

## EVALUATION PROTOCOL

# **Media Academy Cymru's (MAC) Cerridwen Project. A randomised controlled trial efficacy study with internal pilot**

**Cordis Bright**

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## Evaluation protocol

Evaluating institution: Cordis Bright

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<b>Project title</b>	Media Academy Cymru's (MAC) Cerridwen Project. A randomised controlled trial efficacy study with internal pilot.
<b>Developer (Institution)</b>	Media Academy Cymru
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<b>Protocol author(s)</b>	Matt Irani, Suzie Clements, Dr Stephen Boxford, Prof Darrick Jolliffe, Kam Kaur, Madeleine Morrison
<b>Trial design</b>	Two-armed parallel randomised controlled trial with random allocation at the young person level
<b>Trial type</b>	Efficacy trial with internal pilot and implementation and process evaluation
<b>Evaluation setting</b>	The intervention is delivered at a variety of safe spaces in the young people's community
<b>Target group</b>	10- to 17-year-olds who are at risk of involvement in serious violence or exploitation
<b>Number of participants</b>	596 (298 in treatment group, 298 in control group)

<p><b>Primary outcome and data source</b></p>	<p>Self-reported offending (volume score on the Self-Reported Delinquency Scale) (See, Smith &amp; McVie, 2003)</p>
<p><b>Secondary outcomes and data source</b></p>	<p>Empathy (Basic Empathy Scale) (Jolliffe and Farrington, 2006)</p> <p>Quality of relationship with the case manager (Social Support and Rejection Scale) (Roffman et al., 2000)</p> <p>Pro-social values and behaviour (SDQ – Pro-social behaviour subscale) (Goodman, 2005)</p> <p>Behavioural difficulties (SDQ – conduct problems subscale) (Goodman, 2005)</p>

## Protocol version history

Version	Date	Reason for revision
<b>1.0</b> <i>[original]</i>	August 2023	
<b>1.1</b>	September 2023	Incorporating feedback from YEF colleagues prior to submission to GEC0
<b>1.2</b>	December 2023	Incorporating feedback from GEC0
<b>1.3</b>	January 2024	Incorporating feedback from YEF
<b>1.4</b>	March 2024	Incorporating feedback from peer reviewer

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## 1. Study rationale and background

### 1.1. Introduction

This is an efficacy study with internal pilot protocol for a two-armed parallel randomised controlled trial (RCT) and implementation and process evaluation (IPE) of Media Academy Cymru's Cerridwen programme.

The efficacy study including the internal pilot trial will begin in April 2024, and final reporting will take place in October 2026.

This section provides:

- An overview of the local context of the Cerridwen programme.
- The rationale for the Cerridwen model.
- The rationale for an Efficacy Study approach.

### 1.2. Local context

The Cerridwen project (Cerridwen) is a voluntary one-to-one case manager/mentoring intervention, rooted in cognitive behavioural approaches. It will be delivered across Cardiff, Merthyr Tydfil and Swansea in South Wales. It was developed in response to research which shows that:

- There has been an increase in the number of incidents of youth violence over the last year in England and Wales (Cardiff University News, 2023 and Welsh Government, 2022).
- There has been an increase in the number of young people in Wales being referred to Youth Offending Services for violent offences (Morgan, 2022).

### 1.3. Rationale for the Cerridwen model

The Cerridwen model is based on evidence which shows:

- a) Focusing on increasing children and young people's empathy may help to avoid future offending (Bateman and Cook, 2021).
- b) Mentoring and key worker programmes have been shown to have a positive impact on outcomes which are often associated with later involvement in violence, e.g., substance misuse, behavioural difficulties, educational outcomes, social connections, emotional health, self-esteem (Gaffney, Jolliffe and White, 2022).
- c) The importance of protective social networks in reducing the risk of offending, including trusted-adult relationships (Gaffney, Jolliffe and White, 2022).



- d) Targeted programmes which consider the individual characteristics and needs of children and young people are more likely to reduce attrition from interventions and reoffending rates (Christensen, Hagler, and Stams et al., 2020).
- e) Cognitive behavioural approaches and mentoring can be effective in reducing reoffending (Adler et al, 2016).
- f) Voluntary participation tailored to individual interests, taking a trauma informed approach, encourages better engagement by children and young people (CYP) with services than statutory interventions for this cohort (National Lottery Community Fund, 2018).

#### **1.4. Rationale for the efficacy RCT**

The rationale for an efficacy Randomised Controlled Trial (RCT) with an internal pilot trial and implementation and process evaluation of Cerridwen is strong. Preliminary evidence from a qualitative process evaluation of the programme (which has been delivered in Cardiff since 2015) conducted by Swansea University suggested Cerridwen has potential to be used by a range of organisations and practitioners to help support young people who display violent behaviours (Morgan, 2022). This evaluation report also included positive qualitative feedback from children and young people and partners that supports the expectation that the project will reduce the severity and frequency of violence among children and young people. A more robust evaluation using an RCT approach of the programme will enhance its evidence base.

Moreover, across the UK there is limited robust evidence for what works to reduce offending among children and young people. In particular, the evidence is limited for the long-term effectiveness of interventions that work with young people aged 10-17 at risk of involvement in crime (Ross et al., 2011). There is emerging evidence that programmes which include mentoring approaches may support young people to stay out of crime, but more research is needed in this area (Jolliffe and Farrington, 2008). While the YEF Toolkit suggests the evidence for mentoring is moderately strong, this is for mentoring programmes as a whole and not with a specific focus on children and young people already involved in crime or violence. An efficacy RCT of Cerridwen will therefore contribute to knowledge and understanding of what works to reduce offending for this cohort.

## 2. Intervention

### 2.1. Overview

This section describes Cerridwen. It covers:

- Cerridwen's Theory of Change
- Who does the project aim to work with?
- What is required to deliver the project?
- How does the project work with young people?
- What does the project aim to achieve?
- The support that will be received by the control group.

### 2.2. Theory of Change

Figure 1 presents Cerridwen's Theory of Change which was co-developed by Cordis Bright and MAC colleagues. It is based on:

- Documentation provided by MAC.
- Outputs shared with Cordis Bright based on a Theory of Change development process between MAC and Ipsos UK.
- Theory of Change and evaluation co-design workshops between Cordis Bright and MAC.

Figure 1: Cerridwen Youth Violence Programme by Media Academy Cymru (MAC) – Theory of Change

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
<p><b>Cerridwen has been developed to address:</b></p> <p><b>1) An increase in the number of incidences of youth violence and of young people in Wales being referred to the YOS for violent offence (Cardiff University News, 2023; Morgan, 2022; Welsh Government, 2022).</b></p> <p><b>2) A gap in long-term case management services which focus on building trusting positive relationships available to young people in South Wales affected by violence (Ipsos).</b></p>	<p>Focusing on increasing young people’s empathy may help to avoid future offending (Bateman and Cook, 2021).</p> <p>Mentoring and key worker programmes have been shown to have a positive impact on outcomes which are often associated with later involvement in violence (e.g., substance misuse, behavioural difficulties, educational outcomes, social connects, emotional health, self-esteem) (Ipsos and Gaffney, Jolliffe, and White, 2022).</p> <p>There is evidence for the importance of protective social</p>	<p>Young people aged 10-17 who are:</p> <p>Exhibiting or are at risk of exhibiting violent behaviours and offending (demonstrated by one or more of the following: expressing pro-violent thoughts and opinions, making verbal threats of physical violence, committing violent behaviours, and/or using violent aggressive communication strategies).</p> <p>Live in Cardiff, Swansea, or Merthyr.</p> <p>Willing to voluntarily engage with and complete Cerridwen</p>	<p>Six months of community-based one-to-one case work.</p> <p>Young people receive:</p> <ul style="list-style-type: none"> <li>• A three-week engagement and assessment planning phase. This includes two introductory sessions; one with CYP and family to introduce the programme and one with the CYP to conduct an assessment, build positive and trusting relationships and identify goals and outcomes.</li> <li>• An eight-week block of weekly one-to-one sessions, each lasting 2 – 3 hours. Core modules are rooted in cognitive behavioural approaches and include empathy, communication, consequential thinking, identity, and reflection.</li> </ul>	<p>Young people:</p> <ul style="list-style-type: none"> <li>• Have an improved understanding of how their behaviour affects others.</li> <li>• Have improved skills in emotional regulation.</li> <li>• Report they have developed a positive relationship with their case manager.</li> <li>• Have improved understanding of and motivation for opportunities available to them (such as employment/ training opportunities, education</li> </ul>	<p>Young people:</p> <ul style="list-style-type: none"> <li>• Have improved empathy.</li> <li>• Have improved self-knowledge and self-regulation.</li> <li>• Demonstrate improved emotional health and wellbeing.</li> <li>• Have improved social and communication skills.</li> <li>• Report they have more healthy relationships with peers, family members, and teachers.</li> <li>• Demonstrate increased agency and self-esteem.</li> </ul>	<p>There is a reduction in:</p> <ul style="list-style-type: none"> <li>• Young people involved in violent and non-violent offending behaviour.</li> <li>• Young people experiencing behavioural difficulties.</li> <li>• School exclusions (fixed term and permanent).</li> <li>• The frequency and severity of arrests of young people.</li> </ul>

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
	<p>networks in reducing the risk of offending, including trusted-adult relationships (Ipsos and Gaffney, Jolliffe, and White, 2022).</p> <p>Targeted programmes which consider the individual characteristics and needs of young people are more likely to reduce attrition and reoffending rates (Christensen, Hagler and Stams et al., 2020).</p> <p>Cognitive behavioural approaches and mentoring can be effective in reducing reoffending (Adler et al., 2016).</p> <p>Voluntary participation tailored to individual interests, taking a trauma informed</p>	<p>(demonstrated through consenting to referral and confirming willingness to engage).</p> <p>Young people will not be eligible if they are in prison (young people who have been released are eligible).</p>	<ul style="list-style-type: none"> <li>• A one-week review to reflect on progress and plan the next three months of support.</li> <li>• A second eight-week block of weekly one-to-one sessions, each lasting 2-3 hours, focused on transitioning out of the programme.</li> </ul> <p>Following completion of Cerridwen, there is a disengagement phase lasting up to four weeks. The case manager conducts a review and creates an action plan and safety plan with the young person.</p> <p>As part of Cerridwen, case managers employ a youth work approach (Welsh Government, 2019) to build trusting relationships with CYP ensuring they:</p>	<p>opportunities, and opportunities in the community).</p> <ul style="list-style-type: none"> <li>• Report feeling a greater sense of ownership of their goals for the future and improved action-planning skills.</li> <li>• Have increased awareness around the consequences of engaging with criminal activity.</li> <li>• Have increased knowledge of risks and protective factors.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate increased empowerment and knowledge to make decisions about their lives.</li> <li>• Demonstrate pro-social values and behaviour.</li> </ul>	

