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REVIEW PAPER

APSI: a proposed integrative model for suicide prevention

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Background. Deaths by suicide have been increasing in recent years in Ireland, many of whom have co-morbid mental health difficulties and/or have attended primary care services 1 month before death.

Aims. To profile how 'Access to Psychological Services Ireland' (APSI) provides stepped-care therapies for mild-to-moderate adult mental health presentations and the potential effectiveness of this model based on comparison to a review of evidence-based strategies in suicide prevention. A secondary aim is to highlight how APSI has the potential to target those at risk of suicide and provide an integrative after-care service to complement secondary care mental health services.

Findings. In a context of inter-agency working, APSI provides an integrated continuum of suicide prevention interventions that map onto or intervene across the continuum of suicide behaviour. Hence, APSI appears to implement what the literature suggests will work in preventing suicide. However, outcome research is needed to establish APSI's impact in preventing suicide.

Recommendations. It is recommended that Irish-based research is conducted to establish APSI's impact in preventing suicide with a view to rolling out APSI as a national mental health clinical care programme.

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Key words: Delivery of healthcare, integrated, primary care, psychological services, suicide prevention.

The challenge of suicide prevention in Ireland

One of the primary challenges for our health services is to identify effective means of preventing suicide. The World Health Organization (WHO, 2010) has estimated that ~1 million people complete suicide (i.e. end their own life) each year. Global suicide rates have been increasing over the last number of years across age and gender demographics (Tarrier *et al.* 2008). Likewise, there was a marked increase in rates of suicide between 2006 and 2011 in Ireland (Kelly & Doherty, 2013). In 2009, suicide figures in Ireland reached their highest level at 552 deaths, with males represented disproportionately, and the 2011 figures indicate 525 deaths by suicide in Ireland, with males again over represented (National Suicide Research Foundation, 2013). Ireland also holds the fifth highest rate of suicide in Europe amongst males aged between 15 and 29 in 2013 (MacSharry, 2013). Young females also represent an at-risk group. Scowcroft (2013) indicates an increase in suicide rates for Irish females between 10–14 years and 15–19 years age groups in 2011.

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Along with gender and age, a number of other cohorts have been identified as being at risk of suicide. These include those with mental ill-health; those in professional occupations; those in prison [Department of Health (DoH) 2012]; rural dwellers (Statistics Canada, 2002; Hill *et al.* 2005; Hirsch, 2006); those with physical ill-health; and those undergoing stressful life events (e.g. unemployment, marital separation: WHO, 2012). Mental ill-health is estimated to be present in approximately one in four individuals, with suicide behaviour being strongly correlated with presentations such as depression, anxiety, personality disorder, and bipolar disorder (Tarrier *et al.* 2008).

The WHO (2012) point to a variety of barriers to accessing intervention services for at risk individuals including: stigma; lack of detection/referral of risk by GPs; and difficulty accessing secondary care mental health services, at least in part due to excessively high thresholds for acceptance of referrals. Moreover, findings consistently indicate that there are higher rates of contact by suicide completers in primary care services (Luoma *et al.* 2002; Owens *et al.* 2004). A potential strategy to reduce suicide would be to reduce stigma; improve access to services and referral onto higher intensity services; and improve risk management collaboration between frontline and secondary care mental health services.

The continuum of suicide behaviour

Suicide behaviour can be conceptualised as a continuum of either internal or external acts that ranges from suicidal ideation; to serious thoughts of death; to suicide plans; to suicide attempts; and through to suicide completion. 'Suicidal ideation' is defined as 'suicidal ideas in the general population' (Casey *et al.* 2006: 410). Those with 'serious thoughts of death' are defined as those who have 'thought seriously about trying to kill themselves at any time in the past 12 months' [Centers for Disease Control and Prevention (CDCP) 2011: 4]. Those with 'suicide plans' are defined as persons who have made plans to take their own life in the past year and 'suicide attempts' pertain to any incident where a person has taken steps to end their life in the past year but has not completed suicide (CDCP, 2011). In contrast, deliberate self-harm (DSH) refers to purposeful acts of harming oneself, including, but not limited to, self-mutilation, cutting and burning. While such behaviours may have multiple functions, they often serve as a means to regulate affect (e.g. to express emotion and to achieve a sense of control over it; Suyemoto, 1998).

