07

Pathway of Care for Persons presenting to their GP following Self-harm or with Suicidal Ideation

7.1 Introduction

The Model of Care (HSE 2016) states that GPs should be regarded as the first point of medical care for all persons with mental health disorders, including those who engage in self-harm, with the exception of those requiring hospital-based medical care arising from a self-harm episode. This chapter outlines supports required to ensure that the National Clinical Programme (NCPSH) can be delivered for patents presenting to their GP.

Previous chapters provide further information, including the aim and rationale of the NCPSH (Chapter 1), an extensive Literature Review (Chapter 2), Services for those presenting to the ED (Chapter 3), Child and Adolescent services (Chapter 4), Services for groups with specific needs (Chapter 5), and Follow-up and Linkage to next care (Chapter 6). The following chapters look at Community Mental Health Services (Chapter 8), Training (Chapter 9), Governance and Supervision (Chapter 10) and Monitoring and Evaluation (Chapter 11).

7.2 Literature review on self-harm/suicidal ideation and general practice

It is estimated that around half of all people who die by suicide have previously self-harmed (Foster et al 1999). People who self-harm are a group with the highest risk of dying by suicide (Hawton et al 2012). Recently it has been shown that people who present with suicidal ideation are also at increased risk of dying by suicide (Griffin et al 2019). Ireland has a registry of self-harm since 2007 (Perry et al 2013). This registry identifies all who present to EDs, the nature of self-harming behaviour, and the interventions and follow-up offered. In 2017 there were 11,600 presentations to ED following self-harm. It is estimated that, for every presentation to the ED, there are five times as many self-harm episodes in the community (Arensman et al 2018) (see Fig. 7.1).

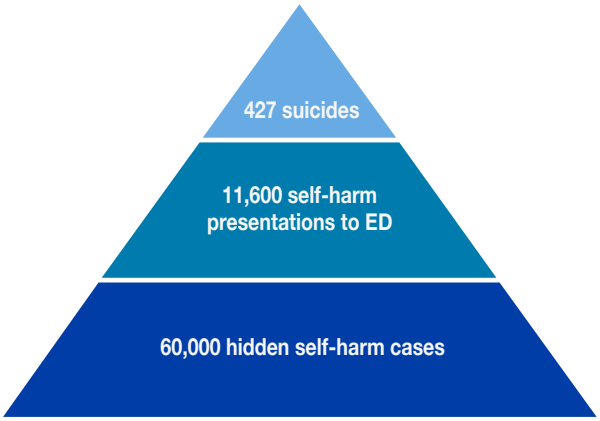

FIG. 7.1 THE ICEBERG MODEL OF SELF-HARM (ARENSMAN ET AL 2018)

General practitioners play a central role in the recognition of suicidal behaviours and in the interventions with patients. Data from the UK show that in the year prior to suicide, 60% to 70% of people have been seen by their GP and almost half of people engaging in a serious suicide attempt have been seen in the previous month (Windfuhr et al 2016). Some studies have found that over 90% of patients with mental health problems are managed in primary care. Studies conducted in Ireland, France and the UK have found that GPs refer 60% to 80% of patients who have self-harmed to hospital (Fitzsimons 1997, Le Point 2004, Saini et al 2016).

Evidence has shown that offering a therapeutic assessment is associated with reduction in repeated self-harm and improved engagement with services (Cully et al 2020, Kapur 2013). Interventions associated with improved outcomes include a written safety plan (Stanley and Brown 2018), next-of-kin or supportive friend input (Shea 2011), and follow-up and linkage to next care (WHO 2014, Riblet 2019). Brief contact interventions such as post-discharge telephone calls have been shown to offer social support, improve suicide prevention literacy and assist in learning alternative behaviours (Milner et al 2016).

In 2016 a Cochrane review (Hawton et al 2016) found evidence that cognitive behavioural therapy (CBT) and dialectical behaviour therapy (DBT) showed a reduction in suicide in those who had self-harmed. This review noted the paucity of well-conducted randomised controlled trials, commenting that self-harm is common and suicide rare.

NICE guidelines on the short-term treatment and management of self-harm are under revision (NICE 2004, 2011, 2020). These guidelines emphasise the importance of treating people who self-harm with the same care, respect and privacy as any patient. Healthcare professionals should take full account of the likely distress associated with self-harm.

Psychosocial assessment following self-harm is not necessarily profession-specific. A service led by experienced nurses can be cost-effective for a health service (Russell and Owens 2010). The value in training multidisciplinary professionals to develop skills for working in suicide prevention has also been demonstrated (de Beurs et al 2015). De Beurs suggests that multidisciplinary approaches have the advantage of developing services from the perspective of multiple stakeholders, which is likely to be of benefit for the complex needs of individuals presenting with self-harm.

Repeated studies have shown that people who have self-harmed or who present with suicidal ideation want to share in the decision-making about their future care, with reasonable attention paid to their personal preferences (Claasen et al 2014). They also benefit from receiving support for better managing distress. This can be achieved by providing each patient with a collaborative plan. In recent years there is increasing evidence for the use of safety planning in reducing repeat self-harming and suicide (Stanley and Brown 2012, 2018). Specific training in the use of safety planning is now incorporated into training on management of suicidality, such as STORM and Self-harm Assessment and Management for General Hospitals (SAMAGH; Gask et al 2006, Arensman et al 2020).

In the Model of Care (HSE 2016), the need for family involvement has been clearly described, citing O'Carroll's Once, Twice, Three Times (2012), to emphasise the need to ensure that response to suicidal ideation or behaviour should be swift and follow national guidelines. Two parties should be involved – the suicidal person and a nominated family member or supportive friend – and a triangle of care and support for the person should include the healthcare providers, the person at risk and the family/supportive friend.

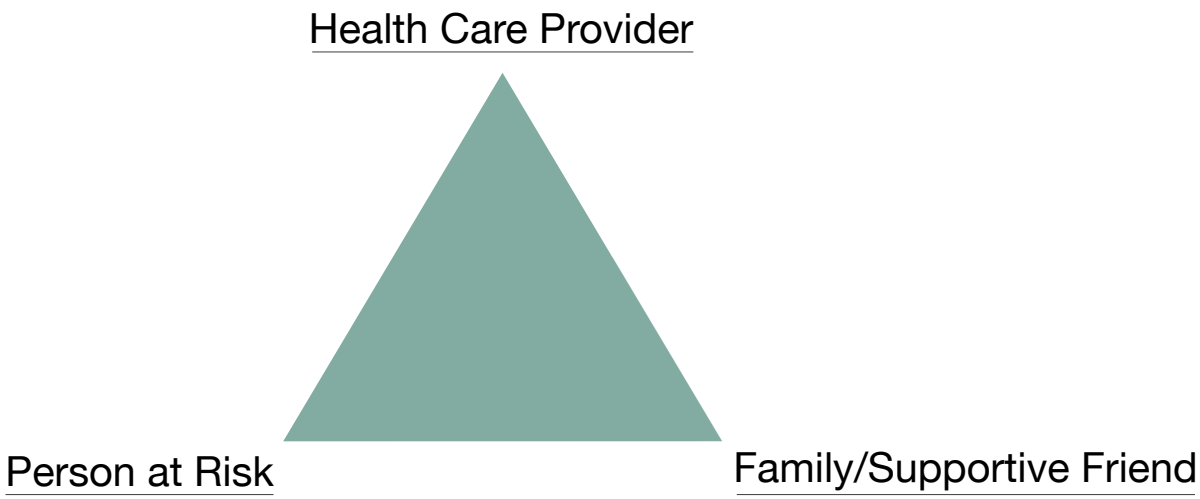

FIG. 7.2 ONCE, TWICE, THREE TIMES – STOP – COLLABORATION BETWEEN PERSON AT RISK, HEALTHCARE PROVIDER AND FAMILY MEMBER OR SUPPORTIVE ADULT

The GP has a key role in supporting both the individual and their family member. Involvement of a family member has also been shown to improve outcome (Taylor et al 2016).

