psychiatry is to create a simpler, more useful approach to diagnosis. Our traditional diagnostic systems are categorical and siloed, consisting of polythetic operational definitions of clinical phenotypes. The boundaries between syndromes and phenotypes are not clear and comorbidity is the rule rather than the exception. We know that dimensionality underlies most of these phenotypes and that distress, impairment, and need for care are not limited to the full threshold versions of these phenotypes. All of this points to the necessity of establishing a transdiagnostic approach. The dynamics of early psychopathology are complex; emerging microphenotypes ebb and flow, and evolve in numerous patterns that do not follow rigid train tracks to discrete macrophenotypes, such as schizophrenia or bipolar disorder. The reification of these macrophenotypes has led to a spurious certainty about the indications, specificity, and timing of drug therapies, with risks of premature and overtreatment, undertreatment, and mismatched treatment. Emerging psychopathology is a fluid mixture of anxiety, affective dysregulation, aberrant salience, motivational changes, and other features that dynamically influence one another over time, creating a range of clinical patterns. Network analysis, supported by frequent sampling of experience and behavior over time, is well placed as an approach to study emerging psychopathology (Borsboom 2017; Borsboom and Cramer 2013).

In large transdiagnostic samples there is a general psychopathology factor (the “p” factor) that has good predictive validity (Caspi et al. 2014); most domains of psychopathology appear to conform to dimensional rather than categorical models and seem to favor a unitary or at least a noncategorical approach. This thinking is compatible with the creation of the Research Domain Criteria (RDoC) project, which has embraced a transdiagnostic approach in research, attempting to base psychiatric nosology on neuroscience and behavioral science rather than on DSM-defined diagnostic categories (Sanislow 2016).

In my view, these approaches downplay the role of clinical phenotype-based classification and overstate the role of neuroscience and behavioral constructs. Part of the frustration with phenotype-based classification, and the perceived roadblock that it is believed to have introduced to progress in research, may be attributable not to phenotype-based classification per se but rather to the oversimplified and broad nature of contemporary psychopathological descriptions that are present from DSM-III onward, and in many of the instruments used to measure psychopathology in research studies. To adopt geological terminology, focusing on plate tectonics (underlying neurobiology) should not replace or compensate for poor characterization of topography (phenomenology). In addition, the RDoC approach as yet confers no diagnostic benefit to clinical care, and its feasibility in many clinical settings is questionable, because care

systems in the U.S.A. and elsewhere are typically structured according to traditional diagnostic categories and block transdiagnostic research. A lack of clinical utility also applies to the Hierarchical Taxonomy of Psychopathology (HiTOP) project, which seeks to provide a hierarchical dimensional approach to psychiatric classification (Kotov et al. 2018). Based in quantitative nosology, HiTOP is promising and has greater intrinsic phenotypic validity; however, like the RDoC model, it is currently cross-sectional and static, lacking a dynamic or longitudinal dimension. While there is a lively debate between proponents of HiTOP and network analysis (Borsboom et al. 2017; Forbes et al. 2017), the latter may have a greater capacity to contribute to the development of new diagnostic approaches. Other dynamic prediction approaches may also come to be of value (Nelson et al. 2017).

Despite the complexity, fluidity, and dimensionality of clinical phenotypes, treatment decisions are binary, and clinicians need categories, however arbitrary (as in hypertension and cancer), to guide their decisions. This is why clinical staging has emerged as a potentially useful model: one that is especially suited to early interventions that seek to preempt progression of illness and enhance understanding of psychopathology over the long-term course of illness across the diagnostic spectrum. To shed further light on the relevancy of this model, a series of papers over the past decade have described its features and reported on findings to date (Cross et al. 2018a; Hickie et al. 2013b; McGorry et al. 2006, 2014b, 2018a; Purcell et al. 2015).

The primary goal of clinical staging is to provide a more accurate guide to treatment selection as well as to prognosis. It also serves to organize research into psychosocial risk factors, neurocognitive variables, and biomarkers (both of current stage and risk for stage development). The model attempts to determine the position of an individual along a continuum of illness (see Figure 14.1), defined according to stages:

Stage 0 = no current symptoms

Stage 1a = help-seeking with distress

Stage 1b = attenuated (i.e., subthreshold) syndrome

Stages 2–4 = full threshold disorder with varying degrees of recurrence and severity

