
# BRIEF EDUCATION SUPPORTED TREATMENT (BEST) FOR ADOLESCENT BORDERLINE PERSONALITY DISORDER

A feasibility study of delivery of specialised, early intervention for borderline personality disorder through collaboration with education providers, incorporating a feasibility randomised controlled trial

## SHORT TITLE: BEST FOR ADOLESCENT BPD

- **This protocol has regard for the HRA guidance**

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**NIHR HS&DR REFERENCE 17/09/31**

**IRAS Project ID: 250938**

**REC REFERENCE: 18/YH/0416**

**PROTOCOL VERSION 1.6, 25/04/19**

**Version Control**

| Version No. | Date | Changes to previous version |
|---|---|---|
| 1.1 | 31/08/17 | N/A |
| 1.2 | 21/06/18 | Updated with changes made in response to HS&DR board feedback. |
| 1.3 | 19/09/18 | Safety reporting section added. Eligibility criteria clarified. Procedure updated in line with internal peer review feedback. |
| 1.4 | 10/10/18 | HRA logo replaced with NIHR logo. Version control table added. |
| 1.5 | 30/10/18 | Information regarding Public and Patient Involvement added to section 11.3. REC reference number added. |
| 1.6 | 25/04/19 | Treatment window increased to 12 weeks and, correspondingly, post-intervention follow-up delayed to 12 weeks post-randomisation.<br>Addition of pre-screening questionnaire to recruitment procedures.<br>Addition of staff questionnaires to assess confidence, knowledge and skills pre and post training.<br>Clarification that supervision can be delivered suitably qualified and experienced practitioners other than the intervention developers.<br>Increase in number of schools and colleges to be involved in feasibility RCT.<br>Logos updated to reflect new NIHR branding guidelines and study logo. |



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## KEY STUDY CONTACTS

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| Funder | NIHR Health Services and Delivery Research |
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## STUDY SUMMARY

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|---|---|
| Title | Brief Education Supported Treatment (BEST) for adolescent borderline personality disorder: a feasibility study of delivery of specialised, early intervention for borderline personality disorder through collaboration with education providers, incorporating a feasibility randomised controlled trial |
| Internal ref. no. (or short title) | BEST for adolescent BPD |
| Design | Evidence synthesis and feasibility RCT |
| Participants | Young people with BPD symptoms, including current self-harm, will be recruited through schools, colleges and mental health services.<br><br>Inclusion criteria<br>• Aged 13-18 years (school years 9-13)<br>• Enrolled at a participating school/college<br>• Score >34 on the Borderline Personality Features Scale for Children (11 item version)<br>• Current self-harm assessed using the self-harm subscale of the Risk Taking and Self Harm Inventory for Adolescents (has intentionally harmed him/herself more than once and at least one incidence of self-harm occurred during the past month).<br>• Able to provide written informed consent or, for under 16s, written informed assent and parent/carer consent<br><br>Exclusion criteria<br>• Currently receiving inpatient treatment or specific psychological intervention<br>• Moderate/severe learning disability<br>• Current psychosis or substance dependence |
| Planned Sample Size | 6 intervention piloting + 60 feasibility RCT (30 per trial arm) |
| Treatment duration | Up to 12 weeks |
| Follow up duration | 24 weeks |
| Planned study period | 29 Months (1st November 2018 – 31st March 2021) |

## FUNDING AND SUPPORT IN KIND

| **FUNDER(S)**<br>(Names and contact details of ALL organisations providing funding and/or support in kind for this trial) | **FINANCIAL AND NON FINANCIALSUPPORT GIVEN** |
|---|---|
| NIHR Health Services and Delivery Research | £351,045.60 |

## ROLE OF TRIAL SPONSOR

Norfolk and Suffolk NHS Foundation Trust will be the sponsor. Responsibility for all aspects of study design, conduct, data analysis and interpretation, manuscript writing, and dissemination of results will be delegated to the Chief Investigator.

## ROLES AND RESPONSIBILITIES OF TRIAL MANAGEMENT COMMITEES/GROUPS

### Trial Management Committees

Three main groups will be convened to oversee the conduct of the study and ensure participant safety:

Trial Steering Committee (TSC)

The TSC will meet regularly throughout the study. It will be chaired by an independent expert and will have majority independent representation. The TSC will oversee the management of the trial and ensure its scientific integrity, reporting regularly to the Sponsor. Members of the study's Youth Advisory Panel (young people with lived-experience of mental health problems) and a parent/carer representative will be invited to sit on the TSC as full members. The TSC will assess the success of the feasibility trial against the progression criteria and will be responsible for the decision whether to seek funding to progress to a definitive RCT.

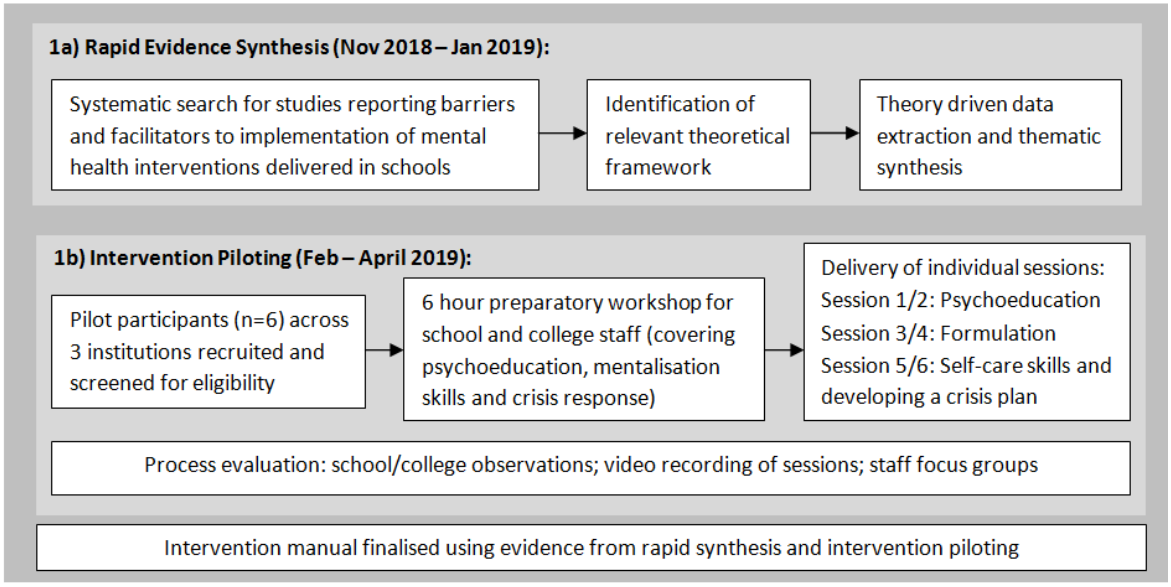
Data Monitoring Committee (DMC)

The DMC will be composed of experienced trialists who are independent of all staff and institutions involved in running the trial. The committee will meet bi-annually during the recruitment and follow-up phase of the feasibility RCT to review accumulating data and report to the Sponsor regarding any safety or ethical concerns pertaining to the conduct of the research.

