EXHIBIT 86

Barrett Adolescent Centre Commission of Inquiry

BARRETT ADOLESCENT CENTRE COMMISSION OF INQUIRY

Commissions of Inquiry Act 1950
Section 5(1)(d)

STATEMENT OF PROFESSOR PATRICK MCGORRY

Name of Witness:	**Professor Patrick Dennistoun McGorry**
Date of birth:	[redacted]
Current address:	**Orygen Youth Health Research Centre** **35 Poplar Road** **Parkville, Victoria 3052**
Occupation:	**Psychiatrist & researcher**
Contact details (phone/email):	[redacted]
Statement taken by:	**Catherine Muir / Sam McCarthy**

I **PROFESSOR PATRICK DENNISTOUN MCGORRY** make oath and state as follows:

Qualifications and professional experience

1. I hold the following qualifications:

   (a) Bachelor of Medicine, Bachelor of Surgery with First Class Honours, 1977 (University of Sydney).

   (b) Member Royal College of Physicians, 1979 (London, UK).

   (c) Member of the Royal Australian and New Zealand College of Psychiatrists, 1986.

   (d) Fellow of the Royal Australian and New Zealand College of Psychiatrists, 1986.

   (e) PhD, Doctor of Philosophy, 1991, Monash University (Diagnosis and Classification of Psychotic Disorders).

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(f) Fellow of the Royal College of Physicians, 2002 (London, UK).

(g) Doctor of Laws (Honoris Causa), 2011, Monash University.

(h) Doctor of Medicine (Honoris Causa), 2011, University of Newcastle (Australia).

(i) Doctor of Philosophy (Honoris Causa), 2012, University of Haifa (Israel).

2. I have held or currently hold the following position(s):

   (a) Professor of Youth Mental Health, University of Melbourne, Australia (1996 – present).

   (b) Executive Director, Orygen, the National Centre of Excellence in Youth Mental Health (2014 to present).

   (c) Executive Director, Orygen Youth Health Research Centre, Australia (2002 – 2014).

   (d) Editor in Chief, Early Intervention in Psychiatry Journal (2007 – present).

   (e) Director, Board, National Youth Mental Health Foundation (*headspace*) (2009 – present).

   (f) Treasurer, International Early Psychosis Association (2007 – present).

   (g) Visiting Professor, University of Stavanger and Rogaland Psychiatric Services, Stavanger, Norway (2007 – present).

   (h) Founding Board of Directors, the Schizophrenia International Research Society (SIRS), (2006-present).

   (i) Honorary Professorial Fellow, Department of Psychiatry, University of Melbourne, Australia (2011 – present).

   (j) Chair, Psychosis Australia Trust Research Advisory Council (2013 – present).

   (k) President Elect, Schizophrenia International Research Society (2014, to take full office in 2016).

3. In 2009 I was awarded the Victorian Australian of the Year Award. In 2010, I was awarded the Australian of the Year Award. Both awards recognised my contribution to the field of Youth Mental Health. I became an officer of the Order of Australia (AO) in June 2010.

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4. My professional experience is otherwise set out in my curriculum vitae which is exhibited and marked **PDM-1**.

5. I was interviewed by Commission staff on 18 January 2016, to provide information to assist the Commissioner. The questions asked and my answers are set out below. In order to prepare for the meeting, I was provided a copy of and reviewed the following documents:

   (a) Draft model of service for the Adolescent Extended Treatment and Rehabilitation Centre that had been planned for Redlands.

   (b) Statement of Dr Trevor Sadler.

   (c) Statement of Dr Anne Brennan.

   (d) Statement of Professor David Crompton.

Preliminary matters

6. Whilst I was aware of the Centre, I never visited the Barrett Adolescent Centre (**BAC**). I did, however, visit The Park at Wacol at some time in the 1980s, so I am familiar with the location of the BAC.

7. Based on my review of Dr Sadler's statement, in particular, paragraphs 43 to 46 (inclusive), it is necessary at the outset to say something about the type of patient at the BAC. Accordingly, I understand the cohort of patients to be those who:

   (a) were aged 13 – 17 years of age at the time of admission, who came from a variety of locations across the state;

   (b) had previously received a range of less restrictive community interventions and more restrictive acute patient admissions with specialist services in adolescent mental health, but who still had persisting symptoms of their mental illness and consequent functional and developmental impairments;

   (c) were likely to benefit from a range of clinical interventions offered at the BAC;

   (d) required extensive and intensive clinical interventions ranging from day patient admission to inpatient admission;

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(e) had a combination of severe and complex mental illness, together with impairment, sometimes family factors, and the potential to benefit from multiple multi-modal intensive interventions provided at the BAC;

(f) had co-morbidities with severe and persistent predominant disorders such as:

  (i) depression with disassociation self-harm and depression;

  (ii) anxiety, especially social anxiety disorder;

  (iii) Post-Traumatic Stress Disorder;

  (iv) eating disorders, both anorexia nervosa and bulimia nervosa; and

  (v) severe psychotic disorders;

(g) were highly likely to have:

  (i) disengaged from educational networks for at least six months to admission;

  (ii) little to no face to face contact with peers;

  (iii) little to no engagement from community networks; and

(h) may have been abandoned, removed, or otherwise be experiencing family difficulties because of:

  (i) disengaged, neglectful, or abusive parents; and/or

  (ii) the tremendous strain imposed on otherwise adequate family networks brought about by the strain of dealing with a mental illness.

8. Patients meeting most or all of those categories will form the most damaged and vulnerable people in the 12-25 age group. Co-morbidity (meaning composite and complex blends of these syndromes), will also be more pronounced in this more severely affected group.

9. The trend in the field is against "*institutionalisation*" of patients and toward community-based services. While inpatient admissions of up to two years are very lengthy, it should be acknowledged that the patient profile includes this most severely damaged group. Such patients are relatively few in number, and represent the "tip of the iceberg". Based on my review of the statement of Dr Sadler, I suggest that the typical patient at the BAC would be at risk of death, jail, or homelessness without a longer inpatient admission or a

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suitable alternative service which adequately caters for accommodation, mental health-care, and educational or vocational support.

10. While short inpatient admissions fit the 'community-based' philosophy and are generally appropriate, for this most severely damaged group, longer inpatient admissions are required particularly if there are not appropriate services to transition these emerging adults while the complex constellation of issues that led to admission persist.

11. In this statement I use the term "emerging adult" in place of adolescent or young person. I do so advisedly. I define an emerging adult as a person between the ages of 12-25 years. The term recognises, correctly in my view, that these people are 'becoming adults' and see themselves this way. In my experience, emerging adults appreciate and feel respected by the term.

12. *I have been asked about adequately assessing services for the types of severely damaged patients who form the BAC cohort by reference to an evidence base.* There are two major difficulties in assessing such a service by reference to an evidence base. First, this is the most damaged cohort, and so the number of people who fall within it is, relatively speaking, relatively small. This means that traditional sources of scientific evidence are difficult to assemble. The success or otherwise of programs for such a sample tend therefore to be measured by assessing individual outcomes. Therefore the effectiveness of such services are often assessed by expert peer review. This may be contrasted with, for example, treatments for more homogeneous forms of mental disorder, where data from randomised clinical trials can be used as a guide or benchmark.

History and Purpose of Orygen

13. *I have been asked by Commission staff to outline the history and purpose of Orygen Youth Health* (**OYH**)*. In particular, I have been asked what services it provides, and how those services touch upon the types of disorders suffered by patients who formed the BAC cohort.*

History

14. I am the Executive Director of Orygen, now the National Centre of Excellence in Youth Mental Health. The history of Orygen has influenced and mirrored the rise in funding, sophistication, and specialisation of youth and adolescent mental health care in Australia, and indeed, internationally.

15. Orygen Youth Health (**OYH**) evolved from a research unit called the Early Psychosis Prevention and Intervention Centre (**EPPIC**) founded in 1992. EPPIC was a State

government funded public mental health service which was revolutionary in design and focus and had in turn evolved from the Aubrey Lewis Unit at the Royal Park Hospital. The latter was an inpatient facility whose focus was to assist young people hospitalised because of their first psychotic episode. The aim was to dedicate the ward to young people in order to reduce the traumatic impact of being managed alongside older more chronic patients and to develop new evidence based interventions to promote full recovery.

16. The EPPIC model was officially launched in October 1992. The centre of gravity of treatment was shifted to the community. Its catchment area encompassed North Western and Western Melbourne, a population of roughly 900,000.

17. In October 1992 a community mental health service was opened at 35 Poplar Road, Parkville. A number of community-focused (that is, not in an inpatient or outpatient setting) components were added to the service. For example, the service added an Early Psychosis Assessment and Home Based treatment team, clinical case managers, comprehensive group programs, and specialist family work. Added to this was a modest community awareness campaign. An important feature of the EPPIC program was the availability of a wider suite of services a young person experiencing their first psychosis might need from a mental health service. At the same time, the Early Psychosis Research Centre linked to the University of Melbourne was founded, supported by a VicHealth grant.

18. By 1994, existing services were complemented by the PACE clinic for people identified as 'at-risk' of developing a psychotic illness, or who were experiencing low-grade psychotic symptoms.

19. In 1996, EPPIC hosted the first International Conference on Early Psychosis in Melbourne and drew together a group of international experts to form the International Early Psychosis Association in 1997.

Development

20. The next phase of development was to extend the youth-focused approach of the EPPIC model to provide care for young people with other major mental illnesses. This service was first called the Mental Health Service for Kids and Youth (**MH-SKY**). The idea was to take the evidence-based success of the EPPIC model as it applied to psychosis, and to apply it to the full range of mental health issues faced by young people at this critical stage of life. My professional working life since 1996 has been devoted, through various means, to the expansion of the model from psychosis to a broader range of mental health disorders.

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21. At the time there was an existing service working with young people aged between 15-18 years with non-psychotic illnesses called the Older Adolescent Service. It was renamed as Youthscope and incorporated within MH-SKY.

22. Since that time, significant new philanthropic investment from the Colonial Foundation led to the formation of the Orygen Research Centre in 2001.

23. OYH has grown into a larger and more comprehensive clinical structure aiming to address the needs of emerging adults who present with a range of emerging mental health and substance use problems through EPPIC, PACE, Youthscope, and HYPE (for personality disorders). It also now includes 4 *headspace* centres within the same geographical region. OYH is a both a reform base in youth mental health driven by research and innovation; and a clinical service providing care to over 4000 young people at any given time.

OYH Today

24. Today, OYH has three arms comprising of:

    (a) clinical programs;

    (b) training programs; and

    (c) medical research (Australia's largest translational mental health research centre).

25. The overall clinical service is a hybrid of State and Federally funded programs comprised of four arms: Enhanced Primary Care (via 4 *headspace* centres under contract), Acute Services, Continuing Care, and Psychological Recovery. Each arm works as a multidisciplinary team that is made up of GP's, psychiatrists and mental health clinicians who are nurses, occupational therapists, clinical psychologists or social workers. These professionals work together to deliver individually-tailored services such as mental health assessment and care, crisis management, psychotherapy, medication, family support, inpatient care, group work, and vocational and educational assistance.

26. The Community Development team focuses on the provision of mental health consultation, training and mental health promotion services to community, education and health organisations/groups across the OYH catchment area of North Western and Western regions of Melbourne. The role of the Community Development Team at Orygen Youth Health is to strengthen the capacity of individuals and organisations to understand, identify and respond to the mental health needs of young people. OYH's research arm is contained within the National Centre of Excellence in Youth Mental Health. Our primary research areas include:

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(a) emerging mental disorders;

(b) first episode psychosis;

(c) functional recovery;

(d) mood disorders;

(e) neurobiology and neuroprotection in emerging mental disorders;

(f) online interventions and innovation;

(g) personality disorder;

(h) suicide prevention;

(i) ultra-high risks for psychosis; and

(j) vulnerable and disengaged youth.

Alignment between child/adolescent and adult psychiatry

27. *In my discussions with Commission staff I was asked to comment upon what is known as the 'alignment issue'.*

28. The alignment issue, as I understand it, has two related aspects. First, it refers to the demarcation between adolescence and adulthood in relation to the provision of mental health services around 18 years of age. Secondly, it refers to the lack of alignment between services for young people between 12 - 18 years old and young people aged between 18 – 25 years.

29. It is now well established that mental ill-health is the single biggest health issue for people in the age group 12 – 25. Emerging adults in this age group will tend to be physically healthy but undergo significant change as they develop from childhood to adulthood. Based on international evidence, derived from OYH's research and my 30 years' experience as a researcher and clinician, I can state that emerging adults experience a surge in new cases of anxiety, depression, personality disturbance, eating disorders, psychotic and mood disorders, and substance use disorders. These syndromes emerge sequentially, with much overlap, and with what is known as comorbidity (which means as I have set out above, composite and complex blends of these syndromes).

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30. The impact of mental illness on normal maturation and development is often profound and pervasive. There is a risk of a slide into chronic mental illness and marked disability in adulthood, with associated problems such as unemployment and welfare dependency.

31. The impact of mental disorders on older adults is very different since the preventive opportunities are much reduced, and the risks of suicide, self-harm and aggression in general tend to subside, provided adequate treatment is provided (not always the case by any means). The linkages with drug and alcohol problems and personality disturbance are somewhat less marked in older adults, and family support and involvement is often less prominent as people become more isolated and marginalised with chronic illness and the death or disengagement of parents and family.

32. The determinants for inpatient admission are multiple and discussed below:

    (a) type of syndrome:

        (i) generally, psychosis, severe mood disorders, eating disorders, and severe personality disorders are most likely to require inpatient care at some stage in the development of the disorder;

    (b) level of family and social support;

    (c) level of acuity and risk, irrespective of diagnostic assignment:

        (i) that is, where a person is suffering from an acute risk of suicide, acute psychosis or mania, an emerging adult will require admission to an acute inpatient facility; and

        (ii) for severe psychosocial impairment, whether temporary or sustained, an emerging adult may benefit from admission to a longer term inpatient sub-acute facility (a residential program with a recovery or rehabilitation focus which permits lengths of stay in months rather than days). This is especially so if few community supports or family exist and community mental health services are under-resourced or, as is so often the case, threadbare.

33. The concept of 'youth-friendliness' extends to all aspects of mental health care for emerging adults in the 12-25 year age range. This means youth participation must shape the service culture and that child or older adult cultures simply are inappropriate and often harmful in different ways for these young people in transition to adulthood. This includes inpatient and outpatient services. Youth friendliness means that young people feel more comfortable with the style of practice, the décor, the flexibility and optimism of

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the culture of the service. It is created by involving young people in the design and operation of the service and by recruiting expert staff who actually have an affinity for and talent for working with young people.

34. There are marked cultural and physical design differences between inpatient units for prepubertal children on the one hand and from older adults on the other. This is well established for the narrow definition of adolescents i.e. 12 – 18 years, and is now also a feature of Orygen's inpatient unit for the blend of adolescents and emerging adults up to 25 years. For example, a 19 year old with an acute onset psychosis requiring inpatient admission will not be therapeutically assisted by being admitted to an adult ward and exposed to people with chronic schizophrenia who have unfortunately not yet recovered. An emerging adult in that position is likely to respond to a diagnosis as if it were a prognosis, and be imbued with hopelessness. Research shows that effective treatment during the onset and aftermath of a psychotic illness can significantly improve outcomes. It can arrest a slide into chronicity (McGorry, 2015, exhibited and marked **PDM-2**) Emerging adults placed in an adult setting are more likely to reject appropriate treatment. For a host of reasons it is not appropriate to treat adults and emerging adults together either in inpatient or community settings.

35. Within a broad 0-25 years child and youth service there are probably 3-4 different and overlapping cultural sub streams or phases required, being the:

    (a) perinatal and preschool stage (0-5 years approximately) with autism/ASD and attachment and behavioural problems;

    (b) 5 -12 years primary or prepubertal stage with another different set of disorders (ADHD, anxiety and conduct disorder) and different developmental issues; and

    (c) 12 – 25 years stage with new emerging syndromes of a now adult type, a stage which itself has several sub-phases within it, which merge seamlessly with each other, except for more abrupt educational transitions, such as leaving school. The 12 – 25 range is a distinct subcultural group and a person's capacity for developmental tasks and physical and brain maturation evolve across this age range. It follows that somewhat different therapeutic approaches are required, for example, for the early teens and the early twenties.

36. There are numerous difficulties with the demarcation at 18 years between child and adolescent services and adult services. These difficulties include:

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(a) The distinction is anachronistic because the developmental challenges of mastering key tasks involved in becoming an independent adult are simply not completed by most young people these days until the mid-20s on average, and certainly not by 18 years.

(b) The transfer of an emerging adult from the child and adolescent stream into the adult stream at age 18 disrupts care at a critical point. The demarcation is imposed on mental health care from paediatrics/general medicine and undermines, rather than assists, patient care.

(c) The TRACK studies in the UK demonstrate that transitions are almost always deleterious and poorly managed. A copy of the TRACK studies are exhibited to my statement at **PDM-3.**

(d) The excluded cohort of under-18s with a need for care but no access, and the surge of new incidence within the 18-25 age group who cannot enter adult services, are even more poorly served by this demarcation as they never get access to care. The under-resourcing and hard gatekeeping and triage policies ensure this is the case. Most young people with serious illnesses and a need for care do not receive it or receive very dilute and limited care.

(e) Mental health problems have a significant detrimental effect on development. Such difficulties are highly disruptive at any stage of life, but particularly for emerging adults. It follows that emerging adults with mental health problems may be chronologically 21 or 22, but be developmentally much younger. Casting such people into an adult system which, even if it does accord access, fails to recognise this point can have major deleterious effects on this vulnerable group.

37. In my view, the above issues have been seriously underestimated and ignored by successive Australian State governments. The exception has been successive Federal governments which have responded by developing *headspace* as a base camp in the reform process. State governments, in my view, tend to focus funds on running hospitals rather than the intensive community engagement required to effectively manage emerging adult mental health disorders. I understand that Queensland had made some hard won improvements in community care, but in recent years these have been eroded. The Federal government, on the other hand, has in the last decade, been persuaded that funding programs such as *headspace*, present a significant opportunity to arrest a slide into chronic mental illness in adulthood. The new Federal policy settings are in this direction but the concern is that new funding is not yet supporting the policy.

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Development of community-based services

38. *In my discussion with Commission staff, I was asked to comment upon the significant development over the last two decades of community-based alternatives to inpatient hospital services. I have been shown a diagram of a typology of CAMHS services along a continuum of treatment intensity and restrictiveness of setting which is* ***PDM-4****. About that typology, my comment is that*:

    (a) There is some utility to the typology provided however it restricts itself still to the CAMHS/CYMHS age range with the demarcation at 18 years. I note that the documents provided refer to possible new services which are not currently in existence and many of which derive from Victorian models which are now notionally at least covering the 12 – 25 age group. The continuum model in Figure 1 adapted from Biggins et al has some validity and logic. Missing elements include a primary care component as exists through *headspace*, school and tertiary institutional platforms of care, and home based acute care teams to prevent traumatic and inappropriate emergency department presentations which, due to the lack or demise of many of these services, are becoming the norm in many parts of Australia.

    (b) This typology is linked to acuity and complexity more than a diagnostic group, though psychoses, mania and suicidal risk will tend to require more intensive acute bed based services. Young people with minimal or compromised family support will also tend to need more acute, residential and assertive outreach forms of care.

    (c) Orygen is one relatively comprehensive example, however, it currently lacks the Y-PARC element and its day programs, home based and assertive mobile youth outreach support team functions have been compromised by recent budget cuts and rationalization of services. Victoria has islands of many of these elements but it remains a piecemeal and shrinking resource. No other country to my knowledge has successfully invested in effective services for this critical yet paradoxically neglected cohort of patients.

39. I also note that the prevailing philosophy of emerging adult mental health is squarely in favour of community based treatment rather than long-term inpatient care. The common objection to long-term inpatient care is that is results in institutionalisation, and is therefore outmoded. It is true, however, that the field is beset by 'either-or' thinking. For the group of severely damaged emerging adults in the BAC cohort, my view is that a longer inpatient admission is always likely to be necessary and needs to be available. However, it would be less protracted were the full range of community supports including supported residential services in the heart of many communities. Such

emerging adults, without the kind of intensive support offered by a BAC, or ideally an improved and modernised service, (which I have discussed in more detail under the heading "Barrett Adolescent Centre" below), are likely to be in jail, homeless, or dead within a short space of time. Sharp binary distinctions between community based care on the one hand, and institutionalisation on the other, do not serve this particularly vulnerable cohort.

Child/Adolescent psychiatric services in Queensland

Terminology

40. *In my discussion with Commission staff I was asked to comment upon a classification system adopted by a group called the Expert Clinical Reference Group, convened by Queensland Health to provide advice on appropriate replacement service for the BAC.*

41. The classification system is as follows:

    (a) Tier 1 – public community mental health services;

    (b) Tier 2a – day programs;

    (c) Tier 2b – residential bed-based services (community-based provider) and day programs; and

    (d) Tier 3 – state-wide inpatient extended treatment and rehabilitation unit (such as the BAC or the Walker Unit in NSW).

42. This system leaves out the critical Australian innovation of an enhanced primary system of care for young people 12 – 25 years, which is *headspace*. The services provided to emerging adults at *headspace* centres are outlined in the exhibited paper marked **PDM-5.** This has reduced stigma and cost barriers, dramatically improving access and providing an initial tier of care. Public community mental health services for young people are threadbare and mesh poorly with *headspace* due to design problems at the State level, cultural problems, age range flaws and lack of a more skilled workforce even than *headspace* in many instances. Day programs have been said to be effective yet the evidence base for this is thin, and they are in very short supply. More modern vocationally oriented programs are more cost effective. A range of third or fourth tier residential facilities are required for mental health and substance use disorders. These need to be greatly expanded and diversified for different levels of acuity, complexity, persistence and also for diagnostic expertise e.g. for borderline personality disorder, eating disorders, psychoses.

43. There are now *headspace* has centres across metropolitan, regional, and rural Australia. The centres are designed for the 12-25 age group. In Queensland, there are *headspace* centres in many locations across the State, including Southport and Meadowbrook. The focus of *headspace* is early intervention. For example, the *headspace* website lists difficulties an emerging adult might be facing with which *headspace* can help:

    (a) feeling down, stressed, or can't stop worrying;

    (b) don't feel like yourself anymore;

    (c) can't deal with school/uni/work or are finding it difficult to concentrate;

    (d) feeling sick or worried about work;

    (e) questions about, or want to cut down drug and alcohol use;

    (f) sexuality, gender identity, relationships;

    (g) difficulties with family or friends;

    (h) sexual health issues and contraception;

    (i) bullying and harassment;

    (j) generally needing someone to talk to.

44. With massive "up-stream" investment in services like *headspace* that aim to catch emerging adults with developing mental health problems, it might be possible to at least reduce the number of emerging adults needing admission to an inpatient extended treatment and rehabilitation unit. At the very least, however, there will always be a need for a service which provides for the following elements:

    (a) residential support;

    (b) expert mental health care; and

    (c) educational/vocational support.

45. Approximately one third of patients that are receiving services through *headspace* present with complex and severe mental health issues similar in complexion to the BAC cohort. Recent research has confirmed this (exhibited and marked **PDM-6 and PDM-7**). There are still gaps since most of these patients cannot get access to more specialised

care in any State due to funding and service gaps. They have been termed "the missing middle".

The Barrett Adolescent Centre

46. *I have discussed the BAC model of care with the Commission staff. I have been asked whether:*

    (a) *a sub-acute, extended treatment and rehabilitation inpatient centre with milieu therapy is a necessary or desirable element of comprehensive mental health services for children and adolescents with severe, unremitting and disabling mental health challenges;*

    (b) *the BAC model of service (or a variant thereof) is appropriate for adolescents with severe mental health issues who either cannot engage with community based options or have exhausted all available community based options;*

    (c) *if not, what replacement services are necessary for the chronically ill cohort of patients in the relevant age group?*

47. I believe inpatient facilities focusing on extended care and rehabilitation for apparently severe and persistent illness are necessary, and probably more than one for Queensland, given its population and demography.

48. However, the model previously delivered at the BAC seems to have been stand-alone and located in a heavily institutionalized and stigmatized setting, utilising what sounds like a typically old fashioned approach to such inpatient care. Dr Sadler outlined the attempts made to adapt the evidence base to guiding the treatment of these patients and this sounded admirable. The setting, however, sounds like a major problem and in my view, these facilities need to be purpose built.

49. The latter could be dramatically modernized in a new purpose built facility if linked to a strong and open academic and research milieu with the full range of other youth mental health service components. Other adjunctive community services would need to be closely embedded and linked into such a facility which past experience suggests, could otherwise risk becoming idiosyncratic, institutionalised and otherwise isolated.

50. I have been asked whether it would be appropriate for 12-25 year old emerging adults to be located in the same inpatient facility. In short, yes. It would only be necessary for the centre to be designed so that appropriate age and gender demarcations are respected and maintained.

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Redlands model

51. I have also discussed the Redlands model with Commission staff. As I understand it, the Redlands model refers to a proposed replacement Tier 3 service for the BAC which was not built.

52. It is difficult but not impossible to comment on a proposed service model based solely on a draft model of service document. However, I believe there is a need for secure inpatient extended care as a last resort option for emerging adults who are so damaged, disabled, developmentally regressed and disconnected, that other treatment options have failed. Such a facility must, however, be one component of a broader suite of accessible and effective community services including accessible primary care, assertive community outreach, crisis assessment and treatment teams (CATT), and step-up/step-down units.

53. I understand that some BAC patients had very extended lengths of stay. There is no question that people will become institutionalised over a 2-year period. I do not believe extended treatment and rehabilitation units should aim for such a long admission. Rather, an appropriate length of stay for most patients would closer to six months to reduce the risk of institutionalisation. It is also true, however, that people who have cut themselves off completely from peer and social networks, consistent with the profile of BAC patients, could be said to be institutionalised at home. Finally, it should be self-evident that institutionalisation in hospital at least for a period is preferable to homelessness, death, or imprisonment.

54. Providing a zone of optimism and recovery is critical for emerging adults with severe and complex mental illness. The setting must be relaxed and calm to provide a haven for patients. This is not a feature of acute inpatient settings. Even youth-friendly acute units are highly stressful environments. Emerging adults are young and always potentially salvageable, and it is crucial that they see people recovering rather than the revolving door of acute inpatient admissions.

Closure of the BAC

55. *I have been asked to comment upon the appropriateness of closing a sub-acute extended treatment and rehabilitation service such as the BAC before the replacement model of care had been finalised and implemented.*

56. Closing a facility caring for the most severely ill and disabled without an alternative approach is a microcosm of the kind of irresponsible deinstitutionalisation that has plagued mental health reform over the past 3 decades around the world. Not only must a suite of alternatives be put in place, not merely a one for one replacement, there is a

wider imperative for Queensland to invest in and develop a restructured and expanded stream of care for the 12 – 25 year olds that represent the future of the State and to safeguard this future in so doing.

57. I note that the closure of the BAC represents 'deinstitutionalisation' of a kind. Such a measure requires detailed and careful step-wise planning to be done properly. There is international and Australian experience which could have been drawn upon. In the 1990s the Kennett government embarked upon a program of deinstitutionalisation. So too in the UK at a similar time.

Child/Adolescent psychiatric services in other jurisdictions

Victoria

58. *I have been asked to comment upon the services provided there to patients with disorders of the kind suffered by the BAC cohort, and how those services compare to the BAC model. In particular, I have been asked to comment upon the Intensive Youth Outreach Model (IMYOS), the Youth Residential Rehabilitation Services and the Youth Prevention, and Recovery Care (YPARC) services.*

59. We have extensive experience at Orygen with large numbers of patients (similar to the BAC cohort), through our only inpatient facility. The inpatient facility is an acute unit with 16 beds and a length of stay of around 12 days. Each patient has their own room and ensuite. Unfortunately, (due to a lack of funding), Orygen lacks an extended care facility and access to a YPARC or step up step down facility.

60. A typical patient would be admitted by a 'triage' system from their local CAHMS service. Alternatively, a referral may be made through the *headspace* centres.

61. At any one time, Orygen is treating 4000 primary care or *headspace* patients, 700 state public mental health patients, and has 16 inpatients. The typical acute patient will be suffering from early psychosis, severe mood disorders, disabling anxiety, and/or borderline personality disorder. In up to 60% of cases, drug and alcohol issues will also be affecting the emerging adult. Many inpatients will be experiencing the manic phase of bi-polar disorder. Orygen will generally not cater for patients with eating disorders because of the physical health problems associated with such disorders, and these are managed at the Royal Melbourne and Royal Childrens' Hospitals.

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62. The 12 day stay is often too short for the typical acute patient. A stay of up to two to three months may be ideally required in some cases, though impossible. However, in order to admit new acute cases it will be necessary to discharge patients who have stabilised and are no longer acutely unwell, but who nonetheless would benefit from an extended inpatient admission. This situation might be improved if an adequately funded 'step-down' program existed, but it does not in our region.

63. We have had day programs, home based treatment teams and intensive mobile youth outreach support, however recent cuts have now limited the potency and effectiveness of these teams. The cuts began to occur when the OYH budget and other public mental health budgets was increasingly folded into the cash strapped acute general hospital budget. We find that hospital CEOs find ways to divert the funds intended by the Government to be allocated to mental health for other health issues in the acute hospital resulting in a shortfall of several million annually in our region. This is an escalating situation across Australia and will worsen in 2017 when the so-called "fiscal cliff" of reducing Federal support for hospitals takes effect.

64. The physical setting for the Orygen clinical centre at Parkville currently has both advantages and disadvantages.

65. It is a picturesque setting which is relaxed and calm. It conveys a sense of 'haven' for the patients. It is immeasurably better than being squeezed into or between the imposing buildings of a major hospital.

66. On the other hand, the buildings have become dilapidated by a lack of investment. This does, in my view, have a significant effect on staff morale and patient outlook. Patients and staff and indeed the local community have seen a new billion dollar new facility – the Royal Childrens' Hospital – built nearby for child and adolescent *physical* health, and contrast that with the run down facilities at which the same young peoples' mental health problems are treated. Naturally, this tacitly conveys the attitude and priorities of the community. It is a continuing reflection of the corroding stigma associated with mental illness which has no place in the 21st century.

Rural and remote psychiatric services

67. *I have been asked by Commission staff to comment upon the necessary facilities, staff skills, and experience necessary to provide assertive outreach services in rural and remote areas. Additionally, I have been asked how (if at all) they differ from inner city and metropolitan areas.*

[redacted]

[redacted]

A BAIL JUSTICE FOR VICTORIA
Reg. No. 1800
Kerryn May Pennell
35 Poplar Road, Parkville 3052

1800

68. In smaller population centres, there is little to no capacity for specialisation. More flexibility is required in rural and remote areas due to the small incidence and scale of the problems. Therefore 'out-reach' style services and telehealth are necessary, possibly supported by more specialised workers and teams in major regional centres. In Queensland, this might include cities such as Cairns, Townsville, and Toowoomba. The challenge is to determine what population base justifies what degree of specialisation. Townships with a population of 20,000 – 40,000 might support a *headspace*, whereas major regional centres with populations of 100,000 or more would support a more specialised youth mental health team funded by the State and linking to a cluster of several *headspace* centres via the new PHN structure.

69. Of all the states in Australia, Queensland is arguably the largest and most decentralised. This issue poses a significant challenge for Queensland.

70. In my view, generic office based "case-management" has diluted the effectiveness of assertive outreach services. I have seen case-management work well where a number of outreach workers have a limited case load and are particularly skilled at the work. If it is imposed on workers as one of their many responsibilities and regardless of whether they are suited to this form of challenging work, it tends to be much less effective.

International jurisdictions

71. Most other countries, even affluent first world ones, operate very limited and old fashioned CAMHS models of care if indeed they have any such services. Some offer for profit heavily privatized approaches which have a minimal evidence base. There are green shoots of reform in some countries notably Ireland, Denmark, the Netherlands and Canada. These international reforms have been inspired by the Australian experience and these jurisdictions are effectively 'catching up' with Australia (see, for example, the papers exhibited and marked **PDM-8** and **PDM-9**).

....[redacted]...........

Witness Signature:

[redacted]

Justice of the Peace / Commissioner for Declarations / Lawyer

A BAIL JUSTICE FOR VICTORIA
Reg. No. 1800
Kerryn May Pennell
35 Poplar Road, Parkville 3052

1800

***OATHS ACT* 1867 (DECLARATION)**

I Professor Patrick Dennistoun McGorry do solemnly and sincerely declare that:

(1) **This written statement by me dated** 3rd Feburary 2016 **is true to the best of my knowledge and belief: and**

(2) **I make this statement knowing that if it were admitted as evidence, I may be liable to prosecution for stating in it anything I know to be false.**

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the *Oaths Act 1867*.

.... [redacted] **.........Signature**

Taken and declared before me at .... this .... day of ....2016.

[redacted]

Taken By

Justice of the Peace / Commissioner for Declarations / Lawyer

A BAIL JUSTICE FOR VICTORIA
Reg. No. 1800
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... [redacted]
Witness Signature:

[redacted] ...
Justice of the Peace / Commissioner for Declarations / Lawyer

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Barrett Adolescent Centre Commission of Inquiry

BARRETT ADOLESCENT CENTRE COMMISSION OF INQUIRY

Commissions of Inquiry Act 1950
Section 5(1)(d)

INDEX OF ANNEXURES

Bound and marked **"PDM-1"** to **"PDM-9"** are the annexures to the Statutory Declaration of Professor Patrick Dennistoun McGorry declared 3rd Feburary 2016:

Annexure	Document	Date	Page
PDM-1	Curriculum Vitae	November 2015	1-90
PDM-2	'Early Intervention in Psychosis'	2015	91 - 99
PDM-3	'Process, outcome and experience of transition from child to adult mental healthcare: multiperspective study'	2010	101 – 108
PDM-4	'A continuum of specialist CAMHS models'	Undated	109
PDM-5	'The services provided to young people by *headspace* centres in Australia'	1 June 2015	111 – 115
PDM-6	'Changes in psychological distress and psychological functioning in young people accessing *headspace* centres for mental health problems'	1 June 2015	117 – 123
PDM-7	'*headspace* – Australia's innovation in youth mental health: who are the clients and why are they presenting?'	3 February 2014	125 – 128
PDM-8	'Innovations in the design of mental health services for young people: an Australian perspective'	14 December 2015	129 - 135
PDM-9	'Cultures for mental health care for young people: an Australian blueprint for reform'	2014	137 – 146

...[redacted].....

Witness Signature:

[redacted].......