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
	<p>approach, encourages better engagement by young people with services than statutory interventions for this cohort (National Lottery Community Fund, 2018).</p>		<ul style="list-style-type: none"> <li>• Feel emotionally and physically safe during their sessions.</li> <li>• Feel listened to and understood.</li> <li>• Feel valued.</li> <li>• Want to continue to engage.</li> </ul> <p>Through this relationship, case managers help CYP to:</p> <ul style="list-style-type: none"> <li>• Reflect on their behaviours and consequences and attitudes about them.</li> <li>• Burn off the shame of past behaviours and think about how to change in the future.</li> <li>• Feel empowered to use their voice and make their own decisions regarding their action plans and goal setting.</li> <li>• Understand and practice social and communication skills, e.g. empathy.</li> <li>• Access additional support or services where needed</li> </ul>			

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
			(through advocacy and onward referrals).			

### 2.3. Who does Cerridwen work with?

The target group for Cerridwen and therefore the RCT is young people aged 10-17 who meet all three of the following inclusion criteria:

- **Criteria 1:** Young people are exhibiting, or are at risk of exhibiting violent behaviours, as demonstrated by evidence from referral partners that they have presented with one or more of the following behaviours:
  - Displaying physical and verbal aggression, for example, making verbal threats of physical violence.
  - Committing violent behaviours (this can include on property, self and / or others).
  - Using violent / aggressive communication strategies.
  
- **Criteria 2:** Young people are living in Cardiff, Swansea, or Merthyr Tydfil.
  
- **Criteria 3:** Young people are willing to voluntarily engage with and complete Cerridwen, as demonstrated through:
  - Consenting to referral.
  - Confirming willingness to engage following initial meeting and detailed explanation of the project.

Young people will not be eligible if they are currently in prison. This is the sole exclusion criteria. Young people who have been released from prison are eligible.

During the mobilisation period the Cerridwen Coordinator will deliver a Communication Strategy to all referral partners to ensure referrers have a consistent understanding of the aims, approach and inclusion and exclusion criteria for Cerridwen. This will include sharing clear written information with partners and attending their team meetings to deliver detailed presentations and training.

The Communication Strategy will be ongoing throughout the lifetime of the project, ensuring that referring partners' awareness, knowledge and understanding is maintained and any lack of understanding or issues can be proactively addressed. A key aim of the strategy will be to actively ensure referral partners understand that Cerridwen is an inclusive service that celebrates diversity and is equipped to support young people from any cultural or ethnic background.

Referrals into MAC will be monitored. If inappropriate referrals are being received, referrals are not in line with anticipations, or certain demographic groups appear underrepresented, further communication and discussions will take place with the referral partners to address

these issues. If required, the Communication Strategy will be updated. More information on referrals and screening for eligibility criteria is available in section 3.6.1.

Cerridwen intends to work with young people from ethnic minority backgrounds; key referral partners are Youth Justice Services and schools referring young people at risk of exclusion, and from both these sources young people from ethnic minority backgrounds are over-represented (please see section 3.6.1 for more details). Where Cerridwen has been delivered by MAC previously, 45% of young people were from ethnic minority backgrounds. It is not possible to predict the proportion of young people from ethnic minority backgrounds who Cerridwen will work with as part of the trial because the intervention is being expanded into different geographical areas to previous delivery. However, demographic characteristics, including ethnicity, will be monitored from referral, and throughout project delivery and evaluation in line with YEF guidance (see section 4.8 for more detail). This monitoring will be discussed between Cordis Bright, MAC and YEF and referral approaches modified if required to increase diversity and inclusion.

## **2.4. What is required to deliver Cerridwen?**

To deliver its intended activities and outcomes, Cerridwen requires the following inputs:

- **Funding:**
  - Staff costs (delivery): £1,138,159.34
  - Staff costs (Central/management/training): £40,846.07
  - Equipment and materials: £26,457.00
  - Travel and expenses: £34,153.89
  - Other expenses (Young people activities/incentives and translation/speech and language): £125,090.03
  - Overheads: £156,647.97
  - **Total: £1,521,354.30**
- **Facilities:**
  - Access to emotionally and physically safe spaces, including young people's homes, schools, community venues and MAC premises.
- **Personnel:** The funding will support the following full-time equivalent (FTE) roles:
  - Regional Cerridwen Manager (x1 FTE).
  - Regional Cerridwen Project Assurance Officer (x1 FTE).
  - Cerridwen Case Manager (x9 FTE, 3 FTE per local authority area).



- MAC Case Manager (for the control group) (x3 FTE, 1 FTE per local authority area).<sup>1</sup>

## 2.5. How does Cerridwen work with young people?

Following a successful referral and consent to take part in the project and evaluation, young people will be randomised into the treatment group (i.e., receive Cerridwen) or the control group (please see section 3.6 for more detail).

The Cerridwen project will work with young people randomly allocated to the treatment group across three stages, taking place over a five-month period:

- 1) Stage 1: Engagement and assessment planning (3 weeks).** A meeting between the Cerridwen case manager, the young person and the family will take place in the most appropriate venue (i.e., school, home, or in the community). This meeting will include an assessment to identify the outcomes that the young person wants to achieve, goal setting, discussing the young person's hobbies and interests to build activities around, and establishing a safety plan if necessary. This will be the basis of the work that takes place in Stage 2, ensuring that young people play an active role in the development of intervention plans. Stage 1 will also include the initial introductory meeting to achieve consent and complete baseline questionnaires prior to randomisation as well as this stage 1 assessment meeting. Please see section 3.6.1 for more detail. Stage 1 will take around three weeks in total.
- 2) Stage 2a: Block 1 of weekly, two to three-hour, one-to-one case management sessions (8 weeks).** The case manager will work with the young person on core components that look at reducing violence through understanding their own feelings and how they relate to behaviours, moving the young person towards positive activity. Sessions will take place in the most appropriate venue for the young person (i.e., school, home, or in the community). Sessions also act as a review of previous sessions and a wellbeing check-in about how their life is going. The core components in one-to-one case management sessions are:

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<sup>1</sup> The MAC case managers will be employed for the purpose of this trial, i.e., they will not be doing any other work within MAC. MAC does not foresee any significant risk in these case managers ending their employment due to the nature of the role, which will be clearly articulated within recruitment literature (adverts / job descriptions etc). MAC, since 2010, has a consistently high staff retention rate, due to the positive working culture. This is achieved by investing in staff development and effective supervision processes, offering attractive employment benefits, and supporting all MAC staff to understand the contribution they make in MAC achieving its aims of supporting and safeguarding young people to live more positive lives.

- **Communication:** aggressive/passive/assertive – how to identify and overcome flight/freeze/fight.
  - **Consequential thinking:** importance of ‘I’ messages and neutralising language and behaviours.
  - **Thoughts/feelings/behaviours:** how thoughts, feelings and behaviours are linked, and recognising negative thinking ideas and flipping them.
  - **Empathy:** awareness of impact on self, others and both short- and long-term repercussions.
  - **Identity:** recognising who you are, role models, how you can be a role model, discussing labels and code switching.
  - **Reflection:** discuss what aspects of the course they have most identified with, what they will take responsibility for moving forward, what positive changes they will make.
- 3) 3-month review (one week).** After three months, the case manager and the young person will review the successes and prioritise the next three months via an outcome star.
- 4) Stage 2b: Block 2 of weekly, two to three-hours, one-to-one case management sessions (8 weeks).** These sessions are a continuation of the one-to-one case management sessions in stage 2a, with a heightened lens on transition strategies.

Following completion of the Cerridwen programme there will be a disengagement stage. At this stage, the young person will reflect on the learning and development throughout the intervention and develop and identify next steps with their case manager via a bespoke exit strategy. As this disengagement phase is not part of the Cerridwen intervention, it will not be included in the evaluation (i.e., exit measures will be administered before the disengagement stage, after completion of stage 2b).

Throughout the intervention, youth work approaches, values and principles will be at the centre of all activity (see Welsh Government, 2019). This approach will ensure and enable learning opportunities that are educative, expressive, participative, inclusive and empowering. Cerridwen case managers (who will all be trained youth workers) will use youth work principles to support and challenge the young people to engage and make better, safer life choices. They will support diversity and inclusivity by ensuring that the days, times, and venues of the intervention and any other required modifications (e.g. use of pictorial resources rather than text) are mutually agreed with the young person. Case management will be delivered in either English or Welsh language formats according to the language needs of the young person.

Figure 2 below summarises the proposed sessions which will be delivered to Cerridwen participants, including anticipated duration, setting and content. Referrals and/or signposting to other services (e.g. Children’s Services Safeguarding Team) will be made throughout the programme depending on ongoing identified risks and needs. The frequency, dosage and content of sessions will be recorded as part of MAC monitoring data.