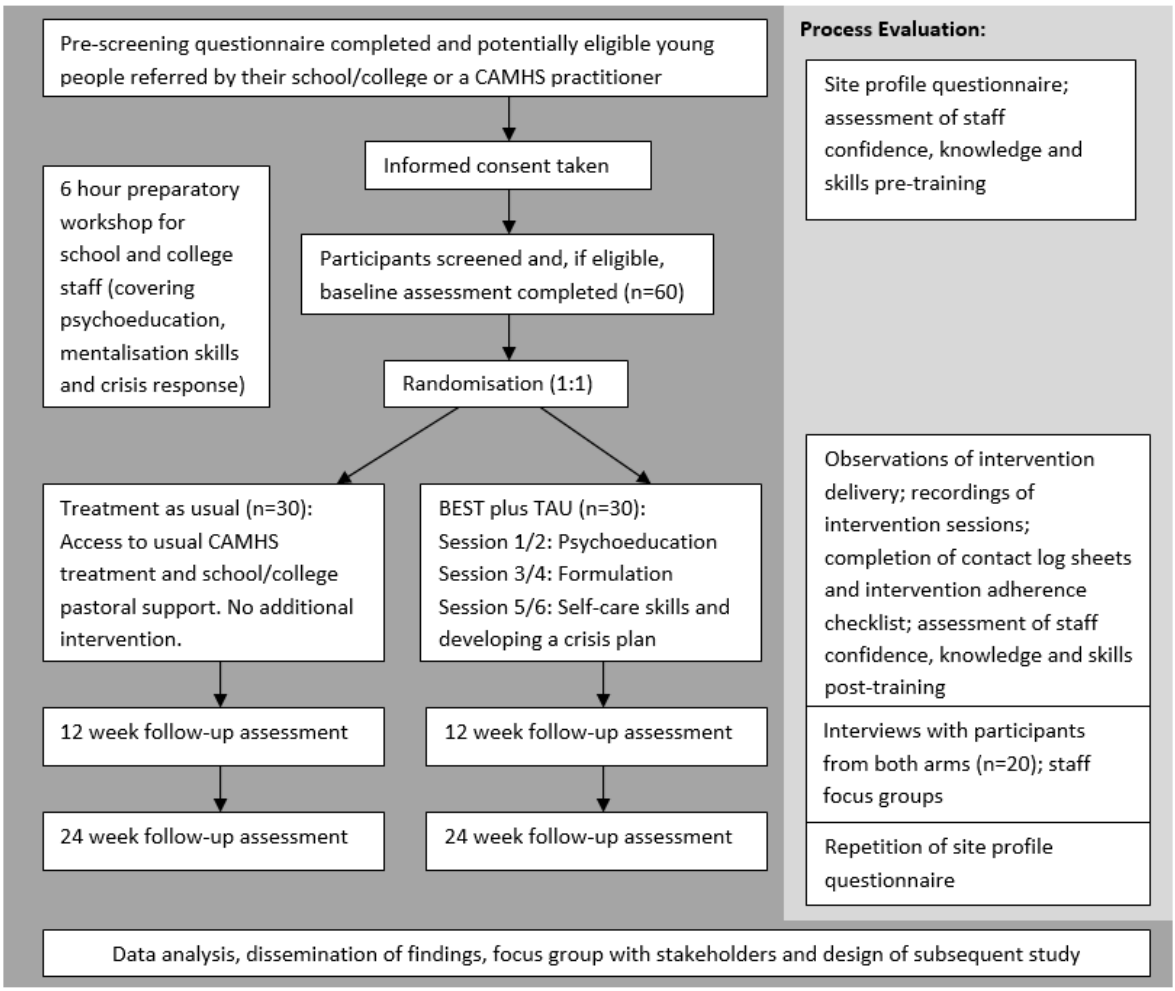
Trial Management Group (TMG)

The TMG will be chaired by Professor Peter Fonagy and will be comprised of core study team members. The TMG will meet monthly throughout the study to monitor the day-to-day running of the study, ensuring that it is progressing well and being conducted in accordance with the protocol and GCP guidelines.

## STUDY FLOW CHART




**Stage 2 – Feasibility Randomised Controlled Trial (June 2019 – March 2021)**

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## 1 BACKGROUND

Borderline personality disorder (BPD) is a severe mental disorder characterised by a pervasive pattern of emotional instability, interpersonal dysfunction, disturbed self-image and impulsive behaviour, including self-harm and suicide (1). BPD is associated with severe and persistent functional impairment (2,3) and a suicide rate 50 times higher than the general population (4). BPD is a developmental disorder and can be reliably diagnosed during adolescence (5). The prevalence of BPD among children and young people living in the community is approximately 3% (6,7). It is estimated that up to 80% of individuals with BPD self-harm and 75% attempt suicide (8), and BPD symptoms are among the best prospective predictors of self-harm in young people (9). Adolescent self-harm and suicide are major public health concerns (10). Increasing number of young people are presenting with self-harm (11) and the demand for services to support young people with these problems is not being met by existing service-models.

Growing research interest in adolescent BPD (12) has spurred the development of the first wave of evidence-based treatments (13–15). These have been found to lead to improvements in clinically important symptom domains, including self-harm, suicidal ideation and mood disturbance. Despite these promising findings, BPD in adolescents is still not regularly assessed for in clinical settings and access to evidence-based treatments for adolescent BPD is poor (12). Implementation of evidence-based treatments for adolescent BPD in routine clinical practice has been hindered by the expensive, highly-specialised nature of the clinical resources required to deliver these treatments (16). As such, late intervention is currently the norm, with specialist treatments being offered to only a small minority of individuals with chronic disorder.

BEST for adolescent BPD has been designed to overcome the barriers to implementing evidence-based interventions for BPD through an innovative, cross-sector approach. The Norfolk Youth Service has developed and successfully delivers a treatment package for young people with BPD which distils fundamental elements of evidence-based interventions for adolescent BPD into a brief (3-6 sessions) practicable format. Informed by neurodevelopmental research, the package promotes understanding of symptoms and the development of self-care strategies to enable young people to manage their condition. Currently, this package is delivered within secondary mental health services; due to increasing waiting times and high thresholds for treatment, this means that young people with BPD often receive it too late, or not at all.

The aim of the study is to investigate whether it is possible to deliver this package of support to young people with symptoms of BPD who self-harm through working in partnership with schools and colleges. The study comprises two phases: an intervention refinement stage and feasibility RCT.

## 2 RATIONALE

There is an urgent need for accessible interventions to address the growing prevalence of BPD symptoms, including self-harm, among young people. Currently available evidence-based interventions for adolescent BPD are not feasible within the NHS context since they require highly specialist clinical resources. Consequently, few young people with BPD are



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able to access appropriate treatment. The challenge of delivering early intervention for BPD can only be met by moving away from complex, resource-intensive psychotherapies towards brief interventions that can be delivered by non-specialists in accessible settings (16). Norfolk Youth Service's brief treatment package for adolescent BPD, which distils key components of evidence-based treatments into a 3-6 session manualised treatment package, has the potential to be delivered by non-specialists in BPD in order to meet growing demand.

Schools/colleges play an important role in the emotional health and wellbeing of young people and are well placed to identify those with mental health problems (17). However, education and health services are too often disconnected, and schools and colleges report receiving inadequate support to meet the needs of pupils with mental health problems (18). A recent survey found that a majority of secondary teachers felt they needed further support to identify mental health issues (62%) and provide appropriate support (68%) (19). Similarly, in a survey of 105 colleges in England, only 18% reported that referrals to secondary mental health services were responded to in a timely manner and 74% had referred pupils with mental health problems to A&E during the previous academic year (20). Maximising opportunities for joint working between education and mental health services is vital if we are to meet the needs of the most vulnerable young people. Our public and patient involvement (PPI) work indicates that school/college staff and young people would like to be able to access mental health interventions within education settings and in a survey of local schools, mental health and working in collaboration with health services were identified as a priority.

The current research is needed to refine the BEST for adolescent BPD intervention to ensure it can be successfully implemented within the context of educational institutions and to assess the feasibility of conducting a randomised controlled trial of BEST for adolescent BPD in preparation for a future trial of the effectiveness and cost-effectiveness of the intervention. If proven effective, the BEST intervention could be implemented nationally, transforming treatment of BPD by making early intervention the norm. This has the potential to produce substantial long-term benefits to individuals, society and the NHS by reducing the number of young people who develop entrenched psychopathology associated with chronic functional disability. As the intervention is designed to be delivered by non-specialists in BPD, the existing CAMHS workforce could be up-skilled to deliver the training to education staff and co-deliver sessions, supervised by a relatively small number of more specialist practitioners, making the intervention highly scalable.



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# 3 OBJECTIVES AND FEASIBILITY OUTCOMES

## 3.1 Objectives

The proposed research is designed to inform a future trial of the effectiveness and cost-effectiveness of the intervention (Brief Education Supported Treatment (BEST) for adolescent BPD). The objectives of the research are:

Objective 1 - To refine BEST for adolescent BPD to ensure it can be successfully implemented within the context of educational institutions.

Objective 2 - To assess the feasibility of evaluating the effectiveness and cost-effectiveness of BEST for adolescent BPD in a randomised controlled trial.

The following factors will be considered in assessing feasibility:

1. Our ability to recruit participants to time and target.
2. Our ability to retain participants in the trial post randomisation.
3. The ability of staff to deliver the intervention in accordance with the model, and the acceptability of the intervention from the perspective of staff and young people.
4. The degree of contamination of the control arm, i.e. the extent to which participants randomised to the control arm receive elements of the trial intervention.
5. The acceptability and suitability of the proposed outcome measures.

## 3.2 Feasibility Outcomes

**Recruitment and retention rates.** These will be estimated along with 95% CIs. If appropriate, time until drop-out will be estimated using a reverse Kaplan-Meier curve. Parameters required for the design of the subsequent study will also be estimated.

**Feasibility of implementation and fidelity to the intervention model.** Informed by the evidence synthesis in Stage 1, a process evaluation will investigate intervention delivery in order to assess implementation and fidelity to the model. A linguistic ethnographic methodology (21) will analyse how relationships, roles and moments of intervention delivery are organised. Mixed methods used will include site profile questionnaires; staff logs to record intervention contacts; non-participant observations of meetings and informal staff interactions; recording of treatment sessions; interviews and focus groups; and intervention fidelity checklist.

**Degree of contamination in control arm.** Qualitative process evaluation data on the experiences of the control arm will be used to monitor contamination.