Gathering information from family and supportive adults and providing family members/supportive adults with support is central to the NCPSH. Every effort should be made to provide the patient with a clear understanding of the value and importance of both gathering information from and sharing information with family members or a supportive friend. Confidentiality is paramount but there are situations where it can be breached. Even in situations where it is not appropriate to breach confidentiality, listening to family members/carers is important and is not precluded by confidentiality. Support for family members/carers can also be provided without breaching confidentiality (Casey 2016). Along with family support, clinicians also need to be aware of the risks of family abuse and intimate partner violence. There is an association between intimate partner violence and self-harm and suicidal behaviours (Dillon et al 2012).

The rates of self-harm and suicidal ideation presenting to primary care are rising, but only a minority of patients who self-harm in the community present to healthcare services (Feeney and Douglas 2016). Two-thirds of patients who self-harm present to their GP in the month prior to the self-harm episode and in the month after a self-harm episode (Houston et al 2003). GPs in Ireland report that they have adequate training in the assessment of suicidal behaviour and are open to exploring suicidal ideation and in treating depressive illness (O'Dowd 2006). One Norwegian study found that GPs expressed a high level of perceived competence in managing suicidal patients, but only 38% reported receiving training in the previous five years (Grimholt 2014).

In 2002, Scott et al showed how using a chronic disease model for depression improved the detection and management of depression and suicidal ideation. Factors key to the success of this model were resources to develop a case register, an education and training programme on detection and management agreed by consensus, facilitation of meetings with secondary care staff, and support in developing a practice guideline. An example of effective use of meetings between primary care and secondary care in Ireland is described by Wright and Russell (2007). A combination of these approaches has been used to good effect in another Irish service (McFarland et al 2009).

A systematic review into the GP's role in supporting patients with self-harm behaviour has identified facilitators and barriers to management (Mughal et al 2020). No Irish study was identified in this review but many of the international findings relate to Irish general practice also. Facilitators include training of GPs in brief psychosocial assessments and in assessment of young people; improved communication between primary and secondary care, including the use of co-developed protocols and regular meetings; improved service provision for people who self-harm, including a single point of access for assessment, a mental health nurse, counsellor or psychologist attached to practice; and family involvement. Four themes or barriers to GP management of self-harm were identified, including a) assessment – GPs did not always have the time or confidence to manage people effectively; b) a lack of effective services in primary care; c) poor communication between primary care and secondary care; and d) workload in general practice and geographic boundaries interfering with referral pathways (see Table 7.1).

Facilitators	Barrier
Training of GPs in brief psychosocial interventions; Improved communication between primary and secondary care A single point of access for assessment Mental health nurse, counsellor/psychologist attached to practice	Lack of time Lack of confidence Lack of effective services Poor communication Workload and systems failures

TABLE 7.1 FACILITATORS AND BARRIERS FOR GPS IN MANAGING SUICIDAL BEHAVIOUR (MUGHAL ET AL 2020)

Earlier studies in Ireland have reported similar issues (Whitford and Copty 2005, Jeffers 2010), with GPs requesting access to counselling in primary care, mental health professionals working within general practice, and improved

communication between general practice and secondary mental health services.

A recent presentation to the Oireachtas Joint Committee on Health by ICGP confirmed this (ICGP 2020). General practice provides care for over 90% of mental health conditions without the need for secondary care input and GPs have a pivotal role in providing first and ongoing care for these patients. It needs to be supported in caring for these patients, with greater access to talk therapies, including on-site sessional talk therapy in a general-practice setting, addiction services, improved integration with primary and secondary care, and upscaling of digital technologies in mental health services in particular (ICGP 2020).

GPs want to have immediate access to discussion and advice from a mental health professional. They need a pathway of care that can provide access to a mental health professional urgently – within 24 to 72 hours (Jeffers 2010, Walsh 2013). This will reduce the need for referral to the ED. It will also provide the GP with a meaningful response and help for patients, which is likely to increase their exploration of suicidality.

Doyle et al (2020), in their qualitative review of 50 people who had presented to the ED following self-harm or with suicidal ideation, reported that a number of people with suicidal ideation had found the ED environment to be unsuitable. They found it noisy and stressful, and the long delay between registering and being assessed was particularly difficult. Individuals reported feeling they were in the wrong place and yet they were not aware of anywhere else to present when they had suicide-related thoughts.

People with suicidal ideation or self-harm ideation present or are directed to the ED, although good practice would recommend they be assessed in the community (Carey et al 2021). The Model of Care clearly states that patients in mental health crisis, without physical need, should have direct access to their local community psychiatric teams over a 24-hour period, without recourse to the ED (HSE 2016). Furthermore, it has been recognised that, when mental health services rely on ED as opposed to community services, to urgently assess patients, this results in higher rates of direct inpatient psychiatric admissions, with obvious cost implications (Gibbons et al 2012).

Many people can be adequately supported by primary care mental health services and will not require referral to a specialist mental health service. If people do require specialist mental health input, this can be provided by a mental health nurse, a CMHT or a central crisis assessment team (Dueweke et al 2018). In the UK, individual services provide a suite of responses for people in a crisis, including a 24-hour helpline, staffed by mental health professionals and open to patients and GPs; a helpline for use Mon-Fri 9-5, for people already known to services; GPs can receive a same-day crisis assessment for new patients, and, in the rare cases where none of these services is available, the person is advised to attend the ED (NHS 2019).

McGarry (2019) describes the development of specific self-harm and unscheduled care teams in Belfast, emphasising the need for separate services. He suggests that home-based treatments and 24/7 services are for people known to service and they prevent the admission to hospital of people suffering from severe mental illnesses, such as schizophrenia, bipolar disorder and severe depression. Others have also suggested that there is a need for a separate service for those with anxiety disorders and substance misuse and those who have self-harmed in the absence of severe mental illness, or in crisis due to relationship difficulties (Onyett et al 2006).

In Ireland, information on access to such non-ED unscheduled care is sparse. Most mental health services provide a 7/7 service for patients who are already known to the service, although recruitment continues to be a challenge (HSE 2018a). This is a service that can be delivered by mental health nurses and other health and social care professionals. Current staffing allows only for pre-planned appointments and it cannot provide an emergency service. It is not in place in all services and many service users may not be aware of it. A full review of the operation of the 7/7 services would be useful in identifying gaps in the service. GPs in North Dublin who were surveyed about access to non-ED care indicated that they referred patients to the ED for urgent psychiatric assessment due to difficulty in accessing the CMHT or other community alternatives for crisis mental health presentations, compared with the certainty of a response from the ED. They also felt that the ED setting was not an appropriate environment for such patients (Carey et al 2021).

A small number of services in the country offer assessments in the approved centre, obviating the need for such patients to spend often long hours waiting in ED. Most psychiatric services require all patients to attend ED first, and they will then be assessed in the ED by a mental health professional. Over 40% of these assessments occur out of hours by a non-consultant hospital doctor in psychiatry (HSE 2017). *A Vision for Change* (DoHC 2006) and the Mental Health Commission (MHC 2009) both support using non-ED facilities for assessments.

Suicide Crisis Assessment Nurses (SCANs) who are clinical nurse specialists in mental health provide assessments for GP patients who present with suicidal behaviour. A recent review found that a SCAN was present in only eight of the country's 16 mental health services, and in these a SCAN service was present in some sectors only (Griffin et al 2019). They provide a link between primary care and secondary care, and will reduce the need to refer patients either to ED or to Community Mental Health Teams (CMHTs). Griffin et al (2019) found that only 38% of patients assessed by SCAN were referred to CMHTs. Raymond et al (2020) reported on a SCAN service in North Dublin where only 12% were referred to the CMHT.

The SCAN service is popular with GPs and service users who have accessed it (HSE 2012). Despite this, only 20% of the population have access to a SCAN service. The slow uptake around the country may reflect concerns consultant psychiatrists hold in relation to resources to supervise staff in a new service, and also, in some areas, a reluctance of GPs to change their practice, as evidenced in the 2012 review (HSE 2012). Any expansion of this service will require resourcing in the form of extra Consultant Psychiatrist time as well as extra Clinical Nurse Specialists, and awareness training for GPs on the value of the SCAN service. Clarity on the level of supervision required will also improve uptake of the service. Once a service is established, further education to ensure joint working with GPs to promote the service will be needed. Evidence shows that a SCAN service will reduce the numbers of inappropriate referrals to a CMHT (Raymond et al 2020, Griffin et al 2019).