Justice of the Peace / Commissioner for Declarations / Lawyer

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EXHIBIT 86

PDM-1

CURRICULUM VITAE

Patrick Dennistoun McGorry

- Professor of Youth Mental Health, University of Melbourne, Australia *(1996 – present)*
- Executive Director, Orygen, the National Centre of Excellence in Youth Mental Health *(2014 to present)*
- Executive Director, Orygen Youth Health Research Centre, Australia *(2002 – 2014)*
- Editor in Chief, Early Intervention in Psychiatry Journal *(2007 – present)*
- Director, Board, National Youth Mental Health Foundation (headspace) *(2009 – present)*
- Treasurer, International Early Psychosis Association *(2007 – present)*
- Visiting Professor, University of Stavanger and Rogaland Psychiatric Services, Stavanger, Norway *(2007 – present)*
- Founding Board of Directors, The Schizophrenia International Research Society (SIRS), (*2006-present)*
- Australian of The Year 2010
- Officer of the Order of Australia (AO) (*June 2010*)
- Honorary Professorial Fellow, Department of Psychiatry, University of Melbourne, Australia (*2011 – present*)
- President, Australian Society for Psychiatric Research (*2013 – 2015)*
- Chair, Psychosis Australia Trust Research Advisory Council *(2013 – present)*
- President Elect, Schizophrenia International Research Society *(2014, to take full office in 2016)*

Updated: 16 November 2015

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PERSONAL INFORMATION

Name:	Patrick Dennistoun McGorry
Date of Birth:	[redacted]
Place of Birth:	Dublin, Ireland
Citizenship:	Australian, Irish

Contact Details

Work Address:	Orygen Youth Health Research Centre 35 Poplar Road (Locked Bag 10) Parkville, Victoria 3052 Australia
Work Telephone:	+ [redacted]
Work Fax:	+ [redacted]
Work Email:	[redacted]

QUALIFICATIONS, MEMBERSHIPS AND FELLOWSHIPS

Qualifications

	In full	**Year**	**Conferring Institution**	**Country**	**Detail**
MBBS	Bachelor of Medicine, Bachelor of Surgery	1977	University of Sydney	Australia	1st class honours
MRCP	Member Royal College of Physicians	1979	Royal College of Physicians	London, UK	Part I: Feb 1979 Part II: Oct 1979
MRANZCP	Member Royal Australian and New Zealand College of Psychiatrists	1986	Royal Australian and New Zealand College of Psychiatrists	Australia	Part I: May 1984 Part II: Jan 1986
PhD	Doctor of Philosophy	1991	Monash University	Australia	Topic: *Diagnosis and Classification in Psychotic Disorders*
MD	Doctor of Medicine	2002	University of Melbourne	Australia	Topic: *The Recognition and Management of Early Psychosis*
FRCP	Fellow of the Royal College of Physicians	2002	Royal College of Physicians	London, UK	
FRANZCP	Fellow of the Royal Australian and New Zealand College of Psychiatrists	1986	Royal Australian and New Zealand College of Psychiatrists	Australia	
Hon LLD	Doctor of Laws (*Honoris Causa*)	2011	Monash University	Australia	
Hon MD	Doctor of Medicine *(Honoris Causa)*	2011	University of Newcastle	Australia	
Hon PhD	Doctor of Philosophy (*Honoris Causa*)	2012	University of Haifa	Israel	

Fellowships & Memberships

- FASSA (Fellow of the Academy of Social Sciences, Australia), (*2006)*
- RANZCP Faculty of Child and Adolescent Psychiatry, (*1996 – present)*
- Australian Society for Psychiatric Research (ASPR) *(1986-present)*
- International Society for Psychological Treatments in Schizophrenia & Related Psychosis (ISPS) *(Including Executive Board Member from 1998 – 2006)*
- Committee for Section on Schizophrenia, World Psychiatric Association (WPA) *(1990 – present)*
- International Early Psychosis Association (IEPA) (Including Founding Member and Current Treasurer), (*1997-present)*
- Australian Academy of Science National Committee for Brain and Mind *(from October 2007)*
- Jury for the selection of the World Psychiatric Association's Jean Delay Prize, to be awarded at the XIV World Congress of Psychiatry *(Prague, September 2008).*
- Member, Melbourne Neuropsychiatry Centre Scientific Advisory Committee *(from 2009)*
- Visiting fellowship, Royal Newcastle Hospital Heritage Oration *(2011)*
- Member, The Lighthouse Foundation Board (2012-)
- Chair, National Eating Disorders Collaboration (*2012-*)
- Member, International Advisory Committee on Clinical Transformation and Redesign, Hinks-Dellcrest Centre for Children and Families, Toronto, Canada *(2013-)*

POSITIONS HELD

Current Appointments – see cover of this document

Past Appointments

Medical

Date	Position	Service	Country
1977	Intern	Royal Newcastle Hospital	Australia
1978	General Practice	Various	Australia
1978	Senior House Officer	Epsom District Hospital	UK
1978	Senior House Officer	Singleton Hospital	Wales, UK
1979	Locum Registrar	Whittington Hospital	London, UK
1980	Medical Registrar	Royal Newcastle Hospital	Australia

Psychiatric Training

Date	Position	Area	Service
1981	Psychiatric Registrar	Adult General Psychiatry	Newcastle Psychiatric Centre (NPC)
1982	Psychiatric Registrar	Consultation-Liaison Service, Adult and Child	Mater Misericordiae Hospital, Newcastle
1982-1983	Psychiatric Registrar	Psychogeriatrics and Rehabilitation	Newcastle Psychiatric Centre (NPC)
1984	Psychiatric Registrar	Adult General Psychiatry	Newcastle Psychiatric Centre (NPC)
1984-1985	Senior Psychiatric Registrar	Professorial Unit	Royal Park Hospital

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Psychiatry Clinical, Teaching and Research

Date	Position	Organisation
1986-1987	Lecturer (0.5)	Department of Psychological Medicine, Monash University
1986-1987	Psychiatrist (0.5)	Royal Park Hospital
1986-1987	Clinical Assistant (Hon)	Adult Psychiatry Department Queen Victoria Medical Centre
1987-1992	Associate Investigator	NHMRC Schizophrenia Research Unit, Royal Park Hospital
1987-1992	Affiliate	Mental Health Research Institute of Victoria
1987-1996	Consultant Psychiatrist	Victorian Foundation for Survivors of Torture
1988-1989	Consultant In Charge	Aubrey Lewis/Nightingale wards, NHMRC Schizophrenia Research Unit, Royal Park Hospital
1988-1991	Senior Lecturer (Hon)	Department of Psychological Medicine, Monash University
1990	Staff Specialist in Psychiatry	Consultation/Liaison Psychiatry, Mater Misericordiae Hospital, Newcastle
1990-1991	Consultant In Charge	Aubrey Lewis Unit, NHMRC Schizophrenia Research Unit, Royal Park Hospital
1990-1991	Consultant Psychiatrist	Victorian Transcultural Psychiatry Unit
1991-1992	Associate Professor	Department of Psychological Medicine, Monash University
1992-1996	Associate Professor	Department of Psychiatry, The University of Melbourne
1992-1996	Head	University of Melbourne Academic Unit, Royal Park Hospital
1992-1996	Director	EPPIC (Early Psychosis Prevention and Intervention Centre)
1992-1996	Honorary Psychiatrist	Mental Health Service, Royal Children's Hospital
1997-2006	President	International Early Psychosis Association (IEPA)
1996-2006	Professor/Director	Centre for Young People's Mental Health (renamed MH-SKY from 1998-2002)
2002-2012	Clinical Director	Orygen Youth Health, Australia
2007-2012	Director	Board National Youth Mental Health Foundation of Ireland (headstrong)
2009	Visiting Professor	University College Dublin, National University of Ireland

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AWARDS

Individual

Year	Award	Details
1991	Organon Junior Research Award	Awarded to Fellow of RANZCP who, in that year, is judged to have made the most significant research contribution (within five years of having become a Fellow) Presented 19.5.1991 at the 26th Annual RANZCP Congress, Adelaide
1995	Ian Simpson Award	Awarded to fellow of RANZCP in recognition of contribution to the research work related to EPPIC and the Victorian Foundation of Survivors of Torture Presented 8.5.1995 at the 30th Annual RANZCP Congress, Cairns
1995	Australia and New Zealand Mental Health Services Individual Award For an outstanding contribution to theory/education/practice: Gold	Presented 5.9.1995 at The Mental Health services Conference (TheMHS), Auckland, New Zealand
1998	Organon Senior Research Award	Awarded to the Fellow of the RANZCP who is judged to have made the most significant contribution to psychiatric research in Australia and New Zealand over the preceding two years. Presented 28.5.1998 at the 33rd Annual RANZCP congress, Melbourne
2001	Founders Medal of the Australasian Society for Psychiatric Research (ASPR)	Third time presented Presented 7.12.2001 at the Australasian Society for Psychiatric Research Annual Scientific Meeting, Melbourne
2001	Centenary Medal	Awarded by the Australian Federal Government in recognition of the development of the EPPIC program
2004	Richard J Wyatt Award	Awarded by the International Early Psychosis Association (IEPA) in recognition of a significant contribution to the field of early psychosis and its ongoing development
2009	Castilla Del Pino Award	Awarded by the Castilla Del Pino Foundation (Spain) in recognition of a significant contribution to the field of Psychiatry in Spanish-speaking countries
2009	Melbourne Award (Contribution to Community – Individual Division)	Awarded by the City of Melbourne to individuals and organisations who go above and beyond the call of duty
2009	Victorian Australian of the Year 2010 Award	Awarded by the National Australia Day Council and supported by the Australian Government, this prize recognises Australians who have a consistent record of excellence and achievements in their field and have contributed in a significant way to the nation at a state/territory level
2010	Australian of the Year Award	Awarded by the National Australia Day Council and supported by the Australian Government, this prize recognises Australians who have a consistent record of excellence and achievements in their field and have contributed in a significant way to the nation at a national level

2010	Officer of the Order of Australia (AO)	The Officer of the Order of Australia is awarded for distinguished service of a high degree to Australia or humanity at large.
2010	Victorian Government Minister of Health's Award for Outstanding Individual Achievement in Mental Health	The Minister's Awards recognise exceptional dedication to delivering the best possible care for consumers and communities and excellence and innovation in public health initiatives and research.
2010	Doctor of Laws *Honoris Causa*	Awarded by Monash University in recognition of significant contribution to research and clinical care in youth mental health.
2011	Doctor of Medicine *Honoris Causa*	Awarded by the University of Newcastle in recognition of significant contribution to early intervention in psychiatry and youth mental health
2012	Doctor of Philosophy *Honoris Causa*	Awarded by the University of Haifa, Israel, in recognition of significant contributions to research and reform in youth mental health care world-wide.
2012	Dublin Prize	Awarded by the University of Melbourne in recognition of a significant contribution to advancing youth mental health nationally and internationally.
2013	National Alliance for the Mentally Ill (NAMI) Research Award	Awarded by NAMI, the peak consumer and carer organization in the USA, presented in Washington DC.
2015	Lieber Prize for Outstanding Achievement in Schizophrenia Research	Awarded by Brain & Behavior Research Foundation (NARSAD) USA.

Organisational

Year	**Award**	**Details**
1994	Australia and New Zealand Mental Health Services Achievement Award: Gold	Awarded to EPPIC, Western Region Psychiatric Services. Presented Sept 1994 at the The Mental Health Services Conference (TheMHS), Melbourne
1995	SAPMEA (South Australian Postgraduate Medical Education Association) Award: Best Program	Awarded to the PACE Clinic
1997	Australia and New Zealand Mental Health Service Achievement Award: Child and Adolescent Services: Silver	Awarded to the PACE Clinic
1997	Australia and New Zealand Mental Health Service Achievement Award: Prevention, Health Promotion or Health Education services or projects: Silver	Awarded to the PACE Clinic
2008	Australia and New Zealand Mental Health Service Achievement Award: Child & Adolescent Services: Gold	Awarded to Orygen Youth Health Research Centre
2009	Victoria Public Healthcare Awards, Minister's Award for Outstanding Team Achievement in Mental Healthcare	Awarded to Orygen Youth Health Recovery Team (Highly Commended)
2010	Australia and New Zealand Mental Health Service Achievement Award: Mental Health Promotion: Silver	Awarded to the MHFA (Mental Health First Aid) program
2010	Australia and New Zealand Mental Health Service Achievement Award: Specialist Service: Gold	Awarded to the HYPE Program for young people with borderline personality disorder

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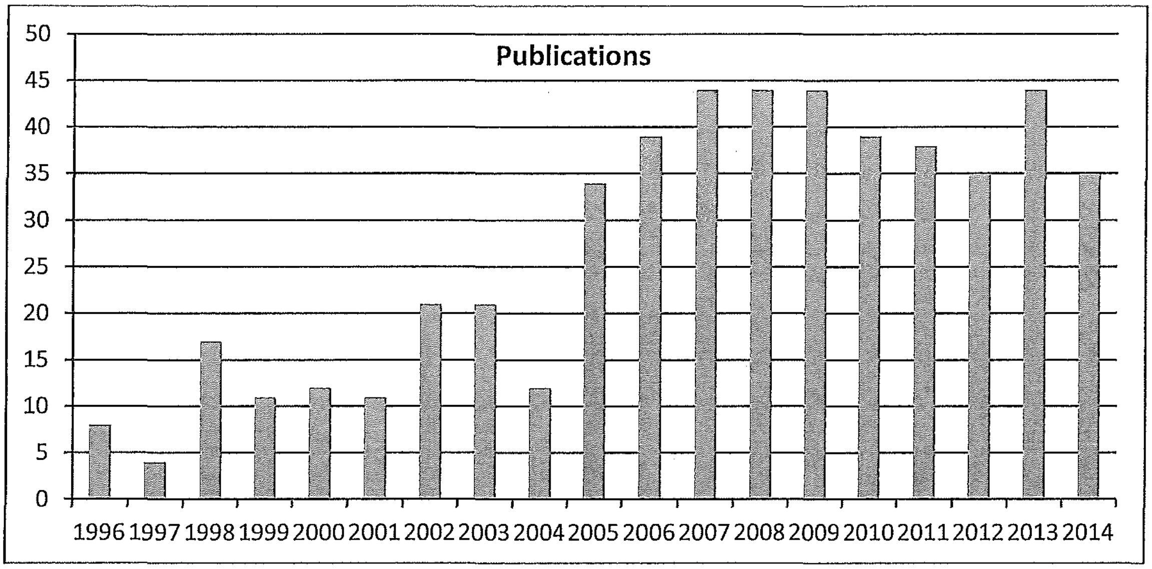
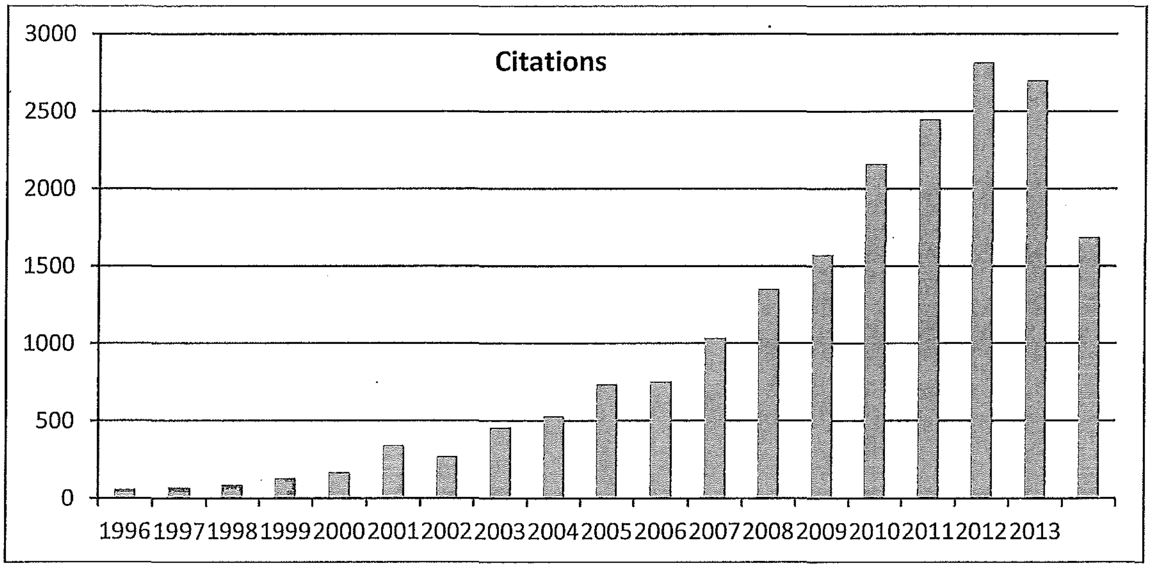
PUBLICATIONS

Rankings (Scopus; Essential Science Indicators)

H factor: 69 (September 2014)
Citations last year: 2,702





Ranking of citation rates: Essential Science Indicators (ESI), September 2014
Top ranked Australian academic psychiatrist
Rank in the World in Psychiatry/Psychology: 16th

Refereed Research Publications

1985–1989

1. **McGorry P**, Singh B. 1985. Stress and anxiety. Australian Family Physician 14(9):858-9, 862-3.
2. Minas IH, Jackson H, Doherty P, **McGorry PD**. 1985. Schizophrenia: An overview. Behaviour Change 2(2):80-93.
3. **McGorry PD**, Campbell R, Copolov DL. 1987. The Zelig phenomenon: a specific form of identity disturbance. The Australian and New Zealand Journal of Psychiatry 21(4):532-8.
4. **McGorry PD**, Goodwin RJ, Stuart GW. 1988. The development, use, and reliability of the brief psychiatric rating scale (nursing modification)--an assessment procedure for the nursing team in clinical and research settings. Comprehensive Psychiatry 29(6):575-87.
5. Minas IH, **McGorry PD**. 1988. The RANZCP vivas: a suitable case for examination. The Australian and New Zealand Journal of Psychiatry 22(4):432-5.
6. Copolov DL, **McGorry PD**, Keks N, Minas IH, Herrman HE, Singh BS. 1989. Origins and establishment of the schizophrenia research programme at Royal Park Psychiatric Hospital. The Australian and New Zealand Journal of Psychiatry 23(4):443-51.
7. Herrman H, **McGorry P**, Bennett P, van Riel R, Singh B. 1989. Prevalence of severe mental disorders in disaffiliated and homeless people in inner Melbourne. The American Journal of Psychiatry 146(9):1179-84.

1990–1994

8. Copolov DL, Keks NA, Kulkarni J, Singh BS, McKenzie D, **McGorry P**, Hill C. 1990. Prolactin response to low-dose haloperidol challenge in schizophrenic, non-schizophrenic psychotic, and control subjects. Psychoneuroendocrinology 15(3):225-31.
9. Copolov DL, **McGorry PD**, Singh BS, Proeve M, Van Riel R. 1990. The influence of gender on the classification of psychotic disorders--a multidiagnostic approach. Acta Psychiatrica Scandinavica 82(1):8-13.
10. Herrman HE, **McGorry PD**, Bennett PA, Singh BS. 1990. Age and severe mental disorders in homeless and disaffiliated people in inner Melbourne. Medical Journal of Australia 153(4):197-205.
11. Jackson HJ, Smith N, **McGorry P**. 1990. Relationship between expressed emotion and family burden in psychotic disorders: an exploratory study. Acta Psychiatrica Scandinavica 82(3):243-9.
12. Keks NA, Copolov DL, Kulkarni J, Mackie B, Singh BS, **McGorry P**, Rubin RT, Hassett A, McLaughlin M, van Riel R. 1990. Basal and haloperidol-stimulated prolactin in neuroleptic-free men with schizophrenia defined by 11 diagnostic systems. Biological Psychiatry 27(11):1203-15.
13. **McGorry PD**, Copolov DL, Singh BS. 1990. Royal Park Multidiagnostic Instrument for Psychosis: Part I. Rationale and review. Schizophrenia Bulletin 16(3):501-15.
14. **McGorry PD**, Singh BS, Copolov DL, Kaplan I, Dossetor CR, van Riel RJ. 1990. Royal Park Multidiagnostic Instrument for Psychosis: Part II. Development, reliability, and validity. Schizophrenia Bulletin 16(3):517-36.
15. Herrman H, **McGorry P**, Mills J, Singh B. 1991. Hidden severe psychiatric morbidity in sentenced prisoners: an Australian study. The American Journal of Psychiatry 148(2):236-9.
16. Keks NA, Copolov DL, Mackie B, Stuart GW, Singh BS, **McGorry PD**, Coffey C. 1991. Comparison of participants and nonparticipants in a neuroendocrine investigation of psychosis. Acta Psychiatrica Scandinavica 83(5):373-6.

17. **McGorry PD**, Chanen A, McCarthy E, Van Riel R, McKenzie D, Singh BS. 1991. Posttraumatic stress disorder following recent-onset psychosis. An unrecognized postpsychotic syndrome. Journal of Nervous Mental Disease 179(5):253-8.
18. Keks NA, McKenzie DP, Low LH, **McGorry PD**, Hill C, Kulkarni J, Singh BS, Copolov DL. 1992. Multidiagnostic evaluation of prolactin response to haloperidol challenge in schizophrenia: maximal blunting in Kraepelinian patients. Biological Psychiatry 32(5):426-37.
19. **McGorry PD**, Singh BS, Connell S, McKenzie D, Van Riel RJ, Copolov DL. 1992. Diagnostic concordance in functional psychosis revisited: a study of inter-relationships between alternative concepts of psychotic disorder. Psychological Medicine 22(2):367-78.
20. **McGorry P**. 1993. Posttraumatic stress disorder postpsychosis. Journal of Nervous Mental Disease 181(12):766.
21. **McGorry PD**. 1993. Early Psychosis Prevention and Intervention Centre. Australasian Psychiatry 1(1):32-34.
22. McKenzie DP, **McGorry PD**, Wallace CS, Low LH, Copolov DL, Singh BS. 1993. Constructing a minimal diagnostic decision tree. Methods of Information in Medicine 32(2):161-6.
23. Herrman H, Mills J, Doidge G, **McGorry P**, Singh B. 1994. The use of psychiatric services before imprisonment: a survey and case register linkage of sentenced prisoners in Melbourne. Psychological Medicine 24(1):63-8.
24. Jackson HJ, **McGorry PD**, McKenzie D. 1994. The reliability of DSM-III prodromal symptoms in first-episode psychotic patients. Acta Psychiatrica Scandinavica 90(5):375-8.
25. **McGorry PD**, Kulkarni J. 1994. Prevention and Preventively Oriented Clinical Care in Psychotic Disorders. The Australian Journal of Psychopharmacology 7: 62-69.

1995–1999

26. Cowling VR, **McGorry PD**, Hay DA. 1995. Children of parents with psychotic disorders. Medical Journal of Australia 163(3):119-20.
27. Jackson HJ, **McGorry PD**, Dudgeon P. 1995. Prodromal symptoms of schizophrenia in first-episode psychosis: prevalence and specificity. Comprehensive Psychiatry 36(4):241-50.
28. Lincoln CV, **McGorry P**. 1995. Who cares? Pathways to psychiatric care for young people experiencing a first episode of psychosis. Psychiatric Services 46(11):1166-71.
29. **McGorry PD**. 1995. A treatment-relevant classification of psychotic disorders. The Australian and New Zealand Journal of Psychiatry 29(4):555-8.
30. **McGorry PD**. 1995. Working with survivors of torture and trauma: the Victorian Foundation for Survivors of Torture in perspective. The Australian and New Zealand Journal of Psychiatry 29(3):463-72.
31. **McGorry PD**, McFarlane C, Patton GC, Bell R, Hibbert ME, Jackson HJ, Bowes G. 1995. The prevalence of prodromal features of schizophrenia in adolescence: a preliminary survey. Acta Psychiatrica Scandinavica 92(4):241-9.
32. **McGorry PD**, Mihalopoulos C, Henry L, Dakis J, Jackson HJ, Flaum M, Harrigan S, McKenzie D, Kulkarni J, Karoly R. 1995. Spurious precision: procedural validity of diagnostic assessment in psychotic disorders. The American Journal of Psychiatry 152(2):220-3.
33. Thompson M, **McGorry PD**. 1995. Psychological sequelae of torture and trauma in Chilean and Salvadorean migrants: a pilot study. The Australian and New Zealand Journal of Psychiatry 29(1):84-95.

34. Yung AR, **McGorry PD**, McFarlane CA, Patton GC. 1995. The PACE clinic: Development of a clinical service for young people at high risk of psychosis. . Australasian Psychiatry 3(5):345-349.
35. Jackson HJ, **McGorry PD**, Dakis J, Harrigan SM, Henry L, Mihalopoulos C. 1996. The inter-rater and test-retest reliabilities of prodromal symptoms in first-episode psychosis. The Australian and New Zealand Journal of Psychiatry 30(4):498-504.
36. **McGorry PD**. 1996. The Centre For Young People's Mental Health: Blending epidemiology and developmental psychiatry. Australasian Psychiatry 4(5):243-247.
37. **McGorry PD**, Edwards J, Mihalopoulos C, Harrigan SM, Jackson HJ. 1996. EPPIC: an evolving system of early detection and optimal management. Schizophrenia Bulletin 22(2):305-26.
38. McKenzie DP, Mackinnon AJ, Peladeau N, Onghena P, Bruce PC, Clarke DM, Harrigan S, **McGorry PD**. 1996. Comparing correlated kappas by resampling: is one level of agreement significantly different from another? Journal of Psychiatric Research 30(6):483-92.
39. Yung AR, **McGorry PD**. 1996. The initial prodrome in psychosis: descriptive and qualitative aspects. The Australian and New Zealand Journal of Psychiatry 30(5):587-99.
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Patents

Patent Number: PCT/AU2008/001337 (applied for in Australia on 09/09/2008) – GP Amminger and **PD McGorry** (inventors)

Title: Prevention of Psychotic Disorders and/or Treatment of Psychotic Symptoms

PRESENTATIONS

A Selection of Invited Papers Read (2001-Present)

1. **McGorry P.** Models of early intervention in psychosis. 8th Congress of the ASEAN Federation for Psychiatry & Mental Health. Singapore, 15-18 March 2001.
2. **McGorry P.** Early psychosis - gender aspects of treatment. 1st World Congress on Women's Mental Health, Berlin/Germany, March 27-31, 2001.
3. **McGorry P.** Early intervention and prevention in psychiatric disorders – purpose, scope, feasibility and urgency of prevention. First Japan International Conference on Early Intervention and Prevention in Psychiatric Disorders. Okinawa, Japan, June 22-23, 2001.
4. **McGorry P**. Optimal (antipsychotics) treatment of first episode schizophrenia. Satellite Symposium, First Japan International Conference on Early Intervention and Prevention in Psychiatric Disorders. Okinawa, Japan, June 22-23, 2001.
5. **McGorry PD.** (Keynote Address). The spectrum of intervention in early psychosis: creating opportunities and evidence. Summer Conference - Acute Care. The Sainsbury Centre for Mental Health, York, June 26-27, 2001.
6. **McGorry P.** (Invited Speaker). Can first episode psychosis be predicted and prevented? International Symposium "Initial Prodromal Symptoms and Risk Factors of Schizophrenia" University of Bonn, Germany. June 28-29, 2001.

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7. **McGorry P.** Early diagnosis and early treatment of schizophrenia. Satellite Symposium "New aspects of schizophrenia treatment", 7th World Congress of Biological Psychiatry, Berlin, July 1-6, 2001.
8. Klosterkötter J (Chairperson), **McGorry P.** (Co-Chairperson). Symposium "Diagnosis and therapy of early stages of schizophrenia". 7th World Congress of Biological Psychiatry, Berlin, July 1-6, 2001.
9. **McGorry P.** First Episode Clinics in Australia. Partnering in Mental Health and Addiction, CMHA/CAMH 2001 Conference, Ontario, October 22-23, 2001.
10. **McGorry P.** (Invited Discussant) Symposium on "Risk and protective factors in schizophrenia – Towards a conceptual model of the disease process", International Scientific Forum of the University of Heidelberg, October 25-27, 2001.
11. **McGorry P.** (Keynote Address) The interface between prevention and clinical practice. Schizofrenidagene 2001, Stavanger, November 12-16, 2001.
12. **McGorry P.** (Invited Speaker). The recognition and management of early psychosis. V National Meeting of the Societa Italiana di Epidemiologia Psichiatrica (SIEP), Roma, November 22-24, 2001.
13. **McGorry P.** The recognition and management of emerging psychiatric disorder. Founders Medal Presentation, The Australian Society for Psychiatric Research Annual Scientific Meeting. Melbourne, 6-7 December 2001.
14. **McGorry P.** (Invited Paper). Early recognition and prodromal phase epidemiology. Congress of the Swiss Society for Child and Adolescent Psychiatry, Basel, September 6-7, 2002.
15. **McGorry P.** Reconciliation, recovery and reform – moving psychosocial interventions into the mainstream. 14th International Symposium for the Psychological Treatment of Schizophrenia and Other Psychosis, Melbourne, September 22-25, 2003.
16. **McGorry, P.** Every me and every you – responding to the hidden challenge of mental illness in Australia. 70th Beattie Smith Lecture, The University of Melbourne, March 2004.
17. Hickie I & **McGorry P.** (Invited speakers). Mental and substance use disorders in young people 12-25 years: The best buy in national mental health reform. TheMHS Summer Forum, Sydney, February 24-25, 2005.
18. **McGorry P.** Psychopathology and neurobiology of evolving psychosis. International Schizophrenia Conference, University of Copenhagen, September 8-9, 2005.
19. **McGorry P.** (Invited Speaker). RCTs in prodromal psychosis. 4th Annual Meeting of the International Prodromal Research Network. California, September 12-14, 2005.
20. **McGorry P.** (Invited Speaker). Melbourne early psychiatric disorder community promotion and family education. WHO Workshop on Whole Course Management for Psychiatric Patient in Shanghai. Shanghai Medical Center, Shanghai, November 18-21, 2005.
21. **McGorry P.** (Invited Speaker). Clinical research in early psychiatric disorder case management. WHO Workshop on Whole Course Management for Psychiatric Patient in Shanghai. Shanghai Medical Center, Shanghai, November 18-21, 2005.
22. **McGorry P** (Keynote Speaker). Early Intervention in Youth Mental Health. Western Australian Rural & Remote Mental Health Conference. Albany, February, 2006.
23. **McGorry P** (Invited Speaker). Clinical intervention before the first episode. Institute of Psychiatry, University of London International Early Psychosis Conference. London, April 3-4, 2006.
24. **McGorry P.** Prevention and early treatment of substance abuse in young people. SMA Australia Conference. Maldives, April, 2006.
25. **McGorry P** (Invited Speaker). Youth Mental Health. Victorian County Court Judges Annual Conference. Marysville, April 10, 2006.
26. **McGorry P** (Keynote Speaker). Early Intervention in Youth Mental Health. Focus on Youth Forum. Perth, Australia. May 9, 2006.
27. **McGorry P.** Utility of Effectiveness studies in Psychiatry. Psychiatry at the Cutting Edge meeting. Melbourne, June 2-4, 2006.
28. **McGorry P.** (Keynote Speaker) Youth Mental Health: The need, the evidence and the plan. Public meeting at University College Dublin, June 18, 2006.

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29. **McGorry P** (Keynote Speaker). Early psychosis – Prevention and intervention. The Association for Child and Adolescent Mental Health Conference, Ireland Branch. Dublin, June 20-21, 2006.

30. **McGorry P**. (Keynote Speaker) Early intervention for emerging mental disorders in young people. 28th Nordic Congress of Psychiatry Congress, Tampere-Tammerfors, August 16-19 2006.

31. **McGorry P**. Early intervention in psychosis. 9th Biennial Australasian Schizophrenia Conference, Western Australia, August 21-23, 2006.

32. **McGorry P**. Overview, rationale, program structure and progress: The Australian Youth Mental Health Initiative – Innovation to strength the mental health care system at its weakest point. 17th International Association for Child and Adolescent Psychiatry and Allied Professions Congress, Melbourne. September 10-14, 2006.

36. **McGorry PD.** (Keynote Speaker) Early Intervention in Psychosis: An International Update. 5th International Early Psychosis Conference. Birmingham UK. October 2006.

37. **McGorry PD.** (Invited Speaker) Early Intervention for emerging mental disorders in young people: a best buy mental health reform. Jeremy Anderson Oration, Peninsula Health Research Week. November 23rd, 2007.

38. **McGorry PD.** (Key Lecture) Early intervention in psychotic and mood disorders in young people. World Psychiatric Association (WPA) International Congress. Melbourne, Nov-Dec 2007. Abstract published: Australian and New Zealand Journal of Psychiatry, 41(2): A116.

39. **McGorry PD.** (Showcase Presentation) Early intervention in psychotic and mood disorders in young people. Australian Society for Psychiatric Research (ASPR), Nov-Dec 2007. Abstract published: Australian and New Zealand Journal of Psychiatry, 41(2): A442.

40. **McGorry, PD.** (Invited Speaker) Stress and HPA functioning in early psychosis: prodromal and FEP studies. Schizophrenia International Research Society Conference. Venice, June 21-25, 2008. Abstract published: Schizophrenia Research 102/1-3(2): 19

41. **McGorry PD.** (Invited Speaker) The real longitudinal course of schizophrenia and related psychotic disorders: transcending old controversies with clinical staging perspective. Schizophrenia International Research Society Conference. Venice, June 21-25, 2008. Abstract published: Schizophrenia Research 102/1-3(2): 48

42. **McGorry PD.** (Invited Speaker) A double blind, placebo-controlled randomized trial of low-dose risperidone, cognitive-behaviour therapy, and supportive therapy in young people with subthreshold symptoms at incipient risk of psychotic disorder: six month outcome data. Schizophrenia International Research Society Conference. Venice, June 21-25, 2008

43. **McGorry PD**. (Keynote speaker). Importance of staging in psychotic disorders. 28th Annual Conference of the Canadian Academy of Child and Adolescent Psychiatry. Vancouver, Canada, September 7-9, 2008.

44. **McGorry PD**. Early Psychosis, when to intervene and with what? 28th Annual Conference of the Canadian Academy of Child and Adolescent Psychiatry. Vancouver, Canada, September 7-9, 2008.

45. **McGorry PD**. (Invited Speaker). Australia's approach to youth mental health. Health Canada and the Policy Research Initiative Discussion Session. Ottawa, 31 October, 2008.

46. **McGorry PD**. Systems of care (presentation on best practice and key policy/program challenges for youth with mental health issues as they 'age out" of paediatric models of care). Canada-US Workshop, The science-policy interface: youth mental health. Washington, DC, November 3, 2008.

47. **McGorry PD**. (Invited Speaker) Schizophrenia prevention: still mission impossible? 12th International Congress on Schizophrenia Research. San Diego, USA, 28 March – 01 April 2009.

48. **McGorry PD**. Early Intervention in Psychiatry (Lecture). World Psychiatric Association International Congress – Treatments in Psychiatry: a new update. Florence, Italy, 1-4 April 2009.

49. **McGorry PD**. Early Intervention in Psychosis and Youth Mental Health (workshop sponsored by Portland State University, Mid-Valley Behavioural Care Network & the Oregon psychiatric Association) Graduate School of Education, Continuing Education, Portland State University. Portland, USA, 9-10 April 2009.

50. **McGorry PD**. Fourth National Mental Health Plan Stakeholder Forum. Melbourne, Australia, 29 April 2009.

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51. **McGorry PD**. Emerging mental disorders in young people. Youth Mental Health: needs, challenges and opportunities. (conference sponsored by the Harvard Medical School Department of Psychiatry and the Department of Mental Health Centre for Excellence in Clinical Neuroscience and Psychopharmacological Research). Boston, USA, 11 May 2009.
52. **McGorry PD**. (Symposium Speaker) Early intervention, clinical staging and youth mental health: synergistic paradigms shift in mental health care. 2009 RANZCP Congress. Adelaide Convention Centre, Adelaide, Australia, 24-28 May 2009.
53. **McGorry PD**. (Invited Speaker) Evidence and perspectives in early recognition and early intervention of psychosis. 2nd European Conference of Schizophrenia Research. Berlin, Germany, 21-23 September 2009.
54. **McGorry PD**. (Plenary Speaker) Norwegian National Early Intervention Conference, Stavenger, Norway, 11 September 2009.
55. **McGorry PD**. (Plenary Lecture) Evidence and perspectives in early recognition and early intervention of psychosis. 2nd European Conference on Schizophrenia Research, Berlin Germany, 21-23 September 2009.
56. **McGorry PD**. (Keynote Speaker) Reform early intervention and youth mental health. Edmonton Schizophrenia Conference, Edmonton Canada, 1-2 October 2009.
57. **McGorry PD**. (Invited Speaker) Clinical staging of psychiatric disorders: a new paradigm. International Meeting of the Fundación Cerebro y Mente on "Staging Neuropsychiatric disorders" – Implications for Etiopathogenesis and Treatment. Mojácar, Spain, 14-18 October 2009.
58. **McGorry PD**. Emerging psychosis in young people who misuse substance. International Conference – Psychosis: improving outcome. St John of God Hospital, Adult Mental Health Research Committee. Dublin, Ireland, 13 October 2009.
59. **McGorry PD** (Plenary Speaker) EPISO workshop and symposium, Hong Kong, 30 October 2009.
60. **McGorry PD** (Key Speaker) Early Intervention and Youth Mental Health. 10th Anniversary of the Dutch Network of Early Psychosis. Amsterdam, Netherlands, 10-11 November 2009.
61. **McGorry PD**. (Invited Speaker) Early intervention for emerging mental disorders in young people. II National AIPP Congress "Intervento Precoce: Popolazione, Cure Primarie E Servizi Di Salute Mentale", Genova, Italy, 26-27 November 2009.
62. **McGorry PD** (Symposium Co-chair): Brain maturation during adolescence and the pathophysiology of schizophrenia: relevance for understanding psychosis, cognitive dysfunctions and implications for treatment. 2nd Schizophrenia International Research Society. Florence, Italy, 10 – 14 April, 2010.
63. **McGorry PD.** (Symposium Speaker). Stress and HPA functioning in first episode psychosis. 2nd Schizophrenia International Research Society. Florence, Italy, 10 – 14 April, 2010.
64. **McGorry PD.** (Keynote Address). VICSERV Conference (Mental Health NGO sector). Early Intervention and Mental Health Reform, Melbourne, Australia, April 2010.
65. **McGorry, PD.** (Invited Address). Youth mental health and the Justice system. Judicial College of Victoria Conference, Lancefield, Australia, April 2010.
66. **McGorry PD.** (Opening Address). The Association for Child and Adolescent Mental Health Youth Summit. Kilarney, Ireland, 19 May, 2010.
67. **McGorry PD.** (Symposium Speaker). Formation of Youth Mental Health international network. The Association for Child and Adolescent Mental Health Youth Summit. Kilarney, Ireland, 19 May, 2010.
68. **McGorry PD.** (Symposium Co-chair) Clinical staging and the need for holistic interventions in emerging mental disorders. 65th Annual Scientific Convention of the Society of Biological Psychiatry. New Orleans, USA, 20 – 22 May, 2010.
69. **McGorry PD.** (Symposium Speaker) Clinical staging and preventive intervention is Psychiatry. 65th Annual Scientific Convention of the Society of Biological Psychiatry. New Orleans, USA, 20 – 22 May, 2010.
70. **McGorry PD.** (Symposium Speaker) Early intervention in Psychiatry: lessons from psychosis. 163rd Meeting of the American Psychiatric Association. New Orleans, USA, 22 – 26 May, 2010.
71. **McGorry PD.** (Invited Lecture). A 21st century model of care for mental health in Australia. Grace Groom Memorial lecture, National Press Club, Canberra, Australia, May 2010.

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72. **McGorry PD.** (Invited Address) Youth mental health reform. AMA National Conference, Sydney, Australia, May 2010.
73. **McGorry PD.** (College Address). Paradigm changes and mental health reform. RANZCP Congress, Auckland, New Zealand, May 2010.
74. **McGorry PD.** (Public Lecture) Why should you care about your people's mental health. Melbourne Health Research Week, Melbourne, Australia, 11 – 17 June, 2010.
75. **McGorry PD.** (Invited Lecture) A fair go for mental health. Australia's health 2010 Conference, Canberra, Australia, June 2010.
76. **McGorry PD.** (Invited lecture). Mental Health Reform in Australia. BUPA Foundation Awards Dinner, Sydney, Australia, June 2010.
77. **McGorry PD.** (Invited Speaker). Too little, too late. "Developing a more evidence-based mental health system". NHMRC Scientific Symposium and Workshop, Academy of Science, Shine Dome, Australia, 28 July 2010.
78. **McGorry PD.** (Invited Keynote Address) Early Intervention and Youth Mental Health Models of Care: 21st Century Paradigms for Australia. First International Youth Mental Health Conference, Melbourne, Australia, 29 – 30 July, 2010
79. **McGorry PD.** (Public Forum) A conversation with Professor Patrick McGorry. Melbourne Convention Centre, Melbourne, Australia, 29 July 2010.
80. **McGorry PD.** (Invited Speaker) Early intervention in Psychiatry. Walter and Eliza Hall Institute, Melbourne, Australia, August 2010.
81. **McGorry PD.** (Invited Speaker). Early intervention for emerging psychotic and mood disorders in young people. XL EABCT (Congress of European Association for Behavioural & Cognitive Therapies), Milan, Italy, 7- 10 October.
82. **MCGorry, PD.** (Invited Keynote Address). A 21st century approach to mental health care. Mental Health Week, The University of Melbourne, Australia 14 October 2010.
83. **McGorry PD.** (Invited Keynote Address). Progress with early intervention in psychosis. 7th International Early Psychosis Association Conference, Amsterdam, Netherlands, 29 November – 1 December, 2010.
84. **McGorry PD.** (Symposium Chairperson). Early intervention: beyond psychosis. 7th International Early Psychosis Association Conference, Amsterdam, Netherlands, 29 November – 1 December, 2010.
85. **McGorry PD.** (Invited Keynote Address). Early intervention and youth mental health - XXI solutions for Psychiatry. IX Symposium "Early intervention in Psychiatry", Cordoba, Spain, 24-26 March, 2011.
86. **McGorry PD.** 13th International Congress on Schizophrenia Research, Colorado, USA, 2-6 April, 2011.
87. **McGorry PD.** (Invited Speaker). Early Intervention and Youth Mental Health Models of Care: 21st century solutions to strengthen mental health care and modern society. American Psychiatric Association 2011 Annual Meeting, Honolulu, Hawaii, May 14-18, 2011.
88. **McGorry PD.** (Symposium Speaker). Young people and mental health. Happiness and its Causes Conference: tools and techniques for a happier life, Brisbane, Australia, 16-17 June, 2011.
89. **McGorry PD.** (Invited Speaker). Mental health reform and 21st century care. John Chalmers Oration, Flinders University, Adelaide, Australia, 28 July, 2011.
90. **McGorry PD.** (Invited Speaker). Early intervention and youth mental health: 21st century paradigms for Asian psychiatry. Third World Congress of Asian Psychiatry, Melbourne, Australia, 31 July – 4 August, 2011.
91. **McGorry PD.** (Invited Speaker) Clinical staging and related interventions in the treatment of psychosis – the idea and the evidence. Congress of the European College of Neuropsychopharmacology, Paris, France, 3-7 September, 2011.
92. **McGorry PD.** (Invited Speaker) Shaping the research agenda for depression prevention. Expert Meeting, Netherlands, 12-14 September, 2011.
93. **McGorry PD.** (Plenary Speaker). Early intervention and youth mental health: strengthening the system of care where it is weakest. 8th Congress of the International Society for adolescent psychiatry and psychology, Berlin, Germany, 14-18 September, 2011.