What is APSI?

Given the significant unmet clinical needs of adults with mental health presentations in primary care (Tedstone-Doherty *et al.* 2008), and in the context of increasing budgetary constraints, it was necessary to develop a high throughput but high quality primary care service. Funded by the heretofore Office of the Assistant National Director for Mental Health Services, APSI was developed to provide stepped care low-intensity, high-throughput interventions in a primary care setting for adults presenting with mild-to-moderate mental health presentations. The stepped care approach utilised by APSI aims to provide a central referral point for immediate risk assessment; a continuum of interventions congruent with the continuum of suicide behaviour; and collaborative working with secondary care and other primary care services.

Building upon a 3-year pilot of a predominantly one-to-one cognitive behaviour therapy (CBT)-based service in a rural town, APSI was piloted in October 2012 and now provides services in six primary care team areas across one particular county. It is staffed by six Mental Health Practitioners, each assigned to a particular primary care team area, who to date have been graduate psychologists. In addition to an in-house training programme of clinical workshops that focus on how to work with common mental health presentations, the practitioners are trained in Applied Suicide Intervention Skills Training; and/or Skills-Based Training on Risk identification and Management (STORM); and/or cross-care suicide prevention for the travelling community. While managed by a Principal Psychologist Manager, the practitioners receive weekly clinical supervision from a Senior and a Staff grade Clinical Psychologist.

As agreed with the local secondary care mental health services, Table 1 indicates the inclusion criteria for primary and secondary care mental health services, respectively.

As evident from Table 1, APSI may also accept referrals for service users whose on-going treatment in secondary care requires an additional time-limited intervention for a mild-to-moderate mental health presentation(s).

Table 1. *Inclusion criteria for APSI and secondary care services*

APSI and CIPC[a]	Secondary Care Mental Health Services
Mild-to-moderate presentations with low risk, or aftercare post-risk[b]	Moderate-to-severe presentations or active risk[b]
• Depressive disorders	• Severe and chronic unipolar depression
• Anxiety disorders [e.g. generalised anxiety disorder (GAD); panic disorder; social phobia; obsessive compulsive disorder (OCD); health anxiety]	• Bipolar disorder
• Interpersonal difficulties	• Severe and chronic anxiety (e.g. complex post-traumatic stress disorder)
• Stress	• Schizophrenia and related disorders
• Low self-esteem	• Substance abuse/dependence
• Coping with physical illness	• Personality and behavioural disorders
• Bereavement and non-complex loss	• Dementia
• Life cycle development issues	• Eating disorders
• Problems of adjustment	• Somatoform disorders

[a] The Counselling in Primary Care (CIPC) service also provides one-to-one intervention to General Medical Service (GMS)-only clients.

[b] Moderate presentations may be initially referred to Access to Psychological Services Ireland (APSI). However, if such presentations have not responded to low intensity APSI interventions (e.g. guided self-help, brief cognitive behaviour therapy), or have a level of complexity that suggests APSI interventions may be inappropriate, referral should be made to secondary care services.