SCAN services can also be integrated with both primary care and secondary care services. A need has been identified for non-crisis and time-limited specialist counselling for people who self-harm or have suicide-related ideation. One example of this is seen in the South East: the Self-Harm Intervention Project (SHIP), which has been in place since 2004. Trained psychotherapists provide non-crisis, time-limited specialist counselling to people who have self-harmed or have suicidal ideation (Gardner et al 2015). Governance for this programme is through the National Counselling Service of the HSE. The SHIP programme is provided in the context of a range of services, including SCAN, CMHTs, community counselling and other community supports.

A number of non-governmental organisations (NGOs) also deliver non-crisis counselling for people who self-harm or with suicidal ideation. However, SHIP is the only service that has been developed as part of the wider and integrated services in primary and secondary care. As a specialist short-term counselling intervention, SHIP is available across both primary and secondary care. The SHIP service can be provided as a single support or as part of a multi-agency care plan for clients with more complex needs such as self-harm and mental health, or self-harm and substance misuse, although certain conditions would be considered inappropriate for the brief intervention such as acute psychosis, chronic intractable mental health issues that remain unchanged after two years of psychiatric intervention, severe recurrent depression and borderline personality disorder. SHIP is not appropriate and does not function as a crisis response service. SHIP accepts referrals from health or allied professionals. The number of sessions is agreed between client and counsellor up to a maximum of 12 sessions. Feedback to the referrer is provided when the therapy has ended.

While it is outside the remit of the NCPSH, the availability of non-crisis, time-limited and focused counselling for people who self-harm or are suicidal should be developed as part of a wider range of services, as identified in Fig. 7.3.

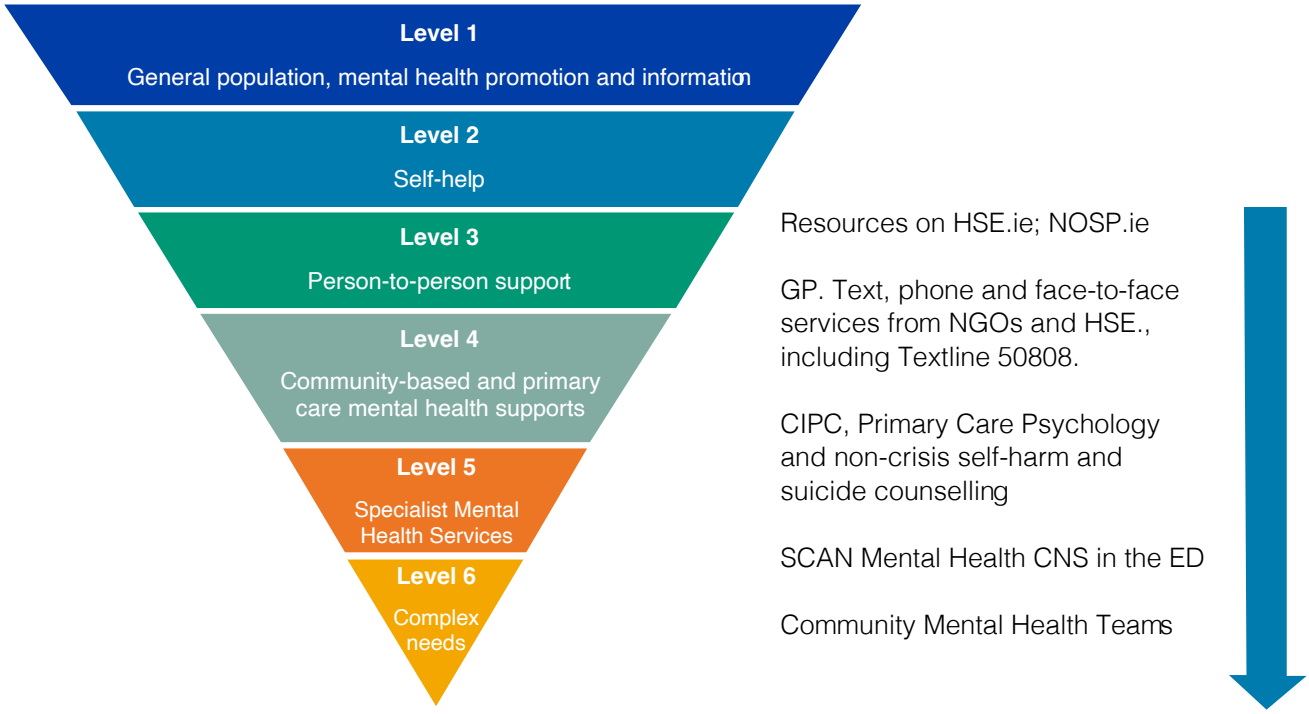

FIG. 7.3 SERVICES REQUIRED FOR SELF-HARM AND SUICIDE-RELATED IDEATION

Psychological services offered in primary care include Adult Primary Care Psychology Services (HSE 2018), Counselling in Primary Care, and Child and Family Psychological Services. Counselling in Primary Care (HSE 2018) is available only to GP patients who are on the General Medical Services scheme. Psychology services are available to all GP patients, but there are long waiting lists (ICGP 2020). GPs also refer patients to local available low-cost or free voluntary counselling provided by NGOs. NOSP has recently developed guidance on governance for voluntary agencies working with people who are suicidal (NOSP 2019a). There are examples around the country of effective collaborative working between primary care psychological and counselling services and secondary care CMHTs. Anecdotal evidence indicates a need to improve this collaboration, and at the same time retain the GP as the gatekeeper to secondary care services. Mental Health CNSs both in the ED and in SCAN services have a role in improving the links between primary care and secondary care mental health services (HSE 2017, Griffin et al 2019).

Collins et al (2020) describe a primary care psychology service that accepts walk-ins, self-referrals, and health and social care referrals in an Irish rural county. It operates a stepped-care model of service provision whereby the least intensive form of intervention to meet the service user's needs is offered. This leads to a high volume of 'low-intensity' interventions being provided and a smaller volume of 'high-intensity' interventions. The various steps include brief assessment/consultation/signposting, guided self-help and brief (up to six sessions) CBT-informed psychological interventions. Assistant and trainee psychology students, supervised by a senior psychologist, provide the service. Input can be stepped up to provide senior psychologist input, or referral to secondary care mental health services. Most individuals using the service wished to have a timely, positive interpersonal experience that addressed their individual concerns. These factors were considered more important than the specific type of intervention offered (Collins et al 2020).

Both the HSE and NGOs provide telephone and text supports for people who are in suicidal crisis. Examples include 50808 text lines; 50808 provides a free, anonymous, 24/7 messaging service, including everything from a calming chat to immediate support. It provide a safe space where the texter is listened to by a trained volunteer. The person and volunteer message back and forth. By asking questions and listening, the volunteer will help the person sort through their feelings until both feel that the person is in a calm safe place. (More information is available at https://text50808.ie/.)

Further examples of mental health support and services available in Ireland are described in Appendix 2.

TABLE 7.2 HSE AND VOLUNTARY MENTAL HEALTH SERVICES IN IRELAND

- General Practitioner
- Counselling in Primary Care (CIPC) / Voluntary no-cost or low-cost counselling
- Psychology in Primary Care / Voluntary no-cost or low-cost psychology services
- Child and Family Primary Care
- Suicide Crisis Assessment Nurse / Crisis Assessment Teams
- Self-Harm Intervention Project / Voluntary Professional Services offering non-crisis counselling for self-harm and suicide-related ideation
- HSE-funded phone lines and text lines
- Community supports
- Seven days a week mental health support for people known to the mental health service
- Community Mental Health Teams

