Submission to the Children's Commissioner Inquiry into Intentional Self-Harm and Suicidal Behaviour in Children and Young People Under 18 Years:
Response from Orygen Youth Health Research Centre

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Introduction

Please find below a submission in to the inquiry into intentional self-harm and suicidal behaviour in children and young people by Orygen Youth Health Research Centre (OYHRC). OYHRC is a world leading youth mental health organisation based in Melbourne, Australia. It incorporates a specialised youth mental health clinical service that provides comprehensive early intervention services to young people with mental health issues aged 15–25. It also houses an internationally renowned research centre that leads a range of innovative studies to better understand the biological, psychological and social factors that influence onset, remission and relapse of mental illnesses and suicide risk among youth. It also has a training and communications program.

The submission is divided into two sections. Section one presents general information pertaining to those aspects of the Inquiry with specific relevance to the work of OYHRC. Section two presents issues specifically relevant to young people with borderline personality disorder (BPD).

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1. Prevalence of, and risk factors for, suicidal/self-harming behaviour in young people

1.1 Prevalence of suicide and self-harm among young people

General population data

Suicide is one of the leading causes of death among young people, both in Australia and overseas [1, 2]. While youth suicide rates in Australia had decreased over recent years [3] the most recent data show a slight increase, in particular among young females [1].

Although suicide data are routinely collected by the Australian Bureau of Statistics (and its equivalent elsewhere) there are difficulties with the data collection processes, in particular with regard to accessing robust data in a timely manner. In addition, obtaining data on the prevalence of self-harm is even more problematic as this relies either on self-report data provided to researchers or on data collected following hospital presentations. As such, available data will probably represent an underestimate of the true prevalence of this behaviour. This is partly due to a lack of standardised reporting systems but also because many young people are often reluctant to seek help following an episode of self-harm and therefore many such incidents remain unreported.

Despite these limitations, data collected from individual research studies conducted in secondary school settings inform us that self-harm occurs more frequently than suicide and that it is both adolescents and young adults who are most frequently reported to engage in such behaviour [4, 5]. Studies conducted in both the United Kingdom and Australia have reported that approximately 5–9 per cent of adolescents report having engaged in self-harm over the previous 12 months, with lifetime prevalence rates estimated at between 12 and 17 per cent [6-9].

Rates among people with psychiatric disorder

Rates of suicide and self-harm are higher among young people with psychiatric disorders. Those discussed here include depression and first episode psychosis. As noted above borderline personality disorder is discussed separately in Section two of the submission.

Depression Rates of suicidal behaviour are particularly concerning among young people with depression, with one large study reporting rates of 41-54.5 per cent for suicidal ideation and a rate of 21 per cent for a past suicide attempt [10]. A more recent long-term follow-up study (20 year follow-up) of children and adolescents with depression reported that 22.9 per cent had made a suicide attempt during the index episode of depression, 14.6 per cent made an attempt during the follow-up period, and 32.3 per cent had made an attempt at least once in their life. The risk of suicide was

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reported to be 2.4 per cent, although the majority who died by suicide also had a comorbid diagnosis of conduct disorder [11].

First episode psychosis   Suicide and self-harm are also common among people with psychotic disorders, with risk generally being highest early in the course of an illness [12, 13].

Between 10 and 14 per cent of people experiencing their first episode of psychosis (FEP) report engaging in self-harm prior to presentation for treatment [14-16]. The period immediately before the first presentation to services may be a time of increased risk for DSH and other suicide-related behaviours [12, 14, 15]. Rates remain high following commencement of treatment, after one-year suicide attempt rates range from 2.9 -11 per cent [16-18]; two year rates of 11.3 per cent have been reported [19], and rates at four and seven years have been reported to be as high as 18.2 and 21.6 per cent respectively [14, 20].

Fewer studies examine actual suicide rates, however those that have report rates of 1–3 per cent over 4–5 years [14, 21] and 2 per cent over an 8-10 year period [20].

1.2 Consequences associated with suicidal/self-harming behaviour

Engaging in suicidal and/or self-harming behaviour carries a range of negative consequences at an individual, familial and societal level. At an individual level, suicide-related behaviour is associated with a range of negative outcomes, the most obvious being mortality or severe injury. However, risk of suicide is not limited to the index attempt. People who have engaged in self-harm are at significantly higher risk than the general population of dying by suicide in the future [22], with this risk remaining elevated for the remainder of the lifetime [23]. Further, people who have engaged in self-harm are also at elevated risk of premature mortality from other causes, including homicide, cardiovascular disease and diseases of the respiratory system [24].

For every person who dies by suicide it is estimated that significantly more of their family member and friends or peers will be negatively affected [25] not least by placing them at increased risk of suicide themselves [26].

Not only does suicidal behaviour cause immeasurable social and emotional costs to individuals, families, friends and communities, but it also has significant implications for the health and wellbeing of Australian society. In 2007–08 there were 9,203 hospital separations for suicide attempts and intentional self-harm for people aged under 24 years [27]. Further, while suicide accounts for 2.8 per cent of the overall burden of disease in Australia, this figure rises to 8.5 per cent for those under the age of 44 years [28].

These behaviours are not only problematic for family members, clinicians, researchers and policy makers, but are also of serious concern to young people themselves. In their 2009 report Mission

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Australia indicated that 26.3 per cent of youth considered suicide to be a major concern for young people [29].

1.3 Risk factors for suicidal and self-harming behaviour

The risk factors for suicide and self-harm are presented separately below. It is acknowledged that there can be significant overlap between the two groups [30], although a key difference appears to be that people who engage in suicide-related behaviour generally experience a greater number of risk factors and the risk factors themselves have a greater impact upon individuals [31].

Risk factors for suicide-related behaviour

Suicide-related behaviour is determined by a complex interplay of risk factors [30], which can be classified into distal and proximal [32]. Distal, or underlying, risk factors predispose an individual to risk, while proximal risk factors may be seen as stressors that temporally precipitate an event. It is helpful to consider these risk factors when planning preventative approaches.

Distal risk factors

Some of the key distal risk factors associated with suicidal/self-harming behaviour that are of direct relevance to the work of OYHRC, and the current submission, are: 1) Psychiatric disorder; 2) Previous suicidal/self-harming behaviour; and 3) Being cared for out of home.

