

**Supplementary material 14:
Characteristics of intervention approaches and models**

Model Country	Population served	Referral source Accessibility Response time	Type of assessment undertaken	Team members Team training	Onward Referral
Outpatient mental health programmes					
Outpatient Crisis Programme Roman et al. 2018 ¹ USA	CYP up to 18 years of age Classed as having high risk MH or behavioural health issues who were experiencing a crisis	Referral source: NR Accessibility: NA Response time: Within 72 hours	Triage Psychiatric assessment	Licensed therapists Team training: NR	Connected to ongoing providers
Rapid Response Outpatient Model Greenfield et al. 2002 ² Latimer et al. 2014 ³ Canada	Adolescents aged 12 to 17 years presenting to the PED after a suicide attempt	Referrals from psychiatrist based in the PED Accessibility: NA Response time: straight after assessment in the PED	Medical assessment Psychiatric assessment	Psychiatrist PN Team training: NR	Long-term follow-up was arranged in the community & was also available in case of future crisis
Outpatient Psychiatry Emergency Room Follow-Up Team (ERFUT) Greenfield et al. 1995 ⁴ Canada	Adolescents age not specified presenting to the ED after a suicide attempt	Referrals from ER psychiatric staff following assessment Accessibility: NA Response time: Within 72 hours	Triage Medical assessment Psychiatric assessment	CNS Child psychiatrist Team training: NR	Referral for onwards community counselling if needed
Integrated Pediatric Mental Health Outpatient Clinic Maslow et al. 2017 USA	CYP aged 2 to 22 years with acute MH needs	Referrals from paediatric ED, paediatric specialty clinics, paediatric primary care & community (community providers, agencies, schools and self-referrals) Accessibility Response time: from ED mean 4.20+6.28 working days, from other referrals mean 13.17+10.39 working days	Triage Psychiatric assessment	Clinical licensed SW Licensed practical nurse Paediatric psychiatrist Nurse practitioner Clinic coordinator Psychiatry fellow SW interns Team training: NR	Those who just have a single evaluation are triaged to internal or community providers Those who have extended evaluations are referred to other specialists are a brief intervention
Adolescent crisis service	Adolescents	Referred from police, urgent	Triage	PT General	After the intervention the

Gillig 2004 ⁵ USA	aged 12 to 18 years presenting with suicidality, homicidally, self-harm to an urgent care centre	care physicians, nurses, teachers or family Staff at the outpatient's clinics collaborate with an emergency hotline so that the clients at risk can be served out of hours	Medical assessment Psychiatric assessment	psychiatrists & nurses ML Clinical SWs	adolescent was either hospitalised psychiatrically or referred to one of several types of outpatient programs with immediate intensive case management
Urgent telepsychiatry assessment and brief intervention Roberts et al. 2017 ⁶ Canada	CYP and adolescents aged < 18 years Presenting to urgent consult clinic with suicidality, anxiety, aggression, psychosis	Referred from emergency physician, primary care or school Psychiatric assessment within 48 hours of referral Direct consultation to ED physicians in remote EDs & clinics within 24hrs of presentation to service	Psychiatric assessment	CYP psychiatrist SW Nurses	Referral to local children's MH agencies, other outpatient clinics in the child and adolescent division or hospital admission
Mobile crisis services					
Mobile Crisis Intervention Service Sowar et al. 2018 ⁷ USA	CYP aged < 18 years & those 19 years who are still enrolled in school All crisis from the perspective of the caller	Referral source: NR 24/7 Mobile crisis hours 6am to 10pm WD & 1pm to 10pm WE & PH Response time: 45 mins or less Non mobile crisis hours the caller speaks to the intake specialist, who notifies the local provider for follow-up during mobile hours the next day	Triage Psychiatric assessment	Mobile crisis director Site supervisors Clinicians with ML qualifications Board certified CAP Team training: NR	Referral and linkage to ongoing care
Emergency Mobile Psychiatric Services Vanderploeg et al. 2016 ⁸ Fendrich et al. 2019 ⁹ USA	CYP aged < 18 years & those 19 years who are still enrolled in school All crisis from the perspective of the caller which includes suicidality and risk of harm to self or others	Self/Family referral School, ED, other community provider, DCF, Police, foster parent, probation/court, other 24/7 EMPS mobile hours 6am to 10pm WD & 1pm to 10pm WE & PH Response time \leq 45 minutes	Triage Psychiatric assessment	Clinicians with GL or ML qualifications in SW, psychology, marriage and family therapy or related fields Team training: Yes	Referral and linkage to ongoing care for example outpatient services, extended day treatment, evaluation for inpatient hospitalisation