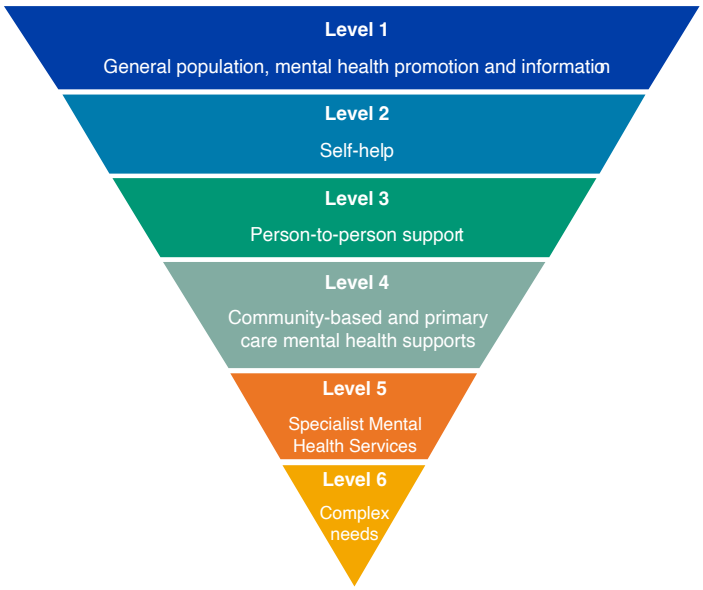

FIG. 7.4 MODEL OF MENTAL HEALTH SUPPORT AND SERVICES IN IRELAND

Douglas and Feeney (2016) have reported on the change in referrals to mental health services in the 30 years up to 2013. Overall, there has been a marked increase in referrals; a reduction in the proportion of referrals concerning psychosis, and an increase in the proportion that were deemed urgent and were concerned with suicidal risk. Suicidal ideation was mentioned in 14% of referrals in 1983 and 50% of referrals in 2013. Since the establishment of the Clinical Programme in 2015, over 40% of patients assessed present to the ED with suicidal ideation only, while the other 60% present following self-harm. Reflecting reduced resources in CMHTs, access to non-scheduled care by CMHTs has reduced and, in the absence of other services, GPs are forced to refer individuals to the ED.

The Connecting for Life Implementation Plan (NOSP 2020) supports the development of Connecting for Life Action Plans in each area. This action plan includes a list of all verified resources and services available in the community, which can support the use of a stepped care approach.

(For a more extensive literature review on self-harm and suicidal ideation, see Chapter 2.)

Summary of literature related to self-harm and suicide-related ideation response by general practitioners:

- Self-harm and suicide-related ideation is associated with an increased risk of death by suicide in the future.
- People who present to their GP with self-harm or suicidal ideation benefit from brief intervention, development of safety plans, and follow-up and linkage to next care.
- At present a high percentage of people presenting to the GP with suicidal ideation or following self-harm are referred to the ED.
- Best practice recommends the development of non-ED crisis assessments in the mental health services or urgent mental health interventions in primary care..
- The SCAN service can provide assessments for GP patients within 72 hours.
- The HSE and NGOs provide a number of telephone and text supports for people in a suicidal crisis.
- The HSE and NGOs also provide specialist non-crisis time-limited counselling for people with suicide-related ideation or self-harm.

7.3 Services required at GP level

7.3.1 Overview

The Model of Care states that GPs should be regarded as the first point of medical care for all persons with mental health disorders, including those who self-harm, with the exception of those requiring medical care arising from a self-harm episode.

The literature review points to the need to develop a specialist service for people who present to their GP following self-harm or with suicidal ideation who do not, at that time, have a primary severe mental illness. They require an empathic response, expert biopsychosocial assessment, family/ supporter involvement and linkage to appropriate next care.

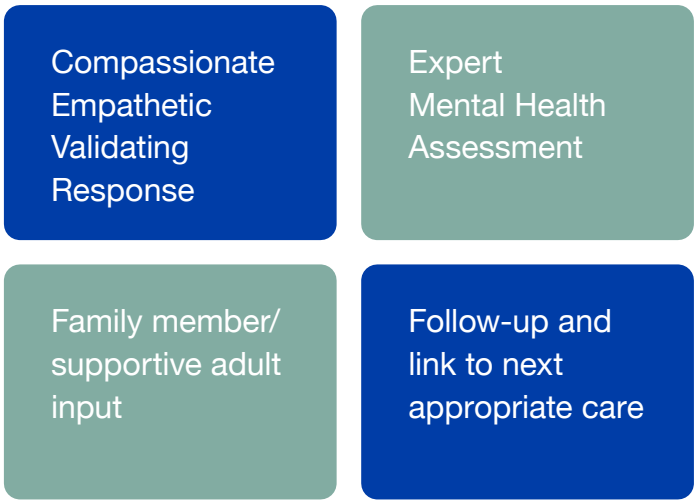

FIG. 7.5 CLINICAL COMPONENTS OF THE NCPSH

The NCPSH was initially introduced for all patients presenting to the ED following self-harm or with suicide-related ideation. It is now recognised that many people with self-harm or suicide-related ideation will present to their GP or primary care, and require a service separate from the ED. There is a need to integrate the services available in the community and in the specialist services.

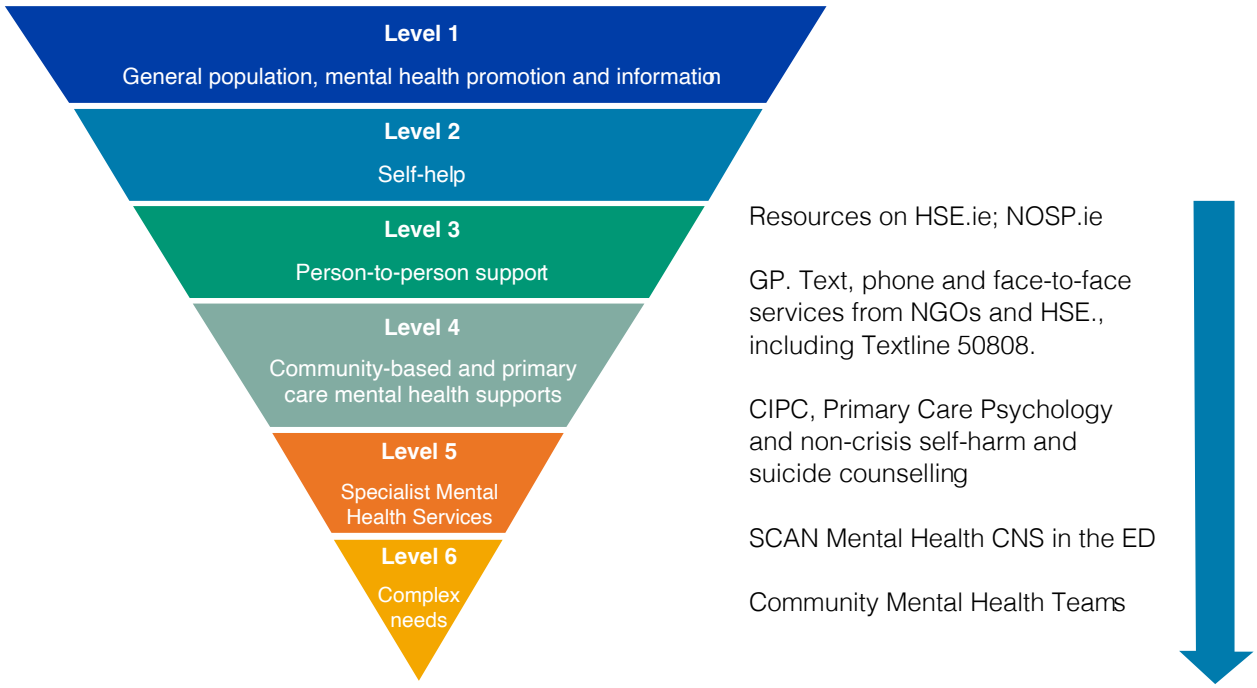

FIG. 7.6 POPULATION, COMMUNITY AND MENTAL HEALTH SERVICES FOR SELF-HARM AND SUICIDE-RELATED IDEATION

A Vision for Change (DoHC 2006) identified the need for liaison and collaboration between primary care and secondary care mental health services. The introduction of SCANs or suicide crisis assessment teams can support this collaboration.

Examples of further collaboration are described in Chapter 8.

7.3.2 Introduction of a new SCAN service

The Suicide Crisis Assessment Nurse (SCAN) was introduced to Ireland in 2007, initially in South Dublin and Wexford. A nurse, at CNS level, was employed by the mental health service to provide assessments of GP patients experiencing a suicidal crisis.