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94. **McGorry PD**. (Symposium Chairperson). Early intervention in psychiatry. 15th World Congress of Psychiatry. Buenos Aires, Argentina, 18-22 September, 2011.
95. **McGorry PD**. (Closing Speaker). 1st Annual Biological Psychiatry Australia Scientific Meeting, Melbourne, Australia, 7-8 November, 2011.
96. **McGorry PD**. (Invited Speaker). Prevention in patients at risk of developing psychosis. XVII International Symposium on Advances in Psychiatry, Madrid, Spain, February 2012.
97. **McGorry PD**. (Symposium Convenor). The dimensions of youth mental health. Inaugural RANZCP Symposium on Youth Mental Health, Melbourne, Australia, February 2012.
98. **McGorry PD**. (Keynote Speaker). Mental ill-health in students: the number one threat to health, wellbeing and success in life. The Inaugural Student Health and Welfare Conference, Melbourne, Australia, 27 March 2012.
99. **McGorry PD**. (Invited Speaker). Intervening in people at risk of psychosis: what is the evidence? 3rd Schizophrenia International Research Society Conference, Florence, Italy, April 2012.
100. **McGorry PD**. (Plenary Workshop). Nordic Congress of Psychiatry, Tromso, Norway, June 2012.
101. **McGorry PD**. (Invited Speaker). Exploring relationships in mental health, recovery and wellbeing. The Asia Pacific Conference on Mental Health, Perth, Australia, June 2012.
102. **McGorry PD.** (Invited Speaker). City of Casey summit on youth suicide. Melbourne, Australia, August 2012.
103. **McGorry PD**. (Plenary Group Speaker). Early intervention: controversies and pseudocontroversis. Lundbeck Institute Seminar, Denmark, August 2012.
104. **McGorry PD**. (Invited Speaker). ATSE Parliamentary briefing, Canberra, Australia, August 2012.
105. **McGorry PD**. (Keynote Speaker). AFFIRM Youth Mental Health Summit, Canberra, Australia, September 2012.
106. **McGorry PD**. (Keynote Speaker). Early intervention in mental health. Comcare National Conference, Sydney, Australia, September 2012.
107. **McGorry PD**. (Keynote Speaker). Children living in the presence of major mental illness. Supporting Families in Mental Illness New Zealand Conference, Christchurch, New Zealand, October 2012.
108. **McGorry PD**. (Invited Speaker). Early intervention and youth mental health models of care: 21st century solutions to strengthen mental health care and modern society. American Psychiatric Association Institute of Psychiatric Services 64th Annual Meeting, New York, October 2012.
109. McGorry PD. (Plenary Speaker). Early intervention and beyond. International Early Psychosis Association Conference, San Francisco, October 2012.
110. **McGorry PD**. (Plenary Chair). Psychotic symptoms in childhood and adolescence, characterizing a new risk paradigm for schizophrenia. International Early Psychosis Association Conference, San Francisco, October 2012.
111. **McGorry PD**. (Invited Speaker). An international focus on youth in transition: development and evaluation of a mental health transition services model. Canadian Institute of Health Research Meeting, Ottawa, Canada, October 2012.
112. **McGorry PD**. (Invited Speaker). Identifying and treating individuals at ultra-high risk of psychosis development: clinical trials and prevention of psychosis transition. 33rd Annual Meeting of the Australian Neuroscience Society, Melbourne, February 2013.
113. **McGorry PD**. (Invited Speaker). Asylum seekers: Another stolen generation. The Robert Manne Conference, Melbourne, March 2013.
114. **McGorry PD**. (Invited Speaker). Preventive strategies to optimize recovery in psychosis. 103rd Annual Meeting of the American Psychopathological Association. New York, March 2013.
115. **McGorry PD**. (Invited Speaker). Youth mental health. Public lecture, Melbourne University Health Initiative, Melbourne, April 2013.
116. **McGorry PD**. (Keynote Speaker). Clinical staging and personalized medicine in potentially serious mental disorders. Australian Schizophrenia Conference, Melbourne, May 2013.

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117. **McGorry PD**. (Plenary Speaker). Early intervention for psychosis: A new architecture and culture of care. 10th Anniversary Conference, Prevention and Early Intervention Program for Psychosis, Montreal, May 2013.
118. **McGorry PD**. (Invited Speaker). How do we grow a good person? Young Minds Conference, Sydney, June 2103.
119. **McGorry PD**. (Invited Speaker). Restoring hope. The Australian Red Cross Matija Barisic Oration, Melbourne, June 2013.
120. **McGorry PD**. (Invited Speaker). The rising tide of mental ill-health, suicide and substance use in young Australians: 21st century challenges and solutions. University of New South Wales Medicine Dean's Lecture, Sydney, June 2013.
121. **McGorry PD**. (Invited Speaker). Australian College of Educators Len Falk Memorial Lecture, Morwell, July 2013.
122. **McGorry PD**. (Invited Speaker). How the health care system fails young people with mental illness. Monash University Medicine Undergraduates Society Surviving Medicine Symposium, August 2013.
123. **McGorry PD**. (Invited Speaker). Clinical staging, early intervention and youth mental health: Building blocks for translational psychiatry. Second National Symposium on Translational Psychiatry, Adelaide, August 2013.
124. **McGorry PD**. (Invited Speaker). Big ideas in mental health. Mater Education 13th Annual National Leadership and Learning Conference, Brisbane, September 2013.
125. **McGorry PD**. (Plenary Speaker). Youth mental health: A best bet for health care reform. International Association for Youth Mental Health Conference, Brighton, UK, September/October 2013.
126. **McGorry PD**. (Plenary Speaker). Clinical staging and personalized medicine in potentially serious mental disorders: Novel paradigm shifts in the treatment and care of psychotic and mood disorders. UNSW Brain Science Symposium The Interactive Brain: Translational Neuroscience. Sydney, October 2013.
127. **McGorry PD**. (Keynote Speaker). Facing the challenges of mental health through research and recognition. Prince Charles Hospital Foundation Research Forum, Brisbane, October 2013.
128. **McGorry PD**. (Invited Speaker). Clinical staging and its heuristic value in research and clinical care in psychiatry. Bio21 Symposium Mindreaders: Biological markers for mental health, Melbourne, November 2013.
129. **McGorry PD**. (Chair). Growing health minds and bodies: Keys to mental health in young people. Public forum, Bio21 Symposium Mindreaders: Biological markers for mental health, Melbourne, November 2013.
130. **McGorry PD**. (Invited Speaker). Solutions for psychiatry: Australia's opportunity. Derrick Mackerras Lecture, Brisbane, November 2013.
131. **McGorry PD**. (Keynote Address). Australian Society for Psychiatric Research Conference, Melbourne, November 2013.
132. **McGorry PD.** (Invited Speaker). Schizophrenia International Research Society Conference, Florence, April 2014.
133. **McGorry PD**. (Plenary Speaker). Society of Biological Psychiatry 69th Annual Conference, New York, May 2014.
134. **McGorry PD**. (Plenary Speaker). 29th International College of Neuropsychopharmacology Congress. Vancouver, June 2014.
135. **McGorry PD**. (Invited Speaker). 10th Annual Global Health Conference, Sydney, September 2014.
136. **McGorry PD**. (Invited Speaker). FePsy Jubilee Symposium, Basel, September 2014.
137. **McGorry PD**. (Invited Speaker) Expert Roundtable on Prevention and Early Intervention, Parliament House, Canberra, October 2014.
138. **McGorry PD**. (Invited Speaker). The Economist Event: Global Crisis on Depression. London, November 2014.
139. **McGorry PD**. (Plenary Speaker). 9th International Association for Early Psychosis Conference, Tokyo, November 2014.

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140. **McGorry PD**. (Plenary Speaker). European Congress on Youth Mental Health. Venice, December 2014.
141. **McGorry PD**. (Invited Speaker). Association of Australian Medical Research Institutes 2014 Convention, Sydney, November 2014.
142. **McGorry PD**. (Plenary Speaker). Society for Mental Health Research Conference, Adelaide, December 2014.
143. **McGorry PD**. (Plenary Speaker). International Conference on Schizophrenia Research, Colorado Springs, March 2015.
144. **McGorry PD**. (Invited Speaker). Stanford Psychiatry Grand Rounds, Stanford, April 2015.
145. **McGorry PD**. (Keynote Speaker) New Zealand National Conference, Royal Australian and New Zealand College of Psychiatrists, Hamilton, September 2015.

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RESEARCH DEVELOPMENT AND GRANTS

Overview

In 2002 the Orygen Youth Health Research Centre was established under my leadership as an innovative research program devoted to early intervention in potentially serious mental illness in young people. Building on 15 years of sequential development and the foundation of early psychosis research, current projects cover the diagnostic areas of mood, bipolar mania and personality disorders as well as having a continuing focus on early psychosis. OYHRC now involves over 120 academic staff including 5 full professors, and 5 associate professors, and has an annual budget of $15M, making it the largest research organisation in Australian mental health.

The research program is fully integrated within Orygen Youth Health Clinical Program, a large comprehensive youth mental health service (15–25 years) covering a catchment of 1,000,000 people in North-Western metropolitan Melbourne. The research program is a blend of neurobiological, clinical and population based research and has as its main focus the creation and transfer of practical knowledge in youth mental health.

There has been consistent growth over a 20-year period from a single research assistant in 1991 to an organisation of over 150 staff. Funding has come from sources including the National Health and Medical Research Council (NHMRC), the Victorian Health Promotion Foundation (VHPF), Federal and State Government Health Departments, Stanley Medical Research Institute (US), NARSAD, NIMH, Rotary, beyondblue, the ANZ Trustees, and, since 2002, the Colonial Foundation. Additionally, Orygen Youth Health Research Centre has conducted several investigator-initiated projects funded, but not designed by, the pharmaceutical industry.

In 2001 current sources of funding (annual budget was approx $3M) were boosted by the award from the Colonial Foundation of A$12.5 million over five years to provide secure infrastructure and to fund new research directions within the Orygen Youth Health Research Centre. Links with the University of Melbourne, Department of Psychiatry were formalised under a new governance structure, senior academic staff were appointed and junior academic posts were developed with a view to mentoring a new generation of Australian psychiatric researchers. In 2002, a new governance structure to support the Orygen Youth Health Research Centre was established, which in 2009 was complemented internally within the University of Melbourne with the establishment of a new Faculty Centre for Youth Mental Health.

In 2004, I led the successful submission for a NHMRC Research Program Grant and Centre of Clinical Research Excellence (CCRE) Grant. The former was re-funded in 2008 for the period 2009–13. These grants have strengthened our internal collaborations as well as our links with the Brain and Mind Research Institute (BMRI) in Sydney and the Melbourne Neuropsychiatry Centre (MNC) in Melbourne.

Currently, I am CIA on a current NHMRC Program Grant (2009-2013) and an NHMRC-EU Health Collaborative Research Grant (2010-2015). In addition I have been CIA on a contiguous NHMRC Program Grant (2005-9), a CCRE Grant (2005-2009) and a CI on several NHMRC Project Grants during the past decade. I have also successfully attracted $46.4M in research funding from the philanthropic organisation, the Colonial Foundation, in three instalments. The first covered the period 2002–2006, and following an external review of progress by international assessors including a site visit, a second period of funding (2007–11) was granted, this was followed by a further extension of funding (2012-2017). This represents over $45m of research investment from a single source. Numerous other grants, including from the Department of Health and Ageing via **headspace** for the Centre for Excellence in Youth Mental Health, the Stanley Medical Research Institute, NARSAD, other philanthropic sources, and industry make up the remainder of research funding achieved. The annual budget for OYHRC has increased to $15M pa from a base level of around $3M pa in 2001.

I have led the process of developing a proposal to conceive, design and operate the National Youth Mental Health Foundation or **headspace**, which resulted in an initial grant in 2006 of $54M to OYHRC and the University of Melbourne over 4 years. Some of these funds flowed directly into research activities, however the bulk of them were devoted to the creation of a unique clinical infrastructure which is fertile ground for a range of much needed and potentially ground-breaking research studies in youth mental health and early intervention. This national reform program, unique internationally, was re-funded in 2009 by the Federal government, with an additional allocation of approximately $50M over the subsequent 3 years. In the 2010 Federal budget a further expansion of $80M over 4 years for **headspace** was announced. In 2011 this was increased to a total of $200M over a period of five years, enabling the establishment of a total of 90

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headspace services by 2015-2016. An independent company was established in 2009 to operate this reform program and OYHRC is a member of this company, while I am a Director of the latter. In 2011 the Federal government also announced a total of $212M of funding for 16 EPPIC services based on our EPPIC model, which was developed and has been operating for in Melbourne two decades. In summary, since 2002 I have led an organisation and a series of processes that have brought in well over $60M to support research, clinical progress and knowledge transfer, and a further $400m plus for the creation of novel clinical infrastructure for this emerging field of health care in Australia.

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Specific Grants

Years of Grant	Funding Source, Grant Type and (if appl), Appln No.	Amounts	Title	Other CIs
1986-1987	NHMRC Project Grant	$65,000	Longitudinal Course and Clinical Features in the Functional Psychoses	PD McGorry BS Singh D Copolov
1986-1987	Monash University Special Projects Grant		Puerperal Psychosis: A Phenomenological Investigation	PD McGorry BS Singh
1988	Monash University Special Projects Grant	$10,960	Puerperal Psychosis: Phenomenology and Prediction of Outcome	PD McGorry BS Singh
1987-1993	NHMRC Research Unit	$420,000	Schizophrenia Research Unit	BS Singh PD McGorry
1986-1988	Health Department Victoria Special Grant	$150,000	A Major Epidemiological Survey of Psychiatric Morbidity in a Homeless Population (under the auspices of the Council to Homeless Persons)	PD McGorry HE Herrman
1987-1988	Health Department Victoria Special Grant		Conduct a survey of severe mental disorders among sentenced prisoners	PD McGorry HE Herrman
1988	Myer Foundation	$17,000	Research and Development of a Clinical Service for the Victorian Foundation for Survivors of Torture	PD McGorry
1988-1991	NHMRC Project Grant	$91,199.06	A Prospective Study of Depression in Schizophrenia	HE Herrman PD McGorry
1993-1996	Victorian Health Promotion Foundation Research Program Grants Scheme	$618,180	Preventive Strategies in Early Psychosis (91-0084C)	PD McGorry H Jackson RC Bell D Hay
1994	Victorian Health Promotion Foundation	$134,898	A Survey of the Health Needs of Refugee Survivors of Torture and Related Trauma in Victoria	PD McGorry M Thompson
1994	NHMRC Public Health Research and Development Small Grant	$19,517	Mental Health Service Needs on On-Shore Asylum Seekers	PD McGorry Z Steel DM Silove

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1994	NHMRC Network for Brain Research into Mental Disorders	$88,299	National Diagnostic Assessment Consortium	PD McGorry
1995	NSW Department of Health	$22,000	To supplement work on torture and trauma and carry out a study of detention centres	PD McGorry
1994-1995	Theodore and Vada Stanley Foundation	US$90,000	Risk Factors for Transition to Frank Psychosis in Young People with Prodromal and Pre-Psychotic Symptomatology	PD McGorry
1996-1997	Janssen Cilag	$383,500	Psychopharmacology in First Episode Psychosis	PD McGorry
1996	Health & Community Services of Victoria Mental Health Project Grant	$164,000	Early Intervention in Psychosis	PD McGorry
1996	Health & Community Services of Victoria, Mental Health Project Grant	$366,000	Further expansion of the Statewide education and consultancy service of the Centre for Young People's Mental Health.	PD McGorry
1996	Health & Community Services of Victoria, Mental Health Project Grant	$130,000	Family Support Network for Refugee Communities in Victoria	PD McGorry
1996-8	Janssen-Cilag	$537,777	Early Intervention in Psychosis by Targeting Young People at High Risk (RIS-AUS-6)	PD McGorry A Yung
1996-8	Commonwealth Government National Mental Health Strategy	$500,000	National Early Psychosis Project	PD McGorry
1996-8	Victorian Health Promotion Foundation Research Program Grants Scheme	$738,806	Preventive Strategies in Early Psychosis	PD McGorry H Jackson G Patton A Yung J Edwards
1996-8	Janssen-Cilag	$383,400	Psychoparmacological Therapy in First Episode Psychosis (RIS-AUS-3)	PD McGorry J Cocks
1996-8	Janssen-Cilag	$269,500	Double-blind Evaluation of Risperidone vs Haloperidol on the Long-Term Morbidity of early Psychotic Patients (RIS-INT-35)	PD McGorry J Cocks
1996-9	Commonwealth Department of Health and Human Services Research and Development Grant	$105,288	Early Intervention in Psychosis by Targeting Young People at High Risk	PD McGorry A Yung G Patton

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1997	Victorian Health Promotion Foundation	$45,000	Early Treatment of Persisting Positive Symptoms in First-Episode Psychosis: Recovery Plus	PD McGorry J Edwards J Cocks C Bennett P Burnett D Maude S Pica R Bell S Harrigan D Dick N James
1997-9	NHMRC Project Grant No: 970391	$245,238	Refining Risk Factors for Prediction of Early Transition to Psychosis in a High Risk Sample	PD McGorry A Yung C Pantelis HJ Jackson
1997-9	NHMRC Special Initiative Grant No: 970598	$199,000	A Two Year Follow-Up MRI Study of Hippocampal Volume Reduction in First Episode Psychosis	PD McGorry D Velakoulis C Pantelis
1996-1999	Commonwealth Department of Health and Human Services Research and Development Grant	$105,288	Early Intervention and Integrated Treatment for First Episode Psychosis	PD McGorry AR Yung G Patton
1997-8	Novartis Pharmaceuticals	$45,000	Early Treatment of Persisting Positive Symptoms in First Episode Psychosis: Recovery Plus	PD McGorry J Edwards J Cocks C Bennett P Burnett D Maude S Pica R Bell S Harrigan D Dick N James

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1997-8	Commonwealth Department of Health & Family Services	$275,000	Pilot and Evaluate Intervention Services for Young People who have Severe Mental Health Problems and are at Risk of Suicide	PD McGorry P Power R Bell J Cocks G Hubbard H Manning S Haines
1997-9	Department of Human Services, Victoria	$277,580	Cannabis and First-Episode Psychosis: Randomised Controlled Trial of a Cognitive-Behavioural Intervention (The CAP Project)	PD McGorry J Edwards
1997-9	Department of Human Services, Victoria	$129,675	Research into the Clinical Relationship between Cannabis Use and Psychosis	PD McGorry S Adlard
1998-9	NARSAD Distinguished Investigator Award (USA)	$94,883	1. Study of the Role of Stress and Cortisol on the Development of Psychosis in Vulnerable People and Their Effects on the Hippocampus and Neuropsychology 2. Can Ketamine be Used as a Challenge Test to Predict the Future Development of Psychosis in Vulnerable People?	PD McGorry
1998-2000	NHMRC Project Grant No: 981112	$297,785	1 H MRS in Schizophrenia: an In-Vivo Study of Neuronal Integrity in High-Risk, First-Episode and Chronic Illness	PD McGorry C Pantelis D Velakoulis P Desmond
1998-2000	NHMRC Project Grant 981116	$144,652	Improving the Diagnostic Reliability of Psychotic Disorders by a Bayesian Belief Network	PL Dudgeon PD McGorry AJ MacKinnon
1999-2001	Victorian Health Promotion Foundation	$200,581	Prevention Strategies in Youth Mental Health	PD McGorry
1999-2000	Department of Human Services of Victoria	$107,369	Guideline Based Intervention in Early Psychosis Across Mental Health Service Setting	PD McGorry J Edwards
1999-2001	Department of Human Services of Victoria	$262,350	A Prospective Study of the Role of Stress, Coping and HPA-Axis Dysfunction in the Onset of Psychosis	PD McGorry L Phillips A Yung K Thompson P Komesaroff
1999-2000	RANZCP	$75,080	Clinical Practice Guidelines for Schizophrenia	PD McGorry
1999-2001	Janssen-Cilag	$116,000	Early Psychosis Prevention and Intervention Centre (EPPIC) Long Term Follow-Up (RIS-AUS-39)	PD McGorry

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2000-2004	Janssen Research Foundation	$4.26 million	Second Generation Intervention Research in Pre-Psychotic Phase of Illness in Schizophrenia and Related Psychoses (RIS-AUS-9)	PD McGorry A Yung LJ Phillips H Jackson
1999-2006	Department of Human Services of Victoria	$1.6 million	The PACE Clinic	PD McGorry
2000-1	Australian Rotary Research Fund	$11,710	Early Intervention in Psychosis by Targeting Young People at High Risk: Long Term Follow-Up	PD McGorry LJ Phillips
2000-1	ANZ Charitable Trusts	$400,000	Partnerships in Mental Health and Well-Being Promotion and Prevention	PD McGorry
2000	Telematics Course Development Fund rust	$23,412	The Graduate Diploma in Young People's Mental Health: A Video Distance Education Program	PD McGorry J Gleeson
2000	Rebecca L Cooper Research Fund	$14,140	Neuroendocrine Functioning in Young People at Risk for Schizophrenia and the Subsequent effect of Neuroleptic Medication	PD McGorry K Thompson
2000-3	Theodore and Vada Stanley Foundation	US$131,000	Detection of CNS Infection in Young People at High Risk of Developing Schizophrenia, Before and After Transition to Psychosis and Associated Hippocampal Changes	PD McGorry GP Amminger K Thompson L Phillips C Pantelis D Velakoulis
2001-3	ANZ Charitable Trusts: beyondblue	$899,898	Compass	PD McGorry A Wright K Pennell M Harris
2001	Telematics Course Development Fund	$24,500	Multimedia Psycho-educational Learning Tool for Patients and Families	PD McGorry K Pennell K Muller J Gleeson
2002	Novartis Pharmaceuticals	$25,000	Recovery Plus Study	PD McGorry J Edwards

EXHIBIT 86

2001-3	NHMRC Project Grant No: 145737	$345,538	The Role of Stress, HPA-Axis Dysfunction and CNS Structural and Functional Change in the Development of Psychosis	PD McGorry K Thompson L Phillips A Yung D Velakoulis C Pantelis
2001-3	NHMRC Project Grant No: 145627	$358,245	A Study of the Medial Temporal Lobe in High-Risk and established Schizophrenia Using T2 Relaxometry	C Pantelis S Wood D Velakoulis PD McGorry G Savage M Saling
2001-3	NHMRC Project Grant No: 145760	$356,113.	A Comparison of an Integrated Psychological Intervention with 'Befriending' in First-Presentation psychosis	PD McGorry H Jackson L Phillips P Conus K Thompson C Pantelis D Velakoulis M Wellard S Wood H Manji
2002-4	Theodore & Vada Stanley Foundation Research Program	US$146,466	Indicated Prevention with Low-Dose Lithium. An Open-Labelled, Parallel-Group, Single-Blinded (Rater) Pilot Study of Low-Dose Lithium in young Subjects at Ultra High Risk (UHR) of Developing a First-Episode Psychotic Disorder	G Berger PD McGorry L Phillips P Conus C Pantelis D Velakoulis W Brewer S Wood M Wellard G Jackson

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2002-5	Eli Lily	$234,000	Mania-Comparison of the Combination of Olanzapine and Lithium and the Combination of Chlorpromazing and Lithium in the Treatment of a First Manic Episode with Psychotic Features: An 8 Week Flexible Dose, Parallel-group, Single Blind, Open Trial, Followed by a 10 month Follow-Up Period	PD McGorry P Conus M Lambert
2002-6	Colonial Foundation	$12.5 million	Integrated Clinical Research Plan (Orygen Youth Health Research Centre)	PD McGorry
2002-4	NHMRC Project Grant No: 209062	$324, 480	A Prospective Study Investigating Implications of Bioactive Lipids for Diagnosis and Treatment of Schizophrenia	PD McGorry C Pantelis G Berger M Wellard S Wood W Brewer
2002-5	North West Mental Health, Melbourne Health	$139,735	EPPIC Prolonged Recovery Program (TREAT & TRACK)	PD McGorry L Wong M Harris J Edwards
2003-5	NHMRC Project Grant No: 236100	$345,250	A treatment for substance abuse in psychosis	D Castle PD McGorry T Rolfe
2003-7	Lilly Melbourne Academic Consortium Initiative	$750,000	EPISODE II: Prevention of Relapse Following Early Psychosis	PD McGorry J Gleeson D Wade D Albiston D Castle M Gilbert D Young
2003	NHMRC Equipment Grant	$20,000	CANTAB licence	PD McGorry
2003	AstraZeneca	$333,000	A Pilot Study to Examine the Effectiveness, Safety and Tolerability of Quetiapine in the Treatment of Anorexia Nervosa (AU-SEA-0002)	PD McGorry J Flemming S Weigall A Court C Mulder G Berger

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2003-4	University of Melbourne	$60,700	Seeding Grant, Pfizer National NeuroScience Research Grant	D Lubman M Yucel PD McGorry C Pantelis M Kyrios S Wood
2004	Pfizer NeuroScience Research Grant	$55,000	Investigation of brain circuits underlying compulsive behaviour in opiate dependence	D Lubman M Yucel C Pantelis PD McGorry M Kyrios S Wood
2003-6	AstraZeneca	$1 million	A Naturalistic, Prospective, Single-Centre, Double-Blinded, Fixed-Dose, Randomised, Four-Week Comparison Study Investigating Efficacy, Tolerability and Safety of 200mg per day Versus 400mg per day Quetiapine Fumarate in 200 Drug-Naïve First-Episode Psychosis Patients Aged 15-25 Years (AU-SEA-0003)	PD McGorry G Berger P Burnett T Proffitt M McConchie M Harris C Mihalopoulos D Lubman
2003-6	Eli Lilly	$69,000	The Treatment of Early Psychosis with Olanzapine and Risperidone (TEPOR)	PD McGorry M Lambert P Conus G Berger
2004	Eli Lilly	$192,000	The role of dopamine D1 receptor in the mediation of cognitive improvement following treatment of olanzapine in drug naive schizophrenia.	J Olver C Pantelis D Reutins W Brewer M Yucel S Wood T Normamn PD McGorry G Burrows

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2004-5	Eli Lilly	$149,000	White matter pathology in schizophrenia sufferers and the effect of medication: a diffusion tensor imaging study	M Walterfang C Pantelis S Wood PD McGorry G Berger D Copolov H Jackson D Velakoulis
2004	NHMRC Project Grant No: 299966	$165,250	Longitudinal Brain Changes in first-Episode Psychosis: A 10 Year Follow-Up MRI Study (Note: Was originally for 2004-6 but was surrendered due to the NHMRC Program Grant starting in 2005)	D Velakoulis S Wood G Stuart PD McGorry C Pantelis M Wellard
2004-6	Theodore & Vada Stanley Foundation Research Program	US$226,000	A Double Blind Randomized Placebo-Controlled Add-On Study of Vitamin B12, Folic Acid and Pyridoxine to Antipsychotic/Mood Stabiliser Treatment in Patients with First-Episode Psychosis	C O'Donnell PD McGorry G Berger
2005	Myer Foundation	$25,000	Navigator Training: Promoting Better Mental Health Outcomes for Disadvantaged Young People	PD McGorry
2005-8	NHMRC Program Grant No: 350241	$ 6,229,422	Emerging Severe Mental Illness in Young People: Clinical Staging, Neurobiology, Prediction and Intervention from Vulnerability	PD McGorry C Pantelis I Hickie H Jackson A Yung
2005-9	NHMRC CCRE Grant (264611)	$2 million	The Centre for Clinical Research Excellence in Youth Mental Health	P McGorry I Hickie H Jackson A Yung N Allen J Edwards A Chanen D Lubman G Berger J Gleeson M Berk W Brewer

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2006-8	Neurosciences Victoria	$139,000	Clinical Neurobiology of Psychiatry Platform (CNPP)	D Velakoulis B Tonge B Dean S Rossell PD McGorry J Kulkarni
2006-9	National Mental Health Foundation	$54 million	National Youth Mental Health Foundation	ORC BMRI The Australian Division of GPs The Australian Psychological Society Ltd
2007-10	Astra Zeneca	$1,678,522	Neuroprotective Properties of Quetiapine versus Lithium in a First Episode Mania Cohort: 12-month Neuroanatomical, Neurochemical and Neuro-cognitive Effects and Preliminary Data of Prophylactic Properties	M Berk K Hallam N Lucas C Macneil M Hasty L Kader M O'Regan T Callaly P Conus S Damodoran P Brotchie C Pantelis PD McGorry M Yucel
2007-11	Colonial Foundation	$17 million	Orygen Youth Health Research Centre Infrastructure	PD McGorry
2008	Australian Rotary Health Research Fund	$42,145	Suicide prevention amongst help-seeking adolescents: an intervention study	AR Yung J Robinson PD McGorry

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2008- 11	NHMRC Complementary and Alternative Medicine Grant (509388)	$278,720	RCT of omega-3 fatty acids as treatment of subthreshold symptoms in young people at ultra-high risk for psychosis	P Amminger P McGorry A Yung S Francey B Nelson
2010-13	Stanley Medical Research Institute	US$2.9million	The NEURAPRO (North America, EURope, Australia PROdrome) Study: A multicenter RCT of Treatment Strategies for Symptomatic Patients at Ultra-High Risk for Early Progression to Schizophrenia and Other Psychotic Disorders	P McGorry M Berk A Yung A Riecher-Rössler G Berger J Klosterkoetter S Ruhrmann B Nelson A Bechdolf I Hickie M Keshavan M Nordentoft F Schultze-Lutter S Francey E Chen
2008-13	Singapore National Medical Research Council	SGD 25,000,000	Vulnerability, Disease Progression, and Treatment in Schizophrenia and Related Psychoses	A Chong Siow R Keefe J Liu P McGorry
2009-2012	Astra Zeneca – Investigator Led Grant	$2,438,000	The NEURAPRO-Q Study: A multicenter RCT of Treatment Strategies for Symptomatic Patients at Ultra-High Risk for Early Progression to Schizophrenia and Other Psychotic Disorders	PD McGorry
2009-2013	NHMRC Program Grant (566529)	$10,027,500	Emerging Mental Disorders in Young People: Using Clinical Staging for Prediction, Prevention and Early Intervention	PD McGorry A Jorm I Hickie C Pantelis A Yung

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2010-2011	Heart Foundation Grants-In-Aid	$129,000	Explaining elevated risk for early heart disease in psychosis	D Foley B Murphy S Harrup A Mackinnon K Morley AI: PD McGorry
2010-2014	NHMRC-European Union Health Collaborative Research Grant (567215)	$997,875	Gene - environment interactions as predictors of clinical outcome in the At Risk Mental State	PD McGorry AIs: C Pantelis A Yung GP Amminger B Nelson B Garner L Phillips
2010-2014	NHMRC-European Union Health Collaborative Research Grant (567216)	$979,375	Optimising current therapeutic approaches to schizophrenia: The OPTiMiSE consortium	C Pantelis AIs: M Seal PD McGorry
2010	DOHA – National Advisory Council of Mental Health	$117,500	Children and Youth Collaborative Care Models	P McGorry I Hickie L Newman B Tonge D Lubman A Chanen S Hetrick R Purcell C Mihalopoulos
2010	DOHA – National Advisory Council of Mental Health	$99,550	A feasibility study in the area of Early Psychosis	P McGorry A Yung E Killackey R Purcell M Knapp P McCrone

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2011	RMH Home Lottery Research Awards	$25,000	Trauma, stress reactivity and prediction of outcome in an Ultra High Risk for psychosis population	B Nelson A Yung A Thompson P McGorry S Bendall L Phillips Y Yun B Garner
2011	The University of Melbourne (Interdisciplinary Seed Funding Scheme)	$45,000	The HORYZONS project: Online Recovery for Youth Onset Psychosis	M Alvarez JGleeson R Lederman G Wadley S Bendall E Killackey A Yung P McGorry
2011-2012	Telstra Community Development Fund	$150,000	The HORYZONS Project: Online Recovery for Youth Onset Psychosis	M Alvarez JGleeson R Lederman G Wadley S Bendall E Killackey A Yung P McGorry
2011	Helen Macpherson Smith Trust	$61,000	The Horyzons Project: Online Recovery for Youth Onset Psychosis	M Alvarez JGleeson R Lederman G Wadley S Bendall E Killackey A Yung P McGorry
2012-2017	Colonial Foundation	$16.9 million	Orygen Youth Health Research Centre Infrastructure	PD McGorry
2012-2016	NHMRC Project Grant	$1,208,745	First-Line Management of Depression in Adolescents and Young Adults: A Randomised Placebo-Controlled Trial of Fluoxetine and Cognitive Behavioural Therapy (APP1024570)	C Davey P McGorry A Chanen S Hetrick S Cotton

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2012-2014	Australian Rotary Health	$207,084	Cognitive behavioural treatment for PTSD in young people with first episode psychosis: A randomised controlled trial of an intervention within the Australian service delivery model	S Bendall H Jackson M Alvarez-Jimenez E Killackey P McGorry
2012-2013	beyondblue	$221,256	The Fish Oil Youth Depression Pilot Study - a randomised, double blind, placebo-controlled trial	P Amminger A Jorm P McGorry A Mackinnon
2012-2016	NHMRC- TCR Grant	$1,150,425	The Fish Oil Youth Depression Study: A randomised, double blind, placebo-controlled treatment trial (APP1042666)	Paul Amminger Patrick McGorry Ian Hickie Alison Yung Andrew Mackinnon Michael Berk Christopher Davey Daniel Hermens
2012-2017	NHMRC- TCR Grant	$1,344,905	Rates, patterns and predictors of long-term outcome in a treated first-episode psychosis cohort (APP1045997)	Susan Cotton Patrick McGorry Andrew Mackinnon Helen Herrman John Gleeson Leanne Hides Debra Foley
2012-2017	NHMRC- TCR Grant	$914,242	Improving mental health for young people in out-of-home care: providng participatory evidence-based mental health care across services (APP1046692)	Helen Herrman Cathy Humphreys Patrick McGorry Ida Kaplan Penelope Mitchell Carol Harvey Cathrine Mihalopoulos Susan Cotton Elise Davis Alasdair Vance

2013-2015	NHMRC - [redacted] Project	$368,533.	Determining the multidisciplinary primary health care team required to support best practice in community mental health care and prevention to enhance mental wellbeing (APP1055351)	Leonie Segal Patrick McGorry Matthew Leach Nicholas Procter
2013-2017	Victorian Mental Illness Research Fund	$1,792,727	The HORYZONS project: Moderated Online Social Therapy for Maintenance of Treatment Effects from Specialised First Episode Psychosis Services	Mario Alvarez-Jimenez John Gleeson Sarah Bendall Eóin Killackey Patrick McGorry Reeva Lederman Helen Herrman Sue Cotton Cathrine Mihalopoulos
2013-2018	NHMRC - Centre of Research Excellence	$2,499,420	Centre of Research Excellence for optimising early interventions for young people with emerging mood disorder (APP1061043)	Ian Hickie, Patrick McGorry , Helen Christensen, Michael Berk , Sharon Naismith, Nick Glozier, Jane Burns, Adam Guastella, Chris Davey , Paul Amminger
2014-2016	NHMRC NHMRC-European Union Health Collaborative Research Grant	$366,080.58	PSYSCAN— Translating neuroimaging findings from research into clinical practice (APP1074555)	Patrick McGorry Barnaby Nelson Paul Amminger Eoin Killackey Christopher Davey Susan Cotton Hok Pan Yuen

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2014-2017	NHMRC Project Grant	$1,613,136.40	Improving depression outcomes in young people by adding a brief physical activity intervention to standard care (APP1063033)	Alex Parker Anthony Jorm Andrew Mackinnon Sarah Hetrick Rosemary Purcell Mario Alvarez-Jimenez Alison Yung Patrick McGorry Debra Rickwood
2014-2018	NHMRC Project Grant	$1,069,629.60	Antipsychotic medication in first-episode psychosis: An RCT to assess the risk-benefit ratio (APP1064704	Patrick McGorry Barnaby Nelson Shona Francey Alexander Fornito Kelly Allott Mario Alvarez-Jimenez Susan Harrigan
2014-2018	NHMRC Senior Principal Research Fellowship	$822,925	Mapping and treating early clinical stages of mental disorders during transition to adulthood (APP1060996)	Pat McGorry
2014-2018	NHMRC Partnership Project	$1,475,867.30	Youth-specific change and outcome measures for effective youth mental health service delivery (APP1076940)	Pat McGorry Debra Rickwood Sarah Hetrick Jane Pirkis Alexandra Parker Ian Hickie Helen Herrman Susan Cotton Kathy Eagar
2014-2016	Stanley Medical Research Institute – Trial Grant	US$546,000	Indicated Prevention With Omega-3 Fatty Acids in Young People With 'At-Risk-Mental-State' for Psychosis: Extended 2 to 3 Year Follow-up of the NEURAPRO-E Trial (#13T-011)	Pat McGorry Paul Amminger Barnaby Nelson

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2015-2020	US$6,003,078	Building the Evidence Base for Adaptive Treatment Sequences in Clinical High Risk (1U01MH105258-01)	Pat McGorry Barnaby Nelson Paul Amminger Hok Pan Yuen Lisa Dixon Cameron Carter Rachel Loewy Tara Niendam Martha Shumway

Total funding received since 2002: $156,651,542

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OTHER PROFESSIONAL ACTIVITIES

Policy and Consultancy

Years	Role	Organisation
1987-1992	Member, Committee of Management	Victorian Foundation for Survivors of Torture (VFST)
1989-2006	Consultant	Victorian Foundation for Survivors of Torture (VFST)
1989-1990	Consultant	Migrant Support Groups, in wake of the Newcastle earthquake
1990	Member	Task Force for Newcastle "Quake Impact Study"
1991-1998	Consultant	Victorian Health Promotion Foundation
1992-1994	Chair	Working Party on Schizophrenia, National Health and Medical Research Council (NHMRC)
1993-1994	Chair	Mental Health Committee Working Party of Psychoeducational Materials in Psychotic Disorders, National Health and Medical Research Council (NHMRC)
1994-1995	Member	University of Melbourne Department of Psychiatry Consultancy to Australian government in reworking the National Mental Health Goals and Targets in Mental Health
1995	Member	Commonwealth Department of Human Services and Health, Research and Development Grants Advisory Committee, Mental Health Working Group on Preventive Research
1996	Member	Professional Liaison Committee (Australia) Board of Professional and Community Relations of the Royal Australian and New Zealand College of Psychiatrists (RANZCP)
1998-2007	Faculty Member	The Lundbeck International Neuroscience Foundation
1998-present	International Consultant	European Prediction of Psychosis Study (EPOS)
1996-present	Policy advisor	Government Health Departments and Psychiatric Services in a number of countries including Norway, United Kingdom, Ireland and Canada
2000-2006	Member	International Advisory Board, German Medical Competence-Network on Schizophrenia
2000-2009	International Advisor	German Competency Network on Schizophrenia Research
2002-present	Member	Research and Development Council, Our Community
2003-present	Member, Advisory Board	UCLA Centre for the Assessment and Prevention of Prodromal States (CAPPS)
2004-present	Member	Ministerial Advisory Committee, Victorian Government
2005-2006	Consultant	World Health Organisation (WHO), Shanghai, China
2005-2009	Program Advisor	Sunrise Foundation (mental health preventative education for athletes)
2006-2007	Member	National Health and Medical Research Council (NHMRC) Program Grant Review Committee
2007-present	Consultant / Co-Principal Investigator	Translational and Clinical Research (TCR) Grant, Institute of Mental Health, Singapore
2007-present	Visiting Professor	University of Stavangar and Rogaland Psychiatric Services, Norway
2007-present	Board Member	*headstrong,* Ireland (National Centre for Youth Mental Health)
2007-present	International Expert and Consultant	Invited by Professor Jeffrey Lieberman (USA) to be a consultant on the application for RAISE, a multisite effectiveness study for first episode psychosis.
2007-present	Panel Member	Victoria Police: Mental Health Expert Advisory Panel
2008-present	Honorary International Advisor	Hong Kong Journal of Psychiatry (Hong Kong College of Psychiatry)

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2008-present	Selection Panel Member	Victorian Premier's Award for Health and Medical Research
2009	Visiting Professor	University College Dublin, National University, Dublin, Ireland
2009	Member of International Framework Review Committee, Evergreen Project	Child and Youth Advisory Committee (CYAC) of the Mental Health Commission of Canada (MHCC)
2009	Selection Panel Member	Ashoka's Changemakers competition: *Rethinking Mental Health: Improving Community Wellbeing*, Ashoka, USA
2009-2012	Member	Victorian Mental Health Reform Council, Australia
2010-present	Member	Centre for International Mental Health, Australia
2010-present	Chairperson	The Butterfly Foundation, Australia
2011-present	Visiting Professor	Royal College of Surgeons Ireland
2011-present	Member	Federal Government Mental Health Expert Working Group
2011-present	Board Member	Hello Sunday Morning Board
2013	Invited Chair	Research Advisory Council, Psychosis Australia.
2013	International Advisor	International Advisor to the $25M Pan-Canadian "TRAM" (Translational Research in Adolescent Mental Health). Canadian Institute for Health Research and the Boeckh Foundation
2013	International Advisor	International Advisory Committee, US$11M NORMENT research program, Norway. Prof Ole Andreassen.
2013	International Advisor	International Advisory Committee, SYNAPSY Translational Neuroscience Research Program, Geneva and Lausanne, Switzerland. Profs. Pierre Magistretti and Philippe Conus
2013	Scientific Advisor	Scientific Advisory Committee "ROAMER": EU funded Roadmap Project for European Mental Health Research
2014-2015	Scientific Advisor	Schizophrenia Research Forum

Advisory Board Memberships

Past

Member, Zyprexa Advisory Board, Eli Lily Australia
Member, Prelapse Advisory Board, Lundbeck Australia
Member International Advisory Board Zeldox Pfizer
Member, Abilify (Aripiprazole) Steering Committee, Bristol-Myers Squibb, Australia
Member, Solian (Amisulpride) National Advisory Board, Sanofi~Synthelabo, Australia
Member, Seroquel Advisory Board, Astra Zeneca
Chairman, Zeldox (Ziprasidone) Advisory Board, Pfizer Pty. Ltd, Australia
Member, Researchers for Asylum Seekers Advisory Board, Australia
Member, International Advisory Council, Schizophrenia International Research Society
Member, Monash Alfred Psychiatry research centre (MAPrc) Advisory Board, Australia
Member, Norwegian Centre for Mental Disorder Research Scientific Advisory Board, Norway
Member, Hincks-Dellcrest Centre Clinical Transformation Advisory Group, Canada

Teaching/Workshops

From 1982 – present: conducted a wide range of teaching and workshop sessions at undergraduate, post-graduate and professional development levels, both within Australia and internationally.
Details available on request.