		Outside these times telephone response provided by trained crisis clinicians with referral to EMPS provider during the next available mobile hours			
Mobile response team Martin 2005 ¹⁰ USA	Youth aged 4-17 who required crisis intervention because of a risk of being a danger to themselves or to others	Referrals are made via the programme "hotline" by adolescent group homes, schools & designated MH services 24/7 MRT is open 9am to 10pm WD& 2pm to 10pm WE. Response time: ≤30 mins Voicemail for afterhours calls followed up when next open	Triage Psychiatric assessment	Licensed marriage & family therapists Pre-licensed SW interns ML clinicians GL support counsellors & family partners Team training: NR	Referral to an emergency shelter or a voluntary visit to PES for further assessment and containment Refers clients to appropriate community resources (MH & SS agencies such as wraparound services, psychotherapy, support groups, TBS, mentorship programs & parenting education classes
Crisis service initiated within the ED					
Family intervention for suicide prevention Asarnow et al. 2009, ¹¹ 2011 ¹² Hughes et al. 2013 ¹³ USA	CYP aged 10 to 18 years presenting to ED with suicidality	Self-referral to ED The intervention is available to all those presenting to the ED	Psychiatric assessment	MH clinicians Team training: Yes	Outpatients as part of intervention
Specialised emergency room program Rotheram-Borus 1996a, ¹⁴ 1996b, ¹⁵ 2000 ¹⁶ USA	Female adolescents presenting to ED with suicidality	Self-referral to ED The intervention is available to all those presenting to the ED	Psychiatric assessment	Paediatric and psychiatric residents Nurses Team training: Yes	6 session follow-up treatment program
Family-Based Crisis Intervention Ginnis et al. 2015 ¹⁷ Wharff et al. 2012 ¹⁸ , 2019 ¹⁹ USA	Adolescents aged 13 to 18 years presenting to ED with suicidality	Self-referral to ED The intervention is available to all those presenting to the ED on WD 8am to 11pm (Fridays 5pm)	Medical assessment Psychiatric assessment	SW Psychiatrist Team training: Yes	Follow up as part of intervention
Pediatric Psychiatry Crisis Service	CYP (no age specified)	Referred by local schools, paediatricians, other psychiatric	Triage	Child psychiatrist Child psychologist	Those with suicidal ideation are discharged home & monitored &

Feiguine et al. 2000 ²⁰ USA	experiencing a psychiatric emergency including suicidality	and medical clinics within the hospital, and local community agencies to the PED 24/7 Response time: same day evaluations are provided	Psychiatric assessment	SW coordinator SW assistant ML psychologist CP fellows Psychology interns Team training: NR	if needed referred for additional therapy to either one of the subspecialty clinics within the outpatient department or to an outside agency
Washburn Allina Acute Response Model Roman et al. 2018 ¹ USA	CYP (no age specified) presenting to the ED in psychiatric crisis	Self-referral to ED Patients can be seen for an immediate evaluation by A crisis worker who is based in the ED will evaluate the patient. After this an in-home session is scheduled within 72 hours after discharge In the absence of a crisis worker in the ED, a referral is made. Follow-up with patients and families will occur within 24 hours	Psychiatric assessment	Crisis clinician who is a licensed clinical SW with crisis and family experience Team training: NR	Referred for additional MH services as needed including long-term crisis stabilisation treatment (up to 6 months)
Increasing paediatric mental health expertise in the ED					
Additionally trained psychiatric professionals Holder et al. 2017 ²¹ USA	Children & adolescents aged 5 to 18 years presenting to the ED in crisis with MH disorders or behavioural reasons	Self-referral to ED ED social worker 20 hours daily Psychiatrist (consultation) for up to 8 hours daily in addition to the usual 4 hours	Triage Medical assessment Psychiatric assessment	CAP Psychiatric SW Team training: Yes	Referred to inpatient paediatric treatment, psychiatric hospitalisation, RTCs, outpatient services or other psychiatric facilities as required
Dedicated MH team Uspal et al. 2016 ²² USA	Children aged not specified presenting to the ED with psychiatric complaints (self-inflicted injuries excluded)	Self-referral to ED 24/7	Triage Medical assessment Psychiatric assessment	MH evaluator (ML SW or PN with at least 2 years' experience) GL Pediatric MH specialist Team training: Yes	Referred for psychiatric hospitalisation if needed
Home or community based crisis programmes					
Home based Multi Systemic Therapy	CYP aged 10 to 17 years	Referred for hospitalisation community child service	Psychiatric assessment	Clinicians with ML qualifications	NR