An in-depth evaluation in 2012 described the SCAN service as a valuable, accessible and timely gateway between primary care and mental health services, allowing for expedited admission, referral for ongoing mental health intervention in the community or management in primary care (HSE 2012). Almost all GPs with experience of the SCAN service agreed that it led to better treatment adherence than 'usual care' and clients were more readily agreeable to being referred to the SCAN service.

Following publication of the 2012 report, further SCAN services were introduced in a number of services in Ireland and in 2017 a review of the service was completed for the National Office of Suicide Prevention (NOSP) (Griffin et al 2019). This review found that SCAN services remained in place and worked effectively when there was support and clinical supervision from a General Adult Consultant Psychiatrist (GACP), but those services where there was no clinical supervision from a GACP have not remained in place. One of the strengths of the service is that it is located in primary care. The service is in place in eight services in the country, covering 20% of the population; the review found that 230 GPs were using the service, referring an average of five patients per year, with 30% of practices referring one patient. A total of 72% of patients referred were assessed; the commonest reason for not assessing was the patient not attending for the appointment. Assessments took an average of 2–3 hours and in 69% of cases some engagement was

made with a family member; 40% of those reviewed had alcohol and drug misuse along with suicidal behaviour. Over 95% were given an emergency safety plan (the study does not identify if this was written or verbal), while 38% of patients assessed were referred to a community mental health team.

A separate study of one SCAN service in North Dublin found that 12% of the patients assessed were referred to the CMHT. In this study, the pathway to care from the GP to the SCAN involved the patient remaining under the clinical guidance of the GP. If referral was required to the CMHT this was made by the GP. In other services, referrals can be made directly from the SCAN to the CMHT.

The current SCAN service is delivered by 11 experienced CNSs. Both the Griffin report (2019) and personal communication with the CNSs delivering SCAN show they are delivering a service that is valued by GPs and Consultant Psychiatrists, as well as service users and family members. Whenever the service has been withdrawn or curtailed, there is evidence of an increase in referrals to CMHTs and to the ED (SCAN 2021). The current SCAN staff are experienced and ideally placed to mentor and support the training of new staff commencing a SCAN service. A need for formalised governance structures for the SCAN staff was identified in the Griffin report.

The current SCAN staff follow a standard operating procedure that aligns with the four components of the NCPSH: a compassionate, empathic response for people who have self-harmed or are suicidal; an expert biopsychosocial assessment, including a written emergency care plan; family involvement where possible, and follow-up and linkage to next appropriate care (SCAN 2021).

Consultants in Ceneral Adult Psychiatry are best placed to provide clinical governance to SCAN professionals. In the absence of a SCAN service, the evidence is that GPs refer suicidal patients either to a CMHT or to an ED (Carey et al 2021). We know that the ED is not a suitable place for people who are suicidal but have no physical health needs, and that people assessed in the ED, rather than in a non-ED mental health service, have a higher rate of admission (Gibbons et al 2012). We also know that SCAN services markedly reduce referrals to the CMHT (Griffin et al 2018, Raymond et al 2020).

The introduction of the SCAN service will provide a suitable and appropriate service for a large group of service users, and will reduce the numbers of inappropriate admissions to approved centres as well as inappropriate referrals to CMHTs. Being seen by SCAN does not constitute a referral to the CMHT and the patient remains in primary care. If SCAN and/or the GP deem that a referral to a CMHT is required, the normal referral process by a GP to the CMHT should be followed.

The NCPSH now recommends the development of Suicide Crisis Assessment Nurse service in local areas in all parts of Ireland. As part of this development, the current SCAN staff should:

- be incorporated into the NCPSH
- be trained and supported in submitting data on all cases referred to them
- receive support and oversight from the staff of the NCPSH office, including review of their service and support to implement all aspects of the Clinical Programme
- attend all training and networking days organised by the NCPSH
- have the opportunity to provide input to the Implementation Advisory Group (IAG) and to the Research and Audit Committee

SCAN service provision

- The role of a SCAN service is to provide assessment and support to GP patients who have suicide-related thoughts, who do not have an acute mental illness requiring immediate input from a secondary mental health team and are not at immediate risk of suicide.
- Patients should be seen within 72 hours of referral.
- Assessments should be carried out in general practice if space is available. It is the responsibility of the HSE to ensure that facilities in primary care are available for use in situations where accommodation is not available in general practice.
- The SCAN practitioner should complete a full biopsychosocial assessment; with patient permission should liaise with family or a supportive friend; should

develop a collaborative written emergency safety plan, and provide feedback to the GP.

- Where required, the SCAN practitioner should provide up to three follow-up appointments.
- In all cases, the SCAN practitioner should provide a follow-up phone call within 24 hours of the first assessment.
- The SCAN practitioner should develop a resource of all the mental health supports available in the local area and should be an active member of the Connecting for Life local action plan.
- SCAN practitioners could be a nurse, at clinical nurse specialist level, an Advanced Nurse Practitioner (ANP) or an appropriately trained mental health professional.
- Each service should have a General Adult Consultant Psychiatrist who will act as clinical lead. They will require allocated time of 0.2 WTE to provide supervision for the SCAN CNS and/or ANP.
- The CNS will require clinical supervision from sector consultants following each assessment and also weekly supervision on work practices and learning, which can be provided by the clinical lead.
- An ANP can work with a greater level of personal accountability and responsibility, and does not always require immediate clinical support following each assessment. An ANP can also provide supervision for a CNS, thereby freeing up Consultant Psychiatrist time.
- The development of the SCAN service would be the responsibility of the clinical lead, SCAN CNS and/or ANP.
- SCAN should be available initially for adults over the age of 18 years. Once the model is established, the development of a similar service for children could be explored.
- One SCAN practitioner for roughly 75,000 population will be required. 0.2 WTE General Adult Consultant Psychiatrists are required per 300,000 population. Initially this service should be commenced in areas of greatest need.

In some services it will be more efficient to employ SCAN staff as members of a crisis assessment team, or with the homeless as part of the specialist mental health team for the homeless (Chapter 5). The service provided for GP patients would be the same but the staff would work as part of a crisis assessment team or assessment hub. The governance structures and oversight of such services would be the same as for the SCAN service, with a CNS appointed through the NCPSH and accountable for implementing the NCPSH.

Staff providing a SCAN service

Clinical Nurse Specialists (CNSs)

In a SCAN service or in crisis assessment teams, assessments are carried out by nurses at CNS grade or mental health practitioners of similar qualification. At this grade nurses have at least five years' postgraduate experience in an acute mental health service and have educational qualifications to level 9 (Postgraduate Diploma/ Master's). Other studies have shown the benefits of using nursing assessments both within CMHTs (Walsh et al 2013) and in assessments following self-harm (Russell et al 2010).

Vandewalle (2020) has shown the benefits that the nursing perspective brings to these assessments, with an enhanced working alliance between patients and health professionals. He recommends that nurses be appropriately supported with clinical and managerial input. At CNS level, nurses can complete assessments and discharge of patients following discussion with a senior decision-maker, such as a Consultant Psychiatrist, Higher Specialist Trainee or Advanced Nurse Practitioner.

CNSs would require clinical supervision from the Consultant Psychiatrist clinical lead. The purpose of this supervision would be to support service development, clinical training and case management.

Registered Advanced Nurse Practitioners (RANPs)

Advanced Practice Nursing (RANP) is defined as a career pathway for registered nurses, committed to continuing professional development and clinical supervision, to practise at a higher level of capability as independent, autonomous, and expert practitioners (NMBI, 2017). The RANP manages a specific caseload of patients'/service users, from admission to discharge, completing an episode of care at an advanced level.

RANPs working in the SCAN service would require a level of training, qualification and experience that would enable them to hold personal accountability and responsibility for patients they see. They would work under the clinical supervision of a general adult psychiatrist, but the input required for discussion and management of clinical cases would be similar to that of a senior decision-maker, such as a higher specialist trainee. The RANP would be in a position to provide clinical support for CNSs.

Consultant Psychiatrist

A General Adult Psychiatrist is the most appropriate person to provide clinical governance over a SCAN service and provide oversight for the SCAN professional in providing timely input in an appropriate place.