Psychiatric disorder   One of the strongest risk factors for suicide related behaviour is the presence of mental disorder [33]. Using information from parental informants, 59 per cent of adolescents under 20 years old who completed suicide met DSM-III criteria for a psychiatric disorder [34] and between 70 per cent and 91 per cent of young people who attempt suicide or report suicidal ideation have a psychiatric disorder [35]. Further, suicidal youth are six times more likely to have a psychiatric disorder compared with non-suicidal youth [6, 7, 36]. These are most commonly depressive and anxiety disorders, with between 60 per cent and 80 per cent of young people having a diagnosis of depression at the time of a suicide attempt [37]. This is of particular concern given the prevalence of both disorders among young people, with one in four experiencing a depressive or anxiety disorder at some point during adolescence [38], and given that psychiatric issues presenting as early as eight years of age can be predictive of future suicidal behaviour [39].

Other common psychiatric disorders associated with suicidal behaviour in young people include conduct disorders, substance abuse, borderline personality disorder and psychosis [36, 40-42]. Borderline personality disorder (BPD) is of particular note and is discussed in detail in Part Two of this submission.

Previous suicidal/self-harming behaviour   Prior suicidal ideation, suicidal intent and self-harming behaviour are also significant indicators of future suicidality in both the general population [43] and in

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clinical samples [44]. The highest risk of onset of suicidal ideation and suicide attempts has been reported to be age 15, although these behaviours can be seen among younger children [45]. Risk is highest in the initial period following the index attempt but remains elevated throughout the lifetime [23].

Out of home care Young people in and leaving out-of-home care are one of the most disadvantaged and vulnerable groups in Australian society [46], and suicidal behaviours are not uncommon in this population. One study found that a sizable portion of children aged between 4 and 9 years old living in foster care had engaged in self-harm [47], whist another found that 6.7% of 13 to 17 year olds in foster care reported a suicide attempt that required medical treatment within the past year [48]. The prevalence of suicidal behaviour in this population also appears to increase after leaving out-of-home care, with a 2007 study reporting that 71% of young people had thought about or acted on suicidal thoughts and almost half had attempted suicide within five years of leaving care [49].

Proximal risk factors

Proximal risk factors are often referred to as the 'tipping point' whereby an individual who has been exposed to one or more of the distal risk factors then engages in suicidal behaviour. These can include negative or adverse life events including relationship difficulties, interpersonal losses or conflict with parents or peers, bullying (including cyber bullying), substance abuse, availability of means, excessive worrying or rumination and certain types of media reporting [50-56].

In addition, suicide-related behaviour in a friend or peer can place a young person at elevated risk, with suicide-related behaviour in school students predicting similar behaviour in peers and friends [6, 9]. Indeed, contagion (whereby suicide-related behaviour in one young person is thought to lead to imitative behaviour in a friend or peer) has been thought to be a factor in as many as 60 per cent of suicides among young people [57].

Contagion does not just operate in school settings and some studies have highlighted concerns regarding the potential for contagion in the context of the ways in which young people talk about suicide and/or self-harm via the Internet [58, 59]. However the Internet may also hold potential for the prevention of suicidal/self-harming behaviour in young people and a more detailed discussion of the role of new media can be found below.

Risk factors for self-harm

Several risk factors for self-harming behaviour have been identified. It is widely agreed that these risk factors likely interact with each other, and with other factors such as states and traits, to trigger self-harm behaviour [4, 60]. However, longitudinal evidence is lacking and caution should be exercised when interpreting these risk factors.

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Demographic risk factors   In adolescents, self-harming behaviour is more common in females and in those with a lower level of education [4, 61].

Distal risk factors

Adverse events and experiences in childhood are the most commonly cited risk factors for self-harming behaviour. In particular, childhood sexual abuse is consistently found to be associated with self-harm later in life [4, 60]. Other childhood risk factors include psychological problems in one or both parents, parental separation, physical or emotional neglect, and psychological or physical abuse [4].

Proximal risk factors

A number of proximal risk factors for self-harming behaviour have been identified. General psychopathology, most often in the form of anxiety, depression, and aggression, has the strongest association with self-harming behaviour according to a recent review [4]. Additionally, low self-efficacy, a maladaptive coping style, and poor problem-solving skills are suggested to be associated with self-harming behaviour [9, 62].

Section Two: Approaches to prevention

Whilst much is known about the epidemiology of youth suicide and self-harm, less evidence exists relating to preventative approaches, both in clinical and general population settings [30, 63, 64]. Indeed there is relatively little research currently underway in Australia that is examining the effects of interventions upon suicide risk in young people [65]. Similarly there is relatively little rigorous or systematic evaluation of suicide prevention programs underway [66]. Thus a strategic approach to research and evaluation is required in this country in order to ensure that the best evidence is available to inform preventative approaches. This is discussed in more detail below.

In addition evidence is presented for those interventions or approaches that appear to have an impact on suicidal or self-harming behaviours in this population.

2.1 A strategic approach to research

One of the key things lacking in Australia's approach to the prevention of suicide and self-harm among young people is a truly strategic approach towards developing a research agenda that can be used to inform best practice. Indeed governments from around the world, including Australia have called for a strategic, multi-level approach to suicide prevention research, citing the need for a program of research into suicide prevention as part of their national strategies. The LiFE Framework, which governs suicide prevention activity here in Australia, also identified the development of an evidence base as one of its core areas of activity, and called for the systematic evaluation of all suicide

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prevention activities in order to ensure that future interventions recommended under any national suicide prevention program are evidence-based [67].

The advantages of a strategic and collaborative approach are multiple. Firstly, it allows the government to work in concert with researchers and practitioners to identify the gaps in research evidence and to use this information to develop a clinically relevant research agenda embedded in the context of wider program including population-based activities involving health and non-health sectors, and actions targeted to specific settings and vulnerable groups. This in turn can inform the development of evidence-based policy and will increase the likelihood that funds are directed towards programs and interventions that are most likely to have an effect.

Secondly, it can facilitate the development of collaborative networks of researchers from around the country. This enables researchers to work together to overcome some of the methodological limitations that frequently hamper suicide research, such as a lack of standardised definitions, the fact that in statistical terms suicide has a relatively low base rate which leads to poorly designed studies that are not sufficiently powered to detect change, and finally issues related to the perceived safety of conducting clinical trials with at-risk young people which frequently leads to their exclusion from research studies.