Henggeler et al. 1999 ²³ , 2003 ²⁴ Huey et al. 2004 ²⁵ Rowland et al. 2000 ²⁶ Schoenwald et al. 2000 ²⁷ Sheidow et al. 2004 ²⁸ USA	presenting to ED or inpatient services with suicidal ideation, homicidal ideation, psychosis or threat of harm to self or others	agencies (MH, JJ, social welfare, schools), probate court and caregivers 24/7 Response time: within 24 hours of being assessed		Crisis caseworkers Psychiatry residents Team training: Yes	
Intensive Home Treatment and Psychiatric High & Intensive Care Muskens et al. 2019 The Netherlands	Adolescents aged 11 to 18 years with severe psychiatric symptoms in need of acute & intensive treatment	Referral source: NR 24/7 Response time: NR	Psychiatric assessment	CAP Child psychologist Nurse practitioner Team training: Yes	Patients with disruptive behaviour disorder and eating disorders referred for other specific treatment options
Home Based crisis Intervention Enhanced HBCI Crisis case management Evans et al. 1997, ³⁰ 2003 ³¹ USA	CYP aged 5 to 18 years presenting to ED in psychiatric crisis including suicidality	Through referrals from either psychiatric hospitals or general hospitals proving PES 24/7 Response time: within 24 hours	Psychiatric assessment	Counsellors Supervisor Psychiatrists Team training: Yes	Linked to other services if needed
Safety First Assessment Intervention Bickerton et al. 2007, ³² 2014 ³³ Australia	CYP age not specified presenting in crisis including acute suicidality, self-harm, risk of harm to others	Case study of referral by family members but no other referral sources provided 24/7 Response time within 72 hours	Psychiatric assessment	CAMHs clinicians working within an ICAT Team training: Yes	Referred to a variety of services as required for long term follow up
School-hospital partnership					
Multi-tiered systems of support Walter et al. 2019 ³⁴ USA	High school and elementary students age not specified in acute MH crisis including suicidality	Referred by school staff Accessible within school opening hours Response time: average wait time 4.94 minutes	Psychiatric assessment	Programme clinicians who were Licensed SW Licensed clinical psychologists And supervised by the programme director a licensed clinical SW (GL in SW) Team training: Yes	Referred externally for ongoing management to community MH centres, service agencies providing wraparound services or PCCH centre