The best known application of clinical staging has been in oncology. One could argue that the progression or resolution of cancer is also a dimensional issue, but we have imposed categories or stages in a successful effort to intervene proportionally and preventively, to reduce the risk of extension of the disease and ultimately death. The risk-benefit ratio is a guide to how aggressively to intervene, with the balance in favor of proactive treatment at each stage, rather than waiting for treatment failure and then stepping up the intensity, as with “stepped care” in mental health, which responds often very belatedly to treatment resistance. Examples of this are dynamic vocational salvage and recovery efforts early in the course of illness, and early use of clozapine in psychosis

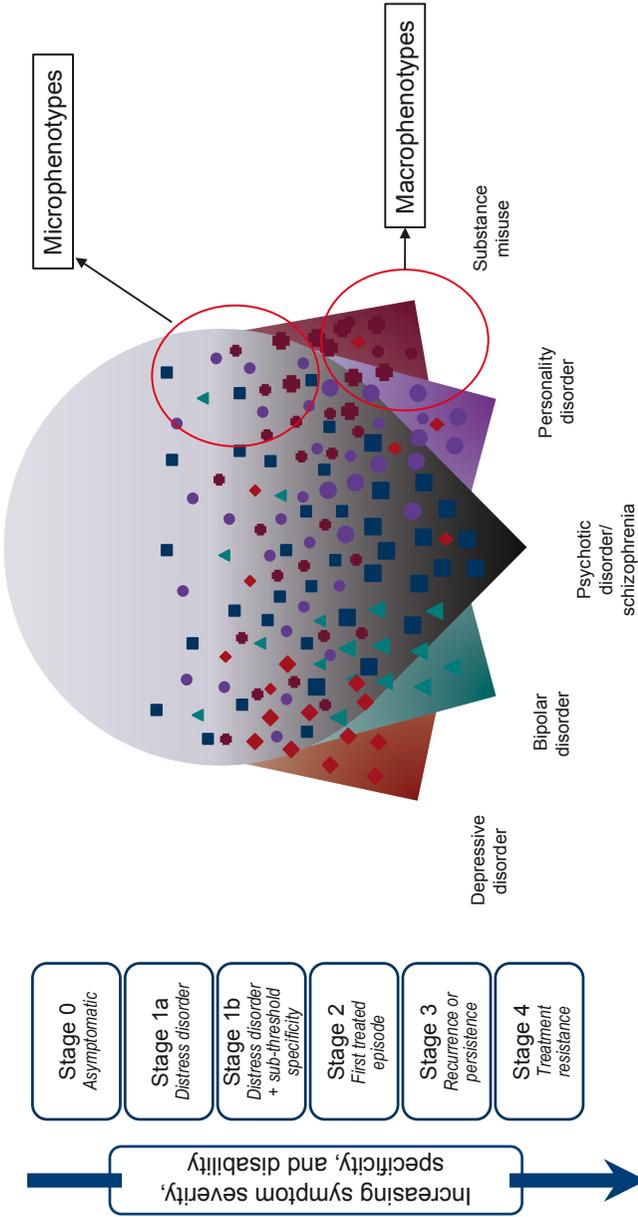


Figure 14.1 Clinical staging model for psychiatry (McGorry et al. 2018a). Reproduced with permission.

(Edwards et al. 2011; Homan and Kane 2018; Killackey et al. 2008, 2019; Okhuijsen-Pfeifer et al. 2018; Thien et al. 2018).

Lesson 9: New stigma-free, developmentally appropriate models of care focused on young people across the peak age of risk for the mental disorders of adult life must be designed and scaled up if early intervention is to be feasible and optimized

The peak incidence and prevalence of mental ill-health among young people in transition to adulthood calls for a new approach to service provision: one that can handle high volumes, allows a role for new technologies, and offers the depth and expertise necessary to manage the diversity, complexity, and persistence of this need. The capacity to cope with the extent of the need for care is crucial if early intervention is to be feasible. Different service levels that cover the entire spectrum of illness complexity and severity are required: from e-health, primary care services, or enhanced primary care services, for those with earlier mild to moderate forms or stages of mental ill-health, to specialized “back-up” services for those with complex presentations or more severe illness. The key principles of such systems can be summarized as follows:

- Youth participation is necessary at all levels to enable the creation of youth-friendly, stigma-free cultures of care that will provide what young people and their families really need, while acknowledging the evolving developmental culture of emerging adults.
- A preventive and optimistic framework must emphasize early intervention and offer holistic, evidence-informed, staged care governed by risk-benefit considerations and shared decision making. Social and vocational outcomes are among the key targets.
- A “one-stop shop” or “integrated practice unit” (Porter and Lee 2013) is integral: multidisciplinary teams of providers need to be organized around the customer (the young person and their family) and their needs, and a dedicated team of clinical and nonclinical personnel will provide the full care cycle for the young person’s condition. This fundamentally changes the way clinicians are organized to deliver care. The ideal version involves both horizontal and vertical integration.
- Discontinuity of care at age 18 must be eliminated, because peak periods of care are needed during this crucial developmental transition.
- Positive and seamless linkages with services for younger children and older adults must be secured.
- Flexible tenure and reentry to care, as needed, are required during the critical period of transition to adulthood.