Examples of these sorts of collaborative approaches already exist around the world. For example the United States has developed a National Action Alliance for Suicide Prevention, which brings together researchers from across the country in order to try and overcome some of the challenges outlined above [68]. This can be a costly exercise and clearly requires a strong commitment on the part of government. However if it could be replicated in Australia, it is likely that research findings would be better able to influence policy decisions [69].

A further example that was born out of a UK policy initiative is 'The Multi-centre Study of Self-harm in England' [70]. This represents a collaboration between researchers from across England. It monitors self-harm presentations to six metropolitan hospital sites and has the capacity to link self-harm presentation data to coronial systems in order to monitor rates of suicide following deliberate self-harm. This has not only produced valuable epidemiological data, but also has the capacity to examine the impact of nationwide interventions; for example, changes in pack sizes of analgesics [71]and to report on variations in the hospital management of self-harm and its relationship to outcome [72]. A project such as this could easily be replicated in Australia.

Australia has numerous organisations with specific expertise in youth suicide prevention, including OYHRC, **headspace** and the Young and Well Cooperative Research Centre that together hold the expertise and the infrastructure to lead the way in a collaboration of this nature.

A final point with regard to research relates to one of the challenges raised above – that of the perceived [lack of] safety when involving suicidal young people in research [73, 74]. There is a common misconception in the community that talking about suicide is harmful and can lead to

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increased risk, and arguably this has led to the frequent exclusion of at-risk young people from research studies [75, 76]. However several recent studies (including research conducted by our own group) have demonstrated that participation in research related to suicide prevention appears to have no iatrogenic effects among participants [77-80]. Therefore continuing to build an evidence base specifically relating to the safety of engaging suicidal young people in research is an important step towards overcoming the current absence of evidence.

This point is returned to below in relation to the potential for the development of online approaches to suicide prevention.

2.2 Interventions for which some evidence exists

Many people who engage in self-harm never reach the attention of mental health professionals, either because they do not present for help or because when they do present they are not offered adequate assessment or treatment [8]. Thus there is an urgent need for youth-friendly services that have the resource, skill and capacity to respond to young people who present with self-harm, even in the absence of severe psychiatric disorder.

As noted above, limited evidence exists with regard to the effectiveness of interventions specifically designed to reduce risk of suicide or self-harm among young people. However some evidence does exist that can be used to guide treatment and further research. Treatment approaches discussed here are broken down into the following categories: 1) Treatment based approaches 2) School-based approaches 3) Internet-based approaches, and 4) The prevention of suicide clusters.

Treatment based interventions

The development of clinical guidelines for the treatment of self-harm, including among young people with FEP, are currently underway, under the leadership of the Royal Australian and New Zealand College of Psychiatrists.

To date limited evidence exists with regard to treatment approaches for this population. However, early intervention and/or detection services specifically for people with FEP appear to show promise in terms of their ability to either reduce rates of self-harm prior to treatment by engaging and treating people earlier in the course of illness [81], or to reduce suicide mortality rates for the duration of treatment and in the immediate follow-up period [82, 83]. Early intervention services are discussed in more detail below.

The use of clozapine [84] and cognitive behavioural therapy (CBT) [85] have both been shown to reduce 'suicidality' or suicidal thoughts among patients with schizophrenia so may be worthy further examination. Clozapine has also previously been recommended as a possible treatment for FEP patients at risk of suicide [86].

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Early intervention services As noted above evidence exists to suggest that early intervention/youth-friendly services have led to better outcomes for young people experiencing a range of disorders, in particular in first-episode psychosis [87, 88]. This has been shown to be the case not only in terms of clinical and functional/vocational outcomes [83, 87, 89], but also in terms of suicide-related outcomes, with lower rates of suicide-related behaviour being evident among patients with access to specialist early intervention services throughout the duration of treatment, when compared with those who only have access to more traditional service models [81, 83]. These findings have led to the wide-scale development of early intervention services for young people with psychosis.

However, youth-friendly early intervention models of care are not restricted to first-episode psychosis. This is perhaps unsurprising given that disorders such as depression and anxiety are more prevalent than psychosis, and most commonly emerge during adolescence [38, 90] hence the need for youth-friendly models of service across the full spectrum of disorders [91]. Suicide-related behaviours cut across the diagnostic spectrum and it has long been established that an index episode of suicide-related behaviour is a key indicator of future episodes [23, 43]. Therefore, if we apply this approach of early intervention to suicide prevention, it makes sense to intervene early before people proceed along this trajectory and suicide-related behaviour becomes embedded in an individual's pattern of behaviour, leading risk to become chronic. In addition, given that we know that in many young people presenting with suicide risk their symptoms will remit with only minimal contact [92], intervention at this stage does not necessarily need to be a time-consuming or costly exercise.

A further advantage of intervening early relates to the risk of contagion. As discussed above, suicide-related behaviour among young people can contribute to an increased risk of similar behaviour among friends and peers [9], therefore it is possible that intervening early might reduce the risk of further episodes of self-harm and therefore reduce the potential for contagion.

Thus, there is a need to continue to prioritise the roll-out of youth-friendly and accessible services such as Orygen Youth Health and **headspace**: Australia's National Youth Mental Health Foundation, that can deliver novel forms of treatment to suicidal youth before risk becomes chronic.

Cognitive behavioural therapy A systematic review conducted at OYHRC examined all interventions for young people engaging in suicide-related behaviour in clinical settings [64]. Fifteen published studies met the inclusion criteria for the review and in general the interventions reviewed fell into the following three categories: 1) Interventions that aimed to reduce risk by attempting to enhance access to, and engagement with, specialist services; 2) Psychological therapy, delivered face-to-face, either individually or in a group setting; and 3) Pharmacological treatment.

The majority of studies recruited young people from inpatient or community mental health services following a suicide attempt or presentation for deliberate self-harm, and most interventions were delivered in an outpatient setting. Of the 15 published studies, two specifically targeted young people with mood disorders, one targeted young people with borderline personality disorder and one targeted young people with a psychotic disorder.

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The two studies that reported some effectiveness were a study by Turner [93] and a study conducted by Slee and colleagues [94]. The study by Turner compared dialectical behavioural therapy with client-centred therapy in people with borderline personality disorder. This trial demonstrated that there were fewer suicide attempts and less suicidal ideation in the dialectical behavioural therapy group at both the six- and 12-month follow-up points. However, caution is required given this was a small study (n=24) with a high drop-out rate, which could possibly over-inflate the treatment effect.