Figure 2: Summary of Cerridwen programme sessions

Session	Duration	Setting	Content / Theme
<b>Introductory period</b>			
1	2 – 3 hours	Safe and suitable location e.g. young person’s home	Cerridwen assessment & goal setting
<b>First 8-week block</b>			
2	2 – 3 hours	Safe and suitable location e.g. young person’s home	Communication
3	2 – 3 hours	Safe and suitable location e.g. young person’s home	Communication
4	2 – 3 hours	Safe and suitable location e.g. young person’s home	Communication
5	2 – 3 hours	Safe and suitable location e.g. young person’s home	Thoughts Feelings, Behaviour & Consequential Thinking
6	2 – 3 hours	Safe and suitable location e.g. young person’s home	Thoughts Feelings, Behaviour & Consequential Thinking
7	2 – 3 hours	Safe and suitable location e.g. young person’s home	Empathy
8	2 – 3 hours	Safe and suitable location e.g. young person’s home	Empathy
9	2 – 3 hours	Safe and suitable location e.g. young person’s home	Empathy

Session	Duration	Setting	Content / Theme
<b>Review phase</b>			
10	2 – 3 hours	Safe and suitable location e.g. young person's home	Midpoint review and reflection of achievements and progress. Goal setting for the remainder of intervention
<b>Second 8-week block</b>			
11	2 – 3 hours	Safe and suitable location e.g. young person's home	Identity
12	2 – 3 hours	Safe and suitable location e.g. young person's home	Identity
13	2 – 3 hours	Safe and suitable location e.g. young person's home	Identity
14	2 – 3 hours	Safe and suitable location e.g. young person's home	Restorative Justice / Repairing Harm
15	2 – 3 hours	Safe and suitable location e.g. young person's home	Revisit of Communication
16	2 – 3 hours	Safe and suitable location e.g. young person's home	Revisit of Thoughts Feelings, Behaviour & Consequential Thinking
17	2 – 3 hours	Safe and suitable location e.g. young person's home	Revisit of Empathy
18	2 – 3 hours	Safe and suitable location e.g. young person's home	Revisit of Identity
<b>Disengagement meeting</b>			
19	2 – 3 hours	Safe and suitable location e.g. young person's home	Review and reflection on achievement achieved. Independent goals and safety plan agreed with YP

## **2.6. What does Cerridwen aim to achieve?**

Cerridwen aims to reduce children and young people's future engagement in violence and offending behaviour. The short-, medium- and long-term outcomes are described below.

### **2.6.1. Short-term outcomes**

Cerridwen aims to achieve the following short-term outcomes:

- Children and young people have an improved understanding of how their behaviour affects others.
- Children and young people have improved emotional regulation.
- Children and young people report they have developed a positive relationship with their case manager.
- Children and young people have improved understanding of and motivation for opportunities available to them (such as employment/ training opportunities, education opportunities, and opportunities in the community).
- Children and young people report feeling a greater sense of ownership of their goals for the future and improved action-planning skills.
- Children and young people have increased awareness around the consequences of engaging with criminal activity.
- Children and young people have increased knowledge of risks and protective factors.

### **2.6.2. Medium-term outcomes**

The programme aims to achieve the following medium-term outcomes:

- Children and young people have improved empathy.
- Children and young people have improved self-knowledge and self-regulation.
- Children and young people demonstrate improved emotional health and wellbeing.
- Children and young people have improved social and communication skills.
- Children and young people report they have more healthy relationships with peers, family members, and teachers.
- Children and young people demonstrate increased agency and self-esteem.
- Children and young people demonstrate increased empowerment and knowledge to make decisions about their lives.
- Children and young people demonstrate pro-social values and behaviour.

### **2.6.3. Long-term outcomes**

The long-term outcomes of the programme are to achieve reductions in:

- Children and young people involved in violent and non-violent offending behaviour.

- Children and young people experiencing behavioural difficulties.
- School exclusions.
- The frequency and severity of repeat arrests of children and young people.

## **2.7. Control group conditions**

Young people who are allocated to the control group will receive light-touch, structured signposting and safeguarding support, provided by MAC. This support will be referred to as 'safety and wellbeing support'.

This will involve young people in the control group being offered a maximum of eight one-to-one one-hour check-in meetings with one MAC case manager, which will take place over the same five-month period as the Cerridwen programme. This will ensure that outcomes data collection for the intervention and control groups takes place over the same time periods.

The first four meetings will take place weekly and the final four will take place monthly. Young people will complete baseline measures prior to randomisation and attending the first meeting in the control group pathway.

The first meeting after obtaining consent, baseline questionnaire completion and randomisation (Session 1) will involve an assessment of needs and risks, which will identify immediate safeguarding concerns and determine the activity and focus of the remaining meetings.

As the sessions offered are determined by individual assessments with young people, the content will vary depending on severity and urgency of any identified risks. Because all young people have been referred to Cerridwen due to a concern around violence and/or offending behaviour, MAC will provide basic information around the law, the consequences of a criminal record, and information on how to keep safe in Session 2. Sessions 3-7 will be delivered if required, and may include:

- Referral to / information sharing with Children's Services in relation to immediate safeguarding concerns.
- Referral into other service to meet other identified support needs, e.g. Education and Employment.
- Direct support around other identified support needs e.g. assistance to engage with positive activities.
- Informal check-ins about current wellbeing and goal setting.

The last meeting (at five months) will include completing the T2 outcome measures and any onward referrals where appropriate.

Figure 3 below summarises the proposed sessions which will be delivered to control group participants, including anticipated duration, setting and content. Referrals and/or signposting to other services (e.g. Children's Services Safeguarding Team) will be made throughout the programme depending on ongoing identified risks and needs.

*Figure 3: Proposed approach to the control group conditions*

Session	Duration	Setting	Content
1	1 hour	Safe and suitable location e.g. young person's home	Assessment of need and risk and identifying next steps (if required).
2	1 hour	Safe and suitable location e.g. young person's home	Basic information around the law, the consequences of a criminal record, and information on how to keep safe.
3 (if required)	1 hour	Safe and suitable location e.g. young person's home	Young person led and dependent on identified risks and need during assessment e.g. Informal check ins about current wellbeing and goal setting.
4 (if required)	1 hour	Safe and suitable location e.g. young person's home	Young person led and dependent on identified risks and need during assessment e.g. Informal check ins about current wellbeing and goal setting.
5 (if required)	1 hour	Safe and suitable location e.g. young person's home	Young person led and dependent on identified risks and need during assessment e.g. Informal check ins about current wellbeing and goal setting.
6 (if required)	1 hour	Safe and suitable location e.g. young person's home	Young person led and dependent on identified risks and need during assessment e.g. Informal check ins about current wellbeing and goal setting.
7 (if required)	1 hour	Safe and suitable location e.g. young person's home	Young person led and dependent on identified risks and need during assessment e.g. Informal check ins about current wellbeing and goal setting.
8 (if required)	1 hour	Safe and suitable location e.g. young person's home	Completion of T2 outcome measures.

The contact with young people through this control group approach will benefit the evaluation by:

- Facilitating engagement with the outcome measures and supporting data collection.
- Ensuring any safeguarding issues are identified and addressed.
- Supporting understanding of what young people in the control group have received in terms of activity and dosage.
- Potentially supporting retention of young people in the trial and reducing attrition.

This approach should enable more robust analysis around whether the differences in outcomes between young people in the treatment group and young people in the control group are attributable to Cerridwen.

To monitor fidelity, compliance and to identify any risk of contamination, the frequency, dosage and content of sessions will be recorded as part of MAC monitoring data. This data will be shared with Cordis Bright on a regular basis to enable an audit and analysis of delivery to identify and mitigate any risks or issues posed to the evaluation. Figure 4 below gives an example of the format of this monitoring data, which will also be collected for the treatment group:

Figure 4: Example of session monitoring data

Session and date	Duration	Setting	Content	Referrals/signposting
#1	<i>Length of session</i>	<i>Location of session</i>	<i>Topics/issues covered</i>	<i>Details of any services young person is referred/signposted onto</i>
#2				
etc.				

The approach to working with the control group will differ significantly from the treatment group. There will be separate Case Manager teams for the treatment and control groups to minimise risk of contamination. This will ensure that young people allocated to the control group are not supported by a Case Manager who also supports young people allocated to the treatment group and therefore has an in-depth knowledge of the Cerridwen intervention.

The treatment group will receive a minimum of 18 weekly sessions, taking a youth work approach, focused on self-exploration and development. The control group will be offered a maximum of eight sessions (four weekly, and four monthly) but may choose to attend fewer sessions, in which they will be given basic information in a much more didactic approach. The



Cerridwen intervention, activities, resources and content will not be available or delivered to young people in the control group.

## 3. Impact evaluation

### 3.1. Overview

This section presents an overview of information about the impact evaluation of the Cerridwen programme. It covers:

- Research questions.
- Trial design.
- Randomisation approach.
- Participant journey through the trial.
- Sample size calculations.

### 3.2. Research questions

The primary research question for the impact evaluation is:

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Is a dedicated case management/mentoring programme delivered with children and young people involved in (or at risk of involvement in) youth violence and offending behaviours, focused on understanding and managing emotions, an effective approach to reducing children and young people's future engagement in youth violence and offending behaviours compared to light-touch young person-led wellbeing and safety support?

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The key primary outcome measure for the evaluation will be a reduction in offending as measured by the Self-Reported Delinquency Scale Volume Score. More information about the outcome measures to be used in the evaluation is provided in section 4.

The secondary research questions are:

1. **Delivery:** Can the Cerridwen programme work under ideal circumstances?
2. **Impact:** a) What is the impact of the Cerridwen project? b) Do different subgroups of young people have different outcomes, e.g. those from minoritised/marginalised groups?
3. **Unintended consequences:** a) Does the Cerridwen project have any unintentional consequences? If so, what are these? b) Do different groups of young people experience these differently?
4. **Introgenic effects:** Are there any serious negative effects that can be attributed to the Cerridwen project on any outcomes?

5. **Mechanisms:** a) How does the Cerridwen project work to reduce young people’s future engagement in offending? b) Which factors contribute most to the observed outcomes?

We are committed to delivering the evaluation in line with race equity, diversity, equality and inclusion. As part of this, we will explicitly assess differences in access, experiences and outcomes for young people from racially minoritised and marginalised backgrounds through the IPE. This will be addressed in analyses under research questions 3, 4 and 5 above. Further information on how the evaluation will be delivered to promote race equity, diversity, equality and inclusion is provided in section 7.

### 3.3. Trial design

The evaluation of Cerridwen will be an efficacy study with internal pilot study, two-armed parallel randomised controlled trial (RCT) evaluation.