**Suitability and acceptability of the proposed outcome and health economic measures.** Participants will be assessed pre-randomisation and 12 and 24 weeks later with the following measures: Borderline Personality Disorder Features Scale for Children (22), Difficulties in Emotion Regulation Scale (23), Risk Taking and Self Harm Inventory for Adolescents (24), Childhood and Adolescent Social Support Scale (25), Time Use Survey (26), and EQ-5D-5L. School attendance and self-reported health and social care service use will also be monitored. The rate of completion of each outcome measure will be calculated and acceptability assessed via the process evaluation. We will estimate the expected cost of the intervention and likely drivers of cost.



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## 4 STUDY DESIGN

**Stage 1 – Intervention Refinement (Nov 2018 – May 2019)**

### Stage 1a) Rapid Evidence Synthesis

Research question: What are the barriers and facilitators to the implementation of mental health interventions delivered within schools/colleges for adolescents with clinical case level symptoms?

Design: Rapid evidence synthesis (27) of barriers and facilitators to the implementation of mental health interventions delivered within schools/colleges for young people with clinical case level symptoms. Databases will be searched for interventional studies that report on barriers and facilitators to implementation. Articles will be screened against protocol inclusion/exclusion criteria and assessed for quality of reporting, recognising that implementation issues and descriptions of context are often poorly reported. Data on factors acting as barriers or facilitators to implementation will be extracted and inductively synthesised qualitatively. Theoretical frameworks underpinning reported interventions will be assessed for fit for structuring the synthesis. A theoretical framework will be selected that best fits the outcome data. This will likely be a multi-level contextual framework such as the Social Ecological Model (28), which is able to capture macro, meso and micro level contextual factors. Outcomes of the synthesis will consider barriers and facilitators within the contextual confines of the reported interventions in order to make recommendations for Stage 1b.

### Stage 1b) Intervention Piloting

**Research question:** What modifications are needed to ensure the BEST for adolescent BPD intervention can be successfully implemented and sustained?

**Design:** The intervention will be delivered to six participants from three schools/colleges. Intervention delivery will be monitored using ethnographic process evaluation methodology.

**Sampling:** A convenience sample of two young people from each of the three pilot institutions will be selected.

**Data collection:** Process evaluation data will be collected using video recordings and observations of intervention delivery. Up to three focus groups with staff members involved in the delivery of the intervention will also be conducted.

**Data analysis:** Transcriptions of recorded sessions, researcher's observational field notes and staff focus groups will be transcribed verbatim and thematically analysed with the aid of NVivo software. Process evaluation findings will be used in conjunction with the knowledge generated by the evidence synthesis to refine the intervention and prepare a finalised intervention manual.

**Stage 2 – Feasibility Randomised Controlled Trial (June 2019 – March 2021)**

Research question: Is it feasible to evaluate the effectiveness and cost-effectiveness of the intervention in a randomised controlled trial (RCT)?



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Design: Feasibility RCT and process evaluation using ethnographic methodology. Eligible young people (n=60) will be randomised in a 1:1 ratio to receive either BEST for adolescent BPD plus treatment as usual or treatment as usual alone. Participants will be assessed pre-randomisation and followed up at 12 and 24 weeks.

Setting: 12-16 schools and colleges in Norfolk with whom the research team have established relationships.

Participants: Referrals will be accepted from schools, colleges and CAMHS. Young people who consent will be screened to ensure they meet the eligibility criteria set out in section 6.

## 5 STUDY SETTING

Twelve to sixteen schools and colleges in Norfolk providing education to young people in the target age range will be invited to participate in the study. In order to participate, each institution must identify one or more members of staff willing to participate in training and co-deliver the intervention to participants from their institution, and be able to provide a suitable venue(s) on site for individual sessions. To meet the study's objectives, participating institutions will be selected to vary in ways hypothesised to impact implementation of the intervention, recruitment and retention rates including the location (urban vs. rural), number of pupils on role, age-range of pupils and qualifications offered.

## 6 PARTICIPANT ELIGIBILITY CRITERIA

Referrals to the study will be accepted directly from schools and colleges as well as from mental health service providers. Young people who give their consent will be screened by a researcher to ensure they meet the eligibility criteria below.

### 6.1 Inclusion criteria

- Aged 13-18 years (school years 9-13)
- Enrolled at a participating school/college
- Score >34 on the Borderline Personality Features Scale for Children (11 item version)
- Current self-harm assessed using the self-harm subscale of the Risk Taking and Self Harm Inventory for Adolescents (has intentionally harmed him/herself more than once and at least one incidence of self-harm occurred during the past month).
- Able to provide written informed consent or, for under 16s, written informed assent and parent/carer consent

### 6.2 Exclusion criteria

- Currently receiving inpatient treatment or a specific psychological intervention
- Moderate/severe learning disability
- Current psychotic disorder (those with sub-threshold psychotic symptoms will not be excluded) or substance dependence (current substance abuse will not be an exclusion criterion) requiring care planned treatment.

# 7 PROCEDURES

## 7.1 Overview of Study Procedures

### 7.1.1. Stage 1b – Intervention Piloting

Three institutions will be selected as pilot sites and will identify one or more members of staff to be trained and co-deliver the treatment package to pilot participants from their institution. These staff members will attend a full-day training workshop prior to co-delivering the intervention as described in section 8.1.

Potentially eligible students of the pilot institutions will be identified through liaison with school/college staff and local CAMHS. School/college pastoral staff and CAMHS multidisciplinary team members will be asked to consider the young people they are working with and approach those they believe might meet the study's eligibility criteria to ask if they would be interested in finding out more about the research. Young people who express an interest will be given a Participant Information Sheet (if under 16, their parents will be sent a Parental Information Sheet in addition) and, with their permission, will be contacted by a research assistant who will answer any questions they have about the study.

If following this conversation the young person is interested in participating (and with the verbal consent of their parent or carer if under 16), the researcher will arrange to meet with the young person at a convenient venue (e.g. their home address, school/college or a community venue) to screen him or her for eligibility. Verbal consent to be contacted by the research team and participate in the screening will be recorded using an expression of interest form.

The screening process will involve completing the Borderline Personality Features Scale for Children, the self-harm subscale of the Risk Taking and Self Harm Inventory for Adolescents, and confirming any treatment for mental health problems they have received in the past or are currently receiving. If this screen indicates that the young person is likely to meet the study's eligibility criteria, written informed consent (in the case of participants aged 16+) or written informed assent and parental consent (for participants aged under 16) will be sought. After informed consent has been obtained, participants will be asked to complete the remaining baseline assessment measures. Recruitment to the pilot stage will continue until six eligible participants have been recruited.

In this phase, all participants who meet the study's eligibility criteria will receive the BEST for Adolescent BPD treatment package as described in section 8.1. With the young person's permission, treatment sessions will be audio or video recorded to facilitate the process evaluation. Following completion of all six pilot cases, focus groups of staff members involved in intervention delivery will be convened. The aim of the focus groups will be to gather data on focus group participants' experience of delivering the intervention within an educational context and their ideas about how the intervention protocol should be modified to facilitate successful implementation within schools and colleges. Findings from the rapid evidence synthesis will also be shared with focus group participants and their views on the applicability of these findings to their own contexts will be sought.

### ***7.1.2. Stage 2 – Feasibility Randomised Controlled Trial***

Twelve to sixteen schools and colleges will act as research sites for the feasibility RCT. Each institution will identify one or more members of pastoral staff to be trained and co-deliver the treatment package to participants from their institution randomised to the intervention arm with a CAMHS practitioner. These staff members will attend a full-day training workshop prior to co-delivering the intervention as described in section 8.1. Prior to the workshop staff will be asked to complete a Site Profile Questionnaire about their institution. In addition, before the workshop they will be asked to complete a brief questionnaire assessing their confidence, knowledge and skills in relation to working with young people with complex mental health issues and who self-harm; this will be repeated following the last session of the intervention with their initial participant.

The process for identifying potentially eligible young people, obtaining informed consent and checking eligibility will be the same as outline in section 7.1.1 above with the addition of a pre-screening questionnaire designed to help referrers assess whether potential referrals are likely to be eligible. Participants who meet the study's eligibility criteria will meet with the research assistant at a mutually convenient venue to complete the remaining baseline measures. Additionally, data on school attendance and exclusions will be gathered from school and colleges, and we will seek the consent/assent of participants (and their parents for under 16s) to access attendance data directly from the school/college as well as relevant individual pupil level extracts of the National Pupil Database to allow us to monitor educational outcomes. Once the baseline assessment has been completed, participants will be randomised to either receive the BEST for Adolescent BPD intervention, or treatment as usual. Recruitment will continue until 60 eligible participants have been randomised.

Participants who are randomised to the intervention arm will receive the BEST for Adolescent BPD treatment package as described in section 8.1 in addition to treatment as usual. Participants randomised to the control arm will receive treatment as usual as outlined in section 8.2. To gather data for the process evaluation, observations will be conducted of staff meetings and informal staff interactions (e.g. within staff rooms) to understand school processes and relevant features of context that impact on delivering intervention sessions. Observations and recordings of individual sessions will enable intervention fidelity to be assessed using a checklist, as well as providing insight into patterns of communication between staff and pupils. School/college staff will be asked to keep a log of all interactions they have with trial participants for the duration of each participant's involvement in the trial.