The study conducted by Slee and colleagues (n=77) compared individual cognitive behavioural therapy (CBT) with treatment as usual and demonstrated clinically significant reductions in terms of suicidal ideation that increased over follow-up. While the number of self-harmers remained the same in both groups post-intervention, there were significantly fewer incidents of self-harm in the cognitive behavioural therapy group at nine-month follow-up. That is, the number of people who engaged in deliberate self-harm did not change, but the number of incidents of self-harm was reduced in the intervention group.

Thus according to this review, and supported by another, more recent study [95], the best evidence to date suggests that CBT shows the most promise when it comes to reducing suicidal thinking among older adolescents and young adults. However the studies included in the review were all hampered by methodological limitations. For example, most studies were not adequately powered to measure suicide as an outcome; only proxy outcomes such as suicidal ideation, suicide attempt and deliberate self-harm could be measured. This is not unusual in suicide research as, despite it being a significant problem, suicide is a low base rate event, meaning that in order to conduct research with suicide as an outcome, very large studies with long follow-up periods are required. While proxy indicators of suicide risk are often used as study outcomes, there remains a need for large, adequately powered trials that can examine the effects of interventions on rates of suicide. Related to this was the absence of standardised definitions of the key outcomes of interest and the use of variable outcome measures across the included studies. For example, in some cases trialists did not distinguish between suicide attempts and non-suicidal self-harm, which made the pooling of data and the interpretation of findings problematic. These sorts of difficulties could be overcome by adopting a more strategic national approach to suicide research as argued above.

A final point relates to a lack of knowledge as to which components of CBT are the most effective when treating adolescent depression [96] or suicidality. The following elements have been found to be the most frequently used: achieving measurable goals or increasing competence; the provision of psycho-education; self-monitoring; relationship skills; communication training; cognitive restructuring; problem-solving and behavioural activation [97]. However, to date no published studies have examined the effectiveness of individual components of CBT with suicidal youth specifically, and this should also be the focus of future research.

School-based interventions

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A recent review examined all suicide prevention and postvention interventions delivered in school settings [63]. The study identified 43 unique studies that reported on the effects of suicide prevention strategies in schools. Of these, 15 studies examined universal prevention programs, 23 examined selective programs (12 were gatekeeper training studies and 11 were screening studies), three were indicated interventions, and two examined programs that focused upon providing interventions following a suicide event in a school (postvention).

Overall, the review found that whilst the universal education programs targeting students did appear to increase knowledge and awareness of suicide and various help-seeking options, concerns have been expressed about their safety [98, 99], therefore the study concluded that whilst they may be intuitively appealing they require further testing before being implemented more broadly. With regard to the selective interventions, i.e. gatekeeper training programs for school wellbeing staff and screening programs designed to identify vulnerable students, these did show some potential. Indeed for the most part the screening programs appeared to identify the correct students and did not show any iatrogenic effects, and the training programs led to improved reports of knowledge, perceived skill and confidence on the part of school staff when working with at-risk students. Questions have been raised with regard to the acceptability and feasibility of implementing widespread screening programs in school settings [100], which has led to limited uptake of such programs outside of the United States. Gatekeeper training however is a widely accepted suicide prevention approach, including in schools. It has been a focus of the national approach to suicide prevention in Australia for some time [67] and was one of the key recommendations to arise from a previous national inquiry into youth suicide [101]. A limitation of research examining the effects of gatekeeper training is that to date no previous research has examined the effects of this type of intervention on actual outcomes for young people, for example changes in rates of help-seeking and improved outcomes following help-seeking, and this is a necessary next step.

The indicated and postvention studies were fewer in number and did not enable us to draw any firm conclusions.

Internet-based programs   The Internet is becoming increasingly popular with Australian young people [102] and is also being used to treat and prevent depression and anxiety in adults and young people [103, 104], and suicidal ideation in adults [105]. However, to date there are no Internet-based programs that specifically target suicidal young people, including in school settings. In response our research group developed the Reframe-IT program, a specifically designed, Internet-based CBT program for secondary school students experiencing suicidal ideation. The study was pilot tested with twenty-one young people in schools across Melbourne and reported a reduction in suicidal ideation, depressive symptoms and hopelessness among participants [106]. Participants also demonstrated improved coping and problem solving skills following the program (Hetrick et al, in submission).

A further important finding was that the program was found to be acceptable by young people, and no iatrogenic effects were reported, meaning that no increases in either suicidal ideation or distress were evident after each module was completed [79]. This is significant. To date concerns have been

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expressed with regard to talking with young people about suicide over the Internet [59], however this study goes some way towards dispelling these concerns. This should not be taken to suggest that all means of communicating about suicide via the Internet are necessarily helpful, and there are a number of factors that may have contributed to the safe delivery of the Reframe-IT program that must be considered in future research. For example, this was a highly structured intervention delivered in the presence of practitioners. It was administered in a controlled environment, and clear safety protocols were in place for supporting distressed or vulnerable young people, however it does demonstrate that the Internet *can be* a useful and safe tool for supporting suicidal young people.

In addition, this was a small and uncontrolled study therefore it cannot be concluded with certainty that the decreases in suicidal ideation, depression and hopelessness were a result of the Reframe-IT program. However, the findings are promising and suggest that it is safe, feasible and acceptable to deliver Internet-based suicide prevention programs in school settings. The program is now being tested in a randomised controlled trial [107].

Programs delivered via the Internet are appealing for a number of reasons, including holding the potential to deliver suicide prevention interventions in a less stigmatising, more cost-effective and more flexible manner than traditional approaches to treatment [108-110]. For example, unlike face-to-face treatment they can be accessed 24 hours a day, seven days a week and do not maintain waiting lists [111]. They also have the capacity to reach large numbers of people (including in remote locations where access to face-to-face treatment can be limited). Further they appear to be acceptable to young people. Therefore further research into programs of this nature is urgently required.