<b>Trial design, including number of arms</b>		Two-arm parallel randomised controlled trial with random allocation at the young person level
<b>Unit of randomisation</b>		Individual young person
<b>Stratification variables</b> (if applicable)		None
<b>Primary outcome</b>	variable	Self-reported offending (violent and non-violent or general)
	measure (instrument, scale, source)	Self-Reported Delinquency Scale (volume score)
<b>Secondary outcome(s)</b>	variable(s)	Quality of the relationship with case manager Empathy Pro-social values and behaviours Behavioural difficulties
	measure(s) (instrument, scale, source)	Quality of relationship with case manager, measured by the Social Support and Rejection Scale (Roffman et al., 2000). Empathy, measured by the Basic Empathy Scale (Jolliffe and Farrington, 2006).

		<p>Pro-social values and behaviours measured by the Strengths and Difficulties Questionnaire pro-social behaviour subscale (SDQ) (Goodman, 2005).</p> <p>Behavioural difficulties, measured by the Strength and Difficulties Questionnaire conduct problems subscale (SDQ) (Goodman, 2005).</p>
Baseline for primary outcome	variable	Self-reported offending (violent and non-violent or general)
	measure (instrument, scale, source)	Self-Reported Delinquency Scale (volume score)
Baseline for secondary outcome	variable	<p>Empathy</p> <p>Pro-social values and behaviours</p> <p>Behavioural difficulties</p>
	measure (instrument, scale, source)	<p>Empathy, measured by the Basic Empathy Scale.</p> <p>Pro-social values and behaviours measured by the Strengths and Difficulties Questionnaire pro-social behaviour subscale (SDQ).</p> <p>Behavioural difficulties, measured by the Strength and Difficulties Questionnaire conduct problems subscale (SDQ).</p>

### 3.4. Internal pilot

As part of the efficacy study, we will conduct an internal pilot trial of Cerridwen. This will take place between April 2024 and February 2025 (fieldwork will take place between April 2024 and November 2024). The aims of this internal pilot will be to provide an understanding of:

- Whether the pilot recruitment, randomisation and retention processes have been established and embedded effectively, and whether they work in practice.
- The likelihood that Cerridwen will recruit and retain enough young people to meet the required sample size for an efficacy study.
- Whether data collection processes have been established and embedded effectively.
- Whether evaluation tools are valid, accurate and practical for the project.

- The sample size required for a future efficacy study.
- Whether Cerridwen has been implemented with fidelity with the co-designed Theory of Change.
- The capacity of the Cerridwen programme delivery team to deliver the intervention and to support the evaluation.
- How acceptable the RCT design is to the key programme stakeholders.
- The quality of working relationships between MAC colleagues, YEF and Cordis Bright.

These aims have informed a set of progression criteria which will inform the decision of whether to progress to an Efficacy study. Figure 5 outlines the progression criteria. We will continue to discuss and refine these criteria in collaboration with MAC and YEF colleagues as part of the set-up and mobilisation stage.

Figure 5: Proposed progression criteria (RAG criteria will be further developed and refined with MAC colleagues during the mobilisation and set-up phase)

RAG ratings → Criteria ↓	Green (Go)	Amber (Pause and think)	Red (Stop)
1. <b>Recruitment:</b> Number of young people who consent and are <b>recruited</b> to the trial’s treatment and control groups (the total number across both groups as a percentage of the monthly recruitment targets) measured by administered baseline questionnaires	Greater than 80% (36 or more young people)	51-79% (23-35 young people)	Less than 50% (Fewer than 22 young people)
2. a. <b>Retention:</b> Number of young people in the intervention group completing questionnaires at five months (as a percentage of those who are recruited to the intervention group)	Greater than 80%	51-79%	Less than 50%
2. b. <b>Retention:</b> The number of young people in the control group completing questionnaires at five months (as a percentage of those who are recruited)	Greater than 80%	51-79%	Less than 50%
3. <b>Data quality:</b> Overall completion rate of all evaluation tools (i.e. amount of missing data) and quality of data for both the treatment and control groups including outcome measurement tools (SRDS, SDQ, SSRS, BES)	Greater than 80% complete	51-79% complete	Less than 50% complete
4. a. <b>Fidelity and dosage:</b> Young people receive the majority of the programme as intended as measured by percentage of young people who complete the	Greater than 80%	51-79%	Less than 50%

RAG ratings → Criteria ↓	Green (Go)	Amber (Pause and think)	Red (Stop)
programme, i.e., having attended a minimum of 12 one-to-one case management sessions (out of 16)			
4. <b>b. Fidelity and dosage:</b> Case management sessions are being delivered as intended as measured by percentage of young people in the treatment group recorded as having received sessions around all of the programme's core topics (Communication, consequential thinking, thoughts/feelings/behaviours, empathy, identity, reflection)	Greater than 70%	51-69%	Less than 50%
5. <b>a. Delivery capacity</b> Cerridwen workers have capacity to deliver the programme as measured by percentage of young people contacted within 5 days of referral being accepted into Cerridwen at the MAC allocation meeting	Greater than 70%	51-69%	Less than 50%
5. <b>b. Delivery capacity</b> Cerridwen workers have capacity to deliver the programme as measured by percentage of young people who start the programme within 15 days of referral being accepted into Cerridwen at the MAC allocation meeting	Greater than 70%	51-69%	Less than 50%
6. <b>a. Randomisation:</b> Successful implementation of the randomisation approach based on percentage of young people who meet the eligibility criteria and	80%	51-79%	Less than 50%

RAG ratings → Criteria ↓	Green (Go)	Amber (Pause and think)	Red (Stop)
consent to take part who are successfully randomised into the control or treatment group.			
6. <b>b. Randomisation:</b> Randomisation achieves a close to 1:1 ratio based on percentage of participants randomised to the Cerridwen group	45-55%	35-44% or 56-65%	<35% or >65%
7. <b>Eligibility:</b> Cerridwen is reaching its intended audience as measured by the percentage of young people recruited who meet the eligibility criteria	80%	51-79%	Less than 50%



### **3.5. Randomisation approach**

This trial will be a two-arm, parallel randomised controlled trial (RCT). Randomisation will be done at the individual level. All young people who are referred to the programme, who meet the eligibility criteria, who consent to be part of the evaluation and who complete a baseline questionnaire will be allocated at random to the intervention or control group on a 1:1 basis, as per Hutchison and Styles (2010).

Randomisation will be conducted using 'blocks' of four, six and eight young people, in which the numbers of young people allocated to the intervention and control group will be the same. For example, in a block of four, there will always be two treatment and two control allocations, but the order of their assignment will be random. Randomly varying block sizes will be used. This is in line with Nesta guidance (Edovald and Firpo, 2016).

This design was agreed in collaboration with MAC colleagues, based on anticipated recruitment rates. Anticipated recruitment rates are between 10 and 14 per locality per month in year one, rising to between 11 and 18 per locality per month in year two. These recruitment rates were estimated by analysing demand for the current Cerridwen project operating in Cardiff and modifying these based on the populations and demand within Youth Offending Services in the other areas Cerridwen will be operating. MAC colleagues discussed and sense checked this with Youth Offending Services in the areas Cerridwen will be delivered.

The use of block sizes of four, six and eight therefore supports an even spread of allocation month-by-month, enabling MAC case managers to be allocated appropriately across the localities and to operate at capacity in each area.

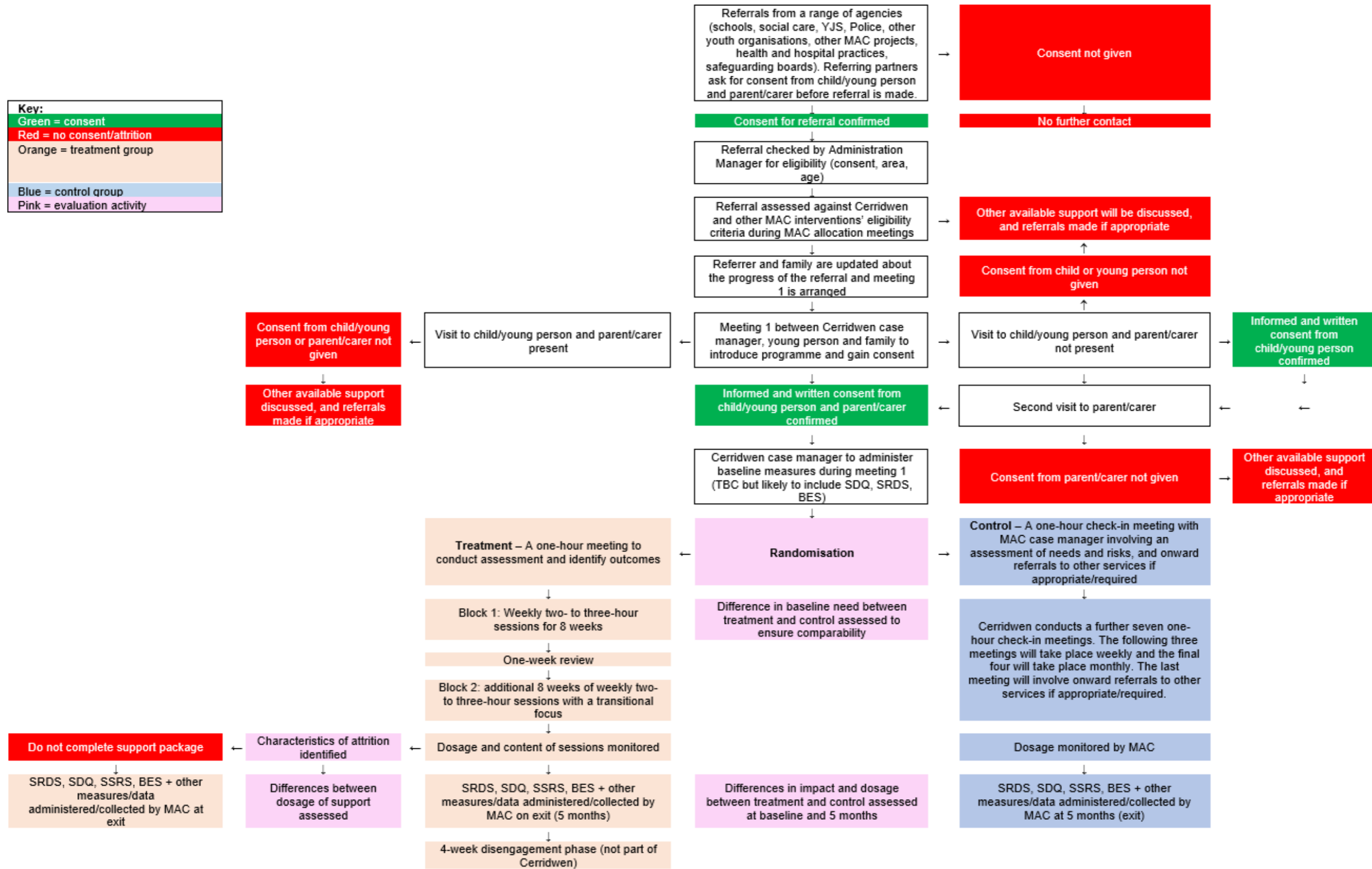
### **3.6. Participant journey**

Figure 6 presents the trial diagram for the RCT. This shows the following key steps:

- Identification and assessment processes.
- Collecting informed consent.
- Data collection at baseline and follow-up.
- Conducting randomisation.
- Conducting analysis.