Participants from both trial arms will be re-assessed using a subset of the same assessment measures administered at baseline at 12 and 24 weeks post randomisation. Follow-up assessments will be completed by a research assistant blind to treatment allocation. Participants will be given the choice of completing the assessment face-to-face at a venue of their choice or, if they would prefer, over the telephone. At each time point, data on their school or college attendance and exclusions since the last assessment will be requested if the participant gives his or her consent.

After the 12 week follow-up assessment, a purposive sub-sample of trial participants (10 per trial arm) will be invited to participate in an in-depth interview about their experience of the intervention they received. Interviews will be audio-recorded with the consent of participants. Staff involved in delivering the intervention will be invited to participate in focus groups about



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their experience of delivering the intervention. At the conclusion of the trial, staff members will be asked to repeat the Site Profile Questionnaire. At the end of the study, an additional focus group will be conducted with commissioners, education representatives and service managers to review study findings and discuss implementation barriers and sustainability of implementation.

### 7.2 Consent

The Chief Investigator will retain overall responsibility taking informed consent but will delegate this responsibility to the study research assistant who will be trained in taking informed consent according to the ethically approved protocol, principles of Good Clinical Practice (GCP) and Declaration of Helsinki. The informed consent process will include a discussion with the potential participant (and his or her parent/carer if under 16) about the objectives of the study, what he or she will be asked to do if they choose to participate, and the possible risks and benefits of participation. Potential participants (and their parent/carer if applicable) will be provided with written information and will be given at least 48 hours to read and consider the information before being asked for consent. Young people and their parents/carers will be given the opportunity to ask questions and will have these answered in full.

If the young person wishes to participate following this process, they will be asked to complete a consent form (if 16 or over) or assent form (if under 16) to document the informed consent/assent process and their willingness to participate. For young people under 16, in addition to the child's assent to participation, the consent of a parent or carer (adult with parental responsibility) will be required for the young person to be included in the study. Consent to participate in an interview as part of the process evaluation will be sought during the main consent procedures. However, it will not be a requirement that a young person consents to a process evaluation interview in order to be included in the study.

We will not include individuals who do not have capacity to give their consent/assent to participation. During the consent process it will be made completely and unambiguously clear that the participant is free to refuse to participate in all or any aspect of the study, at any time, without giving a reason and without incurring any penalty. The participant's continued willingness to participate will be confirmed at each study contact before commencing any research procedures. Participant will be free to withdraw from the study at any time up until the time of data analysis without giving a reason and without prejudicing his or her further treatment. Data collected up to the point of withdrawal will be used if the participant (and their parent/carer in the case of participants under 16) consents to this. Every effort will be made to ensure that vulnerable young people are protected and participate voluntarily in an environment free from coercion or undue influence.

As the reading ages and levels of understanding of potential participants will vary and not necessarily mirror chronological age, and in line with PPI feedback, instead of preparing separate information sheets for children aged 13-15 years and young people aged 16-18 years, we have created an 'easier to read' version of the information sheet and a 'detailed' version. All young people will be provided with both versions of the participant information sheet and can choose to read the version they find more accessible, or to read both. Members of our Youth Advisory Panel (PPI group) have reviewed these information sheets to ensure the format and language used is appropriate for the target age group.



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In the case of potential participants who have difficulty with the English language, information sheets and other materials will be translated into the preferred language of the potential participant where practically possible. In the case of potential participants with sensory impairment or mild learning disability, information sheets and other materials will be converted into the preferred format (e.g. large print, audio recording, Easy Read) where practically possible. Where interpretation is necessary for informed consent or other aspects of the study, trained and accredited interpreters will be used wherever possible.

In addition, informed consent for staff participation will be sought prior to the training workshops. All staff members to be training in the intervention will be given a verbal explanation of the objectives of the study, what he or she will be asked to do if they choose to participate, and the possible risks and benefits of participation. Staff will be provided with a written information sheet and will have the opportunity to ask questions and have these answered in full before deciding whether to participate. If the staff member decides to participate following this process, they will be asked to complete a consent form to document this process.

### 7.3 Randomisation scheme for feasibility RCT

Randomisation will be co-ordinated remotely by the Norwich Clinical Trials Unit (CTU). Participants will be randomised in a 1:1 allocation ratio using pre-set lists of permuted blocks with randomly distributed block size. Randomisation will be stratified by school/college. The allocation sequence will be generated and managed by the Data Management Team at Norwich CTU and will not be accessible by anyone outside of this team, including the research team, school and college staff and participants. Allocation will be via a web-based system. Following completion and input of all baseline data, the research assistant will submit the stratification information (school/college participant is enrolled at) to the web-based system and an email will be generated informing the research assistant that the participant has been successfully randomised (but not revealing their allocation). The system will generate a separate email informing the Study Co-ordinator and other nominated research team members of the participant's allocation. The Study Co-ordinator will then contact the participant, his or her GP and the intervention facilitators to inform them of the participant's allocation.

### 7.4 Blinding

Research assistants collecting follow-up data will be blind to the participant's treatment allocation. Given the nature of the intervention, it will not be possible for participants and those involved in delivering the intervention to remain blind. Following allocation, all participants in the study, education and CAMHS staff will be asked not to reveal the group to which the participants were randomised to the research assistant. Participants will be reminded at the beginning of each contact with the research assistant post-randomisation not to disclose their allocation. Any potentially unblinding data will be stored separately in a database to which the research assistant will not have access.

### 7.5 Emergency Unblinding

As the study's Chief Investigator and participants' responsible clinicians will be unblind to treatment allocations, no emergency unblinding procedures are required for this study.



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### 7.6 Baseline data

The following participant data will be collected at baseline:

- Demographics (age, gender, ethnicity, religion, country of birth, accommodation type, whether looked after by their local authority, academic course undertaken)
- Borderline Personality Features Scale for Children
- Childhood Interview for DSM-IV BPD
- K-SADS psychosis and substance abuse modules
- Risk Taking and Self Harm Inventory for Adolescents (Self-harm subscale)
- Difficulties in Emotion Regulation Scale
- Childhood and Adolescent Social Support Scale
- Time Use Survey
- EQ-5D-5L
- Health and social care receipt inventory
- School/college attendance for the previous 8 weeks
- School/college exclusions in the previous 8 weeks

### 7.7 Follow-up assessments

The following participant data will be collected at 12 and 24 week follow-up:

- Borderline Personality Features Scale for Children
- Risk Taking and Self Harm Inventory for Adolescents
- Difficulties in Emotion Regulation Scale
- Childhood and Adolescent Social Support Scale
- Time Use Survey
- EQ-5D-5L
- Health and social care receipt inventory
- School/college attendance since the last assessment
- School/college exclusions since the last assessment

### 7.8 Process Evaluation

Informed by the evidence synthesis in Stage 1, a parallel process evaluation will investigate intervention delivery within schools in order to determine implementation and theoretical fidelity throughout the duration of the study. Using an approach developed by Murdoch (21), a linguistic ethnographic methodology (29) will be adopted to expose how the BEST intervention interacts with the social structure of different school environments. This is proposed by: 1) setting out macro, meso and micro contextual features relevant to implementation in each school; 2) identifying tensions in implementation at each contextual level; 3) analysing how the implementation of BEST ‘disrupts’ the social organisation of school environments at different points of delivery (30); and 4) considering the consequences of these disruptions for how the intervention was implemented and the implications of these consequences for scaled up implementation in a future definitive trial.



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**7.8.1 Ethnographic Data**: The following quantitative and qualitative ethnographic data will be obtained for each level of context:

- Macro:
  - National school policy documents on support of mental health needs of pupils; relevant policy documents impacting on delivery of pastoral care for pupils (e.g. performance and attendance targets)
- Meso:
  - Site profile questionnaire at beginning and end of study to detail school staff allocation and distribution of staff, school protocols and procedures for supporting pupils with mental health needs;
  - Staff log sheets to detail all participant/staff contacts related to the intervention; and
  - Observational field notes of the main social actors involved in determining intervention delivery (i.e. teaching staff, CAMHS mental health practitioner), and the different sites and scenes which impact on how BEST is adapted and delivered (e.g. school meetings, staff rooms).
- Micro:
  - Video/audio recordings of individual treatment sessions. 15% of sessions delivered will be independently rated against the adherence checklist by the intervention developers and a purposive sample of 5 hours of recordings will be transcribed and subject to conversation analysis.
  - Observational field notes of preparatory training workshops, group supervision sessions, and meetings within which staff may discuss the research and intervention.