Funding should be allocated through the NCPSH to allocate 0.2 WTE Consultant Psychiatrists for a population of 300,000. Working with the appointed SCANs, this consultant would implement the NCPSH, ensure that other Consultant Psychiatrists understood the NCPSH, develop enhanced communication with GPs, and provide ongoing leadership and supervision for the SCAN. All General Adult Consultant Psychiatrists have a role in providing clinical advice for SCAN, relating to patients from their sector and patients who are assessed on call.

Commencement of SCAN as an integral part of the NCPSH

- All current SCAN and equivalent practitioners should be supported as staff implementing the NCPSH.
- SCAN practitioners will be required to implement the NCPSH, as identified in the SCAN SOP.
- Data will be collated on all presentations to SCAN services, and submitted to the NCP office on a monthly basis.
- The NCPSH office will review the practice, supervision and work practices of all SCAN practitioners, and support the practitioner and the service in fully implementing the NCPSH.
- Promotion and awareness of the SCAN programme will be developed for Consultant Psychiatrists and GPs. This will be developed by the NCPSH in conjunction with ICGP. Current SCAN practitioners will be invited to participate in this promotion.
- SCAN practitioners will be invited to participate in the work of the IAG and the Research and Audit Committee of the NCPSH.
- SCAN practitioners will be included in all training and network events organised through the NCPSH.
- Key to effective working between GPs and the SCAN service and between GPs and secondary mental health services is effective and timely communication. This can be in the form of a secure email link such as Healthlinks, through telephone discussion or planned regular meetings between general practice and secondary mental health.

7.4 The role of emergency safety planning in mitigating suicide risk

The risk of suicide is raised in any person who self-harms or who presents with suicidal ideation. The aim of the clinical programme is to introduce practices that will mitigate this risk.

Self-harm and talking about suicide leads to understandable anxiety and distress among individuals and family members. The assessing mental health clinician needs to provide compassionate support and develop a therapeutic rapport in order to complete an expert assessment. Many individuals and their families will have an expectation that hospital admission may be required. In practice, most individuals will be treated within the community. Hospital admission will only be required for a small percentage of people – those presenting with symptoms of psychosis or extreme agitation, or hopelessness caused by mental illness.

As outlined in Stanley and Brown (2018), safety planning intervention as part of a CBT intervention aimed to reduce suicide risk has been shown to be effective. It involves helping patients to identify what triggered the crisis, use skills to tolerate distress or regulate emotions, and, should the crisis not resolve, how to access emergency care. The therapeutic interventions would seek to:

- ensure the safety of the patient by removing access to lethal means
- initiate self-monitoring of the suicidal thoughts, feelings and behaviours

Patient's Name: **Date of Birth:**
Mental Health Professional (MHP) Name:
ESP completed in collaboration by the MHP and the patient: **Yes ❑ No ❑**
Family member/supporter has been part of the care plan: **Y ❑** N ❑

	RESPONSES	**ACTIONS**
Keep safe	Individual Family member/supporter GP /SCAN	*(e.g. Remove firearms, tablets, means of self-harm. Stay with relatives/supportive friend. Identify internal/personal coping strategies.)*
Emergency numbers		*(Include numbers for Samaritans 116123; daytime numbers for CMHT and GP; and for supportive family members or friends who can be contacted in an emergency.)*
Mental Health Support		*(e.g. Name of place and phone number for next appointment; plan for what the next communication will be with the patient.)*

Patient has requested family member is not included: **Y ❑** N ❑
Family member given a copy of *Would you know what to do if someone told you they were suicidal? (NOSP*): Y❑N❑
Copy of the ESP given to the patient: **Y ❑** N ❑
Signed (MHP)
Signed (Patient – *optional*)

FIG. 7.7 EXAMPLE OF AN EMERGENCY SAFETY PLAN

- target symptoms that are most likely to interrupt day-to-day functioning
- target hopelessness and sense of isolation
- reinforce the commitment to treatment
- solidify the therapeutic relationship

Certain modifications have been found helpful for people seen in the Irish services. Staff and service users have reported finding that focus on protective factors is more useful than focusing on reasons for living. Strengths-perspective and solution-focused safety planning focuses on identifying coping strategies and problem-solving, and harnessing family and social supports.

A sample emergency safety plan is shown in Fig. 7.7.

7.5 Family member/supportive friend intervention

One objective of the clinical programme is to enhance the experiences of families in supporting their relative. This includes the mental health professional taking collateral information from family members, providing advice on suicide prevention and, with the patient's consent, informing family members of the care plan. If the patient is discharged home, the CNS provides brief follow-up support by phone to the patient and the family member until they reach the next point of care – for example, the GP, mental health team or a counselling service. Underpinning this model is the triangle of care of the person at risk, the family member and the healthcare professional.

Gathering information from family and supportive adults and providing the latter with support is central to the NCPSH. Every effort should be made to provide the patient with a clear understanding of the value and importance of both gathering information from and sharing information with family members or a supportive friend. Confidentiality is paramount but there are situations where it can be breached. Even in situations where it is not appropriate to breach confidentiality, listening to family members/carers is important and is not precluded by confidentiality. Support for family members/carers can also be provided without breaching confidentiality.

As well as encouraging family involvement, GPs and SCANs need to be aware of the possibility of abuse within the family and in particular the risk of intimate partner violence. All patients presenting should be given the time and space for an interview alone.

The Emergency Safety Plan should be produced with the individual and, where appropriate, their family member/supportive adult. This is a written plan for the following 24 hours. It should include how to provide a safe environment, whom to contact in an emergency and what the next professional contact will be. It should address what the individual needs to do, what the family members/supportive friend need to do and what the service needs to do.

7.6 Prioritising need

General practice has for some time identified the inverse care law (Tudor Harte 1971). The areas of most need are often less well served by health services. The NCPSH strongly recommends that resources for a SCAN service be introduced to ensure that those services of greatest need receive the first services.