The participant journey will be reviewed and further refined if needed as part of the evaluation and project set-up and mobilisation phase.

Figure 6: Cerridwen trial diagram



### 3.6.1. Participant referrals and eligibility

MAC will establish varied referral routes in partnership with a range of key referral organisations to ensure that they reach their intended cohort for Cerridwen (see section 2.3). Referring organisations will include statutory organisations, self-referrals and third sector organisations. These will include (but are not limited to):

- Social Services (Children’s Services).
- Schools and Pupil Referral Units.
- Youth Services.
- Youth Offending Services.
- Third Sector Organisations.<sup>2</sup>
- Self-referrals including young people and parents/carers.<sup>3</sup>

Referral partners will complete a MAC referral form and send this to MAC via email. These referral forms will be checked against the basic eligibility criteria for the wider MAC service by the Administration Manger (i.e. age, consent and area). If young people meet these criteria, the referral will then be reviewed and discussed by the MAC team (representatives from all MAC departments and Senior Management) and the Cerridwen manager in a weekly allocation meeting. This meeting will take place within five working days of receiving the referral.

During this meeting, MAC colleagues will discuss the information in the referral form, decide and document whether it is an appropriate referral into MAC and if so:

- a. Which MAC intervention(s) (including Cerridwen) it meets the project-specific eligibility criteria for.
- b. Which MAC intervention, based on project specific eligibility criteria, would be most appropriate to address the primary concerns and risks within the referral form.

Linked to b. above MAC delivers a range of interventions across Cardiff, Swansea and Merthyr Tydfil. Young people who have received MAC services previously that adopted a trusted adult approach and delivered a structured intervention that aimed to address youth violence/offending will not be eligible for the Cerridwen project. Appendix 1 provides a table

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<sup>2</sup> Examples of organisations include: Atal Y Fro, Action for Children, Amber Project, Barnardo’s, Fearless, Llamau, Platform, St Giles, The Hangout and Women’s Aid.

<sup>3</sup> Self-referrals may form a small proportion of overall referrals. Self-referrals will be subject to the same assessment of eligibility as other referrals. Eligibility and consent would be re-confirmed in the first meeting with the young person to ensure only the intended cohort access Cerridwen.

which presents a summary of MAC services available in the areas Cerridwen will be delivered. It summarises those services that by attending makes young people ineligible for Cerridwen and therefore participating in the trial (as part of either the treatment or control group).

Some young people in either the treatment or control group might attend other MAC services prior to and/or during the evaluation which do not adopt a 'trusted adult' approach and do not deliver a structured intervention to address youth violence/offending. These will not make young people ineligible for Cerridwen, and will be treated as 'business as usual'. MAC will keep a record of which MAC services these young people may attend prior to and during the evaluation.

MAC colleagues attending the allocation meetings will be well versed and trained in the consistent application of the eligibility criteria for Cerridwen and all other MAC interventions as well as robust recording and documenting of decision-making.

Eligibility screening takes place and is recorded within a weekly allocation meeting at which every young person that is referred to MAC is discussed and reviewed. During this meeting, MAC's Referral Tracker spreadsheet is updated to record the content of this screening process. This tracker records young person information, whether MAC's basic eligibility criteria has been satisfied, which Cerridwen project-specific eligibility criteria has been met and allocation outcome. This tracker provides clear, structured and robust information and data for all referrals into Cerridwen and the outcome of screening and decision-making against inclusion criteria.

To provide confidence that Cerridwen is receiving referrals for and working with its intended target group, MAC's Referral Tracker will be shared with Cordis Bright on a monthly basis. Cordis Bright will audit the information for quality assurance purposes and identify any potential concerns or risks to the fidelity of the project. Should any potential concerns or risks be identified, these will be discussed and addressed collaboratively and any required changes to approach will be made.

To provide further quality assurance of referral information and screening and decision-making, MAC will regularly share a number of randomly selected completed referral forms to enable Cordis Bright to independently assess eligibility.

During the set-up and mobilisation phase, we will explore further with MAC and YEF colleagues how MAC can ensure that Ceridwen do not work with young people referred from projects also funded by YEF.

If a referral meets the eligibility criteria for Cerridwen (please see section 2.3 for more detail), feedback will be given to the referral partner before a Cerridwen case manager will make contact with the young person and family.

MAC have experience of recruiting and engaging with young people from a diverse range of backgrounds. They will work with referral partners to ensure diversity in the recruitment of young people by:

- Confirming referring organisations are fully informed on the service offer and how Cerridwen will use assessments to modify the delivery approach to accommodate the needs of different groups. This will enable referral partners to clearly and fully explain the service to young people prior to making the referral and remove any barriers to engagement.
- Ensuring that the Cerridwen team understand the different cohorts /demographics of young people supported by referring organisations, so that the programme can effectively support the young people that these organisations are likely to refer into the programme. This will be achieved via an effective communication strategy and ongoing communication with referral partners.
- Establishing referral routes with organisations where young people from minoritised backgrounds are over-represented (such as Youth Offending, or schools referring young people at risk of exclusion).
- Recording and scrutinising referral data in collaboration with Cordis Bright, including young people's demographic information, via monitoring data, and proactively taking steps to address should any concerns that may be identified. This may include additional training for staff around engaging with young people from a diverse range of backgrounds, reflection in supervision sessions and performance management of staff or disciplinary action if appropriate.

### **3.6.2. Introduction to the project and evaluation**

If a young person is referred into MAC, screened and assessed as suitable for Cerridwen, a Cerridwen case manager will arrange an initial meeting with the young person and the family within 10 working days. This will take place in the most appropriate venue (i.e. school, home, or in the community). During this meeting, the case manager will make sure that eligibility criteria has been met (as mentioned above, eligibility has already been screened for during the MAC Allocation Meeting – this acts as an additional quality assurance process), introduce the project and evaluation, and gain written consent from parents/carers and young people using information sheets and consent forms. These materials will be developed collaboratively by Cordis Bright and MAC colleagues during the evaluation set-up and mobilisation phase.

Training and an evaluation handbook will be provided to Cerridwen case managers by Cordis Bright which will support case managers in administering the informed consent materials.

### **3.6.3. Data collection**

During the initial introductory meeting, after consent has been gained, Cerridwen case managers will administer the baseline questionnaire.

Following this meeting and baseline questionnaire completion, young people will be randomised into either the treatment (Cerridwen) or control (safety and wellbeing support) group. Please see section 3.5 for more detail.

At present, the plan is that if young people are randomised into the treatment group, they will receive case management support from a different case manager who conducted the introductory visit. If they are randomised into the control group, they will receive safety and wellbeing support from a MAC case manager. This ensures consistency of approach across both groups (i.e., no young person will be administered baseline tools by the same case manager they will work with). We will continue to discuss how this operates in practice with MAC and YEF colleagues in the project and evaluation set-up and mobilisation phase.

Cerridwen case managers will administer the five-month tools (T2) to the young people they are working with in the intervention group when they reach the end of their five-month period of support. MAC case managers will administer the five-month tools to the control group. Again, these meetings will take place in a safe space agreed with the young person.

Cerridwen case managers and MAC case managers will also provide a meal for participating young people as a thank you for their time.

The trusting relationship that Cerridwen practitioners develop with young people will be critical in ensuring a good response to the outcome measurement tools. Our approach will also ensure that young people will not be influenced by Cerridwen practitioners when completing tools through the following mechanisms:

- We will co-develop a practitioner evaluation handbook and will provide training which will outline dos and don'ts concerning tool administration to help ensure young people complete the tools independently. Ongoing support will also be available from the evaluation team.
- The tools will be hosted online, and each young person will be able to complete them on a laptop or tablet. Practitioner training will outline the importance of practitioners not looking at the responses young people are providing.

We will review this process as part of the internal pilot and make changes as necessary for the efficacy trial phase.