Crisis programme within a RTC					
<p>On-campus Crisis Residence programme</p> <p>Baker and Dale 2002³⁵ Baker 2004³⁶</p> <p>USA</p>	<p>Boys aged 5 to 17 years experiencing a psychiatric crisis in the RTC (including suicide attempt, fire setting and violence)</p>	<p>Referred from RTC, and other agency programs such as adoption & foster care, local & out-of-state social service agencies & departments of MH & insurance companies, managed care organisations & from biological families</p> <p>24/7</p> <p>Response time: within 24 hours</p>	<p>Psychiatric assessment</p>	<p>Psychologist Psychiatrist Psychiatric SW Supervisor of psychiatric technicians Assistant supervisors Psychiatric technicians</p> <p>Team training: Yes</p>	<p>Those referred from RTC if needed were referred to a higher-level RTF, hospital or detention centre</p> <p>Those referred from foster homes if needed were referred to group home, RTC or hospital</p> <p>Those referred by biological families if needed were referred to group home, foster home, hospital or RTC</p>
Multi component or agency services					
<p>Ventura County Children's Crisis Continuum</p> <p>Sowar et al. 2018</p> <p>USA</p>	<p>Youths</p> <p>MCT: all ages CSU: aged 6 to 17 years CRT: 12 to 17 years</p>	<p>24/7 MCT <24-hour CSU Short-term CRT</p> <p>Mobile crisis team respond to any setting, including residences, schools, EDs, MH & ambulatory care clinics & Juvenile Hall</p>		<p>At the MCT MDT which includes SW, Nurses Family therapists Psychiatric technicians</p> <p>At the CSU MDT which includes Tele-psychiatrist NL clinicians Nurses MH counsellors</p> <p>Team training: NR</p>	<p>Aftercare & connection to outpatient MH services and other local resources</p>
<p>The Solar community crisis resolution team</p> <p>Vusio et al. 2020³⁷</p> <p>UK</p>	<p>CYP aged 0-19 years</p>	<p>7 days a week 8am to 8pm Out of hours service offered</p> <p>Triaged within 1 hour of referral Assessment is completed within 4 hours</p>	<p>Triaged Psychiatric assessment</p>	<p>No details provided</p>	<p>Admitted to inpatient settings as required</p>
<p>Crisis and Transition Services</p> <p>Ribbers et al. 2020</p>	<p>Youth Up to age 18 Presenting in MH crisis</p>	<p>Self-referral to ED ED diversion programme</p>	<p>Psychiatric assessment</p>	<p>No details provided</p>	<p>Connecting with therapists and psychiatric providers as needed</p>

USA					
Generic services with crisis function					
The Market Place, Leeds Garcia et al. 2017 ³⁸ UK	YP aged 13 to 25 years tackling a range of mental health problems; emotional, relationship and practical difficulties	Referrals accepted from all sources including GPs, CAMHS Self-referrals actively encouraged No further details provided	NA	NR	NR
Community Links, Canning Town Garcia et al. 2017 ³⁸ UK	YP aged 16-25 years including those experiencing distress/crisis	Referrals accepted from all professionals as well as families, friends and self-referrals Service can be contacted by text, phone or email Test lime is manned WD and Saturday mornings No further details provided	NA	Details of staff NR Team training: Yes	NR
Sorted Not Screwed Up, Aberdeen Foyer, Aberdeen Garcia et al. 2017 ³⁸ UK	YP aged 16 to 21 years including those experiencing crisis	Self-referrals from young people already using other Foyer services, and referrals from Foyer support workers No further details provided	NA	Student counsellors, Health volunteer NHS health visitors Team training; NR	Only details provided listed under services provided are referral and signposting

Key: 24/7: 24 hours a day, seven days a week; CAMHS: child and adolescent mental health services; CAP: child and adolescent psychiatrist; CNS: clinical nurse specialist; CP: child psychiatry; CRT: crisis residential team; CSU: crisis stabilisation unit; CYP: children and young people; DCF: Department for Children and Families; ED: emergency department; EMPS: Emergency Mobile Psychiatric Services; GL: graduate level; HCBI: Home-based ; Crisis Intervention; ICAT: intensive care and assessment team; IHT: Intensive home treatment; JJ: juvenile justice; MCT: Mobile Crisis Team; MDT: multi-disciplinary team; ML: master's level; NA: applicable; NR: not reported; PCCH: primary care community health; PES: psychiatric emergency services; PN: psychiatric nurse; RTC: residential treatment centre; RTF: regional treatment facility; PED: paediatric emergency department; PH: public holidays; SS: social services; SW: social work; TBS: Therapeutic Behavioural Services; WD: weekdays; WE: weekends

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