The research team will use the ethnographic data to track the implementation of BEST across different contextual levels at each school/college, providing a 'thick description' (31) of intervention delivery and enabling tensions between context and implementation to be exposed within specific moments of delivery. Such tensions are likely to be manifested within the preparatory workshops for pastoral staff, interactions between CAMHS and school/college co-deliverers and pupils individuals sessions, organisational processes for ensuring BEST is delivered, or within additional staff-pupil contacts which may impact on how BEST is enacted within schools.

**7.8.2 Pupil Interviews:** Twenty young people participating in the RCT (10 per arm) will be invited to take part in in-depth interviews to help us understand their experience of taking part. Participants will be asked about their experience and views of the process of accessing BEST for BPD, the content of sessions, staff contacts had in addition to BEST sessions, how they feel they have benefitted or not from receiving the intervention, and suggestions for improvement.

**7.8.3 Staff Focus Groups:** Focus groups will take place in participating schools to understand staff perspectives of delivering the intervention. Discussions will focus on barriers and facilitators to successful delivery, experiences and views of intervention sessions, additional work required to support delivery of BEST, and suggestions for improvement.

**7.8.4 Focus Group with Professional Stakeholders:** At the end of the study, an additional focus group will be conducted with commissioners, education representatives, and service managers to review study findings and discuss implementation barriers and sustainability of implementation.



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# 8 TREATMENTS

## 8.1 Intervention: BEST for Adolescent BPD plus treatment as usual

### 8.1.2 Background

The BEST treatment package has been developed as part of the ongoing work by the Norfolk Youth Service to overcome challenges of supporting young people with early symptoms of BPD. This work has been ongoing since the development of the youth service in 2012 and has resulted in a number of innovative approaches to working with early symptoms of BPD in adolescence. This work has included collaboration with and learning from specialist services worldwide including the ORYGEN service in Australia.

A development of this work has been to produce and deliver a treatment package for young people with BPD which distils fundamental elements of evidence-based interventions for adolescent BPD into a brief (3-6 sessions) practicable format. Currently, this package is delivered within secondary mental health services; due to increasing waiting times and high thresholds for treatment, this means that young people with BPD often receive it too late, or not at all. Supported by CAMHS transformation and the development of Local Transformation Plans (LTPs), following Future in Mind recommendations, the need was recognised to adapt this package to allow for delivery within other contexts in order to allow for earliest possible intervention. School/college staff and young people have indicated that they would like to be able to access mental health interventions within education settings and in a survey of local schools, mental health and working in collaboration with health services were identified as a priority. This has led to adaptation of the intervention into the BEST for adolescent BPD treatment package.

### 8.1.3 Theoretical background

The intervention has been developed to address issues apparent in delivery of evidence based interventions for adolescent BPD; including difficulties of access to specialist services which provide such treatments, problems engaging young people in treatment, early treatment drop-out and lack of resources available to deliver lengthy interventions. As such, the intervention takes account of issues specific to engaging with an adolescent population and providing intervention tailored to this group.

The intervention draws on theory from developmental psychology and neurodevelopmental research. Findings from neurodevelopmental research (32,33) have informed current understanding of changes in emotional regulation and social cognition during adolescence. BEST for adolescent BPD uses such research to educate professionals and young people about the difficulties they are experiencing as well as to inform the structure and content of sessions.

The content draws on knowledge from attachment theory, which identifies how patterns of relating are established in the context of early attachment relationships. Whilst in depth psychological therapies which aim to identify unhelpful patterns of relating and work to establish new, healthier patterns of relating, (such as Mentalisation Based Treatment-Adolescence [MBT-A] or Cognitive Analytic Therapy [CAT]) have been demonstrated as



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effective with this group of young people (12) there are also, as previously mentioned, many difficulties in engaging young people in this form of treatment early enough and for a sustained period of time. BEST for adolescent BPD draws from relational elements of attachment theory to support the young person to identify unhelpful patterns of relating and work towards the development of more helpful strategies. This is achieved through supporting the relationship with an identified member of staff at the young person's school or college, thus nurturing relationships which are already established and part of the young person's everyday life, eliminating the need for additional, specialist support from sources external to the young person's current support network.

Drawing from MBT-A (14), BEST for adolescent BPD recognises that adolescents with chronic difficulties are those most vulnerable to mentalisation (the ability to make sense of the subjective states and mental processes of self and others) failure. We know that a decrease in ability to mentalise creates an increase in emotional arousal. The initial phase of MBT-A involves formulation and crisis planning. The BEST for adolescent BPD intervention mirrors this phase and aims to develop a shared understanding of the presenting difficulties, identify difficulties of mentalisation and develop a crisis plan for managing periods of distress. . The staff training element of the intervention aims to increase staff's ability to mentalise during incidents of conflict/distress, thus supporting the young person to restore their own ability to mentalise.

BEST for adolescent BPD also incorporates elements from DBT-A (13). This approach aims to support young people to achieve behavioural control/stabilisation through understanding of symptoms and development of positive coping strategies/crisis planning. BEST for adolescent BPD makes use of resources for developing positive self-care coping strategies delivered within DBT-A.

### 8.1.4 Intervention outline

BEST for adolescent BPD is a brief, manualised, treatment package designed to be co-delivered by trained mental health professionals and educational staff. As such the intervention is able to address challenges that face both the young people experiencing early BPD and those working to support them by:

1. Tackling the confusion and anxiety experienced by the young person by providing education regarding their symptoms as well as strategies for managing these through self-care.
2. Containing anxiety experienced by educational staff supporting the young person by increasing their understanding and empowering them with tools to offer effective support.
3. Responding to advice of experts that treatment needs to be targeted at early intervention for this group of young people by drawing on evidence based interventions and refining them so that they can be delivered in a brief, focused format without requirement for specialist training.



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### 8.1.5 Piloting

The Norfolk Youth Service treatment package has been piloted within one of the service teams over a period of 18 months. The package is delivered by mental health practitioners on a one to one basis over approximately 3-6 one hour sessions with young people aged 14-25 experiencing significant difficulties with emotional instability and self-harm. Whilst no formal evaluation has yet been conducted, feedback received from staff and service users indicates that this method of intervention has been accepted and received positively.

### 8.1.6 Co-delivery

Co-delivery of the BEST intervention allows for treatment to be delivered within a setting which is accessible to the young person and removes the need to access specialist services. As well as benefits of a known setting to the young person, co-delivery also means that intervention utilises an ongoing relationship that the young person has with school staff. Schools and college staff currently feel inadequately supported to meet the needs of pupils with mental health problems (18). Co-delivery of the intervention can contain anxiety experienced by educational staff by reducing the confusion and anxiety that often surrounds young people with BPD who self-harm, increasing their understanding and empowering them with tools, knowledge and skills to offer effective support.

Co-delivery will involve individual sessions with the young person, a member of education staff and a CAMHS mental health practitioner. The educational staff will be supported by the CAMHS mental health practitioner who will assist in maintaining adherence to the intervention and monitoring and managing issues of risk. The education staff member will be an ongoing point of contact for the young person between treatment sessions.

Staff will attend a six hour training workshop prior to delivering the intervention with young people. The purpose of the workshop is to prepare school/college staff to co-deliver sessions and provide ongoing support to participants from their institution. The six hour workshop will introduce relevant theory, cover the practicalities of delivering sessions, and equip staff members with skills to enhance their ability to mentalise during incidents of distress or conflict.

### 8.1.7 Treatment package

The BEST treatment package is delivered over up to six sessions lasting approximately one hour each, over a treatment window of twelve weeks by a trained staff member from their school/college and a CAMHS mental health practitioner. The sessions cover three manualised components, each supplemented by a resource pack. Sessions are informed by existing evidence-based treatments for adolescent BPD and are designed to help young people understand the problems they are experiencing and learn to manage them better. The intervention is designed to reduce BPD symptoms by decreasing the emotional instability at the heart of the disorder, both by: (a) delivering the key elements of evidence-based interventions for adolescent BPD at an early stage, before symptoms become entrenched, and (b) reducing the confusion and anxiety that often surrounds young people



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with BPD who self-harm by equipping education professionals with the knowledge and skills to support pupils with BPD.

The first component of the intervention focuses on education about emotional instability, how it relates to early features of BPD, why it can happen and what helps with managing it. This component also looks in detail at typical early features of BPD and allows the young person to reflect on which of these symptoms are relevant to them and the ways in which they are affected by them. The key message in this component is one of education in order to reduce confusion and anxiety about distressing symptoms. This component is delivered by working through a psychoeducation leaflet about emotional instability and early features of BPD. This leaflet can then be taken away by the young person to be discussed further at the following session with their reflections.

The second component of the intervention incorporates co-development of a maintenance cycle to help the young person understand what factors are maintaining the current difficulties and thus identify areas for change. Feedback received from service users has stated that they do not want to receive interventions which give the impression of "box ticking" and are not tailored to their unique individual experience. The formulation is used to validate the experience of the individual and provide a framework for the intervention, increasing its meaning and purpose for the young person. The individualised approach aims to encourage engagement and motivation.