### 3.7. Sample size calculations

Our approach to estimating the sample size for this efficacy study using Power Calculations is conservative and has been influenced by the following:

- **YEF guidance.** YEF guidance suggests that efficacy study RCTs should have a Minimum Detectable Effect Size (MDES) of 0.20. According to Lipsey & Wilson (2001),  $\frac{1}{2} d = r$ , which in turn is equivalent to the difference in proportions. Therefore, it is our understanding that an MDES of 0.20 is about equivalent to 10% difference in proportions.
- **The evidence base.** The YEF Toolkit (Gaffney, Jolliffe and White, 2022) suggests that similar mentoring/case manager programmes can lead to, on average, a 21% reduction on violence, a 14% reduction in all offending, and a 19% reduction in reoffending. In addition, in a meta-analysis using a random effects model ( $d=.21$ , 95% confidence interval, .07 to .34) of 18 studies, Jolliffe and Farrington (2008) showed that mentoring programmes similar to Cerridwen make a 10-11% difference in relation to offending.
- **Estimated Cerridwen Project recruitment rates.** We have also considered Cerridwen's estimated programme recruitment rates. This is outlined in Section 3.7.1 below. The project sample is slightly higher than the estimated sample size based on our Power Calculation in Figure 7 because the referral number required to achieve the target sample size of 586 will be reached 'in-month' (during October 2025), and referrals will continue to be received for the remainder of that month for operational reasons.
- **Pre-test/Post-test correlation.** We have suggested a pre-test/post-test correlation of 0.0. This is because we have no reason to believe that the variance would be different between the treatment and control group. However, inclusion of a pre-test as a covariate in impact analyses helps to explain (error) variance in the post-test and improves the likelihood of uncovering programme impacts by reducing the standard error of the impact estimate.

In this case, it is difficult to estimate what the pre-test/post-test correlation will be as this depends on unknown sample characteristics and the characteristics of the measure under investigation (the SRDS volume score when used in a sample similar to Cerridwen). The greater the estimated pre-test/post-test correlation, the lower the MDES and the smaller the sample needed to detect this. In practice, however, if the pre-test/post-test correlation changes from 0.0 to 0.4, the MDES for a sample size of 500 decreases from .25 to .23.

For example, it is possible that there will be a pre-test/post-test correlation between the SRDS at Time 1 and SRDS at Time 2, but we do not have a way of reliably estimating this. Setting the pre-test/post-test correlation at 0 means we have more of a buffer to detect a significant impact if it exists (e.g., if Cerridwen does not recruit the numbers anticipated, or if questionnaires are spoiled etc). Using 0 will therefore provide the best opportunity of achieving statistically significant findings whilst working to the parameters outlined in YEF guidance.

Based on the considerations above, if we suggest that 30% of the young people that MAC does not work with commit an offence (in the control group) compared to 20% of the young people that MAC does work with (in the treatment group) commit an offence, i.e., a 10% difference in proportions in line with Jolliffe and Farrington’s (2008) meta-analysis of mentoring programmes, Figure 7 shows that a total sample of 586 (293 in each group) would be needed to detect a statistically significant result (Power=.80), in a two-tailed test ( $p < .05$ ).

This is based on an MDES of 0.20 which is about equivalent to a 10% difference in proportions which we think is conservative in line with the literature and should enable statistically significant findings if Cerridwen performs in line with the evidence concerning mentoring programmes.

SPSS 25 was used for these power calculations.

Figure 7: Power Calculation Table

		Protocol	Randomisation
Minimum Detectable Effect Size (MDES)		0.20	
Pre-test/ post-test correlations	level 1 (participant)	0.0	
	level 2 (cluster)	N/A	
Intracluster correlations (ICCs)	level 1 (participant)	N/A	
	level 3 (cluster)	N/A	
Alpha		0.05	0.05
Power		0.8	0.8



		Protocol	Randomisation
One-sided or two-sided?		Two-sided	
Number of participants	Intervention	293	
	Control	293	
	Total	586	

### 3.7.1. Recruitment rates

In order to achieve this calculated sample size of 586, we have worked with MAC colleagues to determine the length of delivery of the Cerridwen programme required. This is based on modelled monthly referral rates across each of the three local authority areas. The modelling has been delivered based on MAC’s experience of delivering projects in these local authority areas for more than a decade, and of delivering the Cerridwen project in Cardiff. Estimated attrition of approximately 10% from referral to recruitment, and a further 10% attrition from recruitment to completion of the intervention, have also been factored in.

Based on this modelling, the Cerridwen programme should achieve the required sample size during month 20 of delivery (November 2025). Referrals will not be accepted after month 20, but delivery will continue for a further five months as the young people recruited complete the intervention or control group.

Figure 8 below summarises this modelling. It shows that over the course of the RCT, MAC will aim to recruit approximately 334 young people to the treatment group to receive the Cerridwen programme, and 334 young people to a control group (668 young people in total). This accounts for a 10% attrition from total number of referrals (752). A further 10% attrition has been factored into the model between young people starting the trial and completing follow-up measures. The final analytical sample is therefore expected to be 596.

This final sample size of 596 is slightly above the target sample size of 586 required in line with the Power Calculation. This is because the referral number required to achieve the target sample size of 586 will be reached ‘in-month’ (during October 2025), and referrals will continue to be received for the remainder of that month for operational reasons.

For the internal pilot, data analysis will take place in December 2024. This means that all young people who have completed baseline measures by the end of June 2024 will be included in the pilot analysis (to allow enough time to complete follow-up measures by December 2024). This is expected to be around 45 young people.

Figure 8: Cerridwen programme recruitment rates

Quarter →		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Months →		Apr 24 - Jun 24	Jul-24 - Sep 24	Oct-24 - Dec 24	Jan-25 - Mar 25	Apr-25 - Jun 25	Jul 25- Sep 25	Oct-25 - Dec 25	Jan-26 - Mar 26
Target number of children and young people <b>referred into the project</b>	Quarterly	53	85	132	132	150	150	50	-
	Cumulative	53	138	270	402	552	702	752	752
Estimated number of children and young people whose referrals <b>do not result in them being recruited to the project and evaluation</b>	Quarterly	-8	-11	-15	-15	-15	-15	-5	-
	Cumulative	-8	-19	-34	-49	-64	-79	-84	-84
Target number of children and young people <b>recruited to the project and evaluation</b>	Quarterly	45	74	117	117	135	135	45	-
	Cumulative	45	119	236	353	488	623	668	668
Estimated number of children and young people who <b>withdraw/drop out</b> before completing the full 5 months of intervention/control group	Quarterly	-5	-8	-12	-12	-15	-15	-5	-
	Cumulative	-5	-13	-25	-37	-52	-67	-72	-72
Target number of children and young people who <b>complete the full 5 months</b> of intervention/control group	Quarterly	-	8	48	85	105	110	120	120
	Cumulative	-	-	56	141	246	356	476	596

## 4. Outcome measures

### 4.1. Overview

Figure 9 maps the outcomes from Cerridwen's theory of change against the validated measures which will be used to measure them. Both the outcomes and measures have been discussed, prioritised and agreed through discussions between Cordis Bright, MAC and YEF.

Questionnaires will include the YEF core measures:

- **Self-Reported Delinquency Scale (SRDS)** The SRDS contains 19-items covering a range of both antisocial and offending behaviours and has been validated for use with young people in the UK, and has been used with those aged between 10 and 17. In line with YEF feedback, the volume score measure will be the primary outcome measure for the evaluation.
- **Strengths and Difficulties Questionnaire (SDQ)**. This is a brief behavioural screening questionnaire for 3–16-year-olds. It contains 25 items on psychological attributes, some positive and others negative.

The SDQ has been shown to have good internal consistency (Cronbach's alpha = .73), cross-informant correlation (mean=0.34), and retest stability after 4 to 6 months (mean: 0.62) (Goodman, 2001). The SRDS has been shown to have good psychometric properties; reported internal consistency is between .87-.92 with an inter-item correlation of .19 (Fonagy et al., 2018; Humayun et al., 2017) and the measure correlates with official police arrests (89.5% - 95.2%; McAra & McVie, 2005).

More information on the subscales, psychometric properties and validity of these core measures is available in the YEF outcomes measures database (Youth Endowment Fund, 2022b) and in the YEF core measurement guidance (Youth Endowment Fund, 2021a and 2022a).

Questionnaires will also include the following key validated scales:

- **Basic Empathy Scale (BES)** (Jolliffe and Farrington, 2021, and Jolliffe and Farrington, 2006). This measure has been chosen because in Cerridwen's Theory of Change (see section 2.2), increasing young people's empathy is viewed as the central mechanism through which a reduction in violence and offending may be achieved. The BES is a self-report measure with two subscales of affective and cognitive empathy. The BES has convergent and divergent validity, and the Cronbach's alpha coefficients for the affective and cognitive empathy subscales is .79 and .85, respectively. More

information on this scale, including psychometric properties and validity) is available in Jolliffe and Farrington (2006 and 2021).

- **Social Support and Rejection Scale (SSRS)** (Roffman et al., 2000) to measure the quality of the relationship with a mentor for those in the treatment group or a significant adult for those in the control group at five months. This measure was selected because the relationship with a mentor was hypothesised to be a key mechanism of change of the Cerridwen project (see the Cerridwen Theory of Change in section 2.2). The length and the quality of the relationship that develops between young people and their mentors is considered the central avenue through which mentoring can benefit (or, in some instances inadvertently, harm) young people (Karcher & Nakkula, 2010). The SSRS was selected following a review of scales measuring Mentorship Relationship Quality conducted by Cordis Bright. The SSRS has internal reliability for each of the 4 subscales across ratings of adults from clubs, school, and extended family (Cronbach’s alpha = .67-.76 for negativity, .74-.81 for mentoring, .74-.78 for trust, and .81-.88 for feels valued (Roffman et al., 2000)). More information about the SSRS (including its subscales and validity) is available in the National Mentoring Resource Center’s ‘Measurement Guidance Toolkit’.

Figure 9: Outcomes measures

Outcome from the theory of change	Measure	Subscale(s)	Number of items	Collection point(s)
Primary outcomes measure				
Self-reported offending	Self-reported Delinquency Scale	Volume Score Subscale	19	Baseline, 5 months post randomisation
Secondary outcomes measures				
Quality of relationship between young person and mentor (treatment group) or young person and significant	Social Support and Rejection Scale	Full measure	22	5 months post randomisation

Outcome from the theory of change	Measure	Subscale(s)	Number of items	Collection point(s)
adult (control group)				
Empathy	Basic Empathy Scale	Full measure	20	Baseline, 5 months post randomisation
Pro-social values and behaviours	Strengths and Difficulties Questionnaire	Pro-social behaviour subscale	5	Baseline, 5 months post randomisation
Behavioural difficulties	Strengths and Difficulties Questionnaire	Conduct problems subscale	5	Baseline, 5 months post randomisation

Outcomes will be measured at the individual level through the administration of online self-reported validated measures. Self-report data will be collected with support from Cerridwen and MAC case managers in community settings where the project is delivered. Measures will be obtained at:

- **Baseline (T1)**, i.e., once informed consent has been achieved from parents/carers, prior to randomisation and before support from Cerridwen begins for those in the treatment group and before young people enter the control group pathway.
- **Five months (T2)**, for both the treatment (on exit from the programme) and control groups.