OTHER SCIENTIFIC ACTIVITIES

Editorial Boards

Past
Member, Editorial Board, Australia & New Zealand Journal of Psychiatry *(1992–1994)*
Member, Editorial Board, Schizophrenia Bulletin *(2003–2008)*
Associate Editor, Australian and New Zealand Journal of Psychiatry *(2002–2011)*

Present
Member, Editorial Board, Schizophrenia Research *(2002–present)*
Honorary Advisor, The Hong Kong Journal of Psychiatry *(2006–present)*
Member Editorial Board, Canadian Journal of Community Mental Health *(2010–present)*
Member, Editorial Board, Journal of Psychiatrie, *Sciences Humaines*, *Neurosciences* (*2002–present*)
Member, Editorial Board, World Journal of Psychiatry *(2011–present)*
Field Editor, Journal of Psychopathology *(2011–present)*
Section Editor, Psychopathology *(2011–2014)*
Member, Editorial Board, Epidemiology and Psychiatric Sciences *(2011–present)*
Advisor to the Editor, Australian and New Zealand Journal of Psychiatry *(2012–present)*
Member, Advisory Board, British Medical Journal *(November 2012–present)*
Member, International Advisory Board, Psychiatry and Clinical Neuroscience *(December 2012–present)*
Member, Editorial Board, Australasian Psychiatry *(2014)*
Member, Editorial Advisory Board, Lancet Psychiatry *(2014–2018)*
Member, Editorial Board, Schizophrenia Bulletin *(from January 2016)*

Journal Reviewer
Acta Psychiatrica Scandinavica *(1990–present)*
American Journal of Psychiatry *(1997–present)*
Archives of General Psychiatry *(1996–present)*
Australian & New Zealand Journal of Psychiatry *(2002–present)*
Biological Psychiatry *(2000–present)*
BMC Psychiatry *(2006–present)*
British Journal of Psychiatry *(1996–present)*
British Medical Journal
Canadian Medical Association Journal
Journal of Nervous and Mental Disease *(1992–present)*
Medical Journal of Australia *(1992–present)*
Neuropsychiatric Genetics *(1998–present)*
Neuropsychopharmacology *(2004–present)*
Psychiatry Research *(1996–present)*
Psychological Medicine *(1992–present)*
Schizophrenia Bulletin *(1991–present)*
Schizophrenia Research *(1990–present)*
Social Psychiatry & Psychiatric Epidemiology *(1996–present)*
The Journal of Clinical Psychiatry *(2002–present)*
The Lancet *(2002–present)*

Grant Reviewer

NHMRC Grants:

Contribution	Year	Number of times
External Assessor	1999	4
External Assessor	2000	4
External Assessor	2001	4
External Assessor	2002	4
External Assessor	2003	4
External Assessor	2004	4
External Assessor	2005	4
External Assessor	2006	4

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Member of Peer Review Panel	2006	10
External Assessor	2007	4
Member of Peer Review Panel	2007	10
Member of Peer Review Panel	2008	4

The Wellcome Trust Grants, UK
New Zealand Medical Research
Department of Health, UK
Health Research Board, Ireland

Conferences Convened

One of my major strategies and roles in leading international reform in a collegial and effective manner has been through the creation and leadership of the International Early Psychosis Association, or IEPA, and conducting biennial international conferences in early psychosis in key centres around the world. In partnership with other international leaders in early psychosis, I have now convened seven of these IEPA meetings, each time with a growing attendance, now up to 1500 participants (2010). I also convened another international meeting, the 14th ISPS congress, held in 2003. I also convened the first International Youth Mental Health Conference in 2010. These have been challenging processes to manage from the Southern hemisphere but they have been successful to date.

Year/s	Role	Conference Details
1986	Member, Organising Committee	Annual Scientific Meeting of the Australian Society for Psychiatric Research (ASPR) and the Geigy Symposium "The Major Psychoses"
1986	Scientific Program Convenor	ASPR, Melbourne
1987-1988	Member, Organising Committee	Clinical meeting, "Postpartum Illness: Psychological Perspectives", Monash Medical Centre, Melbourne, (Feb 1988)
1994	Member, Organising Committee	National Mental Health Services Conference of Australia and New Zealand, Melbourne (Sept 1994)
1994	Convenor, Organising Committee	First National Early Psychosis Conference, Melbourne (Sept 1994)
1995-1996	Convenor, Organising Committee	The First International Conference on Strategies for Prevention in Early Psychosis, "Verging on Reality", Melbourne (July 1996)
1998	Convenor, Organising Committee	Second National Conference on Early Psychosis, "Realising the Potential", Hobart (Sept 1998)
1999	Member, Scientific Program Organising Committee	Pfizer Conference, "The Global Challenge", Barcelona, (March 1999)
2000	Member, Organising Committee and Program Committee	2nd International Early Psychosis Conference (IEPA), "Future Possible", New York (Mar-Apr 2000)
2000	Member, International Scientific Committee	VIIth World Congress of the World Association for Psychosocial Rehabilitation, Paris (May 2000)
2002	Member, Organising and Scientific Programme Committees	3rd International Early Psychosis Conference (IEPA), "A Bridge to the Future", Copenhagen, (Sept 2002)
2003	Convenor	14th International Symposium for the Psychological Treatment of Schizophrenia and Other Psychoses, "Reconciliation reform and Recovery: Creating a future for psychological interventions in psychosis", Melbourne (Sept 2003)
2004	Member, Organising and Scientific Programme Committees	4th International Early Psychosis Conference (IEPA), Vancouver, Canada (Sept-Oct 2004)

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2006	Member, Organising and Scientific Programme Committees	5th International Early Psychosis Conference (IEPA), Birmingham, UK (Oct 2006)
2006-2008	Convenor	6th International Early Psychosis Conference (IEPA), Melbourne (2008)
2007-2009	Member, International Scientific Programme Committee (ISPC)	9th World Congress of Biological Psychiatry, Paris, France (2009)
2008	Convenor	10th Australian Schizophrenia Conference (ASC), Lorne, Australia (23-24 October)
2009	Member, Scientific Committee	2nd European Conference on Schizophrenia Research , Berlin, Germany, 21-23 September
2009-2010	Convenor	International Youth Mental Health Conference, Melbourne, 29-30 July 2010
2010	Convenor	7th Annual International Early Psychosis Association (IEPA), Amerstam, Holland, 29 November- 1 December
2009-2011	Member, Scientific Committee	15th World Congress of Psychiatry, Buenos Aires, Argentina, (18-22 September, 2011).
2009-2011	Member, Scientific Committee	International Association for Adolescent Psychiatry and Psychology Congress, Berlin, Germany (17-21 September, 2011)
2011-2012	Member, Scientific Committee	8th International Conference on Early Psychosis, San Francisco, USA (11-13 October 2012)
2012-2013	Co-Convenor	2nd International Youth Mental Health Conference, Brighton, UK. 30 September–2 October 2013
2012-2013	Co-Convenor	Australasian Society for Psychiatric Research Conference, Melbourne, 3–5 December 2013

International Diagnostic Field Trials

1987-1993	Coordinator of Field Trials for ICD-10 (WHO) classification Phase I: May - December 1987 Phase II: January - July 1993, Royal Park Hospital
1991-1992	Coordinator of Australian DSM-IV Field Trial in Psychotic Disorders

Service Development

This arena has probably been my major focus and contribution over 20 years, namely the design, construction and evolution of a range of innovative service models to tackle hidden and complex mental health problems and disorders and to improve the quality and range of clinical care provided. Most of these have focused on young people with emerging serious mental disorders; however the refugee field has been a distinct additional focus.

Years	Service Development
1984-1986	Development of the Clinical Research Unit (Aubrey Lewis Unit) at Royal Park Hospital
1986-1987	Development of the "Recovery Program" for the expanded Clinical Research Unit
1986-1994	Initiating and coordinating role in the establishment of the Victorian Foundation for Survivors of Torture, a large service for health and community care of refugees and asylum seekers.
1992-1994	Initiation and development of integrated regional service for older adolescents and young

	adults with early psychosis: EPPIC (Early Psychosis Prevention & Intervention Centre)
1993-1996	Initiation and development of the Centre for Young People's Mental Health, a comprehensive psychiatric service for older adolescents and young adults with serious mental illness in the Western Region of Melbourne
1996	Multiple Planning Forums for Mental Health Services for Kids and Youth program (MH-SKY) - a linking of child and adolescent with young adult services across two health care networks. This ultimately evolved into Orygen Youth Health and a separate child and younger adolescent mental health service, managed by the Royal Children's Hospital
1996-2007	Development of the International Early Psychosis Association (IEPA) and support of service reform nationally and internationally
2001-2006	Development of Orygen Youth Health and Orygen Youth Health Research Centre. These programs are evolutions of the earlier EPPIC and CYPMH models of clinical care and research which have been progressively reinvented and grown over a 20 year period
2005-present	Formulation and advocacy for, and subsequently successful tendering for and management of, the National Youth Mental Health Foundation (headspace) $200+m National Reform Process in youth mental health.
2006-2009	Chair of the Executive Committee, National Youth Mental Health Foundation (headspace)
2007-2009	Member of advisory panels for Victorian Mental Health Reform Strategy
2020-2011	Member of the Federal Government's Mental Health Expert Working Group

Supervision and Mentorship

In addition to clinical supervision of multidisciplinary staff, supervision of undergraduate level research projects and examining of multiple masters and PhD theses, the following people are those I have supervised and mentored.

1989	Dr G Keismith, Master of Arts (Clinical Psychology) *Monitoring the experience of recovery from psychosis: A personal construct perspective*	Completed
1989	M Thompson, Postgraduate Diploma in Counselling thesis *Psychological sequelae of torture & trauma in Chilean & El Salvadoran refugees: A pilot study*	Completed
1992	Dr J Dakis, RANZCP dissertation *The diagnosis & classification of schizophrenia and related psychosis*	Completed
1992	Dr J Cooper, MPM minor thesis *PTSD and disability in Vietnam veterans*	Completed
1992-1994	M Thompson, MSc in Psychiatry thesis *Psychological impact of torture and trauma among refugees*	Converted to PhD
1992-2002	Dr Carol Hulbert, PhD thesis *The effect on personality on psychotic disorder of recent onset*	Completed
1993-1994	Dr C Lincoln, PhD thesis *Pathways to care in early psychosis*	Completed
1993	Dr Alison R Yung, MPM minor thesis *Prodromal features in early psychosis*	Completed
1994-2002	Dr A Hassett, MD thesis *Discriminating factors in late-onset psychosis*	Completed
1994	Dr JJ McGrath, PhD thesis *Set ability and the pathogenesis of thought disorder*	Examiner

1998	Dr Jane Edwards, PhD thesis *Emotion recognition in first-episode schizophrenia: facial expression, affective prosody, and emotion labels*	Completed
1994-2003	Dr Alison R Yung, MD thesis *Developing a method for assessment of pre-psychotic phase in first episode psychoses and its use in establishing the longitudinal stability of such features*	Completed
1994-2002	Dr Shona M Francey, PhD thesis *Predicting psychosis: a longitudinal investigation prodromal features, vulnerability indicators and social functioning in young people at risk of psychosis*	Completed
1994-2002	Dr John F Gleeson, PhD thesis *Early signs and cognitive responses in the process of relapse in schizophrenia*	Completed
1994-1999	Dr Warrick J Brewer, PhD thesis *Olfactory and neuropsychological deficits in first episode psychosis and in subtypes of schizophrenia*	Completed
1997-	Lisa Henry, PhD thesis *The development and predictors of the deficit syndrome in psychotic disorders*	Ongoing
1995- 2006	Dr Darryl J Wade, PhD thesis *Substance misuse in first-episode psychosis: 15-month prospective follow-up study*	Completed
1995- 2008	M Thompson, PhD thesis *Psychological impact of torture and trauma among refugees*	Completed
1998-2011	Dr Andrew Chanen, PhD Thesis *Personality disorders in young people – Temporal stability, risk and protective factors*	Completed
2001-2003	Dr Yang Yun, Masters thesis *Premorbid developmental risk factors in the ultra-high risk population for psychosis*	Completed
2006- 2009	Dr Yang Yun, PhD thesis *HPA axis and first episode psychosis*	Completed
2009	Sharon Foley, PhD thesis *Suicidality and violence in patients with first episode psychosis*	Examiner
2011	Michelle Hill, MD thesis *Long term outcomes of first episode psychosis*	External Examiner

Ongoing: I am currently the director of a large research organization, Orygen Youth Health Research Centre. In this capacity I now provide a collegial or mentor role for the following senior researchers: Professor Professor Helen Herrman, Professor Andrew Mackinnon, Associate Professor Andrew Chanen, Associate Professor Eoin Killackey, Dr Belinda Garner, Dr. Sarah Hetrick, Dr Chris Davey, Dr Alex Parker, Dr. Mario Alvarez, Associate Professor Paul Amminger, Associate Professor Sue Cotton and Associate Professor Barnaby Nelson. Areas of research within the field of early intervention currently being undertaken by these researchers include prodromal psychosis, risk factors for the onset of psychiatric disorders, community studies of psychiatric symptoms, early intervention and prevention of affective disorders, psychophysiology and neurobiology of emotion, substance use and cormorbidity, neurological underpinnings of addiction, neuroimaging and neuropsychological investigations of psychiatric disorders, the development and treatment of emerging personality disorders, cognitive therapy in psychosis and clinical trials and secondary prevention in psychotic disorders.

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PDM-2

OPEN

Early Intervention in Psychosis

Obvious, Effective, Overdue

Patrick D. McGorry, MD, PhD, FRCP, FRANZCP

Abstract: Early intervention for potentially serious disorder is a fundamental feature of healthcare across the spectrum of physical illness. It has been a major factor in the reductions in morbidity and mortality that have been achieved in some of the non-communicable diseases, notably cancer and cardiovascular disease. Over the past two decades, an international collaborative effort has been mounted to build the evidence and the capacity for early intervention in the psychotic disorders, notably schizophrenia, where for so long deep pessimism had reigned. The origins and rapid development of early intervention in psychosis are described from a personal and Australian perspective. This uniquely evidence-informed, evidence-building and cost-effective reform provides a blueprint and launch pad to radically change the wider landscape of mental health care and dissolve many of the barriers that have constrained progress for so long.

Key Words: Early intervention, psychosis, prevention, service reform

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Although the efficacy of modern treatments in psychiatry is comparable with those in general medicine (Leucht et al., 2012), the reductions in mortality and morbidity seen in cancer and cardiovascular disease over recent decades have proven more elusive in serious mental disorders, such as schizophrenia and other psychoses (Insel, 2010). The conventional wisdom is that such progress must await the discovery of new dramatically more effective treatments based on target mechanisms; however, this has not been the main reason for the improved outcome in the main medical disease categories. Prevention has played a role in reducing the incidence of cardiovascular disease and some cancers, and some new therapeutic strategies have emerged recently; however, early diagnosis and the sustained and sophisticated delivery of existing therapies have been the decisive factors in improving outcomes. Yet across the world, even in the most developed countries, only a small minority of people with mental illness obtain access to evidence-based care, and even then, typically only after prolonged delays (Organization for Economic Co-operation and Development, 2014). The human and economic consequences of this neglect are enormous (Bloom et al., 2011), especially because mental disorders largely begin in young people on the threshold of productive life (Insel and Fenton, 2005). However, the opportunity to save lives, restore and safeguard futures, and strengthen the global economy are equally huge and beckoning (The Economist, 2014). The evidence-based reform of early intervention in psychosis represents a blueprint and launch pad to radically change the landscape and dissolve many of the barriers that have constrained effective mental health care for so long.

ORIGINS

Mental disorders have always been misunderstood, heavily stigmatized, and until recently, actively hidden from public gaze. Even well-intentioned 19th century attempts to make progress through the asylum movement and the development of a descriptive diagnostic system ended up reinforcing these destructive forces. Nowhere is this better illustrated than in the phenomenon of dementia praecox, later schizophrenia, which was deliberately associated conceptually by Emil Kraepelin and his contemporaries with an essentially hopeless future. Although these were serious illnesses and at the time there was no effective treatment, this was a serious conceptual and strategic mistake, and the corrosive pessimism it reinforced was to cloud and impede the care of people with psychosis for over a century. There were early challenges to this orthodoxy. 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, pp. 106–107).

The facts began to get in the way of the Kraepelinian paradigm, with recovery proving more possible in schizophrenia than had been allowed (Bleuler et al., 1976). However, even the advent of effective antipsychotic drugs, developed in the 1950s, and the rise of an embryonic and hopeful community psychiatry, failed to sweep away this pessimism. It was not to be until the 1980s that the focus would turn to the early stages of psychotic illness and the notion of early diagnosis would become a realistic proposition. Initially, this was driven by a research agenda, which correctly proposed that studying first-episode patients free of the many confounding variables that were present in chronic and multiepisode samples would shed more light on etiological questions. However, the establishment of streamed, or discrete, early psychosis programs starkly revealed the clinical imperatives, both from a harm reduction perspective and an opportunity for reductions in premature death and disability and more complete functional recovery. This was certainly our own experience at Royal Park Hospital in Melbourne, where in 1984, we established a 10-bed clinical research unit for first-episode psychosis patients (Copolov et al., 1989; McGorry, 1985). We immediately saw that their clinical needs were very different from those of older multiepisode patients and that the drug and psychosocial therapies offered to the latter ranged from off-key to completely inappropriate or even harmful. These mostly young patients were typically propelled into a hospital after a prolonged period of untreated psychosis as a result of a suicidal crisis or behavioral disturbance, usually with police involvement. They were terrified by their surroundings and the confrontation in the admission ward with an acutely disturbed cohort of much older chronically mentally ill patients. Deep pessimism regarding their future was communicated to them on every level, especially by psychiatrists and nursing staff true to the Kraepelinian traditions of the time and also by the compelling, yet illusory, evidence of the chronicity of the illness that surrounded them in the form of their older copatients (Cohen and Cohen, 1984). These acute units were dangerous places. Not only were their fellow patients disorganized, frightened, and often aggressive, this was also the era of rapid neuroleptization and the drug-naïve first-episode patients were at risk of receiving at least 10 times, if not 30 times, more medication than they needed. Their families were equally shattered by these experiences. Our task was simple.

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First, we had to reduce or prevent the harm that they were exposed to by separating them from the longer-term patients and the toxic messages and treatments that were draining hope and optimism for the future and find the minimally effective dose of antipsychotics that would result in remission with no, or minimal, side effects. Second, we had to develop and evaluate psychosocial interventions for both patients and families that were truly relevant for their stage of illness and psychosocial development (McGorry, 1992). This task was made possible by doubling our early psychosis bed numbers and creating what was called the "Recovery Program," anticipating a later international recovery movement aimed at increasing optimism for people living with established illness (Gagne et al., 2007). Psychosocial group programs, early cognitive therapy strategies, and family interventions were explored. Ultimately, we also hoped to find ways to reduce the destructive delays in accessing care and to provide care predominantly in the community. Some of these aspirations would take time and additional resources and required an incubation period (1984–1991) in what we termed our *clinical laboratory* (McGorry et al., 1996; McGorry and Jackson, 1999). At least one other group, and perhaps others, in the 1980s, led by Marco Merlo in Bern, had recognized the value of creating a streamed, or separate, inpatient space for first-episode patients.

We and most of the new early psychosis programs that followed in the 1990s defined first- episode psychosis and early psychosis as including all psychotic disorders, although in some centers and jurisdictions, psychotic mood disorders were excluded and the focus was on schizophrenia spectrum disorders. I personally disagreed with this approach, for a number of reasons. Some of these were simply practical, as it is so often difficult to separate these two groups in terms of syndrome clarity especially early on and because schizophrenia and bipolar disorder in particular are "late phenotypes," which manifest and even require a substantial course of illness before the diagnosis can be securely affixed. Second, excluding psychotic mood disorders was problematic because of long-standing doubts regarding the validity of the Kraepelinian dichotomy, which have amplified over the past two decades, and also the mostly similar and overlapping treatment needs of the patients and families.

"A Stitch in Time..."

With this as our new slogan, in 1991–1992, we designed and received new State government funding for a fully fledged model of care called EPPIC (Early Psychosis Prevention and Intervention Centre), which added several community-based components to our streamed inpatient unit and reversed the whole orientation of the program to one of early detection and community-based care with inpatient care as a backup and last resort (McGorry, 1993; McGorry et al., 1996). A key element was a mobile early psychosis assessment and detection team whose goal was to reduce the duration of untreated psychosis (DUP) and ensure engagement with care was a positive and safe experience wherever possible. Key research had, by this time, indicated that prolonged DUP was common and associated with a wide range of negative immediate consequences as well as worse longer-term outcomes (Loebel et al., 1992; Wyatt, 1991). Other new features were a recovery-oriented outpatient group program and a case management system guaranteeing secure tenure in the service for 2 years after diagnosis. At the time, and indeed still in most of Australia and elsewhere, standard services merely discharged patients back to primary care once the first acute episode had responded, allowing repeat access only once a severe relapse occurred. Within 12 months of EPPIC's opening, a special clinic for subthreshold and potentially prodromal patients was established nearby in a low-stigma adolescent health setting (Phillips et al., 2002; Yung et al., 1995).

The synergy with clinical research continued as a program grant from the Victorian Health Promotion Foundation established the Early Psychosis Research Centre in 1991 and enabled us to conduct our first clinical trials of psychosocial interventions (cognitively oriented psychotherapy for early psychosis) (Jackson et al., 1998, 2001), study the pathways to initial care (Lincoln et al., 1998), and operationally define the prodromal or at-risk mental state through a series of prospective studies (Yung and McGorry, 1996; Yung et al., 2003, 2006). To provide an alternative to hospitalization, we created an extended-hours home treatment capacity to augment the early detection team's capacity and funded this by reducing our inpatient beds from 21 to 14. In the early 1990s, we did not expect or anticipate that early intervention in psychosis would become a sufficient basis for international system reform, as indeed it subsequently did, but felt that, if a cross-diagnostic and developmentally sophisticated approach in young people, aged from early to mid teen to late twenties, were adopted, this might be a stronger platform for a more sustainable paradigm shift. Blending the logic of early intervention with the developmental paradigm, between 1994 and 1996, we were successful in integrating and remodeling an existing older adolescent program with EPPIC to create a complementary early intervention program for non-psychotic young people. This later formed the basis of our more extensive youth mental health reform strategy from 2002 (McGorry, 1996; McGorry et al., 2013).

"An Idea Whose Time Has Come..."

The growing research interest in first-episode psychosis, which began at Northwick Park in London (Crow et al., 1986) and Hillside hospital in New York (Kane et al., 1982; Lieberman et al., 1992) and the seminal paper by Wyatt (1991)focusing on the destructive impact of treatment delay, created a context for exponential growth in early psychosis. This growth was not only in early psychosis research but also in the development of novel, stage-specific interventions and models of care. It is often said with the benefit of hindsight of an idea that has spread that "it's time had come." However, many such ideas fail to flourish and spread. Powerful ideas must also be "stage-managed" or translated into reality, a process that requires many additional ingredients to mere vision or creativity. Key among these is the demonstration that the idea can work and be sustained in a real-world setting and that it can subsequently be scaled up in many other locations. This aspect, and how research evidence is vital in sustaining the spread of the idea, will be discussed further below. Knowledge of the EPPIC program in Melbourne reached Max Birchwood, a clinical psychologist and an already prominent schizophrenia researcher, who was also beginning to focus on young people with recent-onset psychosis in Birmingham, United Kingdom. He spent a period of sabbatical leave in Melbourne in 1993/1994 in the early phase of EPPIC's development, during which he helpfully characterized the period of illness after the onset of psychosis as the "critical period" (Birchwood and Macmillan, 1993). This notion of a period of maximum vulnerability and virulence of the illness gave a clear logic to why such patients should *not* be rapidly discharged from the specialist service and should rather be retained within expert specialized early psychosis care in the community for some 2 to 5 years to maximize recovery and limit the risk of relapse and disability. On his return to the United Kingdom, with the support of key health administrators, key clinicians, and consumer/family allies, he established a similar early psychosis clinical program in North Birmingham, which, along with the LEO service at the Institute of Psychiatry in London, developed independently by Paddy Power, Tom Craig, and Phillipa Garety (Power et al., 2007), ultimately provided the blueprint for the national scaling up of early intervention for psychosis under the Blair government in the late 1990s and early 2000s. The Initiative to Reduce the Impact of Schizophrenia project, an activist coalition triggered and inspired by an English general practitioner (GP), Dr David Shiers, whose daughter Mary had developed a psychotic disorder and had received standard care of poor quality in both child and adolescent mental health services (CAMHS) and adult mental health services, and comprising clinical academics

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(Max Birchwood and Jo Smith), clinicians, and uniquely, senior health executives (Anthony Sheehan and John Mahoney), was a potent influence in bringing about these reforms in the United Kingdom, with which the leadership of EPPIC (myself and Jane Edwards) closely collaborated. David Shiers and Jo Smith subsequently shared national leadership within the National Health Service of the impressive upscaling of early intervention services within the wider mental health reforms of the Blair government during the 2000s. The latter were inspired and engineered by Anthony Sheehan and John Mahony, who had previously piloted these reforms with Birchwood and others in the "clinical laboratory" of North Birmingham.

Another key relationship at that time was forged when Thomas McGlashan, a leading US psychiatrist and schizophrenia researcher, visited Australia in 1994. He was told about the EPPIC initiative by his hosts in another state and decided to make a detour to visit our program. By that stage, we had not only established our early detection and community care system for first-episode psychosis but also were now operating the PACE clinic, a special service in an adolescent health setting for young people with subthreshold psychotic or prodromal symptoms and a need for care. We had already demonstrated that these help-seeking "ultra-high risk" patients were at substantially increased risk of early transition to psychosis. McGlashan was disillusioned, through his work at the once renowned Chestnut Lodge sanitorium in Washington, DC, with the diminishing returns of treating established psychotic illness. Influenced by Wyatt's (1991) paper on DUP and key Norwegian colleagues who had shown that very long DUPs were the norm in first-episode psychosis, even within the advanced health system of Norway, he was planning a sabbatical in Stavanger. He had been engaged by a progressive Norwegian group in Stavanger, led by the visionary chief psychiatrist of the region, Dr Jan Olav Johanessen, to design a research project to test the value of reducing treatment delay. We were introduced to the Stavanger group by McGlashan, and this led to an international symposium with a small number of kindred spirits (including the innovative Ian Falloon, who had explored early intervention on a local scale in rural England in the 1980s) on early intervention in Stavanger in 1995, a special issue of *Schizophrenia Bulletin*, and a major symposium at the American Psychological Association in New York in 1996. The Scandinavian Tidlig Intervensjon ved Funksjonell Psykose study, one of the major building blocks of evidence in early intervention, was the legacy of this period. In the late 1990s, McGlashan was also responsible for introducing the prodromal focus to the US research environment by establishing the Prevention through Risk Identification, Management and Education clinic at Yale, by adapting the Australian criteria for ultra-high risk for psychosis, and also by modifying the original assessment instrument developed by Alison Yung and our group, the Comprehensive Assessment of At-Risk Mental States (Yung et al., 2005), to become the Structured Interview for Prodromal Symptoms (Miller et al., 2003).

From a long-term perspective, however, a major catalytic event for early intervention occurred in Melbourne, also in 1996, subsequently leading to the establishment of the International Early Psychosis Association (IEPA). EPPIC hosted a major satellite conference following the Collegium Internationale Neuro-Psychopharmacologicum congress held in June of that year, which made it possible to bring together 10 of the leading early psychosis researchers of that era together in one place. We had already held a national early psychosis conference in 1994, and we hopefully named the 1996 meeting, which was attended by more than 600 participants, "Verging on Reality: The First International Early Psychosis Conference." The keynote papers were later published in a supplement to the *British Journal of Psychiatry* in 1998, and the meeting proposed and commenced the formation of the IEPA, which was finalized at Stratford-on-Avon at the inaugural UK National Early Psychosis Conference in 1997. There have now been a total of nine International Early Psychosis conferences, in Australia, the United Kingdom, Europe, the United States, Canada, and Japan, with attendances rivaling those seen at the major international schizophrenia meetings. The success of this holistic venture, which spans neuroscience through clinical care, psychotherapy, consumer partnership and engagement, health services, and economics, has been due to a shared vision, coalescing in many places, and with many innovative and inspiring leaders working together in a mutually supportive and collaborative manner over many years. A commitment to evidence-based health care has been a vital pillar for the sustainability of the reform that has accompanied this research-led momentum. Yet ironically, the evidence-based medicine paradigm has been misused at times to question the value of this change in approach, constantly raising the bar for justifying overdue reform, while protecting a dysfunctional status quo from such scrutiny and standards. In fact, much of the more definitive evidence has actually flowed from reform initially based on indicative and best *available* evidence, consumer and carer dissatisfaction with the poor quality of the status quo, and the face validity of early intervention. Innovation always requires an initial leap of faith that can be validated or discarded on the basis of results. Reform is always necessary to obtain more solid evidence, which conversely is critical in changing course when indicated. That is in fact what has occurred over the past two decades as early intervention for psychosis has weathered early storms and matured.

The scientific literature in early psychosis has expanded exponentially over the past 20 years, and many textbooks have appeared as well (some examples include Addington et al., 2008; Chan et al., 2014; Edwards and McGorry, 2002; French et al., 2010; Fusar-Poli et al., 2012, 2013; Hegelstad et al., 2012; Jackson and McGorry, 2009; Marshall et al., 2005; McGorry, 2002, 2005, 2010, 2011b; McGorry et al., 2010, 2008a, 2009, 2012; 2008b; McGorry and Jackson, 1999; Nordentoft et al., 2014; Van Der Gaag et al., 2013; Yung et al., 2007). The neurobiology of onset is much better understood, and the evidence base for optimal treatment and culture of care is much stronger. More than 60 nations are represented at IEPA conferences now, and hundreds of early psychosis services, first-episode, and prodromal centers have been developed in many countries. These have typically been locally led initiatives and vary in terms of fidelity to a core or optimal model; however, some nations have scaled up services more systematically, some even with widespread or full national coverage. England and Denmark are the best examples of this, although Hong Kong and Canada, especially Ontario, have also been very strong.

CURRENT STATE OF PLAY

Australia

At EPPIC and, later, Orygen, we have continued our research in the neurobiology of onset, much of this in collaboration with Christos Pantelis and his colleagues (McGorry et al., 2014a) and a series of clinical trials and cohort studies aimed at innovation, improving the effectiveness of treatment and service models. In 2003, the State of Victoria added modest, yet discrete, early psychosis case management teams to all adult mental health services, although this was a limited reform that omitted many of the components of a fully fledged early psychosis service. Elsewhere in Australia, reform remained piecemeal until recently, when the Australian Federal government decided to embrace further mental health reform and make early intervention and youth mental health a centerpiece. To complement the growing range of enhanced primary mental health care services for young people under the headspace brand (a further $197 million and 30 new centers announced in 2011—a nationwide program that began in 2005 and that will be in 100 communities by 2016), eight substantial early psychosis services were funded in 2011 and are gradually taking shape in every state and territory with a total funding base of $222 m. These are based on a blueprint derived from an international and national review of evidence and best practice (Orygen Youth Health Research Centre,

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TABLE 1. The Core Components of a Specialized Early Psychosis Service

Early detection
- Component 1: *Community education* to improve awareness of young people's mental health issues among the general public and those who work closely with young people
- Component 2: *Easy access to the service* through one clear entry point with a "no wrong door" policy and guaranteed referral for those who do not meet entry criteria
- Component 3: *Home-based assessment and care* available via a mobile multidisciplinary team able to provide triage, assessment, crisis intervention, and home-based acute treatment 24 hrs a day, 7 days a week

Acute care
- Component 4: *Acute phase care* delivered in the community by the mobile team, or when necessary, in a dedicated youth-friendly inpatient unit
- Component 5: *Access to subacute care* for additional support after an acute episode

Continuing care
- Component 6: *Case management* with an individual case manager who provides an individually tailored treatment approach as well as support with practical issues
- Component 7: *Medical interventions*, primarily low-dose pharmacotherapy
- Component 8: *Psychological interventions*, including psychoeducation, individual psychotherapy, and cognitive behavioural therapy
- Component 9: *A functional recovery program* with an emphasis on returning to full social, educational, and vocational functioning
- Component 10: *Group programs* to enhance psychosocial and functional recovery. The focus should be on topics of interest to young people, ranging from health-related issues, such as stress management, coping with anxiety and reducing drug use, to study, school, and work issues, as well as social and leisure activities such as music, art, and outdoor adventure
- Component 11: *Family programs and family peer support* for the families and friends of young people with early psychosis
- Component 12: *Youth participation and peer support* is crucial for maintaining youth-friendliness and accountability to young people in these services
- Component 13: *Mobile outreach* for those young people with complex issues who have difficulty engaging with services
- Component 14: *Partnerships* with other organizations that can enhance the support for young people with mental health issues
- Component 15: *Workforce development* to create highly skilled and clinically expert mental health professionals specializing in youth mental health
- Component 16: *Ultra-high risk young people* should be treated within a specialized service with the aim of minimizing symptoms and distress and maintaining a normal functional trajectory to prevent further deterioration in functioning to prevent a first episode of psychosis

These can be loosely grouped according to their function within the service, with certain components operating across the whole model, whereas others are more closely aligned to one of the three key functions of early detection, acute care, and recovery. This allows for a flexible, yet comprehensive, service that is able to respond quickly and appropriately to the individual needs of the young person and their family.

2011). The model comprises 16 discrete elements (Table 1), which have been carefully operationalized and will be monitored for fidelity (Hughes et al., 2014). Crucially, the new model includes provision for a cohort of ultra-high risk or potentially prodromal cases and is nested within community-based clusters of the headspace enhanced primary care model for young people.

England

The English reforms have been extensive but, despite the development of a national program implementation guide, are somewhat variable in design and quality. For an early intervention model, they seem to have been oddly positioned behind, rather than in front of, the ubiquitous yet poorly evidence-based generic community mental health teams, with the result that DUP remained very long and entry depended on referral from a community mental health team or CAMHS in most cases. It has been shown, for example, that the strongest predictor of a long DUP is ever having been treated in a CAMHS service (Birchwood et al., 2013), where psychosis onset seems to be particularly poorly recognized and treated. Even requiring a GP referral is an unnecessary barrier to access in our experience in Australia, so a secondary barrier to access in addition to the GP is not surprisingly a major one. Nevertheless, the UK reforms have been carefully evaluated from an economic perspective and have been shown to be highly cost-effective (McCrone et al., 2010) as in Australia (Mihalopoulos et al., 2009). Over the past 5 years, there have been extensive cuts to mental health services in England, which, despite the demonstrated capacity of early intervention services to save money, have resulted in the absorption of a number of early intervention services into the generic care system. At the time of writing, with an election approaching, the UK national government has moved to reinvest modestly in early intervention once again, and is considering a broader youth mental health approach in some regions.