Work is also underway to examine the potential for social media platforms as a means of delivering suicide prevention activities. A recent study conducted at OYHRC (Robinson et al, in preparation) indicates that social media platforms, in particular discussion forums, are widely used by young people to provide and receive peer support for suicidal thoughts and self-harming behaviours. In addition, suicide prevention organisations frequently use social media to advertise their services and engage in awareness raising programs. However few organisations identified in this study use social media to facilitate peer-to-peer support. Thus there exists a 'disconnect' between the ways in which young people and professional organisations use social media for the purpose of suicide prevention. The same study also examined the peer-reviewed literature and whilst a number of studies were identified that examined the nature and content of suicide prevention discussion forums, no intervention studies were identified. Again this suggests a lack of much-needed intervention research in this area.

If social media platforms are to be effectively used there is also a need for the development of safety protocols, or ethical guidelines, in order to support their implementation, and management. Despite the fact that the development of such guidelines presents a number of challenges [112] work developing such guidelines is underway both in Australia [113] and the United States [114], and their implementation will be an important step towards enhancing the safe delivery of suicide prevention initiatives using the Internet.

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Suicide clusters

A suicide cluster can be defined as "a group of suicides or suicide attempts, or both, that occur closer together in time and space than would normally be expected on the basis of statistical prediction/or community expectation" [115]. It has been estimated that between 1 and 4 per cent of all suicides that occur in adolescents and young people may be part of a suicide cluster [116], with contagion being a factor in 60 per cent of all suicides in young people [117].

With regard to prevention, a recent systematic review conducted by our research group identified a lack of well controlled, rigorous trials evaluating the effectiveness of specific approaches to aid communities in responding to a suicide cluster [118]. Commonly implemented strategies include developing a community response plan; educational/psychological debriefings; providing both individual and group counseling to affected peers; screening high-risk individuals; responsible media reporting of suicide clusters; and promotion of health recovery within the community to prevent further suicides. However, adopting a broader perspective on the interventions that have been shown to be effective in preventing suicide in youth and identifying young people at risk of suicidal behaviour may be beneficial in helping communities to develop effective evidence-based response strategies to a potential suicide cluster.

Out-of-Home-Care   A final point relates to improving outcomes for children in out-of-home-care (OoHC). Each week in Victoria 60 children and young people are removed from home by the State and placed in OoHC. They typically have varied cultural backgrounds and serious disadvantage and trauma early in life. Many have multiple and complex needs before, during and after living in care, including higher rates of mental health and substance use disorders and suicide, and greater risks of homelessness and delinquency.

The ***Ripple Study*** (Improving Mental Health for Young people in Out-of-Home-Care) aims to implement and evaluate an innovative approach to systematic and affordable delivery of mental health interventions that respond to the needs of young people aged 12-17 years living in OoHC (foster, kinship and residential care). It will assess whether a mental health intervention that enhances the therapeutic care roles and capacities of their carers will improve: (i) the consistency and quality of OoHC for all young people in the sector, and (ii) access to early intervention when indicated for prevention and treatment of mental illness. Both outcomes will contribute to improving the mental health and inter-related social function of the young people.

Study Design. Stream 1 of the study (from February 2013, through the study period) encourages the participation of young people, carers, government and other organisations, practitioners and a multi-disciplinary research team. It uses a mixed methods approach to refine the intervention and plan and evaluate its implementation in the NorthWest region of Melbourne. Stream 2 of the study (from early

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2014) will use a quasi-experimental design to assess the effectiveness and cost-effectiveness of the intervention at three levels: individual young people, their carers and case-workers, and the organisations that support them. Successful implementation would have significant funding and policy implications for intersection of the youth mental health and child protection sectors nationally.

3. Key recommendations

1. A strategic approach to research into suicide and self-harm in young people, leading to the development of an adequately resourced national research agenda, is required. This should have a focus on developing and testing the safety and efficacy of interventions specifically targeting at-risk young people, in particular those identified as being at elevated risk above (i.e. those with previous self-harm; those with a psychiatric disorder and those in out of home care).
2. A continued focus on youth friendly early intervention services that can provide novel forms of treatment to at-risk young people in an acceptable environment before risk becomes chronic is required. These services should target the full diagnostic spectrum and should include evidence-based interventions for suicidal youth even in the absence of a current diagnosis.
3. Priority should be given to the development and funding of large, well-designed studies that further test the effects of interventions that currently show promise, including CBT with at-risk young people, and gatekeeper training among school staff (and indeed others who work closely with young people e.g. sports coaches).
4. Priority also needs to be given to the development and robust testing of novel interventions that make use of new technologies and social media in the field of suicide prevention. This should include, large effectiveness trials that evaluate efficacy, safety and cost effectiveness.

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Section Two: HYPE Program Response

A key form of mental illness associated with self-harm and suicidal behaviour in young people under the age of 18 years is borderline personality disorder (BPD), however this regularly goes unnoticed. There are several reasons why BPD can go unrecognised as a contributing factor to these behaviours, the causes being the reluctance of health professionals to diagnose it in people under 18 years, the lack of adequate training in the diagnosis, management and treatment of young people who might present with this disorder, and the mixed clinical presentation that adolescents typically have which may include other forms of illness such as depression. More needs to be done to prevent and intervene early in the course of BPD, which first manifests in adolescence, to reduce the use of self-harm and suicidal behaviour as a way of managing the distress associated with the disorder.

1. **BPD in children and young people: intentional self-harm and suicidal behaviour as key symptoms of disorder**

BPD is a disease characterised by "instability of interpersonal relationships, self-image, and affects, and marked impulsivity" (APA 2013). BPD is one of the main forms of mental illness associated with self-harm and suicide, and often co-occurs with mood disorders and substance use disorders. The criteria associated with this disorder listed in the DSM-5 (APA 2013) include:

1. Frantic efforts to avoid real or imagined abandonment
2. A pattern of unstable and intense interpersonal relationships characterised by alternating between extremes of idealisation and devaluation.
3. Identity disturbance: markedly and persistently unstable self-image or sense of self.
4. Impulsivity in at least 2 areas that are *potentially self-damaging* (e.g. spending, sex, substance use, reckless driving, binge eating)
5. *Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour*
6. Affective instability due to a marked reactivity of mood (e.g. intense dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).
7. Chronic feelings of emptiness
8. Inappropriate, intense anger or difficulty controlling anger (e.g. frequent displays of temper, constant anger, recurrent physical fights)
9. Transient, stress-related paranoid ideation or severe dissociative symptoms

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Despite longstanding general agreement that personality disorders have their roots in childhood and adolescence (APA 2013), diagnosing personality disorders prior to age 18 years has been more controversial than diagnosing personality disorders in adults (Chanen and McCutcheon 2008), but this is no longer justified (NICE 2009; NHMRC 2012). BPD is increasingly seen as a lifespan developmental disorder (Tackett et al. 2009) that is similarly reliable and valid when applied to adolescents or adults (Chanen et al. 2008a; Miller, Muehlenkamp and Jacobson 2008), is not reducible to other diagnoses (Chanen, Jovev and Jackson 2007), and can be identified in day-to-day clinical practice (Chanen et al. 2008b).