More information about how these measures will be administered is available in section 3.6.3.

In addition to the self-report measures described above, we also plan to work with MAC during the mobilisation phase to explore whether police data can be obtained and linked to those in the treatment and control groups. If the evaluation is able to obtain this data, it will be used to conduct exploratory analysis. This will explore whether Cerridwen has an impact on the contacts young people have with the Police in comparison to the control group. The analysis will be exploratory in nature as it is likely the sample size calculated on the basis of using the SRDS volume score as the primary outcome measure in relation to reduced

offending will be under-powered to detect statistically significant differences between the treatment and control groups.

Based on initial scoping during the set-up and mobilisation phase, MAC are confident that access to police data will be possible. MAC have contacted representatives at South Wales Police and the Wales Violence Prevention Unit who have suggested that it would be possible to facilitate access to relevant data at two points in time; an initial data request as part of the pilot phase which would give us the opportunity to test the quality and format of the data received, and again at the end of the efficacy phase to receive all relevant data to feed into final analysis. Cordis Bright and MAC will continue to explore this and will report on progress in accessing police data as part of the internal pilot.

#### **4.2. Primary outcome**

The primary outcome for the evaluation of Cerridwen is a reduction in offending between baseline (before young people start Cerridwen) and five months (when young people finish Cerridwen, before they begin the process of safely exiting the programme). This will be measured by the SRDS volume score. The primary outcome timepoint is T2, i.e., five months after randomisation or at the end of support from Cerridwen. We will explore the impact of Cerridwen in comparison to the control group on the SRDS volume score.

#### **4.3. Secondary outcomes**

The secondary outcomes that we are investigating are whether young people receiving Cerridwen have:

- A positive relationship with their Cerridwen case manager.
- Improved empathy.
- Improved pro-social values.
- Improved behaviours.
- Reduced behavioural difficulties.

See Figure 9 for more information about these and how they will be measured. For all measures the secondary outcome timepoint is T2, i.e., approximately five months post randomisation. These measures were selected in agreement between MAC, YEF and Cordis Bright.

#### 4.4. Compliance

Compliance for the purposes of the efficacy study will be met when young people have been randomised and allocated into the treatment or control group. Any further compliance analysis relating to fidelity to the programme (e.g., quantity of dose) will be exploratory in nature. This is because:

- **We will take an “intention to treat” approach to analysis.** This is in line with YEF statistical analysis guidance (Youth Endowment Fund, 2021b) and means that all those allocated to treatment and control conditions in the randomisation will be included. The study in its current form is not likely statistically powered to be able to demonstrate impact in relation to compliance measures, i.e., as this will be based on subgroup analysis which would likely require a greater sample.
- **Evidence has yet to be collected about what optimum dosage (measured by quantity) is required in order for the programme to have an impact on young people.** We plan to conduct exploratory analysis concerning compliance as part of the evaluation.

Our approach to exploratory analysis will be set out in the Statistical Analysis Plan for the study. As part of developing the Statistical Analysis Plan, we will also explore the potential for using sensitivity testing should the data be sufficiently powered to understand more about compliance in the context of the trial.

#### 4.5. Quantitative analysis

This section outlines our high-level approach to:

- Primary outcome analysis.
- Secondary outcomes analysis.
- Subgroup analysis.

#### 4.6. Primary outcomes analysis

Our analyses will be conducted in line with the YEF Analysis Guidance. First, all analyses will be conducted on an intention to treat basis, which means the data of all those who commence Cerridwen will be included regardless of the ‘dose’ received.

The primary analysis will be an analysis of covariance (ANCOVA), controlling for Cerridwen versus the control group on the SRDS volume score measure at baseline (see Youth Endowment Fund, 2021a). The outputs from this analysis will be used to calculate the effect estimate (Hedges’ G) for the impact of Cerridwen on young people’s self-reported offending.

After the completion of this analysis, we will conduct a robustness check particularly related to the demographic characteristics of Cerridwen compared to the control group. That is, if these are unbalanced, a model controlling for this may be employed.

If the analysis would be sufficiently powered, the impact of support from Cerridwen on the other secondary outcomes (e.g., BES, SDQ subscales and SSRS scale presented in Figure 9) could provide an interesting explanation for any differences observed between the treatment and control groups in terms of involvement in offending.

Further detail around primary outcomes analysis will be included in the evaluation's Statistical Analysis Plan, the first draft of which will be developed and agreed in collaboration with MAC and YEF colleagues by August 2024.

#### **4.7. Secondary outcomes analysis**

There are four secondary outcomes measures of interest in this RCT. These are:

- Quality of relationship between young person and Cerridwen caseworker (treatment group) or young person and significant adult (control group), measured by the SSRS at T2.
- Empathy, measured by the BES at baseline and T2.
- Pro-social values and behaviours measured by the Strengths and Difficulties Questionnaire pro-social behaviour subscale (SDQ) at baseline and T2.
- Behavioural difficulties, measured by the Strength and Difficulties Questionnaire conduct problems subscale (SDQ) at baseline and T2.

We propose mirroring the analytic approach used for the primary outcome (e.g., ANCOVA) to predict the post-measure scores (e.g., SDQ subscale final scores, BES and SSRS final scores) for these secondary outcome measures, based on whether the individual was in the Cerridwen (treatment) or control group. We will calculate Hedges' G and the corresponding confidence intervals for these analyses. We will outline more about our approach to analysis in the Statistical Analysis Plan.

Empathy, pro-social values and behaviours and behavioural difficulties will be measured at baseline and T2. Quality of relationship between young person and Cerridwen case manager measured by the Social Support and Rejection Scale will only be measured once, on exit from support after five months. This is because baseline measures will be taken during the first meeting between young people and case managers, when no relationship will have yet developed. Comparison of this measure between the intervention and control group will enable interrogation of the ability of the intervention to support the



development of positive relationships between young people and case managers, and the potential impact of this relationship on other observed outcomes when compared to the control group.

#### 4.8. Exploratory analysis

We propose conducting exploratory data analysis on the following questions if sufficiently powered:

- **Model compliance.** This will utilise monitoring data collected by Cerridwen. We will explore questions concerning what level of dosage was associated with a desirable outcome on the SRDS. For example, does attending 75% of Cerridwen's sessions result in a similar impact as attending all sessions?
- **Police data.** We will explore how useful police contact data is for use in RCTs like this. That is, if we can secure robust, reliable and valid data for all young people in Cerridwen and the control group from this source. If these data can be obtained, we may be able to evaluate the impact of Cerridwen on official data concerning police contacts and triangulate the findings with regards to the SRDS.
- **Race equity, equality, diversity and inclusion.** If there are sufficient participants from ethnic minority and White British backgrounds, we propose conducting an ANCOVA to evaluate whether Cerridwen worked equally well with individuals from different ethnic backgrounds.

#### 4.9. Data quality monitoring and support

We will train Cerridwen staff and provide an evaluation handbook that includes guidance to support Cerridwen practitioners with data collection. This includes an evaluation email inbox so that all Cerridwen practitioners can easily contact the evaluation team with questions which can be responded to quickly.

We will conduct a data quality audit for data that has been collected for the first 20 young people in the evaluation. We will monitor how tools have been completed and amend administration techniques based on feedback from practitioners and young people to ensure that the data collected is high-quality and complete.

As part of the internal pilot, we will assess data completeness, reliability and validity including Cronbach's Alpha and correlation analysis to confirm if the scales are performing as we would theoretically expect them to. We will conduct regular internal data audits throughout the course of the evaluation.

## 5. Implementation and process evaluation

### 5.1. Overview

This section presents information about the implementation and process evaluation (IPE). We intend to deliver a mixed-methods IPE alongside the internal pilot and the efficacy study.

The rest of this section covers:

- Research questions.
- Research methods.
- Approach to analysis.

### 5.2. Research questions

The IPE has been designed in line with YEF guidance on feasibility studies and IPEs, and Education Endowment Foundation (EEF) guidance on IPEs.

The primary objectives of the IPE are to:

- Understand the association between aspects of the Cerridwen programme's implementation and successful outcomes.
- Gather data to support guidelines for successful implementation of the Cerridwen programme in future.

As such, key research questions are as follows:

1. **Dimensions of implementation:** How effectively has the Cerridwen programme been implemented?
  - a. *Fidelity:* To what extent has support been delivered in line with the Cerridwen programme's theory of change and protocols?
  - b. *Dosage:* How much of the Cerridwen programme has been delivered? How much of the Cerridwen programme needs to be delivered to have an impact?
  - c. *Quality:* How well have the different components of the Cerridwen programme been delivered?
  - d. *Reach:* How well has the Cerridwen programme reached its intended cohort?
  - e. *Responsiveness:* To what extent have young people engaged with the Cerridwen programme?
  - f. *Intervention differentiation:* How is the Cerridwen programme different from existing practices?