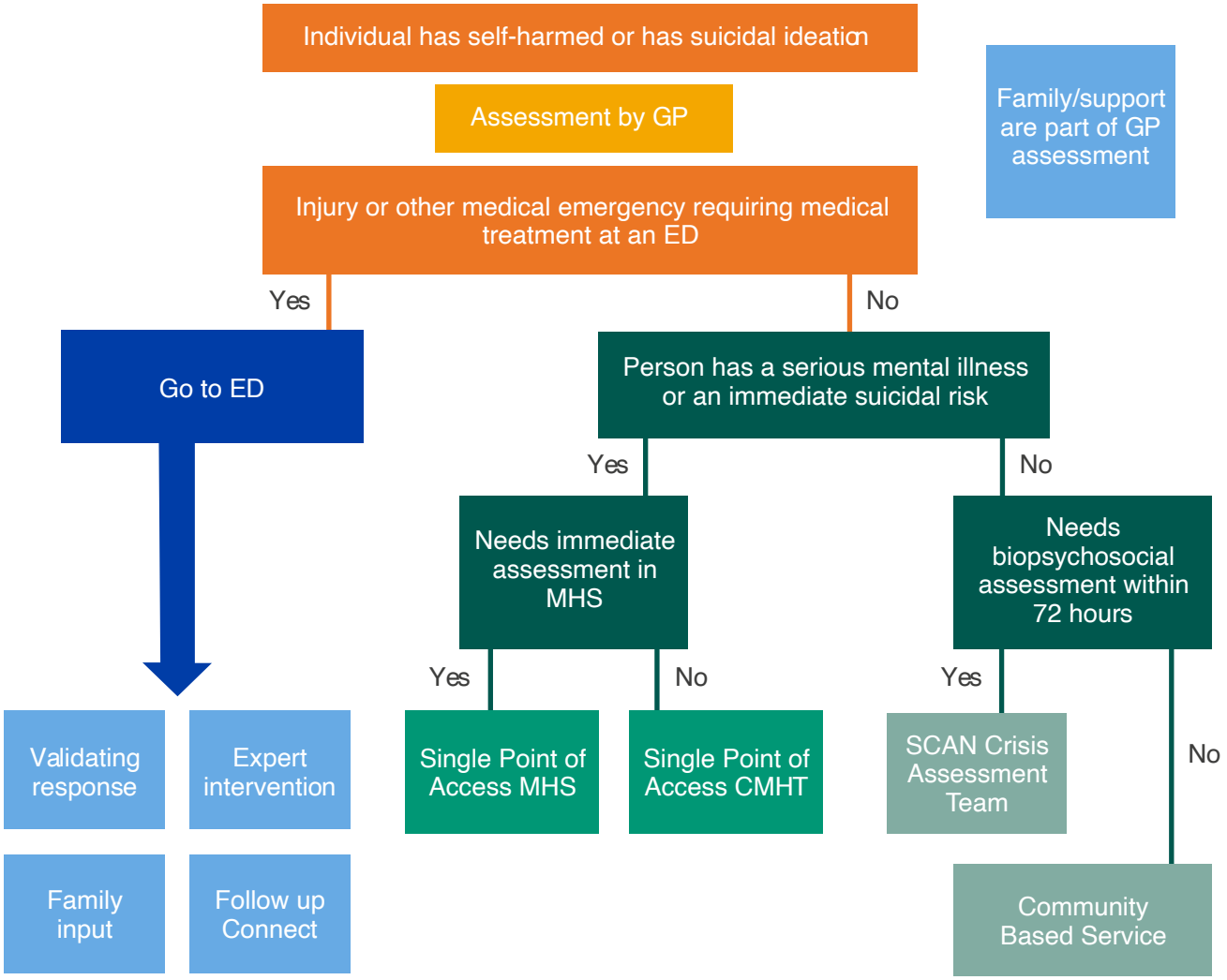

FIG. 7.8 PATHWAY OF CARE FOR PERSON PRESENTING TO GP FOLLOWING SELF-HARM OR WITH SUICIDAL IDEATION

7.7 Examples of local pathways that can be developed

Pathway of care from the GP

Key to effective working between GPs, SCAN and CMHTs is effective communication and collaborative working. The following examples can be used by teams to jointly develop referral pathways. The aim is to ensure that all who have self-harmed or have suicide-related thoughts are directed to the most appropriate service in the first place. The ED is for people who have a medical emergency or an undifferentiated illness. Sending people who do not have a mental illness to the ED to be assessed by a psychiatry-led team is not appropriate. The appropriate service should be available in primary care. If there is no evidence of a serious mental illness, the SCAN service is appropriate. A person with a serious mental illness, who also has suicide-related thoughts or acts, will need to be referred to a psychiatrist-led mental health team. If it's a case of psychiatric emergency, the local mental health service should be contacted through a single point of access. Table 7.3 shows the required pathway of care.

TABLE 7.3 EXAMPLES OF LOCAL PATHWAYS THAT CAN BE DEVELOPED WHEN A PERSON PRESENTS TO THE GP WITH SELF-HARM OR SUICIDE-RELATED IDEATION

Clinical Scenario	Intervention	Useful Contacts
A. The person has intrusive thoughts of wanting to die by suicide and has a means and plan to carry it out. Following GP assessment, it is clear they are at immediate and imminent risk.	**a)** Refer to the local mental health service for assessment for admission. Use the Mental Health Act if the person will not agree to this. **b)** Ensure the person is accompanied at all times until they are safely transferred to the Mental Health Service.	Local Mental Health Service single point of access to discuss assessment for admission.
B. **1.** The person has a serious mental illness, and **2.** has psychotic symptoms or has extreme agitation, or it is not possible to take a full history, and **3.** lives alone or has no family or supportive carer, or **4.** has intrusive thoughts of wanting to die by suicide and has a means to carry it out.	**c)** Contact the Mental Health Service via the Single Point of Access. **d)** In arranging the next assessment, ensure the person is safely linked to the next assessment. An emergency care plan can support this. This will also involve ensuring there is a person with the patient at all times.	Local single point of access for Mental Health Service.
C. **1.** Has a serious mental illness such as moderate or severe depression, Bipolar Affective Disorder, Schizophrenia, Severe Anxiety Disorder, or emotionally unstable personality disorder, and **2.** has fixed thoughts of suicide, and **3.** has supportive family or friend, and, **4.** following assessment and discussion it is clear to the GP the individual's safety can be maintained for 24 hours.	**e)** Complete a collaborative emergency safety plan with the individual and the family/ supportive friend Include – keeping a safe environment, emergency contact numbers and plan for next care. **f)** Contact Community Mental Health Team for assessment within 24 hours.	Local CMHT one point of access for Mental Health Service.
D. **1.** Does not have a major mental illness, **2.** has fixed thoughts of suicide, but no imminent plan, **3.** has supportive family or friend, and **4.** following assessment and discussion it is clear the individual's safety can be maintained for 24 hours.	**g)** Complete a collaborative emergency safety plan with the individual and family. Include keeping a safe environment, emergency contact numbers and plan for next care. **f)** Contact SCAN service for assessment within 24 hours (if SCAN cannot provide this, local Mental Health Service will need to provide an assessment).	Local SCAN service (Some SCAN services will not be able to respond in 24 hours. In these cases SCAN would refer to the CMHT for assessment.)
E. **1.** Has no immediate plans to act on suicidal thoughts. **2.** Has adequate social support. **3.** Is fully cooperative. **4.** Has hope for the future. **5.** Following assessment it is clear the individual's safety can be maintained for 72 hours. **6.** Does not have a major mental illness, or mental illness can be managed by the GP.	**i)** Complete collaborative emergency care plan with the individual and, if they agree, a family member. **j)** Refer to Suicide Crisis Assessment Need (SCAN) service. **k)** SCAN professional to phone within 24 hours, and provide assessment within 72 hours.	Local SCAN service.

Special Circumstances		
F. A person has been assessed by a mental health professional within the last month but now presents with escalating suicide-related thoughts or self-harming.	**a)** Refer to the local mental health service for assessment for admission. Use the Mental Health Act if the person will not agree to this. Or to the local CMHT. **b)** Ensure the person is accompanied at all times until they are safely transferred to the Mental Health Service.	Local Mental Health Service, one point of access for assessment for admission.
G. Suicide-related thoughts or behaviour are accompanied by alcohol and/or other drug use, in the absence of immediate or imminent risk such as in A, in which case interventions for A should be followed.	**c)** Complete a collaborative emergency safety plan with the individual, and, if they agree, a family member. **d)** Follow procedures as in C or D. **e)** Using the SAOR Screening and Brief Intervention for Problem Alcohol and Substance Use, complete a screen for alcohol and other drug use using a screening tool such as AUDIT, DUDIT. Discuss options with the person. **f)** Refer to specialist addiction services where appropriate.	Phone number for local addiction service.

7.8 Follow-up and linkage to next appropriate care

Following a full biopsychosocial assessment with family involvement and completion of a written emergency safety plan, the individual should be followed up and linked to appropriate next care. This may include mental health services and services from the voluntary and community sector.

Chapter 6 described follow-up and linkage to next appropriate care in detail. Follow-up and bridging to next appropriate care is achieved through the SCAN communicating with the patient's GP, telephoning the patient within 24 hours of assessment, and maintaining contact with the patient until they have been in contact with the next appropriate care.

It is beyond the scope of this Model of Care to develop next appropriate care; however, it is important that there be a clear pathway to next appropriate care. It is recommended that all local services develop referral protocols between ED, SCAN, crisis assessment services, CMHTs and community-based non-crisis suicide counselling services. GPs may find that many of these services provide effective supports for individuals before they reach a crisis. Examples of appropriate next care include specialist non-crisis time-limited counselling for self-harm and suicidal ideation, crisis cafés, social prescribing, community counselling and psychological supports. It is recommended that the ED CNS and the SCAN develop clear referral pathways to these services.

The NCPSH recommends that all regions provide access to non-crisis time-limited specialist counselling for self-harm and suicide-related thoughts, and that these services ensure effective communication to and from other health agencies. These services could be developed by the HSE or by NGOs in partnership with the HSE. The Self-Harm Intervention Service (SHIP) in the South East is an example of such a service (Gardner et al 2015). Some non-governmental organisations (NGO) have developed similar services.

Crisis cafés have been identified in a number of countries as offering psychosocial crisis supports (Consumers of MH Report 2019; Harbour Café, Certitude 2020; The Living Room, Heyland et al 2013). The model in all these services provides a place for a person in crisis to receive psychosocial support following a mental health assessment. Links are formed with GPs, local mental health teams and EDs, with individuals referred to the crisis cafés from these services.