Canada

Ontario established a large number of early intervention services in the 2000s following the success of the Prevention and Early Psychosis Program service in London led by Ashok Malla and Ross Norman, the Centre for Addiction and Mental Health first-episode service in Toronto led by Robert Zipursky, and later the Ottawa first-episode program led by Paul Roy. Other provinces, notably Alberta (Jean and Don Addington), British Columbia (Bill McEwen and Karen Tee), and later, Quebec (Ashok Malla), have also established major beachheads for early psychosis care and research but not yet province-wide services. Like Australia, and funded through a unique partnership model of investment from the Canadian Institutes for Health Research and the Graham Boeckh Foundation, Canada is moving to focus research and potentially clinical care more broadly around the needs of young people aged 12 to 25 years with the full range of mental disorders (http://tramcan.ca/).

Denmark

The OPUS model, which, under the leadership of Merete Nordentoft and her colleagues, was the largest demonstration project providing hard evidence for the effectiveness of early psychosis care, has been scaled up across Denmark in recent years, and is being complemented by the establishment of the Australian-inspired headspace model in six locations so far. Extensive research has also been conducted within the OPUS framework.

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Norway

The Stavanger group, who showed in the seminal Tidlig Intervensjon ved Funksjonell Psykose project that reducing DUP had long-term benefits for outcome, continues to promote the value of reducing DUP across Norway, stigma reduction, and prodromal research; however, streamed early psychosis services have not yet been a feature of the reforms in Norway.

The Netherlands

Great innovation in research in relation to the boundaries of psychosis and the early stages of illness has been driven through a number of leading Dutch research centers, from Amsterdam (Linszen, De Haan), Maastricht (Van Os), Utrecht (Kahn), and Groningen (Wunderink). However, definitive service reforms are reported to have been hampered by recent cuts.

Germany

The original work of Gerd Huber and his colleagues, notably Joachim Klosterkoetter, and later Stephan Ruhrmann, Frauke Schulze-Lutter, and Andreas Bechdolf, provided an alternative conception of the psychopathology of the prepsychotic stage of illness and evidence in relation to prediction and treatment. In Mannheim, Heinz Häfner and Anita Riecher mapped the onset phase of psychosis with the IRAOS: Instrument for the Retrospective Assessment of the Onset of Schizophrenia and showed the wide time window available for early intervention (Häfner et al., 1992). Other German centers, notably Düsseldorf (Gaebel), also contributed to first episode research.

Asia

Early psychosis programs have been flourishing and producing key research evidence for over a decade in Singapore (Early Psychosis Intervention Program, EPIP) and Hong Kong (Early Assessment Service for Young People with Early Psychosis, EASY) under the leadership of Siow Ann Chong and Eric Chen, respectively. Despite limited resources, better outcomes, reduced suicide rates, and cost savings have already been demonstrated in contrast to traditional services. In Japan (Masafumi Mizuno) and Korea (Young-Chul Chung, Sung-Wan Kim), there are also centers for early psychosis research.

United States

The United States has been a key leader in first-episode research, especially neurobiological research; however, because of the limitations of the US health care system, service reform has been piecemeal until recently. The highly influential and landmark Hillside program, led originally by John Kane, subsequently by Jeffrey Lieberman, and later by Nina Schooler, Barbara Cornblatt (who pioneered the RAPP clinic for clinical high risk cases), and Delbert Robinson, has been an international research leader since the early 1980s. Oregon (Tamara Sale and colleagues) has been the pioneer in service reform, with a statewide commitment to early psychosis care for several years, based on the Early Assessment and Support Alliance model, and more recently, Californian projects have come to fruition, although in a poorly standardized way. California also hosts several key early psychosis centers at University of California, San Francisco (Vinogradov, Loewy), University of California, Davis (Carter), University of California, San Diego (Cadenhead), and University of California, Los Angeles (Cannon, Nuechterlein). In fact, very many US academic centers carry out early psychosis research; however, it is only now that evidence-informed system reform is being driven through National Institute of Mental Health (NIMH) funding of the recovery after an initial schizophrenia episode project, which is testing whether enhancing first-episode psychosis care can improve outcomes (https://raiseetp.org/), and new Federal funding to seed new reform across 44 states with "set-aside" funds from Congress in January 2014. This is incremental research and reform, but pragmatic within the US health care context. North American Prodrome Longitudinal Study (NAPLS) project, led by Ty Cannon, which has integrated the multiple North American prodromal clinics, of which the prevention through risk identification, management and education clinic at Yale was the first, into a coherent research network catalyzed and funded by NIMH is a key platform for new evidence at the subthreshold phase of illness. The role of Robert Heinssen in assembling and nurturing these national research collaborations and the leadership of the current NIMH director, Thomas Insel, have been absolutely crucial in ensuring that early intervention has been placed at the apex of the US mental health research agenda and furthermore is being realized. In a perverse yet positive twist, the recent shooting tragedies in the United States have focused attention and funding on the need to respond more effectively to emerging mental disorders in young people and have added moral force to the logic and evidence supporting early intervention and sustained care.

Other European nations to have made significant research contributions and reforms in early psychosis include Ireland, led by the late Eadbhard O'Callaghan at DETECT; Italy through Programma 2000, led by Anna Meneghelli and Angelo Cocchi; and finally, in Switzerland at multiple sites (Merlo, Riecher, Conus, Simon, and Berger).

RESISTANCE TO REFORM: GENUINE SKEPTICS OR MERCHANTS OF DOUBT?

When one surveys the landscape of premature death, preventable suffering and multiple risks, the blighted lives and the recoveries against the odds, often despite the often harmful, poor quality and at best patchy care offered in most traditional settings for psychotic illness and contrasts this with the effectiveness and cost-effectiveness of expert care for early psychosis when it is provided and sustained, one might wonder why it has not been scaled up even more rapidly and why a small cadre of critics, especially in parts of the "anglosphere," has fiercely resisted its advance. Whereas the safety of screening and proactive early treatment in cancer and elsewhere has been debated in a logical fashion, the debates concerning early intervention in psychosis have taken on a more strident and, at times, emotional even personal tone (*e.g.*, Frances, 2011). Why should this be the case?

The human mind, and particularly its vicissitudes and dysfunctions, is an extraordinarily complex domain and inhabits the crossroads of many scientific disciplines and philosophical traditions. As a field of medicine, psychiatry has struggled to mature, emerging from the ideas and clinical models of the 19th century only very recently. Continuing funding neglect and its consequences have fueled reductionism and false dichotomies in research and clinical care, and the living memory and continuing experience of suffering and iatrogenesis, the insecurity, and to some extent tribalism, within the mental health professions, notably psychiatry, have undermined the process of maturation of our field and the creation of confidence and public trust. Unholy alliances and crusades readily form in the face of complex and genuine dilemmas and threaten to inhibit reasonable practical stepping stones to solutions, or at least progress. We witnessed these culture wars writ large as the *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*, was developed and launched (Greenberg, 2013; Maj, 2013).

Skepticism and debate are of course crucial scientific processes to guide and safeguard effective reform. However, extreme or excessive skepticism, especially in relation to a reform with strong face validity, should prompt an analysis of motives because vested interests and ideological groups have been known to misuse science to undermine valid change and reform (Oreskes and Conway, 2010). In some parts of the world, notably the United Kingdom and Australia, yet less so in others (Canada, Asia, Western Europe), we have seen intense skepticism expressed toward early intervention, particularly when the momentum shifted from pure research studies and boutique clinics to

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serious investment in new early psychosis services. To a great extent, this is understandable in the context of the wholesale neglect of the mental health care of even people with severe and persistent illnesses. Clinicians working in these underfunded and low-morale cultures of care, barely beyond the shadows of the asylum, genuinely feel that much more must be done to effectively treat and relieve the suffering of their patients and their families, especially when this neglect is leading to the criminalization of the mentally ill and the re-warehousing of people with severe mental illnesses in prisons. They fear early intervention will divert scarce, finite, and precious resources from these neglected patients to notionally less deserving patients, often citing the experience of the 1960s, where this did in fact occur in the United States. However, this is so obviously a false dichotomy. The fundamental fallacy that these well-intentioned, yet essentially simplistic, emotion-based critiques promote is that this is a zero sum game. Unlike our colleagues in cancer and other noncommunicable disease areas, they have somehow embraced the notion that substantial growth and parity in funding for mental health care are not an achievable goal and that only one focus, palliation, should be pursued. In fact, even when a zero sum game is clearly not the scenario, as in Australia in 2011, when $2.2 billion of new funding was injected into the national mental health budget across a wide range of targets, we still witnessed intense, albeit focal, resistance from some academic psychiatrists to any new resources being allocated to early intervention, even when substantial new funding was allocated at the same time to services for people with enduring mental illness (Castle, 2012; Frances, 2011; McGorry, 2011a, 2012).

The dichotomy is false for another even more compelling reason. The evidence that early intervention actually saves money in all kinds of ways means that it is almost certainly part of the solution in relation to funding secure longer-term care for the seriously and persistently mentally ill (McCrone et al., 2010; Mihalopoulos et al., 2009). The notion that patients with prolonged and severe mental illness should receive sole priority until their care is truly optimal is part of the mantra of the cadre of critics, yet it is not a principle that would survive in cancer and cardiovascular medicine. Here, we do not see the trivialization of the needs of those in earlier stages or with less severe or persistent forms of illness as the "worried well" or the fanning of fears of labeling and overtreatment (the latter being mostly a consequence of underfunding, poor cultures, low skill levels, and biological reductionism). In cancer, we simply do not see palliative care being pitted against early diagnosis. The threat of a potentially lethal illness is taken very seriously, and a manageable number of false positives is accepted as a reasonable price to pay for saving lives. Perhaps, the definition of the point when a genuine need for assessment and professional care is more challenging in the mental health sphere than in physical medicine; however, such a tipping point undoubtedly exists, is now being better defined, and as long as safe forms of intervention and stigma-free cultures of care are an initial option in a sequential treatment approach, the principle should be the same as in physical medicine. It is important that these conversations, debates, dilemmas, and choices are able to be faced honestly and openly in the light of the facts and the evidence and that they are not buried, distorted, or hijacked by ideologues, vested interests, sensational and irresponsible media, or even misguided humanitarians. These complex scientific and sociological forces must be understood, recognized, and responded to quite differently on their merits within the cycle of innovation and reform.

Innovation is a vital ingredient if we are to dispel the "soft bigotry of low expectations" and the palliative mindset of traditional mental health care. Innovation has been likened to an orchid, exquisitely sensitive to the context and environment (Brooks et al., 2011; Rogers, 1962), and we need to understand the innovation cycle as it applies in other fields. Innovation involves new thinking, new models, new treatments—all of which we desperately need. Innovators and early adopters need to be nurtured as we seek progress in mental health care. Late adopters need to be respected, listened to, persuaded, and convinced on the basis of logic and scientific evidence wherever possible. However, as referred to already, we have seen intense and personal critiques of early intervention from another more desperate group known as the "laggards." The critiques have come from opposite ends of the ideological spectrum—from the world of antipsychiatry and psychological reductionists on the one hand, who seek to scare the public that more harm than good will be visited on them by an overreaching, dystopian, and biologically reductionist psychiatry, or on the other, from within traditional academic psychiatry, uneasily supported by a phalanx of late adopter mainstream clinicians, who insist that the needs of those with long-term illnesses must be fully addressed before the uncharted and doubtful territory of early diagnosis should be explored. The agenda of the antipsychiatrists is all too clear, although, often, their techniques of misrepresentation, fear-mongering, and personal and reputational attack may be hard to accept. However, the defense with an odd fervor of a failing status quo, which does regrettably rely excessively on medications and seriously neglects evidence-based psychosocial care by some academic psychiatrists, misusing the evidence card to demand impossible standards of proof for any change, is harder to accept (*e.g.*, Burns, 2005). The common feature of these critiques is to go beyond reasonable skepticism to seek to introduce doubt into the minds of the public and policymakers about reforms that have great potential value. Doubt is their product; they are "merchants of doubt" (Oreskes and Conway, 2010).

THE NEXT WAVE OF REFORM: BEYOND PSYCHOSIS

The clinical epidemiology of the onset of mental disorders is more or less the mirror image of that seen in physical illness, with 75% of mental and substance use disorders emerging for the first time by age 25 years. Some of these disorders, notably neurodevelopmental disorders, and some behavioral and anxiety disorders, commence in childhood before the age of 12 years. However, the dominant and potentially persistent and disabling mental and substance use disorders of adult life are by far the major source of health burden during adolescence and emerging adulthood, and yet there has not only been no systematic approach to examining prevention, early diagnosis, and treatment. Worse still, until recently, there has been no sense of urgency to do much at all to intervene to improve their course and outcome. As Gunn (2004) characterized it, this is a form of self-harm that our society inflicts on itself. This obviously has to change.

A conceptual underpinning of this change is the wider application of early intervention beyond psychosis to all disorders and particularly, but not only, in young people. Although there has been exponential expansion of research and clinical activity in early psychosis in recent years, there was little evidence of this trend in other major diagnostic domains, even those such as mood, eating, personality, and substance use disorders, with a similar age of onset. In 2007, to stimulate scientific and clinical interest in early intervention, a new journal was established by Blackwell (subsequently Wiley and Sons), *Early Intervention in Psychiatry.* Several years on, there has been some growth in early intervention beyond psychosis; however, progress remains slow. *Early Intervention in Psychiatry* has established itself as a strong international journal, with a rising impact factor and moving to six issues per annum, as the official journal of the IEPA. The latter international association resolved in 2014 to progressively broaden its own focus from psychosis and severe mood disorders to the full range of mental disorders.

This conceptual framework may be difficult to progress given the siloed nature of psychiatric research and organization of specialist clinical care. However, buttressed by more flexible research and diagnostic approaches such as the Research Domain Criteria (Insel et al., 2010) and clinical staging (McGorry, 2007a), a cross-diagnostic focus for early intervention sits alongside a new wave of service reforms in

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youth mental health in a small number of countries (McGorry et al., 2013, 2014b). These reforms aim to create a comprehensive fully integrated youth mental health service stream for young people that offers seamless mental health care from puberty to mature adulthood up to around 25 years of age, with soft transitions at either boundary with child and older adult mental health care. Such a vertically integrated system embraces the reality of dynamic biopsychosocial development and recognizes the complexity of the challenges faced by young people as they become independent adults, as well the burden of disease imposed on this age group by mental ill-health. It responds by blurring the distinctions and borders between the tiers of primary and specialist care in recognition of the complexity of the presentation of much of the mental ill-health apparent in young people, allowing a flexible and appropriate response for each individual (McGorry et al., 2013, 2014b).

The foundations for reform in mental health must be built on the principles of demonstrable need and capacity to benefit and evidence informed care, including indicative evidence of value for better health outcomes and value for money, which, given the timing of morbidity, is likely to trump almost any other domain of health and social care (McGorry, 2007b; McGorry et al., 2011). Youth mental health is emerging as a new professional field, and evidence will be created as the field evolves. However, we can be optimistic here, not the least because of the success of the early psychosis paradigm, which has not only provided proof-of-concept for early intervention but also has largely driven the current transformation of psychiatry toward a more preventive and personalized focus, analogous to the approach now widespread in physical medicine. The dilemma now is whether health policymakers and planners in different parts of the world pursue a conservative approach and continue to build early psychosis systems in parallel with, or within, mainstream mental health care or leapfrog to a reform that is more ambitious, definitive, and sustainable. My view and prediction are that early psychosis reform will prove to be an insufficient paradigm for radical reform of our systems of mental health care and that a much more inclusive and cross-diagnostic youth mental system to deliver early intervention for all mental disorders is what is now required in all developed countries and, arguably, low- and middle-income countries as well. Early intervention, the keystone of preemptive psychiatry, should now be explored across the full diagnostic spectrum, and this exciting new field promises human, economic, and public health benefits on a much larger scale than could have been envisioned in psychiatry even a decade ago.

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DISCLOSURE

Professor McGorry is the executive director of Orygen: the National Centre of Excellence in Youth Mental Health, is editor in chief of Early Intervention in Psychiatry, and also led the design and implementation of headspace, Australia's nationwide model of enhanced youth mental health primary care. He is currently a director of the headspace Board.

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PDM-3

Process, outcome and experience of transition from child to adult mental healthcare: multiperspective study

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Background

Many adolescents with mental health problems experience transition of care from child and adolescent mental health services (CAMHS) to adult mental health services (AMHS).

Aims

As part of the TRACK study we evaluated the process, outcomes and user and carer experience of transition from CAMHS to AMHS.

Method

We identified a cohort of service users crossing the CAMHS/AMHS boundary over 1 year across six mental health trusts in England. We tracked their journey to determine predictors of optimal transition and conducted qualitative interviews with a subsample of users, their carers and clinicians on how transition was experienced.

Results

Of 154 individuals who crossed the transition boundary in 1 year, 90 were actual referrals (i.e. they made a transition to AMHS), and 64 were potential referrals (i.e. were either not referred to AMHS or not accepted by AMHS). Individuals with a history of severe mental illness, being on medication or having been admitted were more likely to make a transition than those with neurodevelopmental disorders, emotional/neurotic disorders and emerging personality disorder. Optimal transition, defined as adequate transition planning, good information transfer across teams, joint working between teams and continuity of care following transition, was experienced by less than 5% of those who made a transition. Following transition, most service users stayed engaged with AMHS and reported improvement in their mental health.

Conclusions

For the vast majority of service users, transition from CAMHS to AMHS is poorly planned, poorly executed and poorly experienced. The transition process accentuates pre-existing barriers between CAMHS and AMHS.

Declaration of interest

None.

Young people with mental health problems can get 'lost' during transition of care from child and adolescent mental health services (CAMHS) to adult mental health services (AMHS).[1–3] Disruption of care during transition adversely affects the health, well-being and potential of this vulnerable group.[2–9] Ideally, transition should be a planned, orderly and purposeful process of change from child-oriented to adult models of care, taking into account both developmental and illness-specific needs.[1,10–12] If the process is seen simply as an administrative event between CAMHS and AMHS, many health and social care needs may remain unmet.[13]

Transition is often discussed but rarely studied. The national policy in the UK emphasises the need for smooth transition from CAMHS to AMHS[2,14–17] but there is no published evidence on the process, models and outcomes of transition. A systematic review of 126 papers on transition found only one on a mental health population and only within the US context.[5] Transition is a critical aspect of continuity of care, yet we know little about who makes such transitions, what are the predictors and outcomes of the process, and how it affects service users and their carers. Without such evidence, mental health services cannot develop and evaluate efficient models that promote successful transition or plan the future development and training programmes to improve transitional care. The TRACK study was designed to answer some of these questions in the UK context.

The overall aims of the TRACK study were to:

1 conduct an audit of the policies and procedures relating to transition within six mental health trusts in London and the West Midlands (three trusts in each region) (Stage 1);

2 evaluate the process of transition by a case-note survey identifying all actual and potential referrals (see below for definitions) from CAMHS to AMHS in the preceding year, 'track' their journey and outcomes in terms of referral and engagement with adult services, and determine the predictors of successful transition (Stage 2);

3 conduct qualitative interviews across organisational boundaries and services within health and social care agencies to identify specific organisational factors that constitute barriers and facilitators to transition and continuity of care (Stage 3);

4 explore the views of service users, carers and mental health professionals on the process of transition experience from a subsample of service users (Stage 4).

In this paper we present findings from Stages 2 and 4. A paper from Stage 1 has already been published.[18] The TRACK report including Stage 3 findings is available in full at www.sdo.nihr.ac.uk/projdetails.php?ref=08-1613-117. The study received ethical approval from Wandsworth Local Research Ethics Committee.

Method

We used the following definitions: actual referrals were all individuals that crossed the transition boundary and were accepted by AMHS; and potential referrals included individuals that crossed the transition boundary but did not complete transition to AMHS, regardless of the reasons for non-transition.

Transition pathways were categorised as optimal or sub-optimal. The optimal transition criteria were developed from an audit of CAMHS transition protocols[18] and literature on good practice in relation to continuity of care.[19] These criteria included:

(a) information transfer (information continuity): evidence that a referral letter, summary of CAMHS care, or CAMHS case notes were transferred to AMHS along with a contemporaneous risk assessment;

(b) period of parallel care (relational continuity): a period of joint working between CAMHS and AMHS during transition;

(c) transition planning (cross-boundary and team continuity): at least one meeting involving the service user and/or carer and a key professional from both CAMHS and AMHS prior to transfer of care;

(d) continuity of care (long-term continuity) – either engaged with AMHS 3 months post-transition or appropriately discharged by AMHS following transition.

Sub-optimal transitions were those that failed to meet one or more of the above criteria.

Design

The study was undertaken in six mental health trusts (service provider organisations within the National Health Service), three in Greater London and three in the West Midlands, covering a population of 8.1 million with wide socioeconomic, ethnic and urban–rural heterogeneity. All CAMHS teams that managed young people until the age of transition were included. Highly specialised and tertiary services (e.g. a national eating disorder service) were excluded because of the atypical population served and the logistical problems of tracking individuals from services that accept referrals from across the country.

Case ascertainment

Case ascertainment was a two-stage process. First, central databases of all included CAMHS were searched for open cases of individuals who had reached age x or above (where x is the age boundary for transition to AMHS). Since the age boundary for different services (x) varied, for each service x was specifically defined as per that service's transition protocol.[18] In the next stage, all CAMHS clinicians within included services were contacted by letter and email explaining the study and requesting details of actual and potential referrals during the study period. Initial contacts were followed up by further emails and telephone calls during the study period until all clinicians had submitted cases or provided a nil response. For the qualitative study, the young people identified for inclusion were contacted through their care coordinators to explain the study and seek informed consent.

TRACKING tool

Two data extraction tools, one each for actual and potential referrals were devised and piloted for reliability. Data were collected on sociodemographic and clinical variables, transition pathways and transition outcomes (for actual referrals) and reasons for non-transition in potential referrals. Interrater reliability was checked by two researchers independently extracting data from the tools from five actual referrals from a site unrelated to the project. Comparing 491 non-text variables for each of the five cases, an error rate of less than 2% was found. Study tools are available in the full study report.

Ascertaining diagnoses

Since CAMHS case notes vary in recorded diagnoses, we categorised presenting problems into seven diagnostic groups: serious and enduring mental disorders, including schizophrenia, psychotic disorders, bipolar affective disorder, depression with psychosis; emotional/neurotic disorders, including anxiety, depression (without psychosis), post-traumatic stress disorder, obsessive–compulsive disorder; eating disorders, including anorexia nervosa, bulimia nervosa, atypical eating disorder; conduct disorders, including behavioural disorders; neurodevelopmental disorders, including autism-spectrum disorders, intellectual disabilities; substance use disorders, including alcohol and/or drug misuse; and emerging personality disorder. Data on presenting problems were discussed with three CAMHS clinicians (M.P., T.F. and T.K.) to assign a diagnostic group. Comorbidity was defined as the presence of more than one diagnostic category from the seven above.

Predictors of transition

In the absence of previous evidence, we could not develop a prediction model for transition. Instead a two-stage analysis was conducted with initial identification of independent variables with an association ($P<0.05$) with the dependent variable using Pearson χ^2-tests (Fishers exact tests where necessary) for categorical variables and unpaired t-tests for continuous variables. Prior to logistic regression, significant independent variables that were highly associated with each other were recoded into a composite variable to reduce co-linearity. Two logistic regression analyses were planned: first, to determine predictors of achieving transition (being an actual rather than a potential referral); and second, to determine predictors of optimal transition. However, the small numbers of individuals identified in the study who experienced optimal transition precluded the second regression analysis (see Results). It was felt inappropriate to conduct a multilevel analysis as the study did not aim to determine the impact of trust-level variables on transition outcomes. With only six trusts in the sample, there would be insufficient variation in trust-level data for such an analysis. However, to account for possible clustering within trusts, i.e. to account for individuals within trusts being less variable than individuals between trusts, the logistic regression was repeated and standard errors (and therefore 95% confidence intervals and P-values) adjusted for cluster effects (see Results). This analysis was conducted using Stata version 9 for Windows.

Qualitative case studies

Semi-structured qualitative interviews were conducted with a subsample of service users who had completed transition, and where possible their carers and CAMHS and AMHS care coordinators. A purposive sample of service users ($n=20$) was initially identified comprising 10 service users, each in two groups: those who did or did not remain engaged with AMHS 3 months post-transition. Within each group we sampled individuals with or without evidence of joint working between CAMHS and AMHS. Within this primary sampling frame we sought to achieve range and diversity in terms of study site, diagnosis, gender, ethnicity and whether or not the service user was an age outlier at time of transition. Service users who declined to participate or who were deemed clinically unsuitable for inclusion were substituted with a matched case. Interviews were conducted by two researchers (K.H. and Z.I.) using topic guides developed by the project team and amended to incorporate emergent themes from all study components. The main focus was on preparation for transition, transition experiences, transition outcomes and

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factors identifiable as related to positive or negative transition outcomes.

Qualitative analysis

Interviews were recorded, transcribed and entered onto NVivo software (www.qsrinternational.com). K.H. led the development and application of a coding frame with input from Z.I. and the qualitative study lead (T.W.). Use of NVivo facilitated investigator checking of coding. Qualitative analysis was undertaken using the constant comparative method within the framework approach described by Ritchie & Spencer.[20] This approach was particularly appropriate for integrating a thematic analysis built upon multiperspective data.

Results

Quantitative study results

We encountered major difficulties when searching the central CAMHS databases and these could not be interrogated using the study criteria (see full report for details). We therefore relied primarily on clinician recall to identify cases. A total of 154 individuals were thus identified (London 112; West Midlands 42). The rate of actual and potential referrals per 100 000 population in the London sites were 2.68 and 1.49 respectively and in the West Midlands sites 2.23 and 2.97 respectively. The service boundary for transition from CAMHS to AMHS (x) ranged from 16 to 21 years (mode 18).

Transition pathways

Of the 154 participants, 90 (58%) were accepted by AMHS (i.e. actual referrals). Sixty-four (42%) were potential referrals (i.e. those who crossed the transition boundary during the study period but did not make a transition to AMHS). Transition pathways for the entire cohort are shown in Fig. 1.

Sample description

The total sample consisted of 78 (51%) males and 76 females with a mean age of 18.12 years (s.d. = 0.82). A third (31%) were White and 23% Black and minority ethnic, but ethnicity was not recorded in a large proportion (27%). The majority (71%) lived with their parents and nearly two-thirds were either in employment or education (60%). Diagnostically, half ($n = 78$) had emotional/neurotic disorders, a quarter ($n = 38$) had neurodevelopmental disorders and 22% ($n = 34$) had serious and enduring mental disorders. Other disorders included substance misuse ($n = 14$, 9%), conduct disorders ($n = 6$, 4%), eating disorders ($n = 6$, 4%) and emerging personality disorder ($n = 4$, 3%). For five individuals (3%) the presenting problem was not recorded. Almost a fifth ($n = 29$, 19%) had comorbid mental health disorders.

Sociodemographic and clinical variables

Table 1 shows sociodemographic and clinical details of the participants in the actual and potential referrals groups. Those

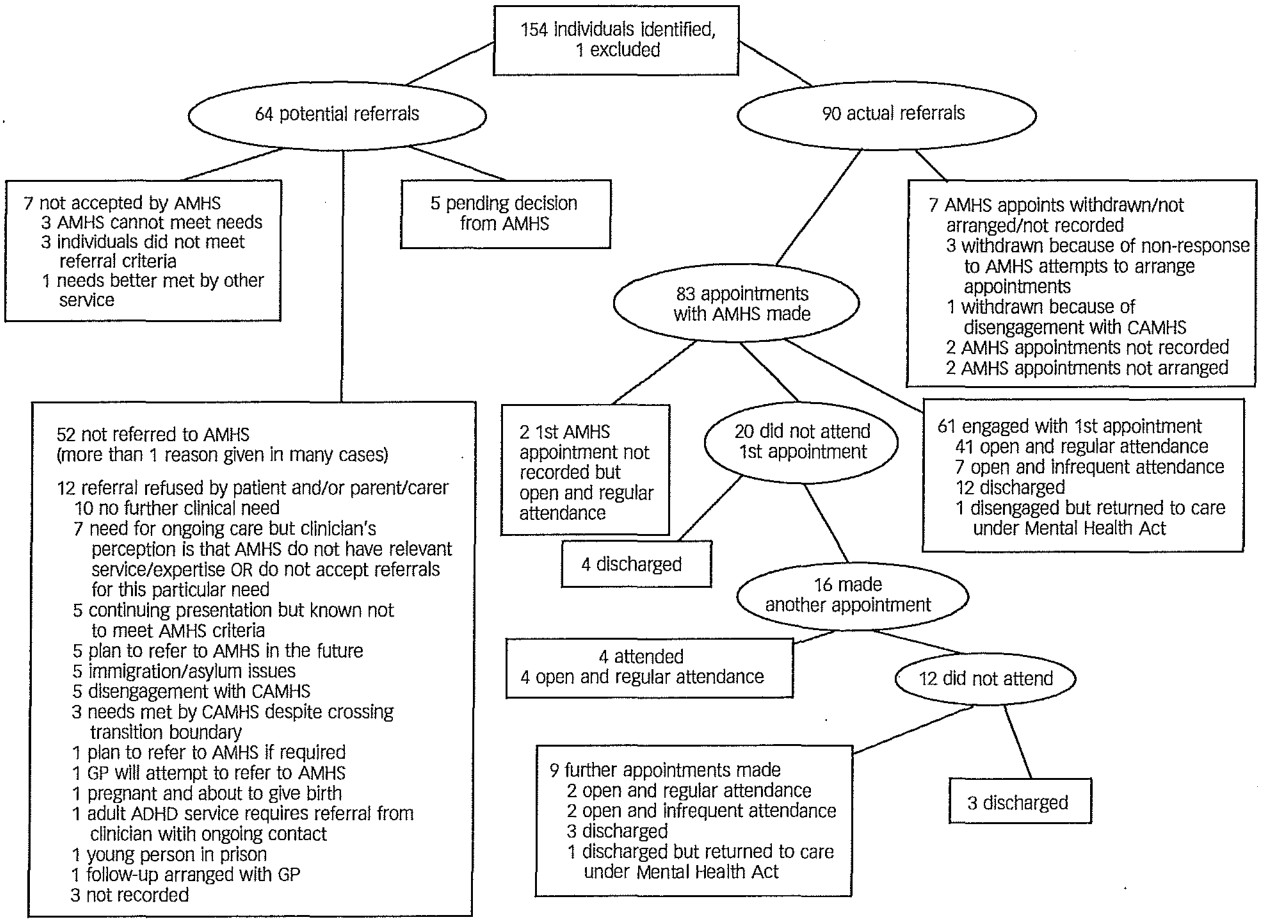

Fig. 1 Outcomes of all referrals from child and adolescent mental health services (CAMHS) to adult mental health services (AMHS).

GP, general practitioner; ADHD, attention-deficit hyperactivity disorder.

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Table 1 Demographic variables comparing actual and potential referrals

Variable	Actual referrals group ($n=90$)	Potential referrals group ($n=54$)	χ^2	P
Male, *n* (%)	49 (54.4)	29 (45.3)	1.24	0.26
Age at first referral to any CAMHS, years: mean (s.d.)	13.34 (3.9)	14.29 (2.9)	1.69	0.09
English as first language, *n* (%)	82 (91.1)	54 (84.4)	1.64	0.200
Living with parent, *n* (%)	58 (64.4)	52 (81.3)	6.99	0.03
Educational attainment GCSEs and below, *n* (%)	43 (47.8)	27 (42.2)	1.35	0.51
Parent attended CAMHS, *n* (%)	34 (37.8)	20 (31.3)	11.64	0.003
Positive family history of mental health problems, *n* (%)	51 (56.7)	22 (34.4)	3.64	0.06
'Looked after child' while attending CAMHS, *n* (%)	24 (26.7)	8 (12.5)	4.56	0.03
Evidence of special educational needs, *n* (%)	19 (21.1)	10 (15.6)	0.74	0.39
Evidence of child protection involvement, *n* (%)	12 (13.3)	1 (1.6)	6.70	0.01
Evidence of youth offending team involvement	7 (7.8)	7 (10.9)	0.45	0.5
Refugee or asylum seeker status, *n* (%)	10 (11.1)	9 (14.1)	0.02	0.96
Serious and enduring mental illness, *n* (%)	32 (35.6)	2 (3.1)	22.87	<0.0001
Emotional/neurotic disorder, *n* (%)	43 (47.8)	35 (54.7)	0.71	0.4
Eating disorder, *n* (%)	1 (1.1)	5 (7.8)	4.49	0.03
Conduct disorder, *n* (%)	3 (3.3)	3 (4.7)	0.81	0.67
Substance misuse, *n* (%)	12 (13.3)	2 (3.1)	4.76	0.03
Emerging personality disorder, *n* (%)	4 (4.4)	0	2.92	0.09
Comorbidity (2 or more disorders), *n* (%)	23 (25.6)	6 (9.4)	6.41	0.01
Admitted to hospital while attending CAMHS, *n* (%)	31 (34.4)	3 (4.7)	19.25	<0.0001
Detained under Mental Health Act, *n* (%)	15 (16.7)	1 (1.6)	9.16	0.002
Risk of self-harm at transition, *n* (%)	5 (5.6)	6 (9.4)	1.50	0.22
On medication at time of transition, *n* (%)	69 (76)	29 (45)	15.89	<0.0001

CAMHS, child and adolescent mental health services.

in the actual referrals group were more likely to have been living with parents, having attended CAMHS with their parents, to be involved with a child protection agency or be a 'looked after child', been admitted to a psychiatric hospital, to have been detained under the Mental Health Act, to have a serious and enduring mental disorder, substance misuse, an emerging personality disorder or more than one category of presenting problem (comorbidity), but less likely to have an eating disorder. To reduce the number of variables to enter into the logistic regression, a known broader social risk score variable was created that equalled the sum of the following: 'looked after child', child protection involvement, youth offending team involvement, special educational needs or refugee/asylum seeker.

Predictors of transition

Table 2 shows the results of the logistic regression conducted twice, with the second analysis controlling for clustering within trusts. Having a severe and enduring mental illness and being on medication at the time of transition predicted transition in both analyses. The effect of clustering among trusts was evident in two predictor variables: having 'known broader social risk' and having been admitted for in-patient care.

Optimal transitions

Based on our four criteria, only 4 of the 90 individuals in the actual referrals group experienced optimal transition. They were 2 males and 2 females, all from Black and minority ethnic backgrounds. Three had a serious and enduring mental disorder and had been admitted to hospital, two under the Mental Health Act. All four were on medication and were from London. Three were referred from an adolescent service.

We were unable to explore predictors of optimal transition given how few individuals had experienced it. We therefore determined predictors of one of the key criterion of optimal transition – continuity of care. This was defined as 'still engaged with AMHS or appropriately discharged 3 months post-transition'. Logistic regression revealed that individuals with emotional/neurotic disorder were a third less likely to experience optimal continuity of care (odds ratio (OR) = 0.34, 95% CI 0.12–0.96, $P = 0.04$). There was no association of continuity of care with any clinical, demographic or process variables.

Qualitative study results

Of the planned 20 service user participants, we could only interview 11. The most common reason for failing to recruit was no response from the service users to our requests for participation (25%). The second most common reason was that a clinician felt that the service user was too ill to participate (18%). A total of 27 interviews were conducted with 11 service users, 6 parents, 3 CAMHS clinicians and 6 AMHS clinicians.

Emergent themes

Emergent themes are reviewed briefly below, with some illustrative quotes set out in the online supplement to this paper.

Preparation for transition. Participants described three preparatory mechanisms for transition: transfer planning meetings, joint working and good information transfer. About half (54%) of young people interviewed reported attending at least one transition planning meeting, usually in the weeks preceding transition, with care coordinators from both CAMHS and AMHS and at least one parent. Service users and carers who did not have

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Table 2 Results of logistic regression: factors predicting actual transition with clustered results accounting for trust-level data

Independent variable	Odds ratio	95% CI	*P*	95% CI, clustered	*P*, clustered
Known broader social risk (score)	1.38	0.9–2.1	0.14	1.1–1.8	0.02
English as first language	0.76	0.3–2.3	0.62	0.4–1.3	0.30
Parents attend CAMHS	0.56	0.2–1.3	0.19	0.2–1.3	0.16
Admitted as psychiatric in-patient	5.05	1.0–26.8	0.05	0.2–147.3	0.34
Admitted under the Mental Health Act	5.0	0.5–48.3	0.165	1.6–15.5	0.01
Eating disorder	0.24	0.0–2.4	0.22	0.0–3.4	0.29
Substance misuse	1.66	0.3–11.0	0.59	0.3–8.7	0.55
Comorbidity	2.82	0.9–9.4	0.09	0.8–9.6	0.01
Serious and enduring illness	7.85	1.6–37.8	0.01	1.5–40.9	0.01
On medication at the time of transition	2.36	1.1–5.3	0.04	1.7–3.4	<0.01

CAMHS, child and adolescent mental health services.

transition planning meetings thought that these would have been helpful. Both CAMHS and AMHS clinicians attributed lack of time as a barrier to such meetings. Two service users were told only at their last CAMHS appointment that they were going to be moved to AMHS.

Joint working. Child and adolescent mental health services were generally seen by AMHS colleagues as being in favour of joint working. The AMHS care coordinators appreciated the benefits of joint working (getting to know the service user, being 'in the best interest of the client') but expressed concern about 'responsibility for someone on your case-load, should something go wrong'.

Parental involvement. Parents tended to be less involved with AMHS than with CAMHS. Although young people preferred not having their parents involved in their care any more, parents wanted to be more involved with adult services, in order to be able to express concerns or because they felt 'left in the dark'. One parent stated: 'I know he is now 18 but he is still my son and I worry about him'.

Outcomes of transition. Eight of the eleven young people were still engaged with AMHS at the time of the interview. In most cases ($n = 7$), young people felt that their mental health had improved since the transition to AMHS but did not necessarily attribute this improvement to transition to adult services. Care coordinator flexibility and persistence in the face of missed appointments helped with engagement, although this was more likely to happen when there was evidence of deteriorating mental health or emerging crises. Of the three young people no longer engaged with AMHS, one was discharged as his symptoms had resolved, one did not want to be seen and one was discharged because of non-attendance.

Other transitions. A number of young people experienced other transitions such as change of accommodation or educational status, becoming pregnant or becoming involved with other agencies. Only two young people were still living with their parents after transition. One young person was living with her partner and their child and another was homeless and living in his car. Of the five young women interviewed, three had unplanned pregnancies during the transition period. Four young people had physical health problems closely linked to their mental health and of these, two experienced parallel health service transitions from paediatric to adult care. Five young people had involvement with other services, including Social Services, health visitors, a homeless persons unit, the probation service, school/education support services, counselling services and an autism support service.

Discussion

It is a paradox that although treatment for mental disorders in young people have improved substantially in the past two decades, health system responses to young people with mental disorders have been inadequate.[21] Despite adolescence being a risk period for the emergence of serious mental disorders, substance misuse, other risk-taking behaviours and poor engagement with health services, mental health provision is often patchy during this period.[21,22] By following a paediatric–adult split, mental health services introduce discontinuities in care provision where the system should be most robust.