Figure 10: IPE methods overview

Research methods	Data collection methods	Participants/ data sources (type, number)	Data analysis methods	Research questions addressed	Implementation/ logic model relevance
<b>Data analysis</b>	Activity and dosage data collected by Cerridwen project co-ordinators	All young people who have received Cerridwen (n=298) and those in the control group (n=298).	Simple descriptive statistics (e.g., univariate statistics, frequencies, means, percentages etc) and comparisons (e.g. measures of association and effect sizes, statistical significance).	RQ1. How effectively has the Cerridwen programme been implemented?	Dimensions of implementation.  Beginning this analysis in the pilot phase will surface any problems that need rectifying for the efficacy phase.
<b>Semi-structured interviews</b>	Interviews with young people	36 young people in the intervention group (12 from each area). This will involve a range of ages, compliance,	Thematic analysis	RQ1. How effectively has the Cerridwen programme been implemented?	Dimensions of implementation; factors affecting implementation; experiences of support; and

Research methods	Data collection methods	Participants/ data sources (type, number)	Data analysis methods	Research questions addressed	Implementation/ logic model relevance
		year groups and ethnicities. 18 will be interviewed in the internal pilot phase and 18 later on in the Efficacy study.		<p>RQ2. Which factors have acted as enablers or barriers to implementation of the Cerridwen programme?</p> <p>RQ3. What are young people's experiences of support?</p> <p>RQ4. What are the implications for future replication, scale and spread?</p>	<p>guidelines for future implementation.</p> <p>Beginning these interviews in the pilot phase will surface any problems that need rectifying for the efficacy phase.</p>
<b>Semi-structured interviews</b>	Interviews with Cerridwen project staff	10-20 programme staff. 5-10 will be interviewed in the internal pilot phase and 5-10 later on in the Efficacy study.	Thematic analysis	<p>RQ1. How effectively has the Cerridwen programme been implemented?</p> <p>RQ2. Which factors have acted as</p>	Dimensions of implementation; factors affecting implementation; experiences of support; and

Research methods	Data collection methods	Participants/ data sources (type, number)	Data analysis methods	Research questions addressed	Implementation/ logic model relevance
				<p>enablers or barriers to implementation of the Cerridwen programme?</p> <p>RQ3. What are young people's experiences of support?</p> <p>RQ4. What are the implications for future replication, scale and spread?</p>	<p>guidelines for future implementation.</p> <p>Beginning these interviews in the pilot phase will surface any problems that need rectifying for the efficacy phase.</p>
<b>Semi-structured interviews</b>	Interviews with wider stakeholders	48 key wider stakeholders. 24 will be interviewed in the internal pilot phase and 24 will be interviewed later on in the Efficacy study.	Thematic analysis	<p>RQ1. How effectively has the Cerridwen programme been implemented?</p> <p>RQ2. Which factors have acted as enablers or barriers to implementation of</p>	Dimensions of implementation; factors affecting implementation; experiences of support; and guidelines for future implementation

Research methods	Data collection methods	Participants/ data sources (type, number)	Data analysis methods	Research questions addressed	Implementation/ logic model relevance
				<p>the Cerridwen programme?</p> <p>RQ3. What are young people's experiences of support?</p> <p>RQ4. What are the implications for future replication, scale and spread?</p>	<p>Beginning these interviews in the pilot phase will surface any problems that need rectifying for the efficacy phase.</p>

### **5.3.1. Interviews with young people**

We will conduct in-depth, semi-structured interviews with 36 young people receiving support from Cerridwen (i.e., those from the treatment group). 18 of these young people will be interviewed in the internal pilot stage, and 18 will be interviewed towards the end of the efficacy evaluation. These interviews will be used to help understand experiences of Cerridwen, including its fidelity to the Theory of Change.

We will work with Cerridwen practitioners to identify young people who are interested and provide informed consent to take part in an interview. We will work with Cerridwen practitioners to identify a sample that is as representative as possible of the groups of young people they are working with in terms of gender, age, ethnicity, etc. Cordis Bright will liaise with Cerridwen practitioners to organise a suitable time, place and method for a member of the Cordis Bright team to talk to the young people. They will also provide young people with a meal to thank them for their time. If a young person requires the interview to be conducted in a language other than English, we will work with MAC colleagues to provide an appropriate interpreter service to ensure that this is not a barrier to participation.

Interviews will be conducted by a member of the Cordis Bright research team who is experienced in conducting sensitive research and interviews. We will work with MAC colleagues in the set-up phase to decide whether telephone interviews or face-to-face interviews would be most appropriate, and trial whatever approach is chosen in the internal pilot. To minimise bias, the interviewer will be external (i.e., from Cordis Bright rather than MAC) and where possible interviews will take place in a different room to the young person's mentor (although they will have the option to have their mentor present if they wish).

Topic guides for all interviews will be designed by Cordis Bright and will explore the key implementation and process evaluation research questions identified in Figure 10. We will discuss and refine the guides with MAC and YEF colleagues before use in the field. We will draw upon MAC staff's knowledge of the young people they are working with to ensure that interview guides for young people are as accessible as possible and can be easily understood by young people, including those with SEND and/or literacy support needs. We will also use Cordis Bright's internal Equality Diversity and Inclusion Toolkit<sup>4</sup> to ensure that all topic guides are designed with racial and cultural sensitivity and are accessible to all participants.

If any safeguarding issues arise in these interviews the interviewer will discuss them with the Cerridwen project co-ordinator. They will follow the MAC and Cordis Bright safeguarding policies as appropriate.

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<sup>4</sup> Available here: <https://www.cordisbright.co.uk/news/equality-diversity-and-inclusion-in-projects>



### **5.3.2. Interviews with Cerridwen and wider stakeholders**

We will also conduct in-depth, semi-structured interviews with a total of 10-20 Cerridwen staff (5-10 in the pilot study and 5-10 in the efficacy study), and with 48 key wider stakeholders (24 in the pilot study and 24 in the efficacy study). We will agree a sample with MAC colleagues based on stakeholders' level of involvement with Cerridwen. Once nominated for interview, the research team will contact the stakeholders giving them more information about the purpose of the research and interview and what it will involve. They will ask for their consent to be involved in the interview and then organise a time to speak with them.

These interviews will be conducted virtually, either by video call or telephone, and will take around 45 minutes to one hour. We will design and agree topic guides for the semi-structured conversations in collaboration with colleagues from MAC and YEF. These conversations will explore views and perspectives of how successfully Cerridwen has been implemented, including dimensions of implementation, factors affecting implementation, experiences of support and guidelines for further implementation. These will inform our understanding of implementation and support future replication, scale and spread of both the evaluation and intervention.

We will ask at the start of interviews if staff and stakeholders consent to the interview being recorded. If they do, we will store the recording for six months after we have delivered the final report. If they do not consent, or if the interview is taking place via telephone, we will not record the interview and will take contemporaneous notes. We will also take contemporaneous notes if the interview is being recorded. These notes will be stored on our secure server and only accessible to research team members, i.e. they will be password protected. We will delete the notes six months after we have delivered the final report.

#### **1.1.1. Activity data analysis**

Data collected through the above methods will be triangulated against activity and dosage data collected as part of the impact evaluation. Analysis of this data (including number of sessions, modules received, types of topics covered) will be used to assess the dimensions of implementation, including fidelity, dosage, and reach. This data will be collected for both the treatment and the control group.

## **5.4. Analysis**

The qualitative evidence captured through the IPE study will be recorded in a matrix, which maps responses against the research questions in section 5.2. We will deploy a mixture of a priori codes and open coding to categorise and identify recurring themes. This is an iterative process, using initial data collected to establish themes, and using these themes to continue

to code further data. This allows for constant comparison of the themes and ensures that any theories or judgements are closely linked to the data they developed from. This mirrors a thematic qualitative analysis approach.

The quantitative evidence will be analysed in SPSS using descriptive statistics and bivariate analysis, i.e., frequencies, percentages and cross-tabulations.

Evaluation reports are strongest when a range of evidence is used to answer each evaluation question. To ensure that data is not presented in 'silos', we will take a rigorous approach to triangulating both qualitative and quantitative data. We will map both quantitative and qualitative data against the research questions to assess how effectively the Cerridwen programme has been implemented and the extent to which experiences of support have differed across groups. Taken together, this information will inform decisions around future scale, replication and spread, and whether progression to an efficacy study will be practical and useful.

## 6. Cost data reporting and collecting

### 6.1. Principles

Our approach to cost data collection, analysis and reporting will be informed by YEF guidance on Cost Reporting (available [here](#)).

Our approach will be rooted in the following YEF cost reporting principles:

- Estimates are the costs of delivery only.
- Cost estimates will be derived using a 'bottom-up' approach.
- Cost estimates will be informed by the perspectives of all organisations involved in delivering the intervention.
- Estimates will capture the nature of the resource used, the quantity and monetary value in delivering the intervention.

### 6.2. Capturing cost data

We intend to work with MAC to report on the pre-requisite, set up and recurring costs of Cerridwen in the pilot trial and the efficacy study. We will explore appropriate approaches for obtaining this information as part of the pilot study evaluation and project mobilisation and set-up phase.

This will include consulting with staff and stakeholders to inform and develop our understanding of:

- Where costs may be incurred in the successful implementation and delivery of Cerridwen.
- The resources required to implement and deliver Cerridwen and how these costs can be monetised using 'bottom-up' principles.
- The most effective approach to capturing information about estimating costs, i.e., through a survey of key partners, time budget approaches, and/or interviews.

In line with YEF guidance, Figure 11 presents the information from the budget which we will use to report against each category:

Figure 11: List of items to be recorded in cost estimates

Category	Information to be used for analysis (upfront, recurring, total costs)
Staff	Cerridwen staff budgets, e.g., for case managers, mentors and managers. Training costs. Administration and preparation costs (may be costed as zero if delivered as part of base salary).
Programme	Cost of providing Cerridwen handbook (i.e., printing costs if hard copies provided). Travel to appropriate settings for young people.
Building and facilities	Costs of buildings and facilities needed to deliver Cerridwen.
Materials and equipment	Laptops/tablet computers to complete outcomes tools and view handbook. Cost of printing referral forms/screening forms/and handbook materials. Equipment used to record monitoring data.
Incentives	Costs of incentives provided by MAC (e.g. cost of meals).

The approach to developing cost reporting during the evaluation of Cerridwen will be developed collaboratively with MAC. More about our strategy to developing our approach to cost reporting during the pilot to inform the efficacy evaluation is outlined in the section below.

### 6.3. Reporting results

We will take the following approaches to reporting cost information, in line with YEF guidance:

- All costs relating to both evaluation and programme development and adaptation will be excluded from cost estimates.
- All costs will be adjusted to constant prices using GDP deflators, using 2024 (the year in which delivery is starting) as the base year. This will account for any data around cost being collected at different points across the study period. We will not discount cost estimates based on time preferences.

- Any costs relating to