In fact, BPD might be better considered as a disorder of younger people, with a rise in prevalence from puberty and a steady decline with each decade from young adulthood (Ullrich and Coid 2009; Johnson et al. 2000; Samuels et al. 2002). Limited data suggest that BPD occurs in approximately 3% of community-dwelling (Bernstein et al. 1993; Moran et al. 2006) and up to 22% of outpatient (Chanen et al. 2008b; Chanen et al. 2004) adolescents and young adults. BPD has been reported to have a *suicide rate of 8-10%* (Pompili et al. 2005), which is *50 times* that of the general community (Work Group on Borderline Personality Disorder 2001).

There is now clear evidence that BPD features have similar stability in adolescence and adulthood (Chanen et al. 2008a). Evidence is emerging that the underlying dimensions of borderline personality disorder features (conceptualized as impulsivity, negative affectivity, and interpersonal aggression) might also be relatively stable in children (Stepp et al. 2010; Crick et al. 2005). Only one study has specifically measured childhood or adolescent personality disorder features as a predictor of later personality disorder over multiple assessments from childhood to adulthood (Cohen et al. 2005). Personality disorder symptoms in childhood or adolescence were the strongest long-term predictors, over and above disruptive behaviour disorders and depressive symptoms, (Cohen et al. 2005; Cohen 1996; Bertstein et al. 1996; Kasen et al. 1999) of later DSM-IV personality disorder. Overall, these data support a normative increase in BPD traits after puberty, perhaps bringing the problems associated with BPD to clinical attention. As this wanes in early adulthood, partly due to maturational or socialization processes, (Cohen et al. 2005) a group is revealed that is increasingly deviant compared with their peers (Kasen et al 1999) and perhaps conforms more to the 'adult' BPD phenotype. This suggests that young people displaying BPD features are the major group from which the adult BPD phenotype arises.

Heritability estimates for BPD (or dimensional representations of BPD) range from 35% to 45% (Chanen and Kaess 2012). Experiences of childhood abuse or neglect, problematic family environment, as well as low socio-economic status are significant risk factors for the development of personality pathology and specifically BPD (Chanen and Kaess 2012). Prospective, longitudinal data also indicate that certain temperamental characteristics and early onset mental state or behavioural problems that are analogous to characteristics of BPD are precursors to the emergence of the BPD phenotype but do not predict its onset with certainty. However, it is technically imprecise to refer to many of these phenomena as 'risk factors' (Kraemer et al. 1997), as these same phenomena are later used to define BPD. Rather, they are better termed *precursor signs and symptoms* (Eaton, Badawi and Melton 1995). Typical phenomena include those of attention deficit hyperactivity disorder (ADHD), oppositional

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defiant disorder (ODD), conduct disorder (CD), substance use, depression, and *deliberate self-harm*, along with the actual features of BPD (Chanen and Kaess 2012).

Deliberate self harm is a core feature of BPD (Leichsenring et al 2011) and retrospective reports from adults with BPD indicate childhood-onset of deliberate self harm in more than 30% and adolescent-onset in another 30% (Zanarini et al. 2006). However, deliberate self harm is surprisingly under-researched as a potential precursor to BPD. Although it is relatively common among adolescents and young adults (Nock 2010) and is associated with a range of clinical syndromes, there is evidence that repetitive deliberate self harm, which is less frequent, might differ from occasional deliberate self harm (Brunner et al. 2007). BPD can be diagnosed in the majority of female adolescent inpatients with deliberate self harm (Nock 2006) and the likelihood of meeting the diagnosis of BPD is greater in adolescents endorsing both deliberate self harm and suicide attempts compared with individuals reporting deliberate self harm or suicide attempts alone (Muehlenkamp et al. 2011). Also, the number of BPD criteria met is predictive of whether or not an adolescent has engaged in deliberate self harm or attempted suicide (Jacobson et al. 2008).

The importance of BPD as a predictor of suicide has been further emphasised by a study conducted in Sweden of 12,247 cases that were linked to the national in-patient register and the cause-of-death register to identify which form of mental illness was associated with completed suicide (Tidemalm et al. 2005). They found that BPD was the diagnosis most strongly associated with suicide among persons with a history of psychiatric in-patient treatment. They also highlight the issue that suicide risk is often underestimated in BPD and that prevention can be difficult as hospitalisation is not always an effective means of prevention.

The above findings are important because they provide evidence that the features of BPD can be reliably and validly detected from at least the pubertal period onwards. However, BPD features are often preceded by, accompany, or follow signs and symptoms that are also associated with other mental state disorders (so-called comorbidity), such as mood, anxiety, disruptive behavior, eating, substance use disorders and self harm (Chanen, Jovev and Jackson 2007; Kaess et al. 2012; Cohen et al. 2005). Taken together, these signs and symptoms appear from childhood through to adolescence. Many of these resemble aspects of the BPD phenotype and presage its later appearance in adolescence or emerging adulthood. It is this cohort of young people with BPD that also carry a high risk for self-harm and completed suicide that extends beyond the risk associated with other disorders over the lifespan.

2. Lack of coherent approach to BPD among service providers

In Australia many children or young people who are referred by their school, family member or guardian due to suicidal ideation or intentional self-harm are currently referred to a CAMHS or CYMHS service, or may see their local GP, local hospital emergency facility, or an alcohol and drug treatment service. Where the underlying reason for these behaviours are related to a diagnosis of BPD there is a complete lack of coherence in approach. This is because there is a lack of adequate training (Thompson et al. 2013), and a lack of coordination amongst service providers. Many young people

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with BPD, like their adult counterparts, demand a high amount of service usage. While girls can be expected to find their way to a mental health service provider and may engage in cutting, boys with this disorder are suspected to be more likely to present to drug and alcohol services (Sansone and Sansone 2011).