To the best of our knowledge, TRACK is the first study in the international literature of the transition process, outcome and experience in a systematically identified cohort of young people who cross the boundary from CAMHS to AMHS. Our biggest methodological challenge was case ascertainment and we were hampered by the poor quality of CAMHS databases. Recall bias among clinicians is likely and our transition rates are certainly underestimates. Additionally, case notes may not accurately reflect the quality and content of services delivered. However, our qualitative results appear to complement the quantitative findings of inadequate transitional care. The requirement of the ethics committee that we seek service user consent through care coordinators meant that we could not interview individuals from the non-referred population (potential referrals) who were invariably out of contact with services. Our catchment was large and diverse, making our findings generalisable to other services in the UK. Internationally, there has been concern about adolescent mental health services in general[21,22] and about transition in particular.[3,23,24] Our findings are likely to reflect similar problems internationally.

The findings from TRACK can be summarised as follows: although most service users who crossed the CAMHS transition boundary needed transfer to AMHS, a significant proportion (a third in this study) were not referred to AMHS. Those with neurodevelopmental disorders, emotional/neurotic disorders or emerging personality disorder were most likely to fall through the CAMHS–AMHS gap. Those with a severe and enduring mental illness, a hospital admission and on medication were more likely to make a transition to AMHS but many (a fifth of all actual referrals in this study) were discharged from AMHS care without being seen. Having social risks also predicted transition of care

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when clustering at trust level was taken into account. This might reflect a greater likelihood of the London sample experiencing such risks. Less than 4% of those accepted by AMHS experienced optimal transition. Although we cannot conclude that optimal transition equates with good clinical outcomes, it certainly equates with good patient experience, a key marker of service quality. In the TRACK cohort, basic principles of good practice identified in transition protocols[18] were not implemented. For the majority of service users, transition from CAMHS to AMHS was therefore poorly planned, poorly executed and poorly experienced. Transition processes appeared to accentuate all the pre-existing barriers between CAMHS and AMHS.[3,25]

Aligning referral thresholds

We cannot say why young people with emotional/neurotic, neurodevelopmental or emerging personality disorders are not being referred to AMHS. It is possible that CAMHS may be adjusting their referral thresholds on knowledge and prior experience of local AMHS. If so, this obscures inadequacies in current provision. Where services exist, all young people with ongoing needs should be referred. Where services do not exist, notably those for young people with neurodevelopmental disorders, unmet service user needs should be systematically documented and made clear to AMHS providers and commissioners. Currently, neither CAMHS nor AMHS appear to accept responsibility for the health and welfare of this group. Their outcomes are not known and should be a serious cause for concern.

Transition boundary

Transition policies in the trusts recommend flexibility regarding transition boundaries based on service user need.[18] Our study found little evidence of such flexibility. Perhaps services should use 'age windows' to decide the optimal time for transition rather than a strict age cut-off. A crisis should be a relative contra-indication to transition; transitions should only be planned and proceed at times of relative stability. There may be situations where transition can only occur during or immediately following a crisis, or where the transition process itself precipitates a crisis, but these occurrences should be relatively rare.

Transition preparation

Since most transitions can be long anticipated, there should be an adequate period of planning and preparing the service user and their carer for transition. Information about adult services, what to expect, differences in service provision, issues of confidentiality and parental involvement should all form a package of information that CAMHS share with service users and carers prior to transition. The completion of a 'transition logbook' would be a cheap and simple intervention to help structure the transition process. It would be jointly completed by the service user and their care coordinator and contain relevant details such as contact names and numbers, the dates and number of appointments with each agency, the final transition date and service user views on the experience. Such a tool can be easily evaluated on its impact on the process, outcomes and service user experience.

Improving information transfer

We found that current information technology systems, particularly in CAMHS, did not allow clinicians and managers to access high-quality information on case-loads. Information transfer was also hampered by a lack of understanding of each other's services, inconsistent documentation, different systems used for transfer of electronic information and transfer of referrals to lengthy waiting lists during which professional dialogue was reduced. Inadequate information technology systems in mental health services clearly hinder informational continuity.[26] The recent National CAMHS Review[27] notes the frustrations that arise as a result of separate, incompatible information technology systems across different agencies and the need for systems reform and resource support. We recommend that protocols for transition should explicitly specify information that should be transferred between agencies. Where possible, case notes should follow the young person and detailed referral letters, including risk assessments, should be sent to AMHS to facilitate planning. Introduction of electronic records offers an opportunity to facilitate standardisation across services and trusts.

Managing multiple transitions

Many young people had multiple transitions between AMHS teams, among care coordinators and in their personal circumstances, the cumulative effect of which was complex and unsettling for service users. From our data we cannot tell whether services were unaware of these multiple transitions or unequipped to deal with them. Mental health services, however, must pay attention to these multiple transitions through multi-agency involvement, in order to address the complex needs of this vulnerable group.[2,7,28]

Improving liaison between CAMHS and AMHS

Maitra & Jolley[29] have described a model where child and adult psychiatrists regularly attend each other's clinical meetings at which they jointly address the mental health needs of parents and children within families. Another approach is the development of designated transition workers with posts split between AMHS and CAMHS.[4,30,31] Such innovations have several benefits, including a higher profile for children and young people within adult services, shaping of the process of referrals across services, improved scope for preventive work, possibilities of joint working and the availability of a forum for formal and informal discussions.

These strategies require closer collaboration between services and agencies, which is demanding of both time and personnel. In periods of fiscal austerity, it is difficult to make a case for enhancing existing services, creating new transition worker posts or developing specialist clinics such as for adults with attention-deficit hyperactivity disorder. The CAMHS–AMHS divide is also mirrored in the differing commissioning arrangements in the UK, where CAMHS are often commissioned by acute care or children's services, whereas AMHS is firmly within mental health commissioning. Research evidence such as TRACK therefore is the best way for academics and clinicians to influence policy and shape service provision. We believe that joint commissioning between mental health services for children and adults and shared commissioning approaches at a regional level are the best ways to improve transitional care. The Appendix outlines the overall recommendations of the TRACK project. Further recommendations can be found in the full report.

Bridging the divide

There are two contrasting approaches for improving care for young people undergoing transition from CAMHS to AMHS. We can improve the interface between services as these currently exist, or we can develop a completely new and innovative service

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model of integrated youth mental health services. Each has its advantages, limitations and resource implications. Common to both approaches is the need for services to pay attention to the developmental needs of this age group in areas beyond healthcare transition such as changes in educational and vocational domains, independent living and social and legal status. Although we call for further research into ways of improving transitional care, TRACK findings by themselves demand early and substantial service improvement, some of which can occur without new resources and by simply improving liaison, planning and joint working between CAMHS and AMHS.

In their review of youth mental heath services across the world, Patel *et al*[21] concluded: 'our single most important recommendation is the need to integrate youth mental health programmes, including those in the health sector (such as reproductive and sexual health) and outside this sector (such as education)'. The findings of TRACK highlight how far away we are from such integration, given the problems of transition revealed at the interface of CAMHS and AMHS. Even though we do not as yet know how to achieve best transitional care, the status quo of existing service barriers should not be acceptable. We certainly need evidence for any models of transitional care that we test in the future. The search for that evidence should be a goal, rather than a prerequisite for service change. We need to ensure that the vital need for improving youth mental health is not ignored for fear of dismantling long-standing and yet unhelpful service barriers.

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Appendix

Overall recommendations from the TRACK study

(a) The needs of the service user should be central to protocol and service development regarding transition.

(b) Trusts should have regular updated mapping of local CAMHS, AMHS and voluntary services, identifying scope of operation, communication networks and key contacts.

(c) Protocols should be developed and implemented in collaboration with all relevant agencies and young people and their carers.

(d) Multidisciplinary training should be planned and delivered for transition, including local service structures, protocols and working with young people. This training should be linked to the appraisal process and skills and competency frameworks.

(e) Protocols should specify the time frame, lines of responsibility and who should be involved, how the young person should be prepared and what should happen if AMHS are unable to accept the referral.

(f) Protocols should stress flexibility in the age range to accommodate a range of needs and developmental stages, and have explicit referral criteria and service provision.

(g) Transition should occur at times of stability where possible; young people should not have to relapse in order to access a service.

(h) Agencies should try to avoid multiple simultaneous transitions.

(i) Improved information transfer between CAMHS/AMHS with the standardisation of record keeping or, where this is impossible, clear indication of what information should be made available. A referral letter summarising past contact, current state and risks is a bare minimum. If all records cannot be transferred, copies of all correspondence and contact summaries should be.

(j) Transition process should include collaborative working between CAMHS and AMHS, with cross-agency working or periods of parallel care.

(k) Carers' needs and wishes should be respected in the transition process and carer involvement in adult services should be sensitively negotiated between clinicians, service users and their carers.

(l) Services need to develop for young people with emotional/neurotic, emerging personality and neurodevelopmental disorders wherever there is gap in such provision.

(m) Active involvement by AMHS is required before CAMHS can discharge a case; transfer onto a long waiting list is unacceptable.

(n) Changes should be evidence based. Prospective research is required on the clinical course, service needs, health and social cost implications for the young people receiving little service provision after leaving CAMHS.

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EXTRA CONTENT ONLINE

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100 words

Edvard Munch (1863–1944)

Alexandra Pitman

The Norwegian Expressionist Edvard Munch caused outrage when his paintings were first shown in Berlin but became one of the most prolific artists of his time. Often described as having had bipolar affective disorder, his low moods and sense of isolation are evident in works such as *The Scream*, *Separation*, and *Evening on Karl Johan*. Yet the evidence of his diaries and his many biographies suggest more plausible diagnoses of depressive disorder and comorbid alcohol dependence. Art historians acknowledge his ability to represent extreme emotional states, while debating the extent to which Munch exploited the market for his 'flawed personality'.

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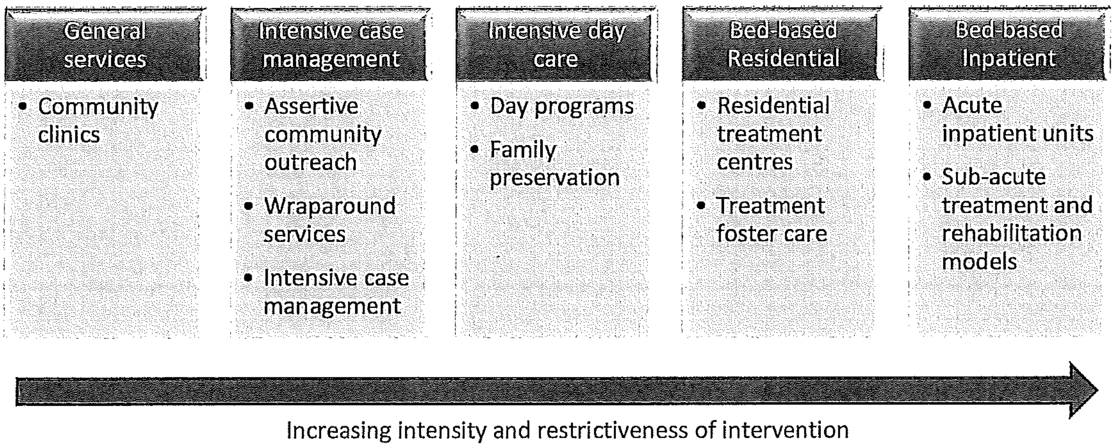
Figure 1: A continuum of specialist CAMHS models



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Biggins, T 2014, 'Home-based treatment' in McDougall, T & Cotgrove A (eds.), *Specialist mental healthcare for children and adolescents: hospital, intensive community and home-based services*, Routledge, London, pp. 96–122.

EXHIBIT 86

The services provided to young people by *headspace* centres in Australia

The headspace *initiative engages young people with a range of health and wellbeing concerns, not just ... mental health problems*

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Abstract

Objectives: To describe the services provided to young people aged 12–25 years who attend *headspace* centres across Australia, and how these services are being delivered.

Design: A census of *headspace* clients commencing an episode of care between 1 April 2013 and 31 March 2014.

Participants: All young people first attending one of the 55 fully established *headspace* centres during the data collection period (33 038 young people).

Main outcome measures: Main reason for presentation, wait time, service type, service provider type, funding stream.

Results: Most young people presented for mental health problems and situational problems (such as bullying or relationship problems); most of those who presented for other problems also received mental health care services as needed. Wait time for the first appointment was 2 weeks or less for 80.1% of clients; only 5.3% waited for more than 4 weeks. The main services provided were a mixture of intake and assessment and mental health care, provided mainly by psychologists, intake workers and allied mental health workers. These were generally funded by the *headspace* grant and the Medicare Benefits Schedule.

Conclusions: *headspace* centres are providing direct and indirect access to mental health care for young people.

headspace, the National Youth Mental Health Foundation, was initiated by the Australian Government in 2006 because it was recognised that the prevalence of mental disorders and the burden of disease associated with mental health problems was greater for those in their adolescent and early adult years than in older adults, but that young people were less likely to access professional help.[1] *headspace* centres aim to be highly accessible, youth-friendly integrated service hubs that respond to the mental health, general health, alcohol and other drug, and vocational concerns of young people aged 12 to 25 years.[2] The main goal is to improve mental health outcomes by reducing help-seeking barriers and facilitating early access to services that meet the holistic needs of young people. Recent data indicate that the initiative is largely achieving its aim to improve access to services early in the development of mental illness.[3]

As the *headspace* network has grown, the key components of the model have become clearer.[4] At the heart of all *headspace* services is a youth-friendly, non-stigmatising, inclusive "no wrong door" approach, essential for engaging young people in mental health care.[5] This is both a challenge and a major point of difference from other mental health services, which are often highly targeted, with clear exclusion criteria. Consequently, there has been a high level of demand for the services offered by *headspace*.[3] Centres have been set up across Australia in highly diverse community settings with a flexible local capacity for service delivery. The variation in focus between centres and in the types of services they offer has been noted as both a strength and a concern.[6] Workforce problems are an ongoing challenge for many centres, particularly in rural and remote locations.[7]

headspace aims to provide a timely and appropriate response to the various problems presented by young people, and to provide a soft entry point to mental health care. In this study we set out to investigate what services *headspace* centres are providing to young people and how they are being delivered. The proportions of young people who initially presented in each of the main service streams — mental health, situational, physical health, alcohol and other drugs, and vocational health — were determined, as were the numbers of clients who received mental health care at *headspace* centres after initially presenting to the service for other reasons. We examined the waiting time for services, patterns of service use (number of sessions of each service type attended, types of service mix), as well as the major providers and the funding streams that support service delivery.

Methods

Participants and procedures

All participants had commenced an episode of care at a *headspace* centre between 1 April 2013 and 31 March 2014. Data were drawn from the *headspace* Minimum Data Set,[3] which includes the routine data collected from all clients who provide consent, producing a near-complete census of *headspace* clients. Young people enter data into an electronic form before each service visit, and service providers also submit relevant information about each visit. Data were de-identified by encryption and extracted to the *headspace* national office data warehouse.

Ethics approval was obtained through internal quality assurance processes; these consent processes were reviewed and endorsed by an independent body, Australasian Human Research Ethics Consultancy Services. Follow-up data collection was approved by Melbourne Health Quality Assurance.

Measures

- The main presenting problem or concern was categorised by the service provider as: mental health or behavioural (symptoms of a mental health problem); situational (eg, bullying at school, difficulty with personal relationships, grief); physical or sexual

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1 Number of *headspace* service sessions attended (all types) and initial wait time for young people presenting with different categories of problem or concern

		Main reason for presenting to *headspace*				
	All clients	Mental health and behaviour	Situational	Physical or sexual health	Alcohol or other drugs	Vocational
Number of presentations (% of all clients)	33 038†	24 034 (72.7%)	4440 (13.4%)	2332 (7.1%)	1030 (3.1%)	583 (1.8%)
Number who received mental health service (% of presentations for respective reason)*	31 134 (94.2%)	23 738 (98.8%)	4331 (97.5%)	1134 (48.6%)	951 (92.3%)	493 (84.6%)
Mean number of sessions attended (SD)	4.1 (4.2)	4.4 (4.4)	3.6 (3.7)	2.5 (2.9)	3.0 (3.4)	3.2 (3.6)
Median number of sessions attended	3.0	3.0	2.0	1.0	2.0	2.0
Number of sessions attended						
1 session	35.4%	32.1%	39.0%	50.8%	45.2%	45.5%
2 sessions	14.0%	12.8%	14.8%	22.2%	19.3%	16.1%
3–5 sessions	25.6%	26.7%	25.7%	18.7%	21.0%	22.3%
6–9 sessions	15.1%	16.9%	13.3%	4.6%	10.0%	9.8%
10 or more sessions	10.0%	11.5%	7.2%	3.6%	4.6%	6.3%
Client did not wait too long for first service	89.4%	88.7%	91.5%	90.9%	91.4%	92.1%

* Includes engagement and assessment services. † Includes 619 young people (1.9% of sample) who had presented for "other" primary reasons not included in the five major categories, such as attention deficit and developmental disorders. ◆

health; alcohol or other drugs (AOD); vocational; or other.

- The *service type* was categorised as one of the following on each occasion of service: mental health; physical or sexual health; AOD; vocational; or engagement and assessment. The number of sessions of each main service type attended by a young person during the data collection period was calculated.
- The wait time was measured by asking clients how long they had waited after requesting an appointment for their first service appointment, and whether they thought they had been required to wait too long.
- Service providers were categorised by profession and role. This included intake and youth workers, psychologists, allied mental health workers (social workers, mental health nurses and occupational therapists), general practitioners, nurses, psychiatrists, AOD workers, vocational workers, clinical leads and administrative staff (including reception staff, managers and practice managers).
- The funding stream was categorised as: the headspace grant (each centre is funded through a headspace grant); the Medicare Benefits Schedule (MBS); Access to Allied Psychological Services (ATAPS); the Mental Health Nurse Initiative (MHNI); Rural Primary Health Services (RPHS); in-kind contributions by partner organisations; or other.

Results

Data were assessed for 33 038 young people who had commenced an episode of care at one of 55 established *headspace* centres during the study period; 16.8% were aged 12–14 years, 34.4% aged 15–17 years, 25.8% aged 18–20 years, and 23.0% were 21–25 years of age. Most were female (61.9%); 37.5% were male.

Main presenting problems or concerns

The proportions of young people who attended *headspace* centres for each category of main presenting problem or concern and the number of service sessions they attended are shown in Box 1. Almost three-quarters of presentations specifically involved mental health and behavioural problems; 13.4% were for situational problems and 7.1% for physical or sexual health concerns. Only a small proportion (3.1%) presented primarily for AOD problems, and very few (1.8%) for vocational reasons.

The vast majority of clients, regardless of their initial problem or concern, attended mental health sessions; this included almost all who presented with situational or AOD problems, and almost 85% of those who presented with a vocational problem. The exception was that less than half of those who presented with physical or sexual health concerns also used mental health services.

Clients who first presented for mental health reasons attended the most service sessions, with an average of 4.4 and a median of 3.0 sessions per person. More than a quarter of these young people attended six or more sessions, and more than 10% attended 10 or more. Less than a third attended only once for mental health consultations.

Those who first presented for a physical or sexual health problem attended the fewest service sessions.

Wait time

Most of the young people reported that they did not wait too long for their first appointment (Box 1).

According to their detailed responses, 38.9% of clients had waited less than one week for their first appointment, 41.2% for 1–2 weeks, 14.6% for 3–4 weeks, and only 5.3% had waited more than 4 weeks. Unsurprisingly, almost half of those who had to wait more than 4 weeks reported that they had waited too long.

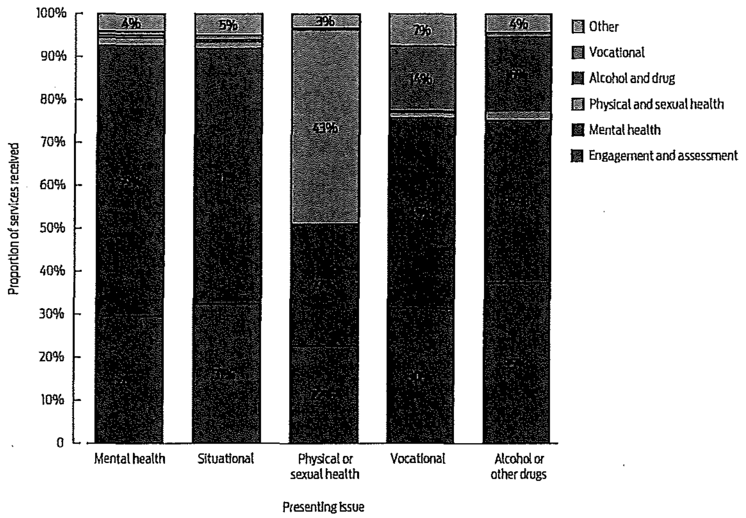
Service mix

headspace clients typically attend at least one session of engagement and assessment, except those who present primarily for physical or sexual health problems. The time used for engagement and assessment increased with the total number of sessions attended, regardless of the initial presenting problem (see Appendix).

Box 2 shows the proportions of each type of service provision for each of the core streams accessed by clients with different initial reasons for presenting. These data show the strong similarity in service patterns for those who presented with mental health and situational problems. Young people who first presented with situational concerns received slightly more engagement and assessment, but were otherwise similar to those who presented with mental health problems.

Young people presenting with physical or sexual health problems had quite a different pattern to those presenting with other concerns, although there was still a large component of engagement and assessment and mental health treatment. Young people who presented for AOD problems tended to have a greater need for engagement and assessment.

2 Service mix according to initial presenting problem or concern



Service providers and funding streams

The service providers that delivered most of each service type are shown in Box 3A. In line with the *headspace* service model — young people usually have an engagement and assessment session with an intake or youth worker during their initial appointment to gather information and to determine their needs — intake and youth workers provided almost half of the engagement and assessment service, followed by psychologists, who delivered almost 20%. Other allied mental health workers, including social workers and occupational therapists, provided just over 12%.

Mental health services were mostly delivered by allied mental health professionals (81%), with over half provided by psychologists; only 1.2% was provided by psychiatrists, and just over 10% by general practitioners. Almost all physical or sexual health service was provided by GPs or nurses. Specialist AOD workers undertook a third of AOD service, complemented by contributions from allied mental health workers. The small amount of vocational service was largely provided by specialised vocational workers, although a quarter was undertaken by intake and youth workers.

The provision of *headspace* services relies on a number of funding streams. The major sources for each service type are compiled in Box 3B. Engagement and assessment services were mostly funded by the *headspace* grant (71%) or through the MBS (21%). Nearly two-thirds of mental health services were funded by the MBS and a smaller contribution by the ATAPS program, with just under a third funded by the *headspace* grant. Physical and sexual health services were primarily funded through MBS items, but 22% was supported by *headspace* grant funds. In contrast, the main funding source for AOD and vocational services was in-kind support by co-located services or consortium partners.

It should be noted that there was variation between *headspace* centres in each of the parameters discussed here, but space precludes the presentation of detailed analyses. Generally, however, no major differences were associated with the size, age or geographical location of centres. The one exception was waiting too long; significantly fewer young people reported waiting too long at the most recently established centres than at centres established during the first three rounds of the *headspace* program (7.0% v. 10.6%; $P < 0.001$). The longest wait times were experienced in one large centre in a major city, where 27% of young people reported they had waited too long, compared with only 2% at each of a small inner regional and a medium-sized outer regional centre. Waiting too long was significantly more common at large centres (12.0%) than at medium (9.6%) and small (9.4%) centres ($P < 0.001$). It was also significantly more frequent in major cities (11.9%) than at inner regional, outer regional and remote centres (8.3%, 9.2% and 8.1%, respectively; $P < 0.001$).

3 Main service providers (A) and main funding sources (B) for each *headspace* service type*

(A)

	Main types of service providers (rank)			
Service type	1	2	3	4
Engagement and assessment	Intake/youth worker (46.4%)	Psychologist (18.6%)	Allied mental health (12.2%)	GP (7.4%)
Mental health	Psychologist (50.6%)	Allied mental health (17.2%)	Intake/youth worker (13.2%)	GP (11.5%)
Physical or sexual health	GP (76.1%)	Nurse (11.7%)		
Alcohol or drugs	AOD worker (31.4%)	Allied mental health (31.4%)	Intake/youth worker (13.2%)	Psychologist (10.3%)
Vocational	Vocational (38.4%)	Intake/youth worker (24.7%)	Miscellaneous† (16.5%)	Psychologist (8.2%)

(B)

	Main funding sources (rank)		
Service type	1	2	3
Engagement and assessment	*headspace* (70.8%)	MBS (20.9%)	
Mental health	MBS (57.4%)	*headspace* (29.5%)	ATAPS (7.8%)
Physical or sexual health	MBS (69.3%)	*headspace* (21.8%)	In-kind (6.7%)
Alcohol or drugs	In-kind (50.3%)	*headspace* (28.6%)	MBS (17.8%)
Vocational	In-kind (46.8%)	*headspace* (37.2%)	MBS (11.7%)

AOD = alcohol or drugs; ATAPS = Access to Allied Psychological Services; GP = general practitioner; MBS = Medical Benefits Scheme.

* A maximum of four service providers and three funding sources are reported here; contributions under 5% are not included. For these reasons, rows do not add to 100%.

† Consisting of various types of provider, mainly interns and placement, community engagement and education officers. ◆

Discussion

There is considerable interest in the *headspace* initiative because it comprises a significant investment by the Australian Government in an innovative approach to youth mental health. The results presented here show that the vast majority of young people specifically attend *headspace* centres for mental health problems, and that the next most common reason for attendance involves situational problems that affect the wellbeing of the young person, such as bullying at school, difficulty with personal relationships or grief. This is consistent with the general early intervention aim of the *headspace* initiative, and with the recognition that mental health problems and related risk factors are the primary health concerns for adolescents and young adults.[8]

A sizeable minority of young people initially attended *headspace* for physical or sexual health problems. For almost half of these clients, this led to a mental health consultation, supporting the contention that physical and sexual health care can and should be a pathway to mental health care (and vice versa).

The *headspace* initiative engages young people with a range of health and wellbeing concerns, not just those with mental health problems. Few clients, however, presented primarily for AOD problems and vocational difficulties, suggesting that these are more often accompanying problems than primary concerns for those attending *headspace* centres, although half of the *headspace* clients aged 17–25 years are looking for work (compared with less than 10% for this age group in the general population).[9] Funding for these two core streams relied primarily on in-kind contributions by *headspace* service partners, emphasising the value of the local partnership model that underpins service delivery, but also revealing vulnerability in terms of stable funding. Building the capacity of the *headspace* model to better support young people with vocational needs and secondary AOD problems should be a priority.

As young people are often reluctant to attend mental health services, receiving an appointment promptly after a young person has decided to seek help is crucial. The vast majority of *headspace* clients waited 2 weeks or less for initial service, a notable achievement. Wait times are a major barrier in traditional mental health services,[10] and minimising waiting is a distinguishing focus of *headspace*. Nevertheless, some clients waited longer, and wait times were longer in more established centres. Minimising wait times must remain a constant focus for *headspace* services, while continuing to respond to the growing demands of young people with a range of presenting problems. Engagement and assessment are also critical elements.

Australia claims to lead the world in innovative approaches to youth mental health care. Our results confirm patterns that diverge from traditional mental health service delivery, and we argue that these patterns are more appropriate for meeting the social and mental health needs of young people.[5]

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EXHIBIT 86

PDM-6

Changes in psychological distress and psychosocial functioning in young people accessing *headspace* centres for mental health problems

Abstract

Objectives: To examine changes in psychological distress and psychosocial functioning in young people presenting to *headspace* centres across Australia for mental health problems.

Design: Analysis of routine data collected from *headspace* clients who had commenced an episode of care between 1 April 2013 and 31 March 2014, and at 90-day follow-up.

Participants: A total of 24 034 people aged 12–25 years who had first presented to one of the 55 fully established *headspace* centres for mental health problems during the data collection period.

Main outcome measures: Main reason for presentation, types of therapeutic services provided, Kessler Psychological Distress Scale (K10) scores, and Social and Occupational Functioning Assessment Scale (SOFAS) scores.

Results: Most *headspace* mental health clients presented with symptoms of depression and anxiety and were likely to receive cognitive behaviour therapy (CBT). Younger males were more likely than other age- and sex-defined groups to present for anger and behavioural problems, while younger females were more likely to present for deliberate self-harm. From presentation to last assessment, over one-third of clients had significant improvements in psychological distress (K10) and a similar proportion in psychosocial functioning (SOFAS). Sixty per cent of clients showed significant improvement on one or both measures.

Conclusions: Data regarding outcomes for young people using mental health care services similar to *headspace* centres are scarce, but the current results compare favourably with those reported overseas, and show positive outcomes for young people using *headspace* centres.

all centres pursue a common vision of youth-focused, evidence-based, early intervention

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Improving the mental health and wellbeing of adolescents and young adults is receiving increasing attention throughout the world.[1] The Australian Government was the first to invest significant funds in a practical and systematic response to this challenge, initiating a national reform process that created new service platforms for young people through its founding of *headspace*, the National Youth Mental Health Foundation.[2]

The initiative commenced in 2006, establishing an initial 10 centres and is set to increase to a network of 100 centres across Australia by 2016. *headspace* centres are one-stop entry points offering a mix of the services that young people need most. Centres provide early intervention by responding to early presentations of mental health problems and by assisting young people at greater risk of developing mental disorders. Being youth-friendly and non-stigmatising are priorities, and centre activities are founded on youth participation and engagement at all levels.[3]

From the beginning, the *headspace* initiative has evaluated its activities, despite the significant challenges inherent in determining the outcomes of such a complex, long-term, real-world, system-wide intervention. A preliminary external evaluation in 2009 showed that young people approved the approach used by the initial centres.[4] At that time, however, it was still too early, in terms of implementation of the *headspace* initiative, to assess outcomes for the clients.

To facilitate investigation of the impact of the *headspace* centres, an innovative routine data capture system was introduced in 2013. This system collects information each time a young person accesses a *headspace* centre for service, and attempts to follow them up after they have finished engaging with the centre. Analysis of the dataset has shown that young people presenting to *headspace* centres have a wide range of mental health concerns, and are typically in the early stages of the development of a mental disorder.[5] Further analyses have explored the types of service young people receive at the centres. In the companion paper to this article, we report that most of the young people seeking help at *headspace* centres present with mental health concerns, that they generally receive a timely response, and receive assessment and mental health care services. We also found that the initiative is primarily supported by funding from the *headspace* grant and by the Australian Government Medical Benefits Schedule.[6]

The current study reports the main clinical outcomes for young people who had presented to *headspace* centres for mental health concerns. The primary aim was to determine the extent to which psychological distress was reduced and psychosocial functioning improved in *headspace* clients.

Methods

Participants and procedure

Participants were all clients who had commenced an episode of care at a *headspace* centre for mental health reasons between 1 April 2013 and 31 March 2014. Young people who initially visited *headspace* for other reasons (situational, physical or sexual health, alcohol or other drug, or vocational reasons) were excluded from analyses. This selection was made because young people presenting with mental health concerns comprise the vast majority of those who seek help at *headspace* centres and definitely use their mental health care services; young people primarily presenting for other reasons may not have used mental health care services (see the companion paper to this article[6]). Analyses were limited to a young person's first episode of care during the 12-month data collection period.

The procedure for the routine collection of data provided by the young people and service providers to the *headspace* Minimum Data Set is described elsewhere.[5] Data related to psychological distress were collected from young people immediately before their first, third, sixth, 10th and 15th visits, as well as at follow-up. Measures of psychosocial functioning were recorded by service providers at each occasion of service.

Young people were invited to consent to being followed up when they first attended *headspace*. They provided an email address, and data were solicited after a 90-day pause in service provision by sending an email with a link to the follow-up questions. Young people could choose to answer these questions electronically, and responses were uploaded into the *headspace* data warehouse. Ethics approval for the follow-up was obtained from Melbourne Health Quality Assurance Review.

Measures

- The *primary presenting concern* was categorised according to the clinical presentation features as determined by clinicians. These did not comprise diagnoses, but were rather the main symptoms evident at the initial presentation that were indicative of mental health problems.
- *Treatment services* were recorded by clinicians, and were categorised as: cognitive behaviour therapy (CBT), interpersonal therapy, acceptance and commitment therapy, psychoeducation (including skills training and relaxation strategies), general and supportive counselling, mindfulness-based therapies, motivational interviewing, problem-solving therapy, and other interventions.
- *Client outcomes* that were assessed were:
  - the level of psychological distress, based on self-reports according to the 10-item Kessler Psychological Distress Scale (K10);[7] and
  - overall psychosocial functioning, assessed by service providers using the Social and Occupational Functioning Assessment Scale (SOFAS).[8]

Appendix 1 presents the number of clients for whom data were available at key time points.

Statistical analyses

IBM SPSS Statistics 21 was used for statistical analyses. Frequencies of each primary presenting concern were calculated, and age group and sex differences were assessed by χ^2 analyses with Bonferroni correction for multiple comparisons.

Changes in each of the outcome measures over time were analysed in two ways.[9] First, mixed-model repeated measures analysis of variance (ANOVA) was used to assess aggregate changes over time in K10 and SOFAS scores according to time point, number of service sessions, age group and sex. The statistical relationship between K10 and SOFAS scores was expressed as a Pearson product-moment correlation coefficient (r). Differences between the characteristics of clients who provided follow-up data and those who did not were analysed by logistic regression.

Second, significant change, reliable change and clinically significant change scores were calculated for the K10 and SOFAS data, as increasingly conditional indicators of change. The criterion for significant change was a moderate effect size (0.5) or greater for the degree of change.[10] The reliable change index (RCI) (indicating reliable improvement or decline) and clinically significant change index (CSI) (cut-off point at which the person is more likely to belong to a non-clinical rather than a clinical population) were determined using Jacobson and Truax's method.[11]

For the K10 scores, the RCI was estimated as a 6.73-point change (rounded to 7 points) using reliability coefficients reported for an Australian normative group (age group, 16–24 years) in the 2007 National Survey of Mental Health and Wellbeing.[12] Using the same norms, the CSI cut-off was estimated to be 22.56 points (rounded to 23 points). For the SOFAS data, an RCI score of 10 was used; this was based on comparable outpatient psychiatric services data using the Global Assessment of Functioning scale as an equivalent. The CSI for the same comparison group was a score of 69 (Söderberg and Tungström [2006], cited by Falkenström[13]).

Results

The participants were 24 034 clients from the 55 *headspace* centres fully operational during the study period. Almost two-thirds of clients were female (62.7%), 36.9% were male and 0.4% were intersex or transgender. The mean age was 17.8 years (SD, 3.3), with 16.7% aged 12–14 years, 35.0% aged 15–17 years, 25.7% aged 18–20 years, and 22.6% aged 21–25 years.

Follow-up data were collected between June 2013 and August 2014. Of the total sample, 20 903 clients (87.0%) were eligible to provide follow-up data; the remaining 13.0% were still receiving *headspace* services or had not yet had a 90-day service-free period. Only 3.1% of eligible young people (651 clients) responded to the follow-up survey.

Presenting concern and treatment services

The most common mental health problems at initial presentation were depressive symptoms and anxiety, which together accounted for more than two-thirds of presentations. These were the most common presenting reasons for all age/sex groups, with the exception of 12–14-year-old boys, who presented most frequently with anxiety and anger problems and less frequently for depressive symptoms (Appendix 2).

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Age and sex differences among those presenting with mental health concerns were indicated by χ^2 analysis ($\chi^2[70] = 3300.57$, $P < 0.001$). The proportions of younger males (12–14 years of age) presenting for anger or behavioural problems was greater than for other age/sex groups. Younger females (12–14 years of age) had higher presentation rates for deliberate self-harm than other groups (Appendix 2).

The most common treatment provided for all primary presenting concerns was CBT; for example, 43.6% of service provided to clients presenting with depressive symptoms involved CBT. A similar pattern of treatments was evident for all primary presenting concerns, with the second most common treatment being supportive counselling (except for borderline personality trait presentations). Psychoeducation was ranked third for most mental health problems (Box 1).

Mean changes in outcomes over time

Changes in the two outcome scores over time are depicted in Box 2 and Box 3. These plot the mean scores at each session that they were recorded, according to the total number of sessions attended. The sample sizes for each point declined as the number of sessions attended increased (Appendix 3). The follow-up data analyses were based on a particularly small sample size; further, no clinician-rated measures were available at this point, as the follow-up was based solely on self-report.

For the change in K10 between initial presentation and last recorded assessment, the factor with the greatest effect size was time, which explained 10.8% of the variance

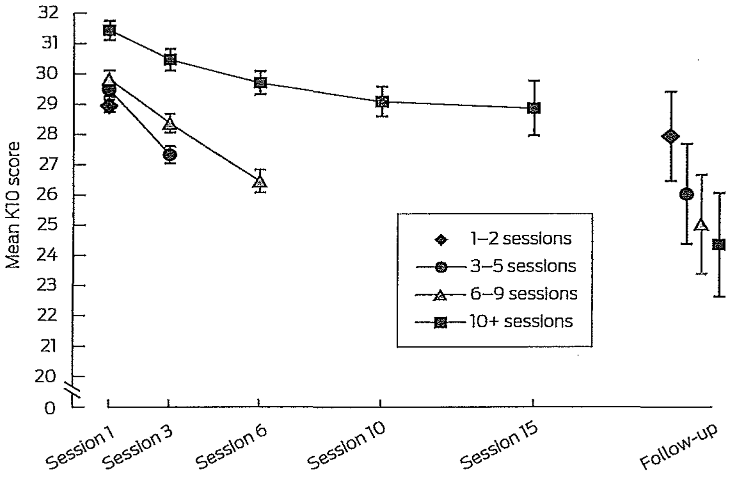
1 Most common types of mental health care service received by *headspace* clients, according to the primary presenting problem*

Presenting concern	Total sessions	Treatment services type rank: 1	2	3	4	5
Depressive symptoms	25708	CBT (43.6%)	Supportive counselling (18.6%)	Psycho-education (8.2%)	IPT (7.5%)	ACT (4.8%)
Anxiety symptoms	21516	CBT (47.0%)	Supportive counselling (14.6%)	Psycho-education (9.7%)	ACT (7.5%)	IPT (4.9%)
Anger problems	3859	CBT (36.7%)	Supportive counselling (21.3%)	Psycho-education (16.6%)	IPT (6.8%)	Motivational interviewing (3.3%)
Stress related	3521	CBT (34.0%)	Supportive counselling (21.9%)	Psycho-education (12.1%)	IPT (7.2%)	ACT (5.5%)
Suicidal thoughts or behaviour	2355	CBT (36.9%)	Supportive counselling (19.5%)	IPT (9.6%)	Psycho-education (9.2%)	ACT (5.1%)
Behavioural problems	1389	CBT (32.1%)	Supportive counselling (23.3%)	Psycho-education (18.8%)	IPT (4.7%)	ACT (3.6%)
Deliberate self-harm	1479	CBT (36.3%)	Supportive counselling (22.4%)	Psycho-education (11.8%)	IPT (6.6%)	ACT (5.8%)
Eating disorder related	1159	CBT (47.9%)	Supportive counselling (12.9%)	Psycho-education (8.4%)	IPT (7.1%)	ACT (6.0%)
Psychotic symptoms	531	CBT (33.5%)	Supportive counselling (23.0%)	Other (18.8%)	Psycho-education (12.2%)	IPT (7.9%)
Borderline personality traits	523	CBT (31.4%)	Other (18.2%)	Supportive counselling (17.8%)	Psycho-education (11.1%)	IPT (7.6%)
All presenting concerns	63221	CBT (42.8%)	Supportive counselling (17.9%)	Psycho-education (9.9%)	IPT (6.5%)	ACT (5.6%)

CBT = cognitive behaviour therapy. IPT = interpersonal therapy. ACT = acceptance and commitment therapy.