Crisis cafés, as described in these reports, do not provide an alternative to the ED; they provide an extra service along with the resourced mental health teams. A comprehensive review of crisis cafés and their feasibility in an Irish setting has been conducted by a number of NGOs, Waterford Institute of Technology and employees of the HSE (Kilkenny Crisis Café

Feasibility Study 2020). This study outlines how a number of agencies can work together in supporting individuals in a crisis. They describe the development of a peer-led and non-clinical approach to crises. Crisis cafés can provide much-needed psychosocial support but they do not provide biopsychosocial assessment of risk and need, and thus do not replace a skilled assessment provided by a qualified mental health professional such as a SCAN, CMHT or the mental health professional in the ED. For this reason, we have not included crisis cafés on the list of pathways to care from GPs. They form part of the next appropriate care for some individuals.

Social prescribing is a means of enabling GPs and other healthcare professionals to refer patients to a link worker – to provide them with a face-to-face conversation during which they can learn about the possibilities and design their own personalised solution to provide social support. This service provides links to social activities and should not be confused with social work input. People with social, emotional or practical needs who often use services provided by the voluntary and community sector are empowered to find solutions that will improve their health and wellbeing. A recent evaluation (HSE 2020c) found that social prescribing is increasing in Ireland, with 18–20 funded projects and a continuing expanding All-Ireland Social Prescribing Network. The self-harm CNS and SCAN should link with any local social prescriber and identify a resource of suitable community agencies that can offer ongoing support. This should be available to all mental health professionals completing assessments, including those working out of hours.

7.9 Training

Training and governance is discussed in detail in Chapters 9 and 10.

7.9.1 Training of GPs

Training, education and continual professional development of GPs takes place through reading, attendance at courses and conferences, and clinical practice.

The ICGP developed the CME Tutor Network to support GP learning. Established in the early 1980s, it has been the most popular form of continuous medial education among GPs in Ireland. Meetings are run in all parts of Ireland and are open to anyone who is working as a GP in general practice in Ireland. A total of 3,195 GPs are currently on the CME mailing list, with more than 10,000 attendances at over 1,200 meetings each year.

The meetings are based on peer-based learning, whereby members share their knowledge and experience. The meetings aim to improve the knowledge base of GPs and also their attitudes and professionalism.

As discussed earlier, GPs have identified specific training needs in relation to supporting individuals with self-harm and suicidal ideation. A systematic review identified the need for training in brief psychological therapies, along with the need to improve communication between the GP and specialist mental health services.

TABLE 7.4 FACILITATORS AND BARRIERS FOR GPS IN MANAGING SUICIDAL BEHAVIOUR (MUGHAL ET AL 2020)

Facilitators	Barrier
Training of GPs in brief psychosocial interventions	Lack of time
Improved communication between primary and secondary care	Lack of confidence
A single point of access for assessment	Lack of effective services
Mental health nurse, counsellor/psychologist attached to practice	Poor communication
	Workload and systems failures

Training in brief psychological therapies is being developed through NOSP and the Irish College of General Practitioners (ICGP). This training will improve GPs' ability to support patients who are in suicidal crisis and enable the GP to use counselling services in primary care in an appropriate manner for all patients. Table 7.5 outlines the learning outcomes of this training.

TABLE 7.5 LEARNING OUTCOMES FOR NOSP/ICGP TRAINING ON COUNSELLING IN PRIMARY CARE

- Understand the role of counselling and psychotherapy in primary care
- Be aware of the different HSE-provided counselling services, and which patients to refer to each service
- Have a basic knowledge of the different forms of counselling available
- Be aware of e-therapies available and the place these therapies have for patients with mental health issues
- Know how to identify patients likely to benefit from therapy and those not currently likely to benefit
- Be trauma-aware in interactions with patients presenting with mental health issues
- Be aware of the clinical governance and risk management issues, the importance of ensuring counsellors are appropriately qualified, and the role of registration bodies and CORU

Specific awareness-building about SCAN will be required as the service is rolled out throughout the country. SCAN nurses and GPs already using the service are ideally placed to support this training.

Training in safety planning and suicide mitigation identified for CNSs and NCHDs, such as STORM training, would also benefit GPs.

The ICGP and the NCPSH should continue to work closely with NOSP in delivering training for GPs in brief interventions.

GPs may also benefit from developing skills in carrying out opportunistic screening and interventions for those at risk of alcohol and substance misuse, including training in SAOR (Screening, Ask and Assess, Offer Assistance and Referral). This training is described further in Chapters 5 and Chapter 9.

7.9.2 Training of SCAN practitioners

Training for SCAN practitioners is described in detail in Chapter 9. All SCANs should attend annual national training seminars organised by the NCP.

7.10 Governance

SCAN practitioners will be funded, recruited and managed by the mental health services.

Each SCAN will require suitable office facilities, ideally alongside a CMHT. Assessments should be carried out in general practice if space is available. It is the responsibility of the HSE to ensure that facilities in primary care are available for use in situations where accommodation is not available in general practice.

7.10.1 Clinical reporting relationship for SCAN service

SCAN provides a consultation service to general practice and general practitioners. Within the SCAN service, the CNS will report clinically to an ANP or a Consultant Psychiatrist. The ANP will report clinically to a Consultant Psychiatrist.

Within the SCAN service, all patients remain in primary care. Being seen by a SCAN does not constitute a referral to the CMHT and the patient remains in primary care. If a SCAN and/or the GP deem that a referral to a CMHT is required, the normal referral process by a GP to the CMHT should be followed.

The CNS should discuss cases with the GP and receive clinical supervision from a registered ANP (RANP) or from a Consultant Psychiatrist, depending on individual service need.

The RANP should receive clinical supervision from a General Adult Consultant Psychiatrist.

Where the supervision is provided by an ANP, that ANP should be allocated time to provide weekly face-to-face supervision, time to establish the service with GPs and, when required, provide input to individual patients.

A General Adult Consultant Psychiatrist should be allocated time to provide weekly face-to-face supervision and time to develop the service with local GPs. This will require 0.2 WTE consultant time per 300,000 population.

7.11 Summary and recommendations

- It is recommended that Connecting for Life Local Action Plans include the provision for GP and ED assessment of self-harm and suicide-related thoughts, as outlined in the Clinical Programme.
- The GP should be the first point of access to people who self-harm or have suicidal ideation.
- Training for GPs should focus on exploring suicidal ideation, identifying local and community-based referral pathways, support family involvement, and brief psychosocial interventions.
- Each general practice should have access to a Suicide Crisis Assessment Nurse service of mental health practitioners. These would be CNSs or equivalent mental health professionals who can address suicide crisis assessment needs. These practitioners will be employed by the mental health services and have access to the clinical support of a Consultant Psychiatrist.
- SCAN should complete interventionist assessments, develop a collaborative safety plan with the patient and a family member or supportive adult, and provide a follow-up phone call and linkage to next appropriate care.
- GPs and secondary care mental health services should aim to develop effective communication, including the joint development of referral protocols, and quarterly meetings to include GP staff, the SCAN service and the CMHT.
- Information on service provision within primary care and community should be available for all GPs.
- All CHO areas should have access to a non-crisis, time-limited, specialist counselling service, with effective communication between health professionals and counsellors within such a service.
- Resources from NOSP, in particular the booklet 'Would you know what to do if someone told you they were thinking of suicide', should be available to all GPs through https://www.healthpromotion.ie/publication.
- SCAN provides a consultation service to general practice and general practitioners. Within the SCAN service, the CNS will report clinically to an ANP or a Consultant Psychiatrist. The ANP will report clinically to a Consultant Psychiatrist.
- Within the SCAN service, all patients remain in primary care. Being seen by the SCAN does not constitute a referral to the CMHT and the patient remains in primary care. If the SCAN and/or the GP deem that a referral to a CMHT is required, the normal referral process by a GP to the CMHT should be followed.
- The CNS should discuss cases with the GP and receive clinical supervision from a registered ANP (RANP) or a Consultant Psychiatrist depending on individual service need.
- A General Adult Consultant Psychiatrist should be allocated time to provide weekly face-to-face supervision and time to develop the service with local GPs. This will require 0.2 WTE consultant time per 300,000 population.