Few mental health clinicians in Australia have been trained in the specific therapies recommended for treatment of this disorder, which include Cognitive Analytic Therapy, Schema Focussed Therapy, Dialectical Behaviour Therapy, Cognitive Behaviour Therapy and Emotion Focussed Therapy (Chanen et al. 2009b; Giesen-Bloo et al. 2006; Linehan et al. 2006; Davidson et al. 2006; Schuppert et al. 2009). Of these only Cognitive Analytic Therapy and Emotion Focussed Therapy have been trialed and shown to be effective in treating young people aged 15 to 24 years (Schuppert et al. 2009; Schuppert et al. 2012). At the HYPE program we have found evidence that it is not just the type of therapy that is important, but also the therapeutic setting and approach (Chanen et al. 2009). This is important because psychotherapy is the main-stay of treatment for this disorder.

Similarly, as BPD has only recently been moved from Axis II to be incorporated into the main part of the DSM, and there is a lag in clinician expertise for its diagnosis and management. National Health and Medical Research Council guidelines for the treatment of BPD state that psychotherapy is the main treatment for this disorder (NHMRC 2012). Pharmacotherapy should be targeted and polypharmacy avoided. Likewise hospitalisations should be kept to a minimum, be short in duration, and only be used to manage extreme risk due to suicidal ideation and self-injury. It remains unknown how far the dissemination of these guidelines has infiltrated all levels of treatment services (primary, secondary, tertiary). On these grounds it is fair to assume that our ability to prevent or intervene early in the course of this disorder and reduce suicide and self-harm is compromised.

The HYPE program provides service development to various Child and Youth Mental Health Services in Victoria, interstate and internationally. In Victoria, over the past 3 years, HYPE staff have trained approximately 100 staff across their 4 Community teams, Access teams and their Adolescent Inpatient Unit in Early Intervention for BPD principles, management of BPD skills and in an introduction to Cognitive Analytic Therapy. A core group of 15 staff have received extensive training over three years in Cognitive Analytic Therapy and now deliver this to young people presenting to their service with BPD features. HYPE staff have facilitated EH CYMHS to develop a BPD committee with portfolio holders located in each of the Community Teams, to support all the clinicians to more consistently manage their clients with BPD. Further support has included consultations with the CYMHS Complex Case Panel about particularly complex clients, and assistance with a recent review of a pattern of suicides. HYPE has provided varying levels of service development activities at Barwon Health's YMH service Jigsaw, Ballarat Child, Adolescent and Youth MHS, and La Trobe Regional Hospital and associated MHS.

3. Gathering statistics on self harm and suicide incidence rates in the Australian community
Unfortunately in Australia, BPD is still not included as causal for suicide and self harm in people under the age of 18 years by the Australian Bureau of Statistics. In their report on "Suicides, Australia 2010",

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they state the high incidence of death by suicide related to mental and behavioural disorders (58.6%) in the 15 to 24 year old age group (ABS 2010). The two most common disorders in this group were mood disorders (23.3%) and those due to psychoactive substance use (30%). However, deaths caused by disorders of adult personality and behaviour (0.2%) in this group would have been limited by the inclusion criteria used. It is unclear whether or how BPD was measured in their survey of cause, and on face value it appears the criteria was only applied to young people aged 18 years or older. It is probable that the ABS statistics on death by suicide for this age group do not adequately include cases related to BPD. We recommend that the ABS include BPD in their collection of suicide rate causes, and extend this category to include cases under the age of 18 years.

In an ABS survey, "Australian Social Trends 2008", information regarding self-harm in the 15 to 24 year old age group, showed the rate of hospital treatment episodes due to intentional self-harm had increased in the time between the survey in 1998/9 period to the 2005/6 period (ABS, 2008). The rates were consistently higher in females than males, rates in females increased between survey periods, with the highest presentation for hospital treatment registered in 15 to 19 year old women. These statistics are limited to recorded hospital treatment episodes and actual community incidence of self-harm would be expected to be much higher. This data is substantially lacking in information about why these acts of self-harm were committed, and do not have a diagnosis attached to them. We recommend that data collected by the ABS concerning intentional self-harm include a diagnosis, with particular attention given to the presence of BPD pathology and disorder.

Research conducted by the HYPE program has shown that it is possible to identify BPD in clinical populations of young people aged 15-24 years using a number of different screening measures. These young people often seek help but are not recognised as having BPD, screening using a number of measures can assist with their identification (Chanen et al. 2008b). When the McLean Screening Instrument for Borderline Personality Disorder, the Borderline Personality Questionnaire, the BPD items from the International Personality Disorder Examination Screening Questionnaire and the BPD items from the Structural Clinical Interview for DSM-IV Axis II Disorders Personality Questionnaire were compared in a sample of young people aged 15-24 years, the BPQ was found to be the most accurate measure. This research also demonstrates that screening for BPD in young people is feasible.

Self-harm reported in people with BPD can include a wide variety of behaviours including: cutting; burning with a cigarette, lighter or match; carving words or pictures into the skin; severe scratching; biting; rubbing sandpaper on skin; sticking pins, needles, staples into skin; rubbing glass into skin; breaking bones; head banging; punching self; interference with wound healing; and taking prescribed medications inappropriately (Lundh et al. 2007). It can be done for a wide range of different reasons, including: to cope with intense feelings of anger, shame, anxiety, dysphoria, sadness, or to cope with painful memories, to elicit a response from others, to stop numbness, and as a response to interpersonal stressors and environmental stress (Lundh et al. 2007). Most studies of self harm and suicidal ideation in BPD have been conducted in adults. Less is known about the behaviours of young people with BPD under the age of 18 years.

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4. Programs and practices that target and support adolescents and young people with BPD traits who engage self-harm and suicidal behaviour

Adolescents with BPD commonly seek clinical help but opportunities for early intervention are frequently missed. The Helping Young People Early (HYPE) program is a unique service developed to provide both indicated prevention and early intervention for BPD (Chanen et al 2009a). The goal of this service is to offer optimal effective treatment as early as possible in the course of BPD to ensure that this intervention is appropriate to the phase of the disorder and to the developmental phase of the individual and his or her family (Chanen et al 2009a).