* Percentages refer to proportion of total mental health care sessions received by clients presenting with the respective concern. Percentages in rows do not add to 100% as other treatment modes were possible. ◆

2 Mean psychological distress scores (K10) at different time points



(Appendix 4, ANOVA 1; Box 2). Including the 3-month follow-up in the analysis showed that the time effect remained significant and explained 12.5% of the variance (Appendix 4, ANOVA 2). On average, there was a 3-point improvement in K10 scores from first to last assessment, and a further 3-point improvement from last service to follow-up for the small proportion of young people who provided follow-up data.

It is, however, important to note that the group of clients who provided follow-up data was significantly different from the much larger group of those who did not ($\chi^2[17]=153.43$, $P<0.001$, Nagelkerke $R^2=0.062$). Those who provided follow-up data were more likely to be female (odds ratio [OR], 1.63; 95% CI, 1.27–2.11), older (OR, 1.07; 95% CI, 1.04–1.11), have attended a greater number of service sessions (OR, 1.59; 95% CI, 1.39–1.82) and had better psychosocial functioning at exit (OR, 1.03; 95% CI, 1.02–1.05).

For change in SOFAS scores, time was again the strongest factor, but explained only 4.5% of the variance in this outcome measure (Appendix 4, ANOVA 3; Box 3).

Significant, reliable and clinically significant change

The percentages of young people showing significant, reliable and clinically significant change between their first and last recorded assessments (not including follow-up) are presented in Box 4. Of the young people for whom data were available, psychological distress was significantly reduced in 36%, was reliably improved in 26%, and clinically significantly improved (by crossing the threshold distinguishing a clinical from a non-clinical population) in 21%. In 13% of clients, K10 scores significantly worsened, and in 8% they reliably deteriorated. According to clinician ratings of psychosocial functioning, significant and clinically significant improvement were each evident for 37% of the assessed clients, while 31% reliably improved.

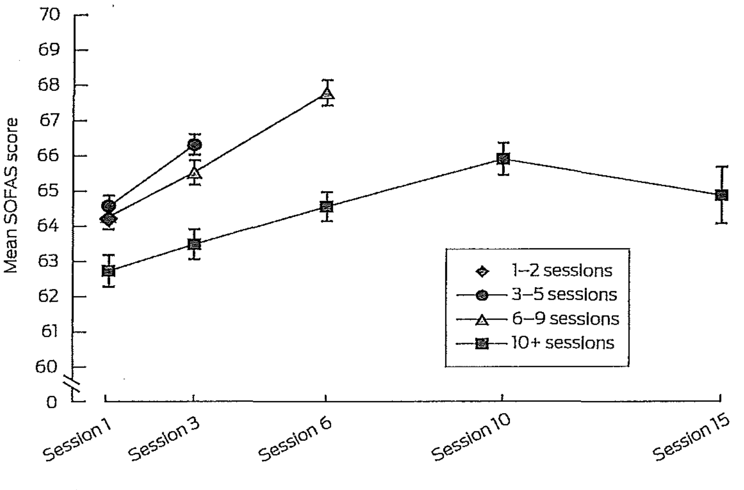
In contrast, function significantly declined in almost a fifth of clients, and reliably declined in 15%.

For 9957 clients, both K10 and SOFAS change data were available. Of these, 59.9% significantly improved and 49.2% reliably improved on at least one of the two scales, while 40.4% of those in the clinical group showed clinically significantly improvement on one or both of the scales.

It is important to note that the K10 and SOFAS scales measure different aspects of mental health, and that psychological distress (K10) was self-reported by young people, while social and occupational functioning (SOFAS) was assessed by a clinician. K10 and SOFAS scores were weakly correlated at presentation ($r=-0.19$, $P<0.001$) and at final assessment ($r=-0.23$, $P<0.001$).

There were statistically significant differences between those who improved and those who did not (significant improvement on at least one measure: $\chi^2[15]=1168.48$, $P<0.001$, Nagelkerke $R^2=0.153$). Improvement was predicted by greater distress (OR, 1.03; 95% CI, 1.02–1.04) and lower psychosocial functioning (OR, 0.94; 95% CI, 0.94–0.95) at service entry, and by attending a greater number of service sessions (OR, 1.16; 95% CI, 1.10–1.22). Age, sex and primary presenting concern did not predict improvement.

3 Mean psychosocial functioning scores (SOFAS) at different time points



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4 Proportion of young people showing significant, reliable and clinical change in psychological distress and psychosocial functioning between first and last service ratings

Measure	Method	Number of clients	Change category		
			Improvement	No change	Deterioration
K10	Significant change (effect size ⩾ 0.5)	10 228	36.1%	50.9%	13.0%
	Reliable change	10 228	26.2%	65.9%	8.0%
	Clinically significant change*	8205	21.1%	78.9%	NA
SOFAS	Significant change (effect size ⩾ 0.5)	15 496	37.1%	43.4%	19.5%
	Reliable change	15 496	30.9%	53.6%	15.5%
	Clinically significant change*	9556	37.0%	63.0%	NA

K10 = Kessler Psychological Distress Scale. SOFAS = Social and Occupational Functioning Assessment Scale. NA = not applicable: young people in the clinical population are, by definition, not able to deteriorate, but rather remain in the clinical population.

* It was not possible to assess the clinical improvement of young people who were in the non-clinical population at the first time point (19.8% of total sample for K10 and 38.3% of total sample for SOFAS); they were therefore excluded from this analysis.

◆

Discussion

This article reports the first outcome data for young people who have accessed the national *headspace* centre network for mental health problems. The analyses focused on the two key clinical outcomes, psychological distress and psychosocial functioning. The results show that psychological distress was significantly reduced in more than one-third of clients for whom data were available, and psychosocial functioning improved in a similar proportion. If improvement in either measure is considered, 60% of clients experienced significant change. Improvements in young people with greater distress and poorer functioning at service entry were noted in those who engaged well with the service (ie, attended more health care sessions). The findings are consistent with those reported from a single Sydney-based *headspace* service that found both symptomatic and functional improvements in its clients.[14]

Comparative data that would help determine whether these outcomes are acceptable are difficult to find. *headspace* clients present for a wide range of reasons and attend for varying numbers of sessions; although only outcomes for mental health clients were examined here, these young people still constitute a diverse group.[6] Comparisons with outcomes from highly controlled clinical studies are therefore inappropriate. A study of psychotherapeutic outcomes in similarly aged young people attending a mental health clinic in the Netherlands, where the clients also presented with a variety of mental health concerns and received varying amounts of service, found that psychosocial functioning reliably improved in 19% of clients.[13] This compares with the considerably higher rate of 31% that we have reported.

Comparative Australian data are scarce. Public tertiary mental health services use age bands of 0–17 and 18–64 years in their outcomes reports, and these are not comparable with either the age range of clients in these analyses or with the enhanced primary care service model of *headspace*. The most recent report from the National Outcomes and Casemix Collection (NOCC), which used the Health of the Nation Outcome Scales (HoNOS) family of outcome measures, showed that 37% of those aged 0–17 years and 24% of those aged 18–64 years using community-based public mental health services reported a significant improvement between the first and last occasions of service.[15] The outcomes in young people reported here are similar to the child and adolescent results of the NOCC report, but much better than its findings for adults. However, the degree to which HoNOS outcomes are comparable with K10 and SOFAS scores is unclear, and the lack of directly comparable age groups makes interpretation difficult.

Drawing conclusions from the current study is restricted by several limitations. Primarily, the absence of a control group and other limitations inherent to observational studies means that the changes in scores reported cannot be attributed to *headspace* care.[16] Further, most of the outcome data were derived from the last recorded assessment point for each client, but for many young people this was not at the completion of treatment. Our results are therefore likely to underestimate psychological and psychosocial gains in the course of treatment.

The follow-up rate was disappointing, although wholly expected, and highlights the considerable challenges in persuading young people to provide follow-up information after they have stopped attending for service. Without committing substantial resources to maintaining contact with people after leaving a health service, obtaining longer-term outcomes from real-world interventions will always be a major hurdle. Nevertheless, the *headspace* initiative has developed a process that attempts to routinely follow up young people after the end of service, and this may be unique in service delivery outside a well resourced prospective clinical trial. Over time, this follow-up database will grow and yield a rich source of information, even though there will be inevitable bias in those who provide follow-up data.

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Another limitation is that the data cannot clearly determine the extent to which *headspace* clients received sufficient and appropriately matched "doses" of evidence-based therapies for different presenting problems and diagnoses, although it is evident that most clients did receive evidence-based therapies. *headspace* centres differ considerably in both their priorities and their capacity as a result of the diverse community and workforce contexts in which they are embedded,[17] although all centres pursue a common vision of youth-focused, evidence-based, early intervention.[3] The complexity and severity of young people's presenting concerns also varies, with a substantial subset of young people who need, but are unable to gain, access to specialised tertiary services,[18] which may have an impact on average improvement scores for the total client group.

Nevertheless, this article demonstrates that *headspace* is committed to examining and reporting outcomes for young people using its services, and that the *headspace* centre initiative is associated with improved mental health outcomes for a large number of young people assisted by this network across Australia.

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EXHIBIT 86

EXHIBIT 86

PDM-7

headspace — Australia's innovation in youth mental health: who are the clients and why are they presenting?

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Abstract

Objectives: To provide the first national profile of the characteristics of young people (aged 12–25 years) accessing *headspace* centre services — the Australian Government's innovation in youth mental health service delivery — and investigate whether *headspace* is providing early service access for adolescents and young adults with emerging mental health problems.

Design and participants: Census of all young people accessing a *headspace* centre across the national network of 55 centres comprising a total of 21 274 *headspace* clients between 1 January and 30 June 2013.

Main outcome measures: Reason for presentation, Kessler Psychological Distress Scale, stage of illness, diagnosis, functioning.

Results: Young people were most likely to present with mood and anxiety symptoms and disorders, self-reporting their reason for attendance as problems with how they felt. Client demographic characteristics tended to reflect population-level distributions, although clients from regional areas and of Aboriginal and Torres Strait Islander background were particularly well represented, whereas those who were born outside Australia were underrepresented.

Conclusion: *headspace* centres are providing a point of service access for young Australians with high levels of psychological distress and need for care in the early stages of the development of mental disorder.

headspace National Youth Mental Health Foundation is the Australian Government's major investment in the area of youth mental health.[1] The National Survey of Mental Health and Wellbeing (NSMHW) revealed that one in four young people experience a clinically relevant mental health problem within any 12-month period, compared with one in five in the general population.[2] Half of a cohort of young people were shown to suffer diagnosable mental ill health at some point during the transition from childhood to adulthood, which reduces fulfilment of their potential and increases likelihood of disability and premature death.[3] Australian data are consistent with international trends and the adolescent and early adult years are periods of peak prevalence and incidence for most mental disorders.[4,5] Yet, despite having the highest prevalence, young people have the lowest level of professional help-seeking for mental health problems across the lifespan.[2]

headspace was initiated in 2006 to address the concerning mismatch between level of need and amount of mental health service use among adolescents and young adults.[1] The initiative is innovative in targeting the age range from early adolescence through early adulthood, maintaining that the traditional child and adolescent versus adult service divide creates a disjunction at precisely the time when there is greatest need for continuity.[6] There are now 55 *headspace* centres across Australia, scaling up to 100 centres in 2016.

The approach to service delivery has been described elsewhere,[1,7] but briefly, *headspace* centres aim to create highly accessible, youth-friendly, integrated service hubs that provide evidence-based interventions and support to young people aged 12–25 years around their mental health, health and wellbeing needs. Each centre is directed by a lead agency on behalf of a local partnership of organisations responsible for the delivery of services, comprising mental health, alcohol and other drug, primary care, and vocational services. The main aim is to improve outcomes for young people by addressing the major barriers to service use for young people,[8,9] and enabling better access to and engagement in early intervention services that provide holistic and integrated care.

The current study provides the first comprehensive profile of *headspace* clients across the entire national network of the current 55 centres. It is timely to investigate the demographic characteristics of young people presenting to *headspace* centres and their reasons for presentation to determine whether *headspace* is providing early service access for adolescents and young adults with emerging mental health problems.

Method

Participants and procedure

Participants were all *headspace* clients who received a centre-based service between 1 January and 30 June 2013. This comprised data from 21 274 clients across the 55 current *headspace* centres. The centres have been operational for varying periods of time, including 10 round 1 centres (established in 2007), 20 round 2 centres (2009), 10 round 3 centres (2011), and 15 round 4 centres established in the past 12 months.

A major review in 2012 of routine data collected by *headspace* found that beyond basic demographics, the information was generally of poor quality. Consequently, a new minimum dataset was implemented from the beginning of 2013. This requires young people accessing *headspace* centres and their service providers to enter data into an electronic form about each occasion of service. Data are de-identified by encryption and extracted to the *headspace* national office data warehouse.

Measures

Client demographic characteristics comprised age in years, sex, Aboriginal and Torres Strait Islander background, country of birth, living situation and current occupation.

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1 Proportion of *headspace* clients reporting each main reason for presentation, by sex and age group

	Male				Female			
	12–14 years	15–17 years	18–20 years	21–25 years	12–14 years	15–17 years	18–20 years	21–25 years
Proportion of total male or female clients	13.4%	30.4%	27.3%	28.9%	11.5%	36.8%	27.1%	24.7%
Reason for presenting								
Feelings	62.3%	66.7%	73.8%	76.3%	67.5%	71.9%	70.2%	72.6%
Relationships	19.6%	14.1%	9.3%	8.0%	19.6%	13.3%	8.7%	7.8%
School/work	16.2%	10.2%	4.2%	3.9%	9.9%	6.2%	3.4%	4.0%
Physical health	1.1%	3.4%	4.6%	5.5%	2.4%	5.2%	12.0%	11.8%
Alcohol/drugs	0.6%	3.6%	4.8%	4.3%	0.2%	0.5%	0.9%	1.1%
Vocational	0.1%	1.6%	3.1%	1.9%	0.1%	0.4%	0.9%	0.6%
Sexual health	0	0.4%	0.3%	0.1%	0.3%	2.6%	3.9%	1.6%

Client clinical presentation characteristics were measured through self-reported reason for presentation, as well as by clinician diagnosis according to relevant World Health Organization ICD-10 classifications of mental and behavioural disorders. Level of psychological distress was measured by self-report using the 10-item Kessler Psychological Distress Scale (K10),[10] while stage of illness was estimated by clinicians using the categories of no mental disorder, mild to moderate symptoms, subthreshold symptoms not reaching full diagnosis, diagnosed disorder, periods of remission, or serious and ongoing disorder without periods of remission.[11] Days out of role were self-reported,[12] and overall functioning was assessed by clinicians using the Social and Occupational Functioning Assessment Scale (SOFAS).[13]

Results

Client demographic characteristics

The proportion of male and female clients in each age group is shown in Box 1. The peak age of presentation was 15–17 years, and relatively more males presented in the youngest (12–14 years) and oldest (21–25 years) age groups. Overall, 63.7% of clients were female and 35.6% were male, with only 0.7% reporting that they were intersex, transgender or transsexual. The NSMHW showed that 30% of young women and 23% of young men had experienced mental disorder in the past 12 months.[14]

There were 7.7% of clients who identified as Aboriginal or Torres Strait Islander, compared with 2011 census data showing that 4.0% of Australians aged 12–25 years identify as Aboriginal or Torres Strait Islander.[15]

Clients who reported being born outside Australia comprised 7%, compared with 15% of the population aged 10–24 years in 2007–2008.[16] Consistent with population trends, the most common places of birth outside Australia for *headspace* clients were England and New Zealand. Ninety-four per cent reported speaking only English at home, which compares with 80.3% in the general population aged over 5 years.[17]

Over half the clients (57.1%) lived in major cities, while 31.2% lived in inner regional areas, 9.6% in outer regional, and 2.1% in remote or very remote areas. This compares with 2012 estimates from the Australian Bureau of Statistics that 70% of the youth population lived in major cities, 18% in inner regional areas, 9% in outer regional and 2% in remote or very remote areas.[18]

Most *headspace* clients had stable accommodation (86.6%), but there were 10.3% for whom accommodation was an issue, 2.4% who reported that they were at risk of being homeless, and 0.7% who were currently homeless. This compares to 0.7% of the Australian population aged 12–24 years who were estimated as being homeless or in marginal housing in the 2011 census.[19] Security of housing decreased markedly with age among *headspace* clients, from 94.0% of those aged 12–14 years to 81.5% of those aged 21–25 years.

Many clients were currently engaged in education, with 46.7% at school and 21.0% in higher education. Among those aged 18–25 years, 29.0% were not engaged in employment, education or training, which compares with 27.3% in the population.[20]

Presentation characteristics

Overwhelmingly, the main self-reported reason for young people presenting at *headspace* centres was having problems with how they felt (71.6%); specifically, almost a quarter first presented feeling sad or depressed (24.9%) and 12.7% were feeling anxious. The next most common reason was having relationship problems (11.4%), followed by physical health issues (6.6%), school/work problems (6.0%), alcohol or other drug problems (1.7%), sexual health issues (1.6%) and vocational concerns (1.0%). Reasons for presenting varied by age and sex (Box 1). Relationship and school issues decreased with age, while problems with feelings increased, especially for males. For females, health and sexual health reasons for presentation increased with age, while alcohol and other drug and vocational issues become more pressing for males.

Over half (69.3%) of the young people attending *headspace* did so with high or very high levels of psychological distress (Box 2). This compares with only 9% in the general community aged 16–24 years, and 21% of young people diagnosed with mental disorder in the NSMHW.[14] Males aged 12–14 years were most likely to present with the lowest levels of psychological distress, while females aged 15–20 years were most likely to present at the highest level of distress. By early adulthood, the distress levels of males and females con-

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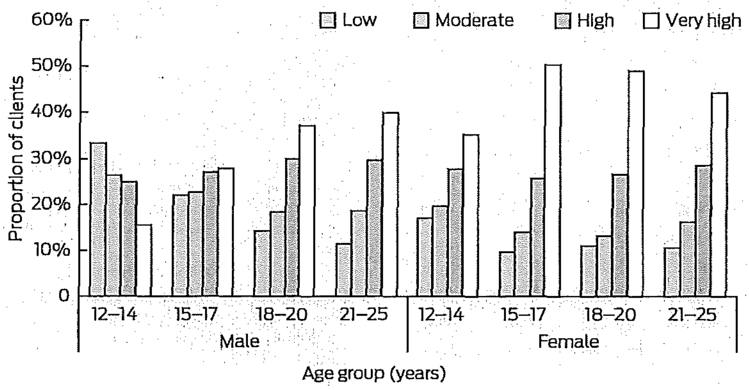
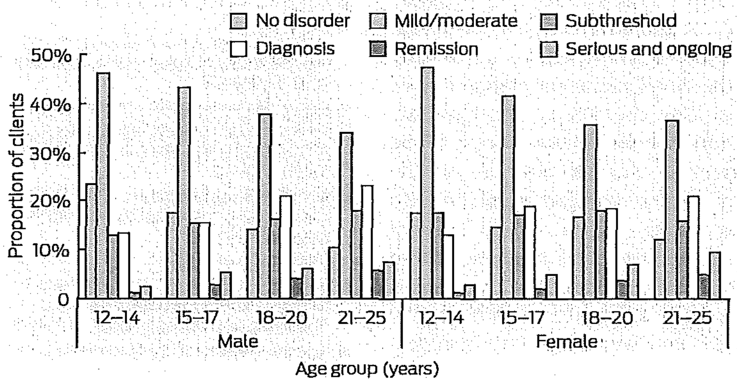
2 Proportion of *headspace* clients at each level of psychological distress, by age group and sex



3 Proportion of *headspace* clients at each stage of illness, by age group and sex



verged. These patterns were reflected in the mean K10 scores. For males, these increased from 20.7 (standard deviation [SD], 8.2) for those aged 12–14 years to 26.9 (SD, 9.0) for those aged 21–25 years. The increase for females was less pronounced, from 25.7 (SD, 9.4) to 27.7 (SD, 9.1) for those aged 12–14 years and 21–25 years, respectively. Only the younger boys had a mean in the moderate range for the K10; means for all other age groups were in the high-distress range.

Stage of illness development reflected the expected age-related trajectory using a population health approach based on the spectrum of mental health interventions[21] (Box 3). Overall, there were 14.6% of clients with no mental disorder, 39.6% with mild to moderate symptoms, 16.9% with subthreshold diagnosis, 18.8% with full-threshold diagnosis, 3.5% with periods of remission, and 6.4% with serious and ongoing mental disorder. With increasing age, there were fewer clients in the no mental disorder and mild to moderate groups, relative stability in the subthreshold group, and increased proportions in the full-threshold diagnosis, remission, and serious or ongoing disorder categories.

These trends were confirmed by self-report of whether prior mental health care had been received. Overall, a third of clients reported never previously seeing a mental health professional. The proportion declined with age: 51.6% of 12–14-year-olds, 41.9% of 15–17-year-olds, 31.5% of 18–20-year-olds, and 26.4% of 21–25-year-olds.

Twenty-nine per cent of clients were estimated by clinicians to have full-threshold, remission, or serious and ongoing disorder, yet almost a third of these had no actual clinical diagnosis recorded at presentation, and a further 6.7% were reported as diagnosis not yet assessed. The most common diagnoses recorded were mood disorders (28.2%), followed by anxiety disorders (17.3%), adjustment disorder (4.3%), personality disorders (2.7%), developmental disorders (2.3%), substance use disorders (1.8%), psychotic disorders (1.6%) and eating disorders (1.2%).

Self-reported days out of role in the previous 2 weeks revealed a trend of increasing disability due to mental health problems with age. This was most pronounced for males, who were most likely to report no days out of role when aged 12–14 years (55.5%), decreasing to 44.5% for those aged 21–25 years. For females, this decrease was less pronounced, from 41.2% for those aged 12–14 years to 38.4% for 21–25-year-olds. Overall, 40.6% of *headspace* clients reported no days out of role, 22.8% reported 1–3 days, 17.8% reported 4–6 days, 6.2% reported 7–9 days, and 12.5% reported more than 10 days out of role in the past fortnight.

Social and vocational functioning, as reported by service providers, showed a similar pattern. The proportions of clients with serious or major impairment (SOFAS scores < 50) were 11.2%, 11.9%, 17.0% and 19.4% for males in each of the ascending age groups, respectively; and 8.1%, 10.0%, 12.3% and 12.6% for females. The mean SOFAS scores were similar across age and sex and closest to the anchor defined as "Moderate difficulty in social, occupational, or school functioning (eg, few friends, conflicts with peers or co-workers)".

Discussion

These are the first data that describe the young people presenting to *headspace* centres across Australia. Such information is timely, as the initiative is now established and attracting national and international interest. Therefore, it is important to examine whether *headspace* centres are being accessed by their intended target group.

The results show that almost two-thirds of *headspace* clients are female, which partly reflects the sex difference in the distribution of mood and anxiety disorders for this age group within the Australian population.[14] However, in the future, *headspace* will need to respond more effectively to mental ill

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health in young men, which typically manifests through substance misuse and behavioural problems, conditions that can mask underlying emotional disorders. The higher proportion of Aboriginal and Torres Strait Islander clients, compared with their proportional representation in the overall population, indicates the need for mental health support in this population group and that the youth-friendly focus of *headspace* centres may be attractive to young Aboriginal and Torres Strait Islander people. In contrast, there is a lower proportion of clients born outside Australia compared with their proportional representation in the overall population, which suggests that some of these demographic groups may still experience significant barriers to service use.

That a third of the young adult *headspace* clients were not engaged in education, employment or training indicates the vulnerability of youth with mental health issues to disengagement from vocational opportunities. This is a situation that must be addressed, particularly during the current period of growing unemployment.[22]

headspace is serving young people outside major metropolitan areas — an excellent outcome for Australia, which struggles to provide an effective mental health service response in regional and rural areas.[23] There has been a deliberate strategy to locate *headspace* centres in regional areas, with the aim of eventually providing national coverage so that all young people have reasonable access to services.

The presenting issues for young people attending *headspace* centres are primarily problems with how they feel, mostly related to feeling depressed or anxious. The initiative was set up to better respond to the need for care for such high-prevalence mental ill health in young people. However, formal diagnosis of mental disorder by an appropriately qualified clinician is available for only a small proportion of clients. This partly reflects the multidisciplinary nature of the *headspace* workforce, many of whom are not trained in formal diagnosis and who use psychotherapeutic approaches that are not diagnosis driven. It also suggests the need for an expanded diagnostic approach that incorporates clinician assessment of at-risk and subthreshold conditions.[24] Over half the young people presenting were in the early stages of the development of mental disorder, having mild to moderate or subthreshold symptoms, as specifically targeted by the initiative. Nevertheless, almost 20% had an established disorder and about 10% had a serious ongoing disorder, showing the wide range of clinical presentations that *headspace* centres need to accommodate.

This description of the presenting characteristics of young people accessing *headspace* centres suggests that the initiative is mostly achieving its aim to improve service access early in the development of mental illness, although there are demographic groups where access needs to be improved. Further analyses of the new minimum dataset are planned, to examine the types of services that *headspace* clients are receiving and to determine whether the approach is making a difference to their mental health and wellbeing. Importantly, a process to obtain follow-up data 3 months after young people have received their last service was implemented several months after the initial implementation of the new minimum dataset, and these outcome data will be available for analysis early in 2014. Such analyses, and other evaluation efforts, are required to determine whether *headspace* is delivering on the aims of this innovative initiative.

Competing interests: We are all employed by or directly involved with *headspace* National Youth Mental Health Foundation.

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PDM-8

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REVIEW

Innovations in the design of mental health services for young people: an Australian perspective

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Abstract: Youth mental health reform has become a major growth point in mental health reform in Australia and in several other countries internationally. This is based on a growing appreciation of the epidemiological data, new knowledge of the developmental changes during the transition to adulthood, growing concern from parents and young people themselves at the neglect of their major health needs during this stage of life, and, perhaps decisively, the economic imperatives. Young people on the threshold of productive life are not realizing their full potential owing to the impact of untreated or poorly treated mental ill-health on their psychosocial, educational, and vocational development. Yet this issue, while of obvious importance to societies around the world, has only come to the fore through entrepreneurial and reform-oriented thinking within the mental health field in a number of regions of the world. Such thinking has been embraced by policymakers in some societies and by the general public; however, it has been challenged and resisted by sections of the mental health profession. It is of equal importance to understand the sociology of such a reform process as to assemble the evidence and know-how to engineer and evolve the reform itself. This paper describes our experience in conceptualizing, designing, advocating for, and guiding such reform in Australia, aspects of which have now been adopted in other jurisdictions, notably Ireland, the UK, and Canada.

Keywords: youth mental health, early intervention, pre-emptive psychiatry, service reform, clinical staging, psychosocial development

Introduction

While mental health issues are the key health concern for young people today, contributing 45% of the total burden of disease for those aged between 10 and 24 years,[1] adolescents and young adults have the poorest access to mental health care of all ages across the life span. For example, the most recently available Australian data showed that in 2008 only 13% of young men aged between 16 and 24 years with a mental health issue had accessed professional help, with this figure increasing to approximately 30% for young women.[2] Other large-scale studies, such as the US National Comorbidity Survey Adolescent Supplement,[3] have shown similar results. Investigation of the epidemiology and age of onset of the major mental disorders has shown that the number of new cases peaks in late adolescence/early adulthood, with 75% of all new onsets appearing before the age of 25 years.[4] Because this peak occurs during the critical developmental window of emerging adulthood[5] and subsequently impacts the most productive years of adult life, the World Economic Forum has recently calculated that among all the noncommunicable diseases, mental illness poses the greatest threat to

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worldwide gross domestic product over the next 20 years, clearly surpassing cancer and rivaling even cardiovascular disease.[6]

Despite these statistics indicating their need for mental health care, young people have poor access to, and engagement with, primary and specialist mental health care. They are notably reluctant to seek help for emotional concerns from mainstream health services.[7,8] There are many reasons for this, but one of the key barriers is the structure and culture of our existing health services. Our primary care services are largely geared to catering for physical ill-health, and because young children and older adults bear most of the physical health burden, their needs are considered first in the design of these services. Consequently, they are typically alienating, or at best "off-key", to young people, who fail to engage.[9]

Young people and their families who seek help from the specialist mental health system face an even more difficult situation. This is primarily the result of poor resourcing and inappropriate system design. Young people's complex and evolving symptom profiles often do not meet the narrow criteria required for acceptance, particularly into an adult service, despite the significant distress and impairment they experience.[9] This is because the adult services are designed around the needs of older adults with well-established illness, while the child and adolescent services largely focus on the needs of younger children within their family, educational, and social contexts, with an artificially imposed age cut-off of 18 years.[10] This represents a fatal design flaw, not only because of the differences in their culture, focus, and therapeutic approach, but also because the discontinuity falls right within the age range where the incidence of new onsets peaks,[11] rendering the system weakest where it should be strongest. Furthermore, transitions from one "system" to the next are hugely problematic, with many falling between the cracks.

The need for system reform

Fundamental system reform is urgently required to improve young people's access to mental health care, as well as the quality and continuity of the care they receive. A specific service stream able to accommodate the unique clinical, developmental, and psychosocial needs of young people is appropriate for two major reasons: firstly, young people in the early stages of a mental illness tend to present with blends of comorbidities of variable intensity and stability, particularly substance abuse and challenging personality traits, which require an integrated model of care.[9] Services that acknowledge these complex and evolving patterns of morbidity and symptomatic fluidity and that are able to manage them appropriately and sensitively are necessary. Secondly, developmentally appropriate approaches are essential for the management of emerging disorders; young people's individual and group identity and understanding of their social world needs to be central to any service model.[12,13] Practically, this means creating a new youth mental health model that links with, but is separate in culture, skills, and expertise from, systems for younger children and older adults.[14] This type of model tackles the issues of poor access to, and engagement with, care and the difficult transition between the current service streams[15] and has the potential to overcome these major flaws in our existing system. The key principles and features of youth mental health services are summarized in Figure 1. Ideally, to respond to the high incidence and prevalence of mental health issues in young people, different service levels that cover the full spectrum, complexity, and severity of illness are required, including e-health, primary care or enhanced primary care services for those with mild to moderate mental health issues, through to more specialized services for those with complex and more severe forms of illness.[16]

Although more than 50% of young people will experience mental ill-health during the transition to adulthood,[12,17–19] much of this mental ill-health is mild to moderate in nature. For many young people, these issues tend to resolve by the late 20s.[19] However, if left untreated and unsupported, even short-lived or moderate mental ill-health typically comes with a substantial cost to the young person, in terms of poor social functioning, underachievement, and educational or vocational failure, as well as a significant risk of persistence, self-harm, or even premature death. The argument that illness can resolve as young people mature is not a valid reason to fail to provide safe, secure care that is appropriate to the stage of illness throughout the period of need. Physical ill-health, such as asthma, in young people is readily treated, even though it too often resolves over time. Furthermore, for the not insignificant proportion of young people whose mental health issues do not in fact resolve with time but persist and/or worsen, compelling evidence demonstrates that persistent mental health problems in adolescence significantly increase the risk of mental illness in adulthood.[9,17–19] It is this risk that underpins the momentum for early intervention, with the ultimate aim of preempting and preventing the emergence of serious and enduring illness.

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- Youth participation at all levels, to enable the creation of youth-friendly, stigma-free cultures of care that provide what young people and their families really need
- Care that reflects the epidemiology of mental ill-health in young people and that acknowledges the developmental culture of emerging adulthood
- A holistic, preventive, and optimistic framework that emphasizes early intervention and offers evidence-informed stepped care governed by risk-benefit considerations and shared decision-making, with social and vocational outcomes as the key targets
- A "one-stop shop" where providers are organized around the needs of the young person and their family, and through which a dedicated team of clinical and non-clinical personnel provides the full care cycle for the young person's condition
- The elimination of discontinuities at peak periods of need for care during developmental transitions
- Positive and seamless linkages with services for younger children and adults
- Flexible tenure and re-entry to care as needed during the critical period of transition to adulthood

Figure 1 Key principles for youth mental health services.

The complexity and relative nonspecificity of young peoples' symptom profiles mean that different treatment approaches are required than those for full-threshold illness. Simpler and safer forms of intervention are the first step, and they need to be tailored to the early stages of illness, and aim to be preemptive, with a strong preventive focus. This sits comfortably within a clinical staging approach, which differentiates earlier and milder clinical phenomena from those that accompany illness extension and progression, and thus enables an agnostic, rather than a traditional diagnostic approach to treatment, at least in the early stages of illness.[20] Here, it is the persistence of symptoms, distress, and functional impairment, as well as the risk or reality of comorbid alcohol and substance abuse[21] and self-harm and suicidal ideation[22] that indicate a need for care, both on immediate clinical grounds as well as the risk of progression of illness.[9] This explicit acknowledgment of the early stages of illness and need for care provides a more clinically useful framework than other diagnostic reforms. Clinical staging is sensitive and tied to risk/benefit considerations and facilitates the selection of safer interventions early on. It may have particular relevance in the context of youth mental health, where the onset of mental ill-health and illness is most common, and full-threshold syndromes according to traditional systems of diagnosis are often not yet apparent, even though the need for care is.[12]

New models for youth mental health care

Care for the majority of young people is perhaps best provided in the context of stigma-free, youth-friendly primary or enhanced primary care structures; while those with more severe or established illness need more rapid and direct access to specialized youth mental health services. Over the last few years, reform in the delivery of youth mental health services has been gaining ground, inspired in no small part by the success of the early psychosis movement and its service reforms.[12,13,16,23–26] In a groundbreaking first step in youth mental health, in 2006 the Australian Federal Government established headspace, the National Youth Mental Health Foundation, which was tasked with devising and building 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.[27] Each center is operated by an independent local consortium of service providers, commissioned through and contracted with the headspace national office, based in Melbourne. Each headspace center functions as an integrated, multidisciplinary practice that provides four core service streams: mental health, drug and alcohol services, primary care (general health, sexual health), and vocational/educational assistance, with a mix

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of staff that comprises medical, nursing, allied health, and specialist practitioners. Other needs are met through referral to linked agencies, which are often represented in the local consortium, such as specialist mental health and housing services. This welcoming and holistic "one-stop shop" venue aims to minimize the stigma often associated with traditional and specialist mental health services, and to provide clear and accessible pathways to a range of local services relevant to young people.[27] The therapeutic approach centers on brief psychosocial interventions, which are used as first-line therapy with the aim of preventing the development of sustained illness (for example, Parker et al).[28] Medication is used as an additive or second-line therapy, and only if the young person does not respond to initial psychosocial interventions, or presents at the outset with more severe symptoms and/or high levels of risk. This stepped care model ensures that care is safe and linked to the actual stage of illness, and offers a preemptive approach to therapeutic intervention. In addition to the current 74 walk-in centers available around the country, headspace also runs a nationwide online support service (eheadspace; http://www.eheadspace.org.au) where young people can talk with a mental health professional either online or by telephone and access assessment and therapeutic care, and headspace school support, a suicide postvention program for schools affected by the suicide of a student.

The majority 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; 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 mental health services (CAMHS)/adult system.[29] To begin to address this need, in 2011 the Australian Government funded the creation of up to nine "enhanced headspace" services, which are now beginning to deliver evidence-based early psychosis services, offering early detection, acute care during an initial psychotic episode, and recovery-focused continuing care featuring multimodal interventions to support the young person (and their family) to maintain or regain their social, academic, and/or career trajectory during the critical first 2–5 years following the onset of a psychotic illness.[30] The first of these enhanced services (known as hYEPPs or headspace Youth Early Psychosis Programs) commenced operation in 2013, embedded with clusters of headspace centers at a regional level and drawing on their links with locally available services. It is hoped that they will ultimately be expanded to cover not only all headspace communities, but also the full diagnostic spectrum in young people with any severe mental illness.

A comprehensive sample of 22,000 young people assessed by headspace nationally revealed that headspace appears to be successfully addressing the issues of access and engagement,[29] a conclusion further evidenced by the heavy demand for eheadspace services from across the nation. However, headspace is still a work in progress. Important gaps remain, notably the fact that more than half of the Australian community is not yet covered, as the current level of funding does not yet allow full national coverage. Furthermore, access rates for young men, some ethnic populations, and young adults, while improved, are still too low, and the program does not yet adequately cover those with serious mental illness. More specialized care for the more complex subset of young people who can access care via the headspace portal is also an urgent funding priority.

The long-term aim of these reforms is to develop a nationwide youth mental health stream of care that fully integrates care for young people with other service systems; notably education, employment, housing, and justice, in order to provide a seamless coverage of mental health care from puberty to mature adulthood at around 25 years of age, with soft transitions with child and adult mental health care and links with other mainstream services as appropriate. This system acknowledges biopsychosocial development and recognizes the complexity and challenges faced by young people as they become independent adults, as well as the burden of disease imposed on this age group by poor mental health. In fact, with its multidisciplinary approach, it also deliberately seeks to blur the distinctions between traditionally separate tiers of primary and specialist care, including some aspects of acute care, in recognition of the complexity of the presentation of much of the mental ill-health apparent in young people, allowing a flexible and appropriate response for each individual, depending on their own unique needs.

The Australian National Mental Health Commission, in its 2013 Report Card on National Mental Health and Suicide Prevention,[31] has explicitly recommended that "national, systematic and adequately funded early intervention approaches must remain [but that] this must be accompanied by robust evaluation to support investment decisions, with a focus on implementation, outcomes and accountability". Clearly, the success of Australia's reforms will ultimately only be able to be determined after careful and repeated evaluation, and evidently more high-grade health services research is necessary to develop, refine, adapt, and evaluate this new service model. An independent evaluation has just been completed, and this will no doubt inform the further evolution of the headspace model. However, the indications are that the model is justified, not only purely on the grounds of the significant improvement it offers in terms of access to care, which has been acknowledged by policymakers both nationally and internationally, but also indications of early benefit for the majority of patients.[32,33] Similar youth mental health models, based on the headspace approach, have now been implemented in other countries, such as the UK,[13] Ireland,[13] Denmark, and Singapore,[25,26] and are proposed for Canada, the United States, and Israel. These various services have been adapted to their local contexts and offer somewhat different models of care to headspace, but all have in common the key principles of youth-focused, multidisciplinary comprehensive care in a stigma-free, community-based center.