The third component builds on areas for change identified in the development of the maintenance cycle. This incorporates the co-development of a crisis plan to support with managing periods of distress. Crisis plans will focus on the development and use of self-care strategies to support emotional regulation. This component introduces self-care distress tolerance strategies, including techniques for sensory self-soothing, grounding and distraction. Introduction of these strategies will be supported by completion of worksheets which the young person can take away to support ongoing practice. Crisis plans will also incorporate development of appropriate pathways for accessing additional support when needed to support the young person with managing their distress in a helpful way and to develop positive help-seeking behaviours.

**Part 1: Education**

- What is emotional instability
- Why does it happen
- What helps

**Part 2: What happens for me (formulation)**

- How emotional instability affects me
- Identifying maintenance cycle
- Introducing mentalising skills

**Part 3: What I need**

- Developing my crisis plan
- Self-help/Self soothing skills



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### 8.1.9 Supervision and adherence

Supervision for education staff and CAMHS mental health practitioners delivering the intervention will be provided by the developers of the BEST for adolescent BPD intervention; Dr Sarah Maxwell, Consultant Psychiatrist, and Dr Nicola Martin, Clinical Psychologist, or another appropriately qualified and experienced practitioner. Supervisors should be trained in the delivery of MBT-A, and have extensive experience of working with young people with early features of BPD within a CAMHS setting. Supervision will be used to support the use of a mentalising approach within sessions and to support adherence to the treatment package. Supervision will be provided in two hour group format sessions on at least a fortnightly basis during the intervention phase.

Supervision will also monitor additional needs of participants in regard to social and domestic circumstances and monitor issues of risk. Participants allocated to the intervention arm will have access to all services that constitute treatment as usual. Participants will not be denied access to any service currently available as part of standard provision and therefore any concerns regarding the safety or wellbeing of participants will be responded to in accordance with local safeguarding procedures.

At the end of each session, the co-facilitators will rate adherence to the intervention using the adherence checklist and complete session notes which will be reviewed by the supervision team. With participant consent, all sessions will be audio or video recorded and a sample of 15% of recordings will be independently rated against the Adherence Checklist by two members of the supervision team and concordance checked. Any discrepancies will be discussed and consensus reached.

## 8.2 Control: Treatment as Usual

The control condition will be treatment as usual. Participants will not be denied access to any service currently available as part of standard provision. Participants not under the care of mental health services at the time of recruitment to the trial will be signposted to appropriate local services.

Current standard care pathway:

1. Young people referred to CAMHS via GP, family member/carer or self-referral.
2. Telephone triage by a mental health practitioner.
3. Young people who do not reach CAMHS threshold or are unable to engage are signposted to other services. Those who meet threshold are offered an assessment within 28 days.
4. Young people are placed on a wait list for treatment. Waiting times are up to 12 months. Interventions offered for BPD may include case management, group or individual therapy and psychiatric review.



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# 9 STATISTICS AND DATA ANALYSIS

## 9.1 Sample size calculation

We will recruit 60 participants to the feasibility RCT from across the participating schools and colleges. The sample size was selected in accordance with current guidelines and to meet the study's objectives of accessing rates of recruitment and retention. A sample size of 60 will allow us to estimate an attrition rate of 20% to within a 95% confidence interval of +/10% and a recruitment rate of 50% of those eligible to within a 95% confidence interval of +/- 9%. Current guidelines recommend feasibility studies should have sample sizes between 24 and 30 per group (34,35).

## 9.2 Planned recruitment rate

The planned recruitment period for the feasibility RCT is June 2019 – April 2020 (11 months). In order to recruit the target 60 participants, it would be necessary to recruit an average of five to six participants per month across all schools/colleges. However, we anticipate that the recruitment rate from June to August will be modest (due to school holidays), with the majority of recruitment taking place during the Winter (Sept-Dec) and Spring (Jan-April) terms.

The schools and colleges who have already committed to participating in the study have a total of over 14,000 students on roll. The prevalence of adolescent BPD is estimated at 3%, thus we estimate that the number of students with clinical levels of BPD symptoms within the participating schools and colleges will be in the region of 420. The pupils of the participating schools and colleges include young people between 11 and 19 years. As such, a proportion of these 420 young people will be ineligible due to being under 13 or over 18, and a smaller number will be excluded on the basis of other inclusion/exclusion criteria. Thus, we estimate that there will be 200-250 young people eligible for the study within the institutions already committed to participating. Therefore, 25-30% of eligible young people would need to consent in order for our recruitment target to be met. Based on our experience of recruiting to previous trials, we believe this recruitment rate to be realistic. In the event the recruitment rate is lower than anticipated, we will extend recruitment to additional local schools/colleges.

## 9.3 Statistical analysis plan

The recruitment and retention rates will be estimated along with 95% CIs. If appropriate the time until drop-out will be estimated using a reverse Kaplan-Meier curve. Analysis will be based on the intention-to-treat principle, treating each randomised patient in the arm they were allocated to regardless of compliance. Due to the small sample size formal hypothesis testing will not be undertaken but analysis will focus on estimation. The primary outcome measure, BPFS-C, the mean difference will be estimated using a linear model along with corresponding 95% CIs. The rate of completion of each outcome measure will be given and if appropriate multiple imputation will be undertaken. A similar approach for the secondary outcome measures will be undertaken. The sample size calculation for the definitive study will be undertaken using the estimated values of the estimated standard deviation and the minimally important clinical difference. Analysis will be undertaken in STATA.

## 9.4 Economic evaluation

As this is a feasibility study, it will not be possible to demonstrate the definitive cost-effectiveness of the intervention as part of this trial. This is because the study will not be powered to demonstrate either effectiveness or cost-effectiveness. However, we will collect



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information to inform the economic evaluation alongside any future definitive trial. This will yield useful information, such as the likely cost of the intervention and key components of resource use. It will also inform the design of a future study by informing the best design of health economic data collection instruments.

As part of the study, we will record all resources required to provide the intervention. This will include the training provided, the staff time required to provide the intervention, any consumables and materials required, and any other necessary expenditure. This will be combined with appropriate unit cost data to provide an estimate of the cost of providing BEST for BPD. It will also be possible to conduct scenario analyses, which estimates the cost of provision if any assumptions about how the service is provided and who provides it are changed.

The use of BEST for BPD may also have implications for the use of other NHS, pastoral and social care services. Resource use data will be analysed to highlight any potential areas of differences between study groups. All resources identified will be combined with appropriate local and national unit cost data to estimate likely costs associated with service use in study participants. The intention is to identify costs that are likely to be the most important in terms of total resource use. The feasibility study will also be used to explore the usefulness of the EQ-5D-5L in adolescents with BPD by comparing EQ-5D-5L scores with other outcomes used. The intention is to look for measures of correlation with other outcome measures and to use this as an assessment of the likely sensitivity of the EQ-5D-5L.

## 9.5 Process evaluation

### 9.5.1. Ethnographic data

Recordings of individual sessions will be rated against the fidelity checklist by members of the study team and a purposive sample of interview extracts of 5 hours duration will be transcribed according to Conversation Analytic conventions (37) to identify patterns of successful delivery, interactional difficulties between staff and pupils in negotiating the content of the treatment sessions, and analysis of how the theories of adolescent developmental, attachment and mentalisation, that underpin BEST, are enacted within sessions.

Researchers' observational field notes will be analysed thematically to provide a detailed description of process and content involved in adapting and delivering BEST within schools, as well as any evidence of contamination between arms, and impact on the wider school environment. Site profile questionnaires delivered at the beginning and end of the study will enable us to identify changes to the school's characteristics which impact on delivery; staff log sheets will provide an audit trail of activities surrounding psycho-education sessions that either facilitate or constrain delivery.

We will then analyse the ethnographic data to provide a thick description of delivery and to empirically observe how BEST is organised within the specific social historical contexts of delivery. To do this we will investigate how moments of disruption provide 'telling cases' (38), exposing social forces structuring intervention delivery *at the point of delivery*, relations which are otherwise hidden from view. This analytical work will be key for evaluating and refining the theoretical framework developed by the evidence synthesis at Stage 1a, and therefore for identifying how to refine the BEST intervention for a future definitive trial, in particular, key difficulties in adoption, delivery, maintenance and importantly, help identify how adjusting contextual features might produce different outcomes.



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### 4.5.2. Pupil interviews

Pupil Interviews: All interviews will be transcribed verbatim and thematically analysed using NVivo software. This will be to provide detailed perspectives of how pupils respond to the process and content of BEST. In the intervention arm, we will then develop a coding scheme to evaluate how the theories of adolescent developmental, attachment and mentalisation, have functioned from the pupil's perspective. In the control arm, we will assess how pupils have managed their condition during the study and other sources of help obtained, which may indicate possible contamination between study arms. A constant comparison approach will be adopted, working iteratively between data obtained from different interviewees within and between schools.