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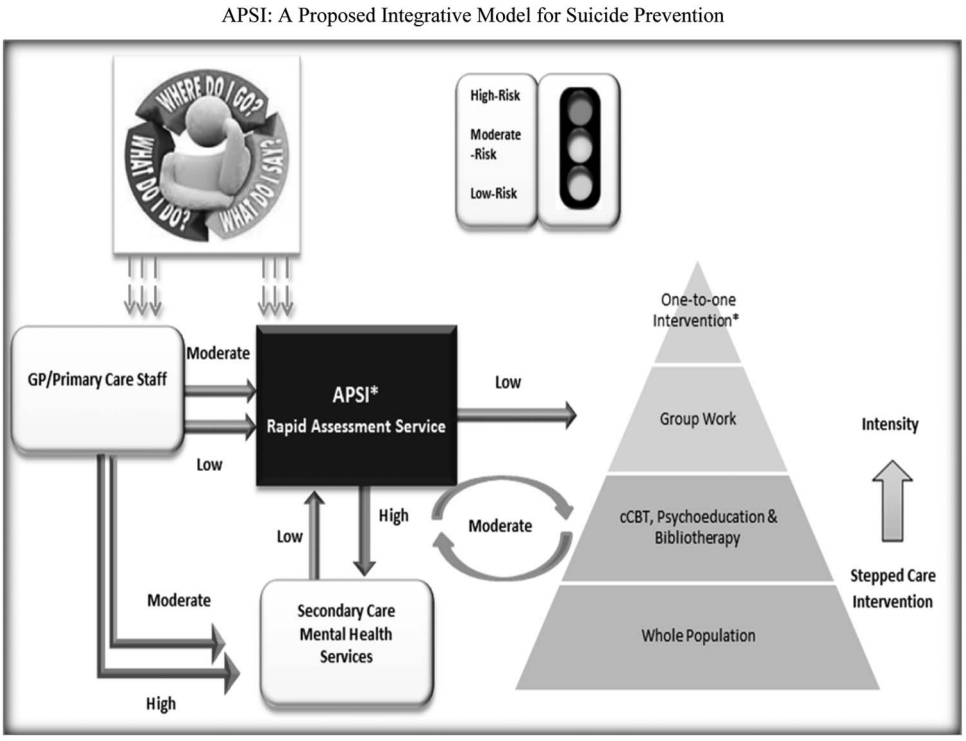

Fig. 1. 'Traffic-light' system for risk referral and management. *One-to-one intervention also provided by CIPC to General Medical Service (GMS) patients. **Stepped Care intervention provided by the Health Service Executive (HSE) in collaboration with local voluntary agencies.

APSI's model for risk referral and management

The 'traffic-light' system, developed by APSI (see Fig. 1), sets out how risk identification and referral can be managed between services. Low risk presentations can be appropriately managed by APSI and moderate risk cases (highlighted by amber arrows) can be managed by APSI in collaboration with local secondary care and associated services. In contrast, high-risk cases (highlighted by red arrows) are referred directly by GPs to the local secondary care services, and once risk decreases, these cases can be referred to APSI.

Table 2 profiles the multiple factors implicated in low, medium and high risk of suicide behaviour. However, the level of risk will also be influenced by several person-centred factors (e.g. repertoire of coping skills; access to natural supports). Hence, an appropriate assessment tool to assess for other complicating factors (e.g. hopelessness; intent; social-isolation, etc.) also needs to be utilised.

What an effective suicide prevention service needs to provide

Effective suicide prevention and management requires recovery-based principles to permeate all aspects of support and service provision. More specifically, a recovery model of mental health represents a holistic approach to the concerns of service users and their carers that recognises the need to develop a 'tight bundle of relevant responses' (Heginbotham, 1999: 258) that directly correspond to their needs and wishes. The recovery model also refutes the episodic model of health care provision that provides intensive intervention only in acute periods by seeking to provide 'on-going therapeutic input and the need for a significant degree of mental health team-working and collaboration between different agencies so that the totality of service users' needs is addressed' (Byrne & Onyett, 2010: 14).

Suicide prevention measures recommended by WHO include primary and secondary mental health services working together in an integrated manner to provide brief interventions to those at risk (WHO, 2012: 18). Indeed, effective communication between primary and secondary care services is vital for suicide prevention (DoH, 2012). The National Institute for Health and Clinical Excellence (NICE, 2011b: 18) recommends that 'if a person who self-harms is receiving treatment or care in primary care as well as secondary care, primary and secondary health and social care professionals should ensure they work cooperatively, routinely sharing up-to-date care and risk management plans'. Meta-analyses have indicated

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Table 2. *Indicators of low, medium and high risk*[a]

Low risk	Moderate risk	High risk
• Infrequent/fleeting thoughts of suicide • No suicide plan • Mild mental illness • No substance abuse/dependence problems • No previous suicide attempt • No self-harming behaviours	• Frequent or fixed thoughts of suicide • Has considered suicide but no specific plan or immediate intent • Moderate mental illness • Substance abuse/dependence problems • Presence of dangerous or self-harming behaviours of low frequency • Previous attempt(s) of low lethality	• Suicide intent with specific plan • Means of suicide available/accessible • Moderate or severe mental illness • Substance abuse/dependence problems • Frequent dangerous or self-harming behaviours • Previous attempt(s) of high lethality

[a] Information adapted from references (Bryan & Rudd, 2006; Substance Abuse and Mental Health Services Administration, 2009; Craig & Rudd, 2006).