The challenge of change: achieving transformational reform

The process of initiating and sustaining these reforms in youth mental health shares some characteristics with the earlier wave of reform in early psychosis. Here, innovative and entrepreneurial thinking have provided proof of their value in mental health care, with the successful evidence-informed upscaling of early intervention in psychosis, now available in specialized services across hundreds of locations and numerous national health systems.[34–38] This thinking has inspired the development of new youth mental health models with the potential to create significant savings, in terms of both human suffering and economic costs to society.[13]

However, psychiatry and the mental health field more generally remains conservative, and entrepreneurial thinking, even when committed to the principles of evidence-informed health care, is often viewed with suspicion. This is to a large extent due to our historical legacy. Psychiatry and the mental health field more generally have been characterized by immunity to reform from the 19th century through to the late 20th century. The asylum era and psychoanalysis were 19th century ideas that threw a heavy shadow over reform. We also witnessed a series of "great and desperate cures", which, guided by enthusiasm more than evidence, took the field down some dark pathways and harmed many patients. The current status quo, which is narrow and under pressure, reacts badly to change, and this is even more so since deinstitutionalization, which general consensus considers as largely botched, short-changing patients and society as a whole. We do have a way forward at the macro level, but we need to overcome a number of genuine obstacles.

The current reality is that despite its much greater projected impact on human suffering and productivity over the next 20 years, mental health continues to be seriously underfunded in comparison with cancer, cardiovascular disease, diabetes, and other noncommunicable diseases. As health expenditure continues to rise worldwide, we must increasingly consider our spending priorities and channel future health funding into those areas that will benefit people and society the most. This will require a reorganization of our health care system that makes value – defined as the best outcomes for clients for the lowest cost – the overarching goal.[39] Since approaches that deliver better mental health are best positioned to deliver value at a lower cost than other health expenditures, these should be strongly prioritized. This means affirmative action and preferential investment in mental health care.[9] Obvious priorities in this area that will produce health gain and value include achievable prevention targeting younger children and parenting, and early intervention strategies for emerging mental ill-health in children and especially in young people. Mental health care needs to shift its focus from our historical, and largely palliative, approach to care to a more preemptive and preventive focus to enable the greatest potential public health gains.

How can this be achieved? The first step is to respect and nurture innovation and the entrepreneurial spirit. Innovation is a vital ingredient if we are to dispel the current largely palliative mindset in mental health care. Innovation encompasses new thinking, new treatments, and new service models, all of which we desperately need. It is driven by a genuine need for change and requires creativity, reasonable evidence, independent champions, and substantial public involvement to enable new resources and systems of care to be developed and implemented. The establishment of headspace is an example of this process: it was inspired by the need for change, designed and championed by a group of clinician scientists and translational researchers, demanded by the public, and progressively funded by the Australian Government. The scaling up literature,[40,41] again a body of knowledge that cuts across many fields of endeavor, bears witness to the key elements that are required for success in achieving transformational reform. There are often serious threats and resistance to such reform. "Merchants of doubt"[42] representing vested interests may undermine the credibility of reform and reformers, and need to be recognized and responded to. Issues of power and control may overwhelm or even derail the original objectives of the reforms. Innovation in health care is hard won and too often fragile. Mental health needs innovation more than any other area at a number of

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levels; the youth mental health reforms represent green shoots that must be carefully nurtured.

Conclusion

The best opportunity for obtaining real benefits in mental health care lies in system reform based on the principles of early intervention and a priority focus on the developmental period of greatest need and capacity to benefit from investment, emerging adulthood. This by no means argues against investments in earlier or later life stage care, which are also essential. Indeed, international health and welfare organizations such as the World Health Organization[43] and United Nations Children's Fund[44] recommend a strong focus on adolescent health, including mental health, and the provision of adolescent-friendly health services as necessary for future development and prosperity. A number of leaders, policymakers, and service developers are now working together to create international momentum to address the mental health needs of young people and their families (http://www.iaymh.org/). The arguments for this type of transformational reform are resonating strongly with the community and with policymakers, and it is hoped that the 21st century clinical infrastructure and cultures of care, such as headspace, that result from these efforts will be able to reduce the lifelong impact of mental ill-health on our health, happiness, and prosperity over the next two decades and on into the future.

Disclosure

Professor McGorry is the Executive Director of Orygen, the National Centre of Excellence in Youth Mental Health. He played a leading role in the design and establishment of headspace, the National Youth Mental Health Foundation, and is currently the Director of the headspace Board. The author reports no other conflicts of interest in this work.

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Adolescent mental health 2

Cultures for mental health care of young people: an Australian blueprint for reform

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Mental ill health is now the most important health issue facing young people worldwide. It is the leading cause of disability in people aged 10–24 years, contributing 45% of the overall burden of disease in this age group. Despite their manifest need, young people have the lowest rates of access to mental health care, largely as a result of poor awareness and help-seeking, structural and cultural flaws within the existing care systems, and the failure of society to recognise the importance of this issue and invest in youth mental health. We outline the case for a specific youth mental health stream and describe the innovative service reforms in youth mental health in Australia, using them as an example of the processes that can guide the development and implementation of such a service stream. Early intervention with focus on the developmental period of greatest need and capacity to benefit, emerging adulthood, has the potential to greatly improve the mental health, wellbeing, productivity, and fulfilment of young people, and our wider society.

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This is the second in a Series of three papers about adolescent mental health

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Introduction

More than a quarter of the world's population is aged between 10 years and 24 years, and about 90% of these individuals live in low-income or middle-income countries.[1] A strong focus on the health of young people is crucial, because their health now determines the health and prosperity for future generations worldwide. Many of the patterns of long-term health-related behaviours are initiated and become established during adolescence and early adulthood.[2] This phase of life is also when most of the major adult-type mental disorders emerge.[3] With the global reduction in mortality from communicable diseases, the non-communicable diseases are becoming more important, especially in less-developed countries. Mental ill health is now the most important health issue facing young people in both less-developed and more-developed countries[4] and is the leading cause of disability in people aged 10–24 years, contributing 45% of the overall burden of disease in this age-group.[5] Largely because the onset of mental illness peaks in emerging adulthood and subsequently affects the most productive years of life, it will pose the greatest threat to the gross domestic product (GDP) of both the developed and developing nations over the next 20 years, narrowly exceeding cardiovascular disease among the non-communicable diseases.[4]

In this Series paper we present the case for the urgent need for transformational reform of mental health services to better accommodate young people. Despite their manifest need and undoubted capacity to benefit, young people have the lowest rates of access to mental health care, largely because of poor awareness and help-seeking, structural and cultural flaws within the existing care systems, and a serious failure of governments to invest. We contend that early intervention and a priority focus on the developmental period of greatest need and capacity to benefit—emerging adulthood—have the potential to greatly improve the mental health, wellbeing, productivity, and fulfilment of young people, and our wider society, now and into the future. We discuss innovative service reforms that have led to the development and implementation of a nationwide youth mental health service, headspace, in Australia, which aims to improve access to evidence-based enhanced primary mental health care for all young Australians. With its focus on early and pre-emptive intervention in primary care and community settings, provided it is accompanied and backed by investment in the development of a complementary specialist tier of evidence-informed mental health care, this approach offers a useful blueprint for service reform in the broader international context and has already begun to influence and guide service reform and investment elsewhere.

The youth mental health imperative

The incidence of mental illness in young people is well documented as the highest of any age group.[6] In the USA, the National Comorbidity Survey Replication[3] showed that in 75% of people with psychiatric disorders, the onset was before the age of 24 years; the onset of most of the adult forms of mental illness falls within a quite discrete time band from the early teens to the mid-twenties, peaking in the early twenties. Furthermore, this study[3] has shown that in the general population, the full lifetime risk of mental disorders approaches 50%. These findings are supported by other evidence, including that from large prospective cohort studies, such as the Great Smoky Mountains Study[7] in the USA, which showed that by 21 years of age, 61·1% of participants had met criteria for a diagnosable psychiatric disorder at some point during the 12 year study, and a further 21·4% had met impairment-based criteria for subthreshold disorder, a total of 82·5%. The National Cormorbidity Study Adolescent Supplement[8] showed that 40·3% of US adolescents aged 13–17 years had a mental disorder in any 1 year.[8] Even though a proportion of mental ill health in young people resolves by the late twenties, much pain, unrealised potential, disability, or premature death will have happened by then. In a large and rigorous

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cohort study in New Zealand, Gibb and colleagues[9] showed that 50% of young people had a diagnosable mental disorder between the ages of 18 years and 25 years, and that these disorders had a significant effect on young people's economic and social outcomes at age 30 years, in accordance with and extending the findings of the Great Smoky Mountains Study.[7] The effect is underestimated in young men, especially because the research measures used typically focus on emotional aspects of ill-health; young men tend to present with externalising symptoms and emotional distress is less overt.[10] Thus, mental ill health is a reality that most people will confront in themselves or within their families as they make the transition to adulthood.

There are complex biological, psychological, and sociological reasons for why young people are so susceptible to, and powerfully affected by, the onset of mental illness. Physiological changes that occur during puberty strongly affect behaviour and emotional functioning, creating a disjunction between physical, intellectual, and psychosocial maturity.[11] Adolescence and early adulthood is also a time of major structural and functional change in the brain, driven by a series of maturational processes that result in the refinement of the neuronal circuitry and a recalibration of the inhibitory–excitatory balance, particularly in the frontal cortex.[12,13] The developmental challenges that must be met during the transition from childhood to independent adulthood take place against the background of these highly dynamic changes in brain structure, which creates a biological opportunity of susceptibility to the onset of mental illness.

As general health improves worldwide, children are reaching puberty at younger ages. Rapidly increasing changes in social, economic, and technological environments mean that young people need to stay in education or training longer, and their entry into mature social roles is delayed.[14,15] Thus, the developmental phase of emerging adulthood has been stretched and made less secure in many ways.[15] Hence, young people now must make the transition to independent adulthood in increasingly complex, and conflicting, social environments.[2] Mental illness, even when brief and mild and especially when more severe and persistent, can seriously disrupt this developmental trajectory and restrict a young person's potential. All too often, mental ill health in young people is associated with impaired social functioning, poor educational achievement, unemployment (and underemployment), substance misuse, violence, and victimisation, leading to a cycle of dysfunction and disadvantage that can be difficult to break.[16,17]

Debate for service reorientation and a dedicated youth mental health care stream

Despite the obvious need, young people are reluctant to seek help from, or cannot access or engage with, existing health services.[18] In Australia, young people have had worse access to mental health care than any other age-group; only 13% of young men and about 30% of young women with mental health issues access professional help.[19] Thus, most young people who could benefit from mental health care did not receive it. Other large-scale studies, such as the US National Comorbidity Survey Adolescent Supplement,[20] have reported similar findings. Primary health-care services cater for physical ill health and are largely designed for young children or older adults (older than 25 years); this developmental so-called blind spot and the narrow clinical focus can be alienating to young people, who as a result do not engage. Most young people in developed countries have good or excellent physical health and therefore, they do not often visit health practitioners; when they do, some find discussion of emotional concerns extremely difficult.[21] Furthermore, many practitioners do not have the necessary skills, patience, and time to engage with young people and to work with them constructively.

Many factors contribute to young people's disengagement with the health-care system. At the individual level, barriers to help-seeking include poor mental health literacy and failure to recognise a need for care, unhelpful beliefs about personal strength and autonomy, and the severity of psychological symptoms—patients with more severe symptoms are less likely to seek help than those with less severe symptoms.[22] Young people from culturally and linguistically diverse or indigenous backgrounds face additional barriers to help-seeking, including reliance on informal supports, challenges associated with maintaining close connections with family and culture, complex needs such as grief and loss, and stigma and shame linked to seeking help for mental health and wellbeing, which commonly lead to help-seeking at later stages of illness. At the service level, accessibility, confidentiality, and cost, in addition to the organisation, location, milieu, and even decor of the available services are barriers to engagement.[21,23]

When young people or their families do seek help, they might have great difficulty in accessing the existing specialist mental health system, because their complex and changing symptom profiles commonly do not meet the stringent criteria needed for acceptance, particularly into an adult service, despite the substantial distress and impairment associated with them. Poor resourcing and design also severely restricts access to child and adolescent services. These services have been adapted from a paediatric focus on the needs of younger children within their family, educational, and social contexts, with artificially imposed age cutoffs of 18 years or 16 years.[24] The development of child psychiatry has been a worldwide struggle, and many older adolescents, especially those with severe disorders, find that the access to care is only via adult services. As a result, mental health services for children have increased their age range to include adolescents, whereas adult services, which have their origins and mandate in the asylum era and still focus mainly on middle-aged people, have lowered their age range with very little success. The split at 18 years presents

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difficulties for some physical health disorders; however, for mental health it is a major design flaw. The result is that young people and their families are an afterthought, rather than the priority that they should be in terms of need for care and return on investment.

This structural divide between specialist child and adolescent and adult mental health services is a problem, not only because they differ in focus and treatment approach, but also because the discontinuity between service streams is in the age range with the peak incidence of new-onset disorders.[25] The mental health system is weakest where it should be strongest.[16] Thus, the surge in new cases is not accommodated in the existing system. This situation is compounded for those young people with existing mental health issues who reach the end of their care with a child and adolescent service, and who need continuing care within an adult service. Findings from the TRACK study in the UK[26,27] showed that although most of these young people are referred on to adult services, about a third are not; of those accepted by adult services, a quarter are discharged without being seen by clinicians. This service gap arises partly because the adult services, with their narrow focus on established severe mental illness—a legacy of the asylum era from which these services arose—do not cater for the special needs of groups who have received help in childhood for developmental disorders. These groups include young people with intellectual disabilities, autism spectrum disorders, attention deficit or attention deficit hyperactivity disorder, and those with emerging mood, anxiety, personality, or substance misuse disorders. Furthermore, although some transfer between services does painfully occur, the adult services can have difficulty in engaging and working with young people at this transitional stage, owing to the morale and culture of such services.

To improve access, quality, and continuity of care, a new approach to youth mental health is needed. A specific mental health service stream is appropriate for young people for two major reasons. First, this population is heterogeneous with varying and clinically uncertain illness trajectories; young people in the early stages of a mental illness tend to present with comorbidities of variable intensity, particularly substance misuse and challenging personality traits, which necessitate an integrated model of care. Thus, services that acknowledge the complex and changing pattern of morbidity and symptom fluctuation in this age group are needed. Second, developmentally and culturally appropriate approaches are essential for the management of emerging disorders; young people's individual and group identity and their help-seeking needs and behaviours need to be central to any service model.[16,28] Evidence has shown that youth-specific services should be provided in an accessible, community-based, non-judgmental, and non-stigmatising setting in which young people feel comfortable, have a say in how their care is provided, and can feel a sense of trust.[16,28] Ideally, a novel model for youth mental health should be created to overlap and link with, but be discrete in culture and expertise from, systems for young children and adults.[29] Such a model would largely overcome the issue of poor access to care and transition between the present service streams.[28]

The sheer scale of the incidence and prevalence of mental ill health among young people calls for an approach to service provision that offers the capacity to cope with the associated high volumes of need, which means new technologies need to be drawn upon, and yet has the depth to manage the complexity and diversity of this need. Different levels of service that cover the entire range of illness complexity and severity are needed, including e-health, primary care services, or enhanced primary care services for individuals with mild-to-moderate mental health issues, and specialised back-up services for those with complex presentations or severe illness.[30] Culturally and socially appropriate systems of care are crucial, and contextual differences will determine the model to be used. The key principles of such systems[28] are summarised in panel 1.

These principles and the models that flow from them to provide care for young people are compatible with the perspective of Porter and Lee,[31] who emphasised the need for value for patients (the best outcomes at the lowest cost) as the overarching goal in health care.

A multifaceted approach that addresses the associated intrinsic and extrinsic factors is necessary to tackle the barriers for young people to access to mental health care. At the individual level, young people should be able to recognise the need for help, know where to go to obtain it, and have access to acceptable and appropriate care so that they and their families can trust the people and the care and engage with it. At the system level, care needs to be accessible, affordable, acceptable, and appropriate to the stage of illness and the developmental period of the young person.

Panel 1: Key principles for systems of mental health care for young people

- Youth participation at all levels, to enable the creation of youth-friendly, stigma-free cultures of care that provide what young people and their families really need
- Care that represents the epidemiology of mental ill health in young people and acknowledges the developmental culture of emerging adults
- A holistic, preventive, and optimistic framework that emphasises early intervention and offers a comprehensive, evidence-informed, stepped care, which is governed by risk-benefit considerations and shared decision making, with key targets of social and vocational outcomes
- An integrated practice unit in which providers of care are organised around the needs of the young person and his or her family, and through which a dedicated team of clinical and non-clinical personnel provide the full cycle of care for the young person's disorder; this approach fundamentally changes the way clinicians are organised to deliver care
- Elimination of discontinuities at peak periods of need for care during developmental transitions
- Positive and seamless links between services for young children and adults
- Flexible tenure and re-entry to care as needed during the crucial period of transition from childhood to adulthood

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Promotion of awareness, access, and acceptability

An essential first step to improve help-seeking behaviour and access to care is to promote awareness in young people and the wider community about mental health issues in young people and how to recognise and respond to them. First-line strategies, such as community education, self-help, and e-health, all have useful parts to play in raising awareness, developing an understanding of how best to respond to mental health issues as they arise, and how, when, and where to seek help. The idea of first aid for mental health, provided it is guided by young people and their families and youth mental health professionals, could have much to offer but needs to be carefully assessed.[32] Since most young people are in some form of education or training, these settings provide an ideal opportunity for programmes to develop young people's awareness of mental health issues, to promote resilience and mental health, and to identify early those young people who are struggling. Other strategies need to be developed for young people who are not in employment, education, or training,[17] because they are at greater risk of mental illness than their peers.

To overcome the issue of access to services, the basic factors of location, setting, and atmosphere need to first be addressed. Services for young people need to be easily accessible by public transport and should preferably be located in settings that young people frequent, such as shopping, sports, or leisure precincts. Additionally, the atmosphere of mental health services should be friendly, welcoming, and non-clinical, with a physical environment and décor that are appealing to young people.[21] Ideally, the services should be free or low cost, and confidentiality should be assured, because anxiety about this concern is one of the main barriers to seeking help.[21,22] A low threshold for entry into these services is needed, as is a policy of "no wrong door" that ensures that any young people who do not meet entry criteria are actively assisted to obtain help at an appropriate service.[16,33] Such services operate best as enhanced primary care models, an example of integrated practice units,[31] offering integrated, multidisciplinary mental health care in a setting that targets primary health-care needs of young people—both physical and mental—in one setting with strong links to locally available specialist services, community organisations, and other services frequently accessed by young people, such as schools, tertiary training institutions, and educational and vocational support organisations.[16,33] This model offers stigma-free access to care that is appealing to young people who are struggling and distressed, without labelling or premature medicalisation of mental health issues, and provides a way of addressing the comorbidity of mental and physical health difficulties and of social difficulties in this age group.

The culture surrounding emerging adulthood changes rapidly and the youth voice is needed to ensure that services are acceptable to young people and that they remain relevant to them. Young people and their families should be involved from the initial design of services, in staff selection, and in the service's day-to-day activities, and should have a strong voice in all its operations.[21] Young people can act as consultants, ambassadors, and peer support workers and advocates for youth mental health in their schools, communities, and in health services.

Another key factor in ensuring that a service is acceptable is the selection of staff who have an interest in working with young people and the necessary affinity, talent, and skills, and who enjoy working with this stimulating, but challenging, age group and their families.[21] Expertise in adolescent or young adult developmental and mental health issues is important. Additionally, an optimistic approach and a willingness to work flexibly and collaboratively in a multidisciplinary environment, at hours that suit young people rather than professionals, are needed. These features are important for creation of a positive culture of hope, optimism, and agility within mental health services for young people.

Promotion of care appropriate to the stage of illness

Although up to 80% of young people experience mental ill health at some point during adolescence,[7,9,12,34] much of it is mild-to-moderate in nature. Typically, young people tend to present with a complex and fluctuating blend of symptoms, most commonly depression, anxiety, and other more non-specific symptoms including withdrawal, apathy, and sleep and appetite disturbance. Self-harm and substance misuse are prevalent in this age group. Over time these symptoms can either intensify, eventually cohering into diagnosable syndromes, or remit and resolve.[35] Historically, and even nowadays, by mistaking common for normal and acceptable, clinicians have tended to normalise and dismiss much of this poor mental health as adolescent *Sturm und Drang*. However, although much of the ill health resolves by the late twenties,[34] if left untreated, not only is the young person at substantial risk of premature death and various forms of self-harm, but also such neglect could carry a substantial cost to them in terms of underachievement, educational or vocational failure, poor social functioning, and to the wider community in terms of non-participation and lost productivity. The argument that illness can resolve or improve as young people mature is not a valid reason to fail to provide safe, secure care that is appropriate to the stage of illness throughout the period of need. We can take the analogy of childhood asthma. Most children with asthma outgrow their symptoms by adolescence, yet we do not withhold potentially lifesaving treatment from them on that basis; indeed, to do so would be judged negligent. Furthermore, for those young people whose mental health issues do not resolve with time, evidence strongly suggests that persistent mental health problems in adolescence significantly increase the risk of mental illness in adulthood. This risk of persistence is what drives the interest in early intervention and youth mental health.[7,9,34,35]

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The complexity and poor specificity of their symptom profiles means that the treatment approaches needed differ from those for full-threshold illness. An emphasis is needed on offering care that is appropriate to the very early stages of illness, pre-emptive, and has a strong preventive focus. This method sits best with a clinical staging approach, which differentiates early and mild clinical features from those that accompany illness extension and progression, and thus enables an agnostic, rather than a diagnostic, approach to treatment. In the early stages of illness, persistence of symptoms, the risk of self-harm and suicidal ideation,[36] comorbid alcohol and substance misuse,[37] distress and impairment indicate a need for care both on immediate clinical grounds and the risk of progression of illness.[35] This explicit acknowledgment of the early stages of illness provides a clinically useful framework, in that it is sensitive to risk–benefit considerations and helps with the selection of early and safe interventions, and favours a preventive, or at least pre-emptive, approach to treatment. Such a framework is particularly relevant in the context of youth mental health, in which the onset of illness is most common and full-threshold syndromes are not yet apparent, even though the need for care is.[16]

New models for youth mental health services

Although care for most young people is best provided in the context of stigma-free, youth-friendly primary care or enhanced primary care structures, individuals with severe or established illness need access to specialised youth services for mental health. In the past few years, reform in the delivery of youth mental health services has been gaining ground, first in Australia, then the UK, Ireland, Canada, Denmark, and Asia, and lately the USA.[16,28,30,38–41]

In 2006, the Australian Federal Government established headspace, the National Youth Mental Health Foundation, which was tasked with devising and building a national youth service stream for mental health that would provide highly accessible, youth-friendly centres that promote and support early intervention for mental and substance misuse disorders in young people. This step resulted from a targeted awareness-raising campaign, policy analysis, and intensive lobbying by academic and clinician leaders, with strong support from the Mental Health Council of Australia and a subset of Federal politicians, and the increasing demand for investment in youth mental health by the Australian community. The headspace model was designed and developed by a consortium led by Orygen Youth Health Research Centre in partnership with the University of Melbourne, the Brain and Mind Research Institute at the University of Sydney, the Australian General Practice Network, and the Australian Psychological Society. In 2007, the first ten centres for headspace were opened, and the programme has been successfully scaled up to reach more than 70 Australian communities. By 2017, 100 sites will be in operation, allowing coverage of more than 50% of Australia. Many more people can be reached via eheadspace, the online support service.

For more on eheadspace see www.eheadspace.org.au

The programme operates on an enhanced primary care model, providing a multidisciplinary care structure with close links to local specialist services, schools, and other community-based organisations. Each site is an independent local consortium, overseen by the headspace National Office, and offers evidence-based care within a clinical staging framework[33] (panel 2). Interventions are delivered in a stepwise way; simple brief psychosocial approaches are used as first-line treatments, with the aim being to prevent development of sustained illness. Drugs are used as an additive treatment only if the young person does not respond to initial psychosocial interventions or at presentation has more severe symptoms or risk. This stepped-care model is linked between stages and thus allows a preventive and proactive stance to treatment intervention. Large-scale clinical trials to expand and strengthen the evidence base and treatment repertoire are underway in some headspace centres. Four core service streams are provided: mental health, drug and alcohol services, primary care (general health, sexual health), and vocational and educational assistance. This combination of frequently accessed services acts to minimise the stigma commonly associated with mental health services.[33] In addition to the four core service streams, each centre offers local community awareness campaigns to improve young people's help-seeking behaviour, to enable 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 nationwide online support service where young people can chat with a mental health professional online or by telephone and access assessment and therapeutic care. This service has begun to expand access to expert mental health care for young Australians when, where, and how they choose to use it. In recognition of the issue of youth suicide in Australia, a support service for schools affected by student suicide is provided (headspace school support). It offers a range of services: assistance with managing the immediate response after a student's suicide or suicide attempt; information sessions for staff and parents; education and training related to suicide and evidence-based resources; a postvention toolkit; secondary and tertiary consultation; assistance with critical incident review; and media liaison and advice.

In 2014, Orygen Youth Health Research Centre was given a strong mandate as the National Centre of Excellence in Youth Mental Health in partnership with headspace to undertake new collaborative national research aimed at building the evidence base in youth mental health, to develop and train the new workforces that are needed for this national and international service construction, and to disseminate new skills and knowledge. This research will build on previous work in collecting, synthesising, analysing, and disseminating research about

For more on headspace see www.headspace.org.au

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Panel 2: Some evidence-based interventions offered at headspace centres, within the preventive framework of the clinical staging model

The clinical staging model[42] proposes that mental illness changes from a non-specific distress disorder, symptoms of which can either resolve or intensify and differentiate, accompanied by increasing distress and disability, until clear syndromal content is apparent and diagnosable illness is present. The model recognises the need for care purely on the basis of persistence of symptoms and distress and the risk of progression to more severe illness, rather than an arbitrary diagnostic threshold. The model has a strong preventive focus and is particularly applicable to the early stages of illness, when early intervention has the greatest potential benefits. Through recognition of where a person is on the continuum of the course of illness, interventions can be selected that are most appropriate to that stage of illness, with the most benign interventions being offered early in the course of illness. This rational framework can guide clinicians in their choice of treatment, enabling them to effectively balance the risks and benefits associated with the choice of intervention for each patient. Stepwise interventions are offered within a clinical staging framework, with the aim of preventing the progression of symptoms and therefore what might be the initial stages of illness, to full threshold disease.

Psychosocial interventions

Interventions are offered as first-line treatments, including:

- Psychoeducation.
- Physical activity interventions with an educational component for depression and anxiety.[43]
- Interventions based on cognitive behavioural therapy for depression, anxiety, and psychosis.[44–47]
- Motivational enhancement, behavioural contingencies, and motivational interviewing for substance misuse.[48]

Benign therapies

Such therapies can also be offered in combination with psychosocial interventions, eg, omega-3 fatty acid supplementation for depression or psychosis.[49,50]

Drugs

Drugs are offered only if there is no response to psychosocial interventions, or if the young person presents with more severe symptoms or extent of risk to themselves or others; drugs might include fluoxetine for depression[51] and anxiety[52] or low-dose atypical antipsychotics for psychosis[53] or acute mania.[54]

young people with mental health difficulties and substance misuse, producing evidence-based resources to support headspace centres in using evidence-based practices. These resources are publicly available.

For more on headspace see www.headspace.org.au/what-works

Most young people using headspace services, even when highly distressed, are experienceing mild-to-moderate mental ill health and are in the early stages of illness;[55] however, most headspace centres also encounter a substantial subset of young people with more complex, severe, and enduring problems who are unable to gain access to the traditional system.[55] Detailed data from a sample of 22 000 young people nationally assessed by headspace[56] show that this service is seriously addressing the issues of access and engagement, a conclusion further supported by the heavy demand for eheadspace services in the country. A full-scale independent assessment of the headspace programme by the Social Policy Research Centre at the University of New South Wales is underway, with results expected in 2015. That review, which follows standard practice for all new mental health programmes in Australia, is after a preliminary assessment done in 2009,[57] and will focus on the programme's effect on young people's access to mental health care and explore outcomes and efficiency by use of routine minimum data sets and targeted surveys. A major difficulty is the definition of, and access to, an appropriate control group, but this problem inevitably affects most forms of service innovation in which access was previously restricted. Data from a large cohort of early-stage patients from a Sydney headspace centre[58] show short-term improvements in symptoms and functioning. The programme is unusual in Australia, having been designed, delivered, and scaled up with leadership and governance from clinician scientists and health services researchers. This has enabled funding to be accessed via a National Health and Medical Research Council of Australia partnership grant involving headspace, Orygen Youth Health Research Centre, and nationwide health services experts to use more sophisticated health services methodology to evaluation the outcomes and fidelity of the headspace programme, with results expected in 2017 or 2018. These serial assessments should make headspace the most evidence-informed reform in mental health in Australia as it unfolds.

The programme is still a work in progress and the growth of headspace is justified by the need to respond to very large gaps in access. Substantial gaps remain, notably because more than half of Australia is not yet covered; the level of funding and geographic constraints do not yet allow full national coverage. Furthermore, although access rates for young men, some ethnic populations, and young adults have improved, these rates are still too low in relation to the manifest need. However, the most serious gap in this new service stream for youth mental health is in its capacity for expert and specialised care of the subset of complex young people who are severely ill. Although the programme provides valuable entry to the health and welfare system, and can deal with the needs of perhaps two-thirds of its clientele through its enhanced primary care capacity, the remainder need a more expert, specialised, and at times more intensive approach. That approach might include mobile home-based and outreach care, diagnostically targeted interventions, and acute and subacute residential care. To begin to address this gap, the Australian Government has funded the creation of up to nine enhanced headspace services, which will be resourced to deliver evidence-based early psychosis services, offering early detection, acute care during and immediately after a psychotic episode, and recovery-focused continuing care featuring multimodal interventions to support the young person and their family in maintaining or regaining his or her social, academic, or career trajectory during the crucial first 2–5 years after the onset of a psychotic illness.[59] The first of these enhanced services started operation in 2013. The hope is that ultimately these enhanced services will be expanded to cover not only all headspace communities,

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but also the full diagnostic range in young people with all the severe forms of mental illness.

The long-term aim of these reforms is to develop a nationwide youth mental health stream that fully integrates care for young people with other service systems, notably education, employment, housing, and justice, to provide seamless coverage of mental health care from puberty to mature adulthood at around age 25 years, with soft transitions from and to child and adult mental health care. This system acknowledges biopsychosocial development and recognises the complexity and challenges faced by young people as they become independent adults, and the burden of disease imposed on this age group by mental ill health. It responds by blurring the distinctions between the tiers of primary and specialist care, including some parts of acute care, in recognition of the complexity of the presentation of much of the mental ill health apparent in young people, allowing a flexible and appropriate response for each person, according to individual needs.

The Australian National Mental Health Commission, in its 2013 Report Card on national mental health and suicide prevention,[60] explicitly recommended that national, systematic, and adequately funded early intervention approaches should remain, but that they should be accompanied by robust assessments to support investment decisions, with a focus on implementation, outcomes, and accountability. Whether these reforms have been successful will ultimately only be apparent after careful assessment, and additional research of health services is needed to develop, refine, adapt, and asess new service models, both in individual contexts and across sectors. Relevant crucial assessment is funded and underway and will no doubt inform the further adaption of the headspace model. However, the indications so far are that the model is justified, if only on the grounds of the substantial improvement it offers in terms of access to care; this has been acknowledged by policy makers both nationally and internationally. The general assumption, and that of the existing system, is that some care is better than no care for young people with mental ill health. Access and quality could be further improved, since under existing funding models, throughput and expertise within headspace centres can readily expand if the workforce is available. In pragmatic terms, we believe that offering evidence-informed care within a system that is accessible and acceptable to young people should continue as the best option, while the research evidence is accumulated that will allow the development of a truly evidence-based care stream for this uniquely susceptible group.

Similar models have been implemented in other countries, such as the UK,[28] Ireland,[28] Denmark, and Singapore.[40,41] Similar services are proposed for Canada, the USA, and Israel. These various services have been adapted to local contexts and offer somewhat different models of care, but all have in common the key principles of youth-focused, multidisciplinary comprehensive care in a stigma-free, community-based centre.

The challenge of transformational reform

Mental health is undervalued in health care and in medical research. Despite its much greater projected effect on human suffering and productivity in the next 20 years, mental health continues to be seriously underfunded in comparison with cancer, cardiovascular disease, diabetes, and other non-communicable diseases. Meanwhile, health expenditures increase worldwide, with little rational guidance as we spend more and more on the final months of life in advanced old age. Most people agree that this approach needs to be rethought. Although reducing present expenditure in emotionally sensitive areas would be difficult and arguably unacceptable, future growth in health expenditure should be channelled into those areas that will most benefit people and society. As Porter and Lee[31] point out, a reorganisation of the health-care system will be needed to make value (meaning the best outcomes for clients for the lowest cost) the overarching goal. Because approaches that deliver improvements to mental health are best positioned to deliver enhanced value and at lower cost than other health expenditures, they should be strongly prioritised. Affirmative action and preferential investment in the best buy of mental health care are needed.[35] However, that does not mean we should continue in the same way. In the era after deinstitutionalisation, mental health care itself needs to be reorganised and to 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.[31] Specifically, we must identify priorities that will result in health gain and value both to the patient and the funder. Obvious approaches include achievable prevention targeting younger children and parenting, and early intervention strategies for emerging mental ill health in children and young people. How can these approaches be achieved? The first step is to respect and nurture innovation and value.

Innovation is essential if we are to dispel the low expectations and largely palliative mindset of traditional mental health care. Innovation includes new thinking, new models, and new treatments, all of which are desperately needed. Innovators and early adopters must be nurtured as we seek progress in mental health care. Late adopters are more conservative and should be respected, listened to, persuaded, and convinced on the basis of logic and scientific evidence wherever possible. They do have a legitimate role in the process. Even if no new treatment advances were made in the next 20 years, we could still substantially reduce what Andrews and colleagues[61] describe as the avertable burden of disease by increasing the scale, coverage, and value of mental health care and changing the timing and culture of the provision of services. The related ideas of implementation science[62] and scaling up of innovations, especially of service models, are particularly relevant and also part of Porter and Lee's approach.[31]

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Evidence-based medicine has been a valuable safeguard against so-called great and desperate cures,[63] particularly in psychiatry; however, it can also be misused to obstruct the diffusion of genuine advances. Sackett and colleagues[64] defined evidence-based medicine as "...the conscientious, explicit, and judicious use of current best evidence in making decisions about the individual care of patients". Youth mental health is a new discipline and evidence will be created as it evolves. Some critics want to wait until definitive evidence is somehow produced before investing in new models of early intervention and youth mental health. However, we are not talking about great and desperate cures here; merely more widespread access to existing and accumulating evidence-based youth mental health care, in new youth-friendly cultures and settings. Much more evidence flows from such changes of care, as the early psychosis experience has shown.[65–68] Sackett and colleagues[64] pointed out that: "Evidence-based medicine is not restricted to randomised controlled trials and meta-analyses. It involves tracking down the best external evidence with which to answer our clinical questions". Although cluster randomisation and stepped wedge randomised trials are useful variants that strengthen approaches to health services research, the unreconstructed Cochrane approach is too rigid for these purposes. Indeed, policy makers have noted that the Cochrane approach becomes impractical and loses relevance when applied beyond the level of individual treatment to cover health services research.[69] Evidence-based health care, a cousin of evidence-based medicine, cannot be the hostage of a post-Cochrane correctness.[70] Innovation needs a range of factors to succeed; although evidence is included, creativity, a genuine need for change, substantial public involvement, independent champions, context, and new resources are others. The establishment of headspace is an example of this process: it was inspired by the need for change, designed and championed by a group of clinician scientists and translational researchers, demanded by the public, and progressively funded by the Australian Government. Many flowers will germinate and flourish in a particular context, yet few will disseminate to other fields in a systematic or franchised manner. The scaling up literature,[71,72] again a body of knowledge that cuts across many areas of endeavour, bears witness to the key elements that are needed for success.

For more on **The International Association for Youth Mental Health** visit http://www.iaymh.org/

Search strategy and selection criteria

This manuscript involved a systematic search for studies on the epidemiology, age of onset, and prevention and treatment of the adult-type mental disorders in adolescents and young adults between 12 years and 25 years of age using the Embase, PsycINFO and Medline databases. We also searched for papers that discussed youth mental health and mental health service development. Key search terms included adolescent, young adult, age of onset, depression, anxiety, psychosis, mania, mental health, service development.

The foundations for reform in mental health need to be built on the principles of demonstrable need and evidence-informed care, including indicative evidence of value for better health outcomes and value for money, which, given the timing of morbidity, is likely to trump almost any other domain of care.[25,35] Real-world clinical laboratories, with new evidence, skills, and professional workforces, must be developed and proven in many parts of the world and then linked together.[28,73] However, these prerequisites will not be sufficient to change spending priorities, which, if they have any rational basis at all, are determined by what political leaders and the media perceive to be what people want and expect and upon which they are likely to base voting intentions. Mental ill health affects almost everyone, usually from early on in life, and our present approaches are known to be not sufficient, properly designed, or supported. Furthermore, solutions are available and innovation means more can be developed, demonstrated, and disseminated just as well as in other kinds of health care.

John Gunn, the eminent British forensic psychiatrist, once described the neglect of the mental health of young people as a form of self-harm perpetrated by society upon itself.[74] Yet, if the silence and ignorance around this issue can be dispelled and solutions placed before the voting public, and especially parents and young people themselves, this societal self-harm can be replaced by a potentially striking improvement in the mental health, wellbeing, productivity, and fulfilment of young people. Transformational reform of mental health care should be based on the principles of early intervention and a priority focus on the developmental period of greatest need and capacity to benefit from investment—the period of emerging adulthood. This approach by no means excludes investments earlier or later in life, which are also essential. Heartened by the successful evidence-informed scaling up of early intervention in psychosis across hundreds of locations and many national health systems since the mid-1990s,[65–68] and the newly emergent youth mental health models of the past 5–10 years,[28] leaders, policy makers, and service developers are working to create an international momentum to address the mental health needs of young people and their families. In this Series paper we have described rapidly emerging examples of these modern, stigma-free cultures of care designed and operated with young people themselves. The arguments for this type of transformational reform are resonating strongly with the community and policy makers, while attracting predictable resistance from some policy makers and conservative elements within professional groups. Evidence alone, however crucial, is unlikely to dissolve this resistance completely. These examples of 21st century clinical infrastructure culture will also help with some of the population-based and universal programmes that could link with mental health awareness and promotion activities and with new internet-based technologies. If these new mindsets and

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reforms spread widely, the lifelong effects of mental ill health on health, happiness, and prosperity could be reduced in the next two decades.

Contributors

PDM, SDG, and AGP contributed to the design and writing of this Series paper. PDM, SDG, DJR, and IBH provided crucial commentary throughout the preparation of this Series paper. SDG and AGP contributed to the literature search. All authors contributed to the final review and revisions of this Series paper.

Declaration of interests

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