The HYPE program is part of ORYGEN Youth Health, the government-funded youth mental health service in western and north-western metropolitan Melbourne. ORYGEN provides services to a catchment of 150,000 young people aged 15 to 24 years of age and offers comprehensive mental health care for both psychotic and nonpsychotic disorders. Founded in 1998, HYPE became fully operational in 2000 as a service for patients who were 15 to 18 years of age, and this age range was extended to include patients up to 24 years in 2003.

HYPE referrals must meet ORYGEN's general entry criteria. The most frequent referral sources for HYPE are hospital emergency departments or crisis services (25%), self-referral (24%), other healthcare agencies (18%), family or friends (17%), and education services (5%) (Chanen et al 2009a). HYPE has a threshold of three or more of the DSM-5 criteria for BPD, which is lower than the five required for a diagnosis, as it is a mixed indicated prevention and early intervention service.

HYPE uses an integrated, team based treatment model together with time limited Cognitive Analytic Therapy (CAT) (Chanen et al 2009b). Several randomised controlled trials of the HYPE model together with CAT have shown the treatment to be efficacious and more effective than standard psychiatric care (Chanen et al 2009b), and it could be integrated with specialised treatment for co-occurring first episode psychosis (Gleeson et al 2012). Importantly, outcome measures for these treatment trials included a measure of deliberate self harm (i.e. parasuicide) and showed a dramatic reduction in the frequency of self harm in the group receiving CAT treatment within the HYPE model of care (Table 1). Clearly, provision of specialised BPD treatment services for young people aged 15 to 24 years can reduce risk of self harm and suicidal behaviours.

5. The staging model and indicated prevention with a stepped care approach for the management of disorders associated with self harm and suicide

Critically, in youth mental health, patients most frequently present with mixtures of symptoms and a dynamic, evolving and uncertain clinical picture. These might include depression, mood changes, a history of abuse, substance abuse, impulsive behaviours and self harm (Zimmerman 2010). Studies of adolescents with BPD have reported high rates of co-occurring mood (59%), anxiety (46%), disruptive behaviour (70%), and substance use disorders (35%) (Chanen, Jovev and Jackson 2007), and other personality disorders (Kaess et al. 2012). A key problem, shared with adult psychiatry, appears to be that patients who present with depression are not further questioned as to the presence of symptoms

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of BPD (Chanen and McCutcheon 2008). Another key issue is disproportionate thinking with regard to intervention, with undue emphasis placed upon applying the most intensive interventions for adult phenotypes of the disorders (often pharmacotherapeutic) as first-line interventions (Leibenluft 2011) and a lack of emphasis upon psychosocial interventions.

An alternative to the diagnostic category approach to prevention and early intervention is to develop a range of risk syndromes, or warning signs for the development of a range of disorders (McGorry 2013; McGorry and van Os 2013), of which self harm and suicidal ideation may be one. Key to this cross-diagnostic, 'clinical staging' (McGorry 2010) approach is eschewing diagnostic categories and arbitrary age restrictions in favor of a focus on the severity and persistence of symptoms, the need for care, and the proportionality of any intervention.

Clinical staging involves mapping the development, progression, and extension of mental disorder over time and is essentially a more refined form of diagnosis. It is analogous to disease staging in general medicine. Its value is recognized in the treatment of malignancies and other potentially severe medical illnesses, where limiting the extension and secondary impacts of the disease, and improving quality of life and survival, all rely on the earliest possible delivery of effective interventions.

Clinical staging offers an integrating framework that is potentially more useful in determining which and what type of treatment will be most effective during a particular stage of disorder. Treatment needs will differ by phase or stage of disorder, with the possibility that interventions might be more benign and/or effective in earlier stages of disorder. Clinical staging is also much more consistent with evidence from developmental psychopathology that there are many paths to the development of disorders (equifinality) and diverse outcomes (multifinality) for those presenting with psychopathology (Cicchetti and Rogosch 2002).

Clinical staging differs from conventional diagnostic practice in that it defines not only the extent of progression of a disorder at a particular point in time but also where a person lies currently along the continuum of the course of an illness. The differentiation of early and milder clinical phenomena from those that accompany illness extension, progression, and chronicity, lies at the heart of the concept, which makes it especially useful.

Table 1 illustrates the application of clinical staging, with a potential model for assessment of and intervention for mood disorders and BPD (adapted from Berk et al. 2013; McGorry et al. 2006). This model recognises the commonality of many of the risk factors for these disorders, their shared precursor symptoms and syndromes and the diverse developmental pathways that any individual might take, especially those with early stage disorder. Crucially, this framework outlines a proportionate clinical response to each stage of disorder. Suggested interventions are simpler and more benign during early stages of disorder (stages 0 and 1), and could specifically target self harm and suicidal ideation, and increase in intensity (and potential adverse effects) with disorder progression. In later stage disorder (stages 3 and 4), the risk of adverse effects becomes more justified when compared with the risk of not treating disorder.

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Many of the interventions suggested for early stages of disorder already exist but their outcomes have not been assessed when used in this proposed model. Interventions for stages 1b and 2 are early in their development. Psychosocial interventions in youth include the Helping Young People Early (HYPE) program for borderline personality disorder (Chanen et al. 2008), along with psychosocial interventions for bipolar disorder (Macneil et al. 2012) and unipolar depression (Garber et al. 2009). Low toxicity, novel pharmacotherapies might also be apropriate for stages 1b and 2. Examples include omega-3 fatty acids, which have evidence to support their use in both mood and borderline personality disorders from stage 2 onwards (Amminger et al. 2013; Zanarini and Frankenburg 2003; Sarris, Mischoulon and Schweitzer 2012).

This clinical staging model for mood and borderline personality disorders will necessarily evolve and become more sophisticated with evolving knowledge about developmental pathways for these disorders (including indicative biological and endophenotypic markers) and novel interventions. It provides a starting point for both diagnosis and treatment development. When applied to the indicated prevention of self harm and suicidal ideation it has some obvious benefits.

Summary

BPD has been neglected as a source of self-harm and suicide in young people under the age of 18 years. Continued resistance exists about the application of this diagnosis to adolescents even though there is clear evidence that states it can be reliably diagnosed in young people. This is important because BPD is a disorder that includes self-harm and suicidal ideation as a core feature. More needs to be done to identify young people who have BPD with a view to preventing and intervening early in this disorder, to curb the use of self-harm and suicidal behaviour as a way of managing the distress it causes.

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