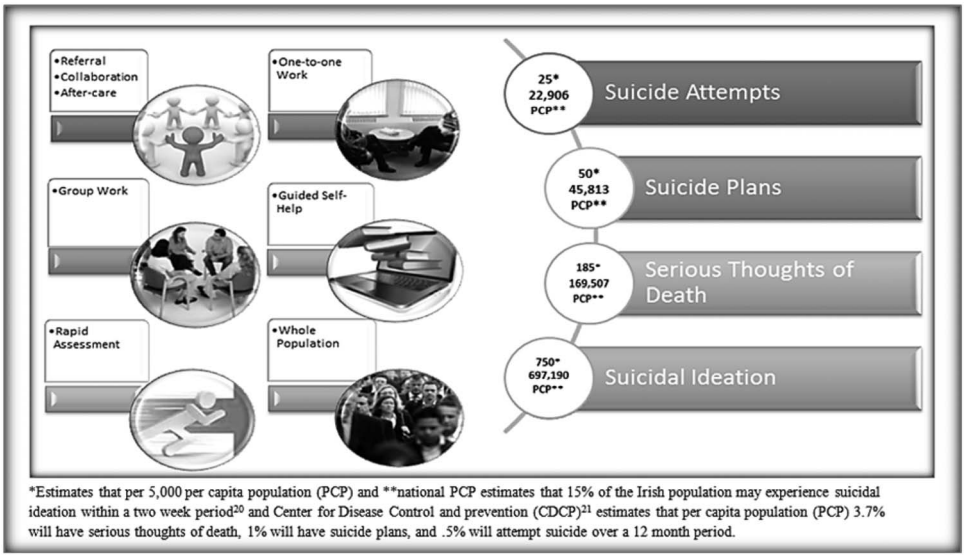

Fig. 2. Estimated prevalence rates of suicidal ideation, serious thoughts of death, suicidal plans and suicide attempts. **Based on Irish population figures (Casey *et al.* 2006; CDCP, 2011; CSO, 2011) estimates as above.

collaborative care to be both more effective and cost efficient than treatment as usual (TAU) for depression (Gilbody *et al.* 2006; Glied *et al.* 2010).

Figure 2 indicates how the APSI steps map onto the continuum of suicide behaviour.

Subsumed within an inter-service shared-care recovery model, any suicide prevention service needs to reflect what the literature has been found to be effective in preventing suicide. A systematic review indicated that several key factors point towards reduced suicide mortality, including education of key stakeholders; increased access to services and assessment; use of CBT and service user choice; a focus on depression; follow-up care; and case co-ordination.

Education of key stakeholders such as health professionals, at risk cohorts and the general public has a strong supportive evidence base. Large population studies indicate a reduction in suicide rates through provision of mental health-related information and media communication [Hegerl *et al.* 2005; National Office for Suicide Prevention (NOSP) 2011]. Provision of information to at-risk groups, such as males (NOSP, 2007), and in raising general awareness of services (Mann *et al.* 2005) have shown some promising results in suicide prevention (Hegerl *et al.* 2005; Jorm *et al.* 2005). Longitudinal data indicates levels of mental health staff above the median within Veterans Integrated Service Networks correlated with decreases in suicide rates amongst veterans of 11.2–12.6% (Katz *et al.* 2013). As mental health is a primary predictor of suicide behaviour (Cheng, 1995), education of frontline workers in suicide prevention has had a positive impact on suicide reduction (Mann *et al.* 2005). Education campaigns aimed at improving physician recognition of risk and depression have also correlated with a reduction in rates of suicide (Mann *et al.* 2005).

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Research indicates statistically significant increases, post suicide intervention training, in the use of suicide prevention practice behaviours, knowledge and in self-efficacy in substance abuse treatment providers (Connor *et al.* 2013).