These principles and the models that flow from them to provide care for young people are highly congruent with the perspective of Porter and Lee (2013), who stressed the need for value for patients (the best outcomes at the lowest

cost) as the overarching goal in health care. To date, this has been a hallmark of both early intervention and youth mental health reform.

The first and now most extensive example of the development of integrated care for young people began in Australia. In 2006, the Australian Federal Government established *headspace*, a national youth mental health service stream designed to provide highly accessible, youth-friendly centers that promote and support early intervention for mental and substance use disorders in young people through four core service streams: mental health, drug and alcohol services, primary care (general health), and vocational/educational assistance (McGorry et al. 2007b, 2014a). Operating on an enhanced primary care model, *headspace* provides a multidisciplinary care structure with close links to local specialist services, schools, and other community-based organizations, and offers evidence-based care within a clinical staging framework. In addition to the four core service streams, each *headspace* center delivers local community awareness campaigns to enhance young peoples' help-seeking behavior, the ability of families and local service providers to identify emerging mental health concerns in young people early, and to strengthen the referral pathways into the service. In addition to these face-to-face services, *headspace* also runs a 24/7 nationwide online support service (*eheadspace*) where young people can "chat" with a mental health professional either online or by telephone and access assessment and therapeutic care. In recognition of the issue of youth suicide in Australia, *headspace* also provides a support service for schools affected by student suicide (*headspace* school support), which offers a wide range of services.

From the original ten centers in 2006, *headspace* has been successfully scaled up to reach over 110 Australian communities and many more via *eheadspace*. The bulk of the young people using *headspace* services, even when highly distressed, are experiencing mild to moderate levels of mental ill-health and are in the early stages of illness (Rickwood et al. 2014); however, at most *headspace* sites there is also a substantial subset of young people with more complex, severe, and enduring problems who currently are unable to gain access to the traditional child and adolescent/adult mental health system. An independent evaluation has shown that in addition to greatly improved access, there are modest short-term improvements in outcome in contrast to standard primary care, including reduced self-harm and improved role functioning (Hilferty et al. 2015).

However, *headspace* is still a work in progress and important gaps remain. The most serious gap lies in its capacity for vertically integrated specialized care. While *headspace* provides a valuable entry to the health and welfare system and can address the needs of perhaps two-thirds of its clientele through its enhanced primary care capacity, the remainder need a more expert, specialized, and at times more intensive approach, which may include mobile, home-based and outreach care or acute and subacute residential care. To begin to address this gap, the Australian Government has funded the creation of six "enhanced

headspace” services, which will be resourced to deliver fully fledged evidence-based early psychosis services and a modest but more flexible stream of funds for nonpsychotic yet complex presentations. These centers will ideally be integrated with and act as the portal for such care. Similar models to headspace have been implemented in other countries, such as Canada, Ireland, Denmark, Israel, the Netherlands, and Singapore. Similar services are being developed in some parts of the U.S.A. and the U.K. A common sequence is for initial catalytic philanthropic funding to develop services and demonstrate effectiveness, which is then followed by government funding to scale up and sustain the venture.

The long-term aim of these reforms is to develop a nationwide youth mental health stream that fully integrates care for young people, so as to provide seamless coverage of mental health care from puberty to mature adulthood (at around 25 years of age), with soft transitions between child and adult mental health care. Distinctions between the tiers of primary and specialist care will be blurred to utilize a staging approach aimed at preempting the progression of illness. This means youth-friendly, stigma-free primary care portals for young people with undifferentiated needs, backed up with intensive community education, mobile detection and assertive treatment teams, and specialized streams of expert care. The latter streams would cover not only early psychosis but also the other major macrophenotypes that emerge, notably complex mood, borderline personality, substance use, and eating disorders. Such vertical integration of care could deliver early intervention and secure tenure of care during the critical period of transition to adulthood, when major mental disorders emerge and embed. Clearly, the success of these reforms will ultimately only be able to be assessed after careful evaluation, and more health services research is necessary to develop, refine, adapt, and evaluate new service models, both within their individual contexts and across sectors.