### 4.5.3. Focus groups

Focus groups will be transcribed verbatim and thematically analysed using NVivo software. Analysis will focus on obtaining detailed staff perspectives on how BEST was delivered, what enabled or constrained successful delivery, and suggestions for refining the processes and content for implementation in a definitive trial.

### 4.5.4. Data synthesis

The analysis of qualitative data will be iterative, moving between data collection and data analysis to test emerging theories. It may for example emerge that some staff have expectations about BEST, which shape their experience and use of the intervention, and this may require deeper exploration. The analysis of the ethnographic data will therefore require knowledge from staff interviews to compare how reported experience relates to actual implementation of BEST. Care will be taken to identify and follow up deviant cases which do not fit into emerging theories. Unlike conventional qualitative analysis, our approach will involve working laterally across data types. We will seek to provide a broad description of intervention delivery but, instead of allocating equal time to the analysis of each case, we will focus on identifying 'telling cases', triangulating and looking for connections between data. The analysis will be informed by the theoretical framework developed during the rapid evidence synthesis. Data analysis will begin in parallel with data collection.

By setting the delivery of the BEST intervention within a macro, meso and micro contextual framework, we will be able to make the transition from the identification of routines and patterns of the use of BEST in specific schools, to theoretical explanations of how different structural relations and mechanisms of the intervention organise moments of delivery, which then impact on specific outcomes. In drawing case comparisons across schools, we will develop hypotheses about why the intervention is linked to outcomes which we can test out in a future definitive trial. This may lead us to identify factors which are plausibly and/or consistently related to successful or unsuccessful delivery of the components of the intervention. Emerging theories and the relationship of the data to the conceptual literature underpinning the intervention will be discussed and refined at team meetings throughout the research.

## 10 DATA MANAGEMENT

### 10.1 Data collection and storage

Data will be collected and stored in accordance with the Data Protection Act (1998) and Good Clinical Practice Guidelines. The Chief Investigator will be the data custodian. Quantitative data will be captured using standardised assessment tools as detailed in



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section 7. Hard copies of these assessment measures will be completed by the research assistant and stored securely in locked filing cabinets at Trust premises. Data on the young person's attendance will be requested from the attendance monitoring team at the participant's school or college. Interviews, focus groups and observations of intervention delivery will be (audio/video) recorded and transcribed verbatim. Each participant will be allocated a study identification code on entry to the study which will be used to identify data relating to that participant. Consent forms and other documents containing person-identifiable information will be stored separately from participant data. Recordings and transcripts will be stored securely on Trust and/or University computer systems. If data need to be transported, password-protected encrypted memory sticks or the NHS Mail secure file transfer system will be used.

All data will be entered into the study's database by the research assistant. Periodically and at database lock the data will be further validated for errors and inconsistencies. The database will be password protected to prevent unauthorised access and will only be accessible to members of the research team and authorised representatives of external regulators.

### 10.2 Access to Data

Direct access will be granted to authorised representatives from the Sponsor, host institution and the regulatory authorities to permit trial-related monitoring, audits and inspections. Participant consent for this will be obtained as part of the informed consent process for the trial.

### 10.3 Archiving

The investigators agree to archive and/or arrange for secure storage of trial materials and records for 10 years after the close of the trial unless otherwise advised by the Sponsor.

## 11 ETHICAL AND REGULATORY CONSIDERATIONS

### 11.1 Research Ethics Committee (REC) review and reports

Before the study begins, approval will be sought from a REC for the protocol, participant information sheets, informed consent/assent forms and other relevant documents. The study will not begin until REC and all other regulatory approvals have been received. Substantial amendments that require review by REC will not be implemented until the REC grants a favourable opinion. All correspondence with the REC and HRA will be retained in the Study Master File. An annual progress report (APR) will be submitted to the REC within 30 days of the anniversary date on which the favourable opinion was given, and annually until the study is declared ended. The Chief Investigator will notify the REC of the end of the study and within one year after the end of the trial, the Chief Investigator will submit a final report with the results (including any publications/abstracts) to the REC.

### 11.2 Peer review

The study protocol has been peer reviewed by independent experts as part of the NIHR funding application process. In addition, the protocol has undergo internal peer review by the Norfolk and Suffolk NHS Foundation Trust Research Committee.



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### 11.3 Public and Patient Involvement

We have formed a Youth Advisory Panel who will be involved in key decisions regarding the design and conduct of the study, as well as the interpretation and dissemination of study findings. We have planned for the Youth Advisory Panel to meet in Months 1, 7, 13, 19 and 27. In addition, a representative of the Youth Advisory Panel and a parent/carer representative have been invited to sit on the study's steering committee. Youth Advisory Panel meeting months have been planned to coincide with TSC meetings to enable advice and suggestions generated by the panel to be reported back to the TSC as a standing agenda item at each TSC meeting.

Youth Advisory Panel meetings will be arranged and facilitated by the Study Co-ordinator with the support of the study's Research Assistant. Meetings of the panel will be held at community venues which suit the needs and preferences of the young people attending. We will seek panel member's views on their preferred methods of communication outside of meetings, which may include text, phone or online communication, to enable members to input in a way that suits their needs and preferences.

We recognise the importance of ensuring that members of the Youth Advisory Panel are appropriately supported and are able to fit their advisory role around existing educational, family and social commitments. We intend to be flexible about the meeting times, which will be arranged outside of school/college hours or during school holidays when possible, according to the young people's preferences. The NSFT youth participation lead and/or INSPIRE participation lead will support young people to attend meetings when required. Ongoing training and support will be provided through INSPIRE, Norfolk and Suffolk NHS Foundation Trust's research engagement initiative.

### 11.4 Protocol compliance

Every effort will be made to ensure protocol compliance. Accidental protocol deviations will be fully documented on the relevant forms and reported to the Chief Investigator and Sponsor immediately. Deviations from the protocol which are found to frequently recur will be acted on immediately and could potentially be classified as a serious breach.

### 11.5 Notification of Serious Breaches to GCP and/or the protocol

A "serious breach" is a breach which is likely to effect to a significant degree:

(a) the safety or physical or mental integrity of the participants of the trial; or
(b) the scientific value of the trial

The sponsor will be notified immediately of any case where the above definition applies during study conduct phase.

### 11.6 Financial and other competing interests for the chief investigator and committee members for the overall trial management

The co-applicants have no competing interests that might influence trial design, conduct, or reporting.

All members of the trial management and oversight committees will be required to disclose any potentially competing interests including (but not limited to):

- ownership interests that may be related to products, services, or interventions considered for use in the trial or that may be significantly affected by the trial



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- commercial ties requiring disclosure include, but are not restricted to, any pharmaceutical, behaviour modification, and/or technology company
- any non-commercial potential conflicts e.g. professional collaborations that may impact on academic promotion.

These will be recorded by the Study Co-coordinator and reported in all publications resulting from the study.

### 11.7 Indemnity

The sponsor, Norfolk and Suffolk NHS Foundation Trust, is covered by NHS Indemnity arrangements for any negligent harm caused by the design and conduct of the research study as a non-clinical trial once HRA and Ethical approval has been obtained. Any activity taking place on non-NHS sites will be covered by individual organisational indemnity arrangements.

### 11.8 Amendments

The responsibility for decisions to amend the protocol and for deciding whether an amendment is substantial or non-substantial will be the Chief Investigator's. Amendments will be approved by the REC prior to implementation. Once approved, amendments will be communicated to all trial personnel via email correspondence and team meetings. A version tracking document will be used to track amendment history and allow staff working on the trial to identify the most recent version of the protocol and other documents.

### 11.9 Post trial care

The sponsor will not continue to provide any intervention to participants (beyond those offered as part of standard care) after the study is completed.

### 11.10 Access to the final trial dataset

All co-applicants will have access to the full dataset. Other individuals will be able to request access to trial data and these will be considered, and approved in writing where appropriate, after formal application to the TSC.

## 12 SAFETY REPORTING

### 12.1 Definitions of harm

Adverse event definitions to be used in this study are given in Table 1.