Increased access to services and assessment also represents a key preventative strategy. Up to 40% of suicide completers will consult with their GP within 1 month before death but the perceived barriers to accessing secondary care services may mean that such individuals are often managed solely by their GP (Owens *et al.* 2004). Significant differences exist in urban-rural Irish suicide rates (Kirwan, 1991; Clarke *et al.* 2003), with suicide rates in rural males rising by 50% between 1980 and 1990 compared with no corresponding rise in urban males (Hirsch, 2006). Research also indicates a steady rise in suicide rates in rural females (Kelleher *et al.* 1992, 1997; Rygnestad, 1992). A significant number of people who engage in self-harming behaviour have not been provided with an assessment, and approximately one in every 100 of such individuals will die by suicide during the following year (DoH, 2012). Hence, information about past suicide attempts, history of DSH (Crowley *et al.* 2004), and directly asking about suicidal ideation (Schulberg *et al.* 2004: 341; Vannoy *et al.* 2010) are important factors in identification of risk.

Use of CBT and service user choice are indicated as highly effective intervention strategies. Depression and anxiety are strongly associated with suicide behaviour (Tarrier *et al.* 2008). Although no single intervention has been shown to be effective (Gunnell & Frankel, 1994), CBT-based interventions have shown promising results, particularly in the treatment of depression, anxiety and reducing DSH (Knesper, 2010). An RCT investigating self-harm found that CBT was an effective treatment intervention (Slee *et al.* 2008). Research also indicates that providing CBT results in an ~50% reduction in repeat suicide attempts (Mann *et al.* 2005). Service user choice regarding psychological services can improve both attendance and clinical outcomes (Swift & Callahan, 2009). NICE (2004, 2009, 2011a) recommends CBT-based bibliotherapy for a number of mild-to-moderate mental health presentations. Meta-analysis indicates such an approach is as effective as other brief therapy for anxious and depressive presentations (Den Boer *et al.* 2004). NICE (2011a) also recommends cCBT and bibliotherapy for managing mild-to-moderate anxiety.

Timely recognition of depression (Goldney, 2005; Hepner *et al.* 2007; IMO, 2008) is required to prevent suicidal behaviour. A primary care-based RCT ($n = 297$) indicated that therapist-guided internet therapy was more effective than GP interventions for depression. Education of frontline workers regarding treating depression has correlated with a decrease in suicide rates (Rutz *et al.* 1997). Brown *et al.* (2005) indicates a sample group of those at 'high risk' of suicidal attempts who were provided CBT resulted in a reduction in self-harm, suicidal ideation and an improvement in symptoms of depression (Knesper, 2010).

Follow-up care and case co-ordination including a systematic programme of contact with at-risk individuals has been shown to have a preventative effect for up to 2 years (Appleby *et al.* 1999; King *et al.* 2001). Studies suggest that co-ordinated care (Knesper, 2010) is particularly important for those who have been recently discharged from inpatient units (Large *et al.* 2011). Dhossche *et al.* (2001) point to insufficient after-care as a primary factor in elevating risk for discharged secondary care mental health patients. Gilbody *et al.* (2006) meta-analysis results indicated that collaborative care, including follow-up phone-calls and utilisation of a 'depression care manager', to be more effective than TAU regardless of length of intervention. The 'Improving Mood-Promoting Access to Collaborative Treatment' programme has shown promising results in the United States, evidenced by better quality of life; fewer symptoms of depression; higher rates of physical functioning (Hunkeler *et al.* 2006); and improvements to both mental and physical health (Unützer *et al.* 2002).

Table 3 describes the stepped-care model utilised in APSI; the goals of each step for identifying and managing risk; and how APSI adheres to the evidence base listed above. It is evident from this table that APSI provides a number of stepped-care interventions aimed to constitute a 'tight bundle' of treatment options for service users. Table 3 indicates that APSI also provides a continuum of care aimed at seamless transition between higher-intensity secondary care services and/or other primary care intervention services.

How APSI can integrate with existing services?