Lesson 10: Challenges to transformational reform: Evidence is necessary but not sufficient

Mental health remains the poor cousin in health care and medical research. Despite its much greater projected impact on human suffering and productivity over the next 20 years, it continues to be seriously underfunded in comparison with cancer, cardiovascular disease, diabetes, and other noncommunicable diseases. This shortfall is even more dramatic in the developing world. However, in both high-income and low- to middle-income countries, current and future generations of young people are being consigned to the social and economic scrapheap because of the neglect of their major health and social needs. Meanwhile, health expenditures continue to balloon worldwide, with little rationality, thoughts of value for money, or even humanity to guide this. Most people agree that this needs a major rethink (Gawande 2017), and while it will be challenging to contain expenditure in emotionally sensitive

areas, we must channel future growth in health expenditure to areas that will benefit people and society most. As Porter and Lee (2013) point out, this will require a reorganization of the health-care system that makes value (meaning the best outcomes for clients at the lowest cost) the overarching goal. Since approaches that deliver better mental health are best positioned to deliver enhanced value at a lower cost than other health expenditures, they should be strongly prioritized. This means affirmative action and preferential investment in the “best buy” of mental health care. However, this does not mean more of the same. In the post-deinstitutionalization era, mental health care itself needs to be reorganized: it must extract itself from many of the unhelpful constraints and perverse incentives that have flowed through its marriage with mainstream medical care, as identified by Porter and Lee (2013). Specifically, we must identify priorities that will result in health gain and value both to the patient and the funder. Obvious low-hanging fruit includes achievable prevention that targets younger children and parenting as well as early intervention strategies for emerging mental ill-health in young people. How can this be achieved? Key steps involve innovation as well as the translation of existing knowledge, effective advocacy, and sociopolitical activism.

Innovators and early adopters need to be nurtured as we seek progress in mental health care. Late adopters should be respected, listened to, persuaded, and convinced on the basis of logic and scientific evidence wherever possible. Skepticism and debate are crucial processes to guide and safeguard effective reform. However, extreme or excessive skepticism should prompt an analysis of motives, since vested interests and ideological groups have been known to misuse science to undermine valid change and reform (Oreskes and Conway 2010). These sociological forces must be understood, recognized and responded to quite differently on their merits within the cycle of innovation and reform. Finally, engaging with the general public and helping them to mobilize in their own self-interest are missing ingredients in securing a fair deal for the mentally ill and to promote reform and investment.

Even in the absence of new therapeutic discoveries, we can still substantially reduce the “avertable burden of disease” (Andrews et al. 2004) by increasing the scale, coverage, and value of mental health care and by reengineering the timing and culture of the provision of services. The related concepts of implementation science and “scaling up” of innovations, especially of service models, are particularly relevant. The scaling up literature (Bradach 2003; Cooley and Kohl 2006), a body of knowledge that cuts across many fields, contains the key elements that are required for success.

We now have Cochrane level 1 evidence for the value of early intervention services for psychosis (Correll et al. 2018; van der Gaag et al. 2013), which is capable of even greater potency. These services have been scaled up in many places worldwide, but coverage is piecemeal, program fidelity patchy, and momentum still too slow. Conversely, integrated primary youth mental health care has been scaled up more rapidly, despite the fact that supporting

evidence has followed rather than led the reform. This may be because the value to communities is so palpable that the requirement for disease-modifying evidence is less, because access and engagement have so obviously been improved, the product on offer is so appreciated, and modestly better outcomes are also occurring. Implementation failure is a genuine risk in health services reform and arises from a range of sources. Even when reform has been well funded, threats have arisen from devolved commissioning and poor model fidelity, from mission creep (as seen in the U.K. when early psychosis services were extended across the life span without new resources or evidence), and resistance from clinicians to implementing key evidence-based elements of the model (e.g., community education, mobile detection, and home-based treatment). Additional challenges involve engaging the wider community, creating political will, building the right cultural and physical settings, and attracting a dynamic, skilled, and optimistic workforce.

Conclusion

Early intervention and youth mental health are twin paradigms that have the potential to transform the landscape of mental health over the coming decade. An overarching enabler will be the creation of a professional field of knowledge and expertise to be known as “youth mental health” or even “youth health,” which is quite distinct from child and adolescent psychiatry or pediatrics. The concept of adolescent health falls short because it retains the outmoded concept of adolescence, has failed to capture the full extent of the developmental processes in play in the current era, and has minimized the salience of mental ill-health as the major health threat to a flourishing generation and productive society. This new endeavor must draw on a wide range of disciplines and skills, which may help to redefine the emergent field in a way that we can currently not imagine.