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Table 1. Adverse event definitions

| | |
|---|---|
| **Adverse Event (AE)** | Any untoward medical occurrence in a participant (which does not necessarily have a causal relationship with the trial treatment).<br>Adverse events include:<br>• an exacerbation of a pre-existing illness<br>• an increase in the frequency or intensity of a pre-existing episodic event or condition<br>• a condition (regardless of whether PRESENT prior to the start of the trial) that is DETECTED after trial intervention administration. (This does not include pre-existing conditions recorded as such at baseline.)<br>• continuous persistent disease or a symptom present at baseline that worsens following administration of the trial treatment |
| **Adverse Reaction (AR)** | Any untoward and unintended response to a trial intervention. |
| **Unexpected Adverse Reaction (UAR)** | An adverse reaction, the nature or severity of which is not consistent with the applicable intervention information. |
| **Serious Adverse Event (SAE) or Serious Adverse Reaction (SAR)** | Any AE or AR that at any dose:<br>• results in death<br>• is life threatening*<br>• requires hospitalisation or prolongs existing hospitalisation**<br>• results in persistent or significant disability or incapacity<br>• is a congenital anomaly or birth defect<br>• or is another important medical condition*** |
| * the term life threatening here refers to an event in which the patient is at risk of death at the time of the event; it does not refer to an event that might hypothetically cause death if it was more severe (e.g. a silent myocardial infarction)<br>** Hospitalisation is defined as an in-patient admission, regardless of length of stay, even if the hospitalisation is a precautionary measure for continued observation. Hospitalisation for pre-existing conditions (including elective procedures that have not worsened) do not constitute an SAE<br>*** Medical judgement should be exercised in deciding whether an AE or AR is serious in other situations. Important AEs or ARs that may not be immediately life threatening or result in death or hospitalisation, but may seriously jeopardise the participant by requiring intervention to prevent one of the other outcomes listed in the table. | |

## 12.2 Researcher responsibilities relating to safety reporting

When an adverse event occurs, the member of the study team who first becomes aware of the adverse event must assess whether or not the event is serious using the definition given in Table 2. If the event is classified as serious, the team member must notify the Study Coordinator within 1 working day and complete an SAE form. The completed and signed SAE form should be emailed to the Study Coordinator (or delegated person in the absence of the Study Coordinator).

All adverse events assessed as non-serious, whether expected or not, should be recorded in the participant's medical notes (if applicable) and recorded on the study database within 7 days.

## 12.3 Study coordinator responsibilities relating to safety reporting

The Study Coordinator will review the SAE form and disseminate to the CI and and sponsor representative within 72 hours of being informed. The DMC and REC will be informed by the Study Coordinator of SAEs periodically unless the CI or sponsor representative escalates the SAE or deems necessary.



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### 12.4 Study co-ordinator responsibilities relating to safety reporting

The Chief Investigator (or a clinically qualified delegate) will review all SAE reports received. The CI must assess the causality of all serious events or reactions in relation to the trial intervention using the definitions in Table 2. If there is at least a possible involvement of the trial procedures (including any comparators), the investigator and sponsor must assess the expectedness of the event. If a SAR is assessed as being unexpected it becomes a SUSAR (suspected, unexpected, serious adverse reaction). The CI is responsible for the reporting of SUSARs and other SARs to the REC as appropriate. Fatal and life threatening SUSARs must be reported to the competent authorities within seven days of the Chief Investigator becoming aware of the event; other SUSARs must be reported within 15 days.

Table 2. Causality definitions

| Relationship | Description | Event Type |
|---|---|---|
| Unrelated | There is no evidence of any causal relationship | Unrelated SAE |
| Unlikely to be related | There is little evidence to suggest that there is a causal relationship (e.g. the event did not occur within a reasonable time after administration of the trial medication). There is another reasonable explanation for the event (e.g. the participant's clinical condition or other concomitant treatment) | Unrelated SAE |
| Possibly related | There is some evidence to suggest a causal relationship (e.g. because the event occurs within a reasonable time after administration of the trial medication). However, the influence of other factors may have contributed to the event (e.g. the participant's clinical condition or other concomitant treatment) | SAR |
| Probably related | There is evidence to suggest a causal relationship and the influence of other factors is unlikely | SAR |
| Definitely related | There is clear evidence to suggest a causal relationship and other possible contributing factors can be ruled out. | SAR |

## 13 DISSEMINIATION

### 13.1 Dissemination plan

Findings will be disseminated to participants (staff and young people) and other key stakeholders, including commissioners, CAMHS managers and service-users, academics and practitioners in mental health and education using study newsletters, a dissemination event, publications in peer-reviewed journals and presentation at scientific conferences. Additionally, we will disseminate the findings through networks of which the research team are established members, including UK Collaboration for Leadership in Applied Health and Care Research (CLAHRC) networks, the Strategic Clinical Network, Eastern Academic Health Network and International Global Alliance for Prevention and Early Intervention for



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BPD. In order to reach educational audiences, we will also disseminate the findings of the research through relevant professional bodies (such as the National Association of Head Teachers, Association of School and College Leaders and Charterer College of Teaching), local education networks (including Educate Norfolk and Norfolk County Council's SENCO group), key professional journals (such as the Times Education Supplement), and local education-sector newsletters. Key interim outputs will include publication of the study protocol and findings of the rapid evidence synthesis, and production of the finalised intervention manual and training materials.

The primary output of the research will be the design of subsequent trial. Criteria for progression to a definitive RCT will be as follows:

a) recruitment rate is within 70% of target

b) at least 70% of those randomised to receive the intervention attended 3 or more treatment sessions within the 12 week treatment window

c) follow-up assessments completed by at least 75% of participants at 12 weeks and 70% of participants at 24 weeks

d) contamination of the control arm can be sufficiently limited for individual randomisation to be justified (as informed by process evaluation findings)

The progression criteria were agreed following consultation with international experts on adolescent BPD and reflect the challenge of recruiting and retaining young people with severe and complex psychopathology in research and treatment. The TSC will assess the trial against these criteria and make recommendations regarding progression. The design of subsequent research will be informed by the results of the feasibility study, the views of participants in the stakeholder focus group and MRC guidelines on developing and evaluating complex interventions. If the results of the feasibility study suggest that substantial changes to the protocol are required prior to progression, an internal pilot will be proposed. If it is found that contamination of the control arm cannot be adequately limited, a cluster trial or stepped wedge design will be considered.

If the above progression criteria are met and a definitive RCT is judged to be a suitable and acceptable methodology, we would progress to a multi-site, assessor-blind, superiority RCT of the effectiveness and cost-effectiveness of the intervention plus TAU in comparison to TAU alone. The proposed primary outcome measure is severity of borderline personality features measured using the Borderline Personality Disorder Features Scale for Children (BPFS-C) (22). The feasibility RCT will provide information needed for the final sample size calculation, including the likely rate of attrition and size of intra-class correlations between the outcomes of pupils attending the same institutions. The sample size calculation will be undertaken using the estimated values of the estimated standard deviation and the minimally important clinical difference. The primary analysis of effectiveness will be a multilevel comparison of BPFS-C total score at 24 weeks, with treatment arm as the main effect, school as a random intercept and baseline BPFS-C total score as a covariate. A



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definitive cost-effectiveness analysis will be conducted, informed by the results of the preliminary economic analysis conducted alongside the feasibility trial.

### 13.2 Publications

The following key publications are planned. All individuals named as study team members above will be credited as authors of these publications provided they meet the authorship criteria. The proposed primary author is stated below. Other authors will be listed according to the size of their contribution to that particular paper (in the case that two or more authors have contributed equally, their names will be listed alphabetically), with the exception that the last author will be JW if not primary author, or PF where JW is the primary author, unless otherwise stated. The order of authors should be proposed by the primary author and agreed by the TMG.

- The study protocol. Primary author: JW
- Report of rapid evidence synthesis. Primary author: BG, Last author: CN
- Report of process evaluation findings. Primary author: JM
- Main trial outcome paper covering key feasibility outcomes and health economic data. Primary author: JW

It is anticipated that a number of other publications may be produced based on study data. Proposals for additional publications will be circulated to all study team members, who will be asked to comment, offer participation and indicate the extent of their availability to participate. The TMG will review proposals and comments. The presumption is that all proposals will be agreed provided the proposed authorship has sufficient resources to deliver the study, appropriate ethical permission is obtained, and unless there are perceived problems with overlap with ongoing projects or lack of availability of data.

The agreed primary author of each manuscript is responsible for ensuring:

- timely circulation of all drafts to all co-authors during manuscript development. The final draft should be circulated to all co-authors (and the TMG and Clinical Leads if not co-authors) at least 14 days prior to the proposed submission date
- timely circulation of reviewers' comments to all co-authors
- incorporation of comments by authors and reviewers into subsequent drafts

- The TMG and Clinical Leads are responsible for ensuring that all outputs are appropriately aligned. As such, it is expected that all members of the TMG and Clinical Leads will agree all publications and presentations related to the study prior to submission.

### 13.3 Authorship and acknowledgments

In line with International Committee of Medical Journal Editors and NSFT guidelines, only individuals who meet **all** of the following criteria will be named as authors on publications resulting from the study:

- conception and design, or acquisition of data, or analysis and interpretation of data
- drafting the article or revising it critically for important intellectual content
- final approval of the version to be published



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The Chairs and Independent members of the TSC and Data Monitoring and Ethics Committee (DMEC) will be acknowledged, but will not qualify for full authorship, in order to maintain their independence. The following should also be acknowledged:

- The funders (NIHR)
- All study participants, including NHS and education staff involved in delivering the intervention.
- Research staff who do not meet the above criteria for authorship, named individually if they give permission.
- Members of the Youth Advisory Panel who do not meet the criteria for authorship, named individually if appropriate and they give permission.

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