In the current Irish service provision context, those at risk of suicide may self-refer or be referred via their GP/primary care health worker for observance in an acute hospital unit. Typically discharged from the acute unit after a short period of time, these service users may then receive intervention from secondary care mental health services, dependent on their level of assessed risk/severity of mental health presentation. While this system can initially manage those at 'high risk' of suicide, insufficient after-care elevates risk for discharged individuals (Dhossche *et al.* 2001).

Those at risk for suicide may also have access to a mental health liaison nurse, typically in a general hospital setting. In a study conducted by the Office of the Nursing and Midwifery Director, respondents indicated the need for increased psychosocial interventions and

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Table 3. *How the APSI model of service delivery targets the continuum of suicide behaviour.*

Factor associated with suicide prevention	APSI provides
Education	Step 0. Whole population
• General population	• General mental health cCBT – freely accessible programme that focuses on general mental health that can be accessed without professional guidance (currently in development)
• At-risk cohorts	• Self-help information – on-site provision of psycho-education material and bibliotherapy list for freely available materials (e.g. books, articles) in the local libraries
	• Health promotion – newspaper articles on mental health issues and regular slot on local radio where mental health queries from the public are discussed
• Healthcare professionals	• Public talks and large scale group work – to target specific suicide-related issues (mental ill-health, substance misuse)
	• Mental health training – group workshops, staff training, guidebook and online training modules (e.g. on the training hub HSELanD)
	Aims
	Reduce stigma, increase knowledge of services and promote help-seeking behaviour for those with suicidal ideation, serious thoughts of death, suicide plans and suicide attempts
	• Increase knowledge, skills and consultation surrounding risk management health care workers & community in general
	Note: APSI also provides psycho-education intervention to at-risk groups through Steps 2 and 3
Increased access to mental health services	Step 1. Rapid Assessment Service[a]
	• Risk assessment and management – competent in assessing/managing risk, practitioners manage risk on-site and/or via immediate onward referral to / working collaboratively with secondary care mental health services
	• Formalised referral pathway – a formalised referral forum and pathway in collaboration with key stakeholders (primary and secondary care services)
	• 'Walk-in' clinic – freely accessible 'walk-in' clinic for all community members ages ⩾18 years that provides information and/or self-referral for APSI interventions
Routine assessment of risk	• 'Call-back' service – allows those at risk to directly speak with a practitioner and provides a systematic programme of contact to monitor suicide risk and update progress with appointments with for example secondary care services
	• Routine assessment for risk, deliberate self-harm, depressive/anxious symptoms, and previous treatment history
	• Standardised risk assessment checklist to determine both predictive factors (history of personal/peer attempts, DSH, substance misuse) and level of risk
	Aims
	• Identify, intervene and/or provide appropriate referral and support for those with suicidal ideation, serious thoughts of death, suicide plans and suicide attempts
	• Highlight potential 'high risk' priority cases to secondary care services (i.e. those with suicide plans/suicide attempts)
	• Increase access to psychological intervention to community members who may have suicidal ideation or serious thoughts of death
	Note: Access to services and routine assessment of risk also provided by SCAN
Use of CBT-based interventions	Step 2. Guided self-help
	• Psycho-education – 6-week presentation-specific (e.g. depression, anxiety) psycho-education programme including on-site and telephone sessions with an individually assigned therapist
	• cCBT – evidence-based cCBT programme (e.g. MoodGym) including on-site and telephone sessions with an individually assigned therapist. APSI are developing HSE-owned cCBT programmes
	• Provides a range of service user options including relaxation techniques [via psycho-education hand-outs and compact disc (CD) recordings] and/or podcasts (i.e. multimedia digital files made available on the internet for download) and information on bibliotherapy resources

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Table 3. (*Continued*)

Factor associated with suicide prevention	APSI provides
Service user choice	Aims • Promote self-management of factors associated with suicide (i.e. suicidal ideation, serious thoughts of death) • Provide practitioner contact to the service user should risk escalate (i.e. suicide plans, suicide attempts) Note: Service users are provided with further intervention options based on CBT through Steps 3 and 4
A focus on depression	Step 3. Group work • CBT-based skills groups – presentation-specific (e.g. low mood, anxiety) programmes provided on-site • Specific focus on prevention and intervention for mild-moderate depressive presentations Aims • Provide intervention for factors associated with suicide (e.g. depression) to prevent escalation to suicidal ideation, serious thoughts of death, suicide plans, and suicide attempts • Reduce social isolation through group involvement
Provision of follow-up care	Step 4. One-to-one psychotherapy[a] • Brief, low-intensity one-to-one CBT sessions – six sessions of individual CBT intervention that is presentation specific (e.g. depression, anxiety interventions) • Practitioners are placed within Community Mental Health Teams and liaise on specific cases and act as case co-ordinators to help navigate support services with service users • All intervention work with after-care clients is closely monitored through supervision and consultation with secondary care psychologists
Case co-ordination by case managers	Aims • Provide intervention for factors associated with suicide (i.e. suicidal ideation) • Provide after-care intervention post – 'high risk' for those who have been recently discharged from secondary care services (i.e. suicide plans, suicide attempts) • Provide collaborative intervention/consultation for 'moderate risk' cases (i.e. serious thoughts of death) Note: Case consultation and service user follow-up contact is available within all steps of APSI

APSI, Access to Psychological Services Ireland; DSH, deliberate self-harm; SCAN, Suicide Crisis Assessment Nurse; cCBT = computerised cognitive behavioural therapy.

[a] CIPC also provides one-to-one therapy for General Medical Service (GMS) users.

service user facilitation in using available community supports for those at risk of suicide (HSE, 2012a). Research indicates that introduction of a nursing role in consultation with mental health services was viewed as beneficial in terms of practical care-orientated interventions and in negotiating access to mental health services (Sharrock *et al.* 2006).

The Suicide Crisis Assessment Nurse (SCAN) service was piloted in rural Irish settings between 2007 and 2010 and had since been rolled out in many other areas. It aims to provide increased access to risk assessment by nurses, and it also provides informal information and support to GPs on client management. There is also the recently rolled out medical card holder-only Counselling in Primary Care Service (or CIPC).

However, SCAN and other services offer what are effectively fragmented and low throughput models of care with service users and their carers having to potentially engage with several different services. The Mental Health Commission recommends that services be underpinned by a number of principles including accessibility, comprehensiveness, continuity, co-ordination, recovery-based and timeliness (Byrne & Onyett, 2010). In providing an integrated suite of interventions including rapid access to a comprehensive risk assessment in each primary care team area, APSI provides the improved continuity and co-ordination of care that is required by those service users on the suicide behaviour continuum.

Looking to the immediate future, given the indicated low baseline of shared care activity in our services

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(McHugh & Byrne, 2013), it is important that multi-agency shared care protocols are developed with a view to establishing after-care services for those post-high risk phase; increasing the efficiency with which referrals that involve the continuum of suicide behaviour are processed; and providing access to mental health interventions (e.g. APSI) for those at risk who do not meet the criteria for secondary care mental health intervention. More robust inter-agency links may also act to reduce the stigma associated with suicide behaviour (WHO, 2012); and remove potential barriers in accessing services (Owens *et al.* 2004) such as making it easier for service users and their carers to navigate between the appropriate services.

Conclusion

Despite recent increases in Irish suicide rates (Kelly & Doherty, 2013), accessing mental health interventions is becoming increasingly difficult (Tierney, 2013). It is important that those on the suicide behaviour continuum and other cohorts of distressed individuals can readily access mental health services in their locality. With an emphasis on a rapid and robust risk assessment; immediate access to evidence-based stepped care interventions that map onto the suicide behaviour continuum; and inter-service working, APSI potentially provides a highly effective model of service delivery in preventing suicide. A follow-up evaluation paper will be available shortly based on APSI outcome data.

The authors of this paper propose that the Mental Health Division in the HSE consider rolling out APSI as a national mental health clinical care programme as a means of reducing domestic suicide rates. The potential benefits of such a roll out would significantly contribute to increased access to services for at risk groups and provide a model of continuity for service providers and service users alike. Given the extensive evidence base for the steps utilised by APSI, the authors believe that positive evaluation results would provide a strong rationale exporting the service's fidelity markers to services both nationally and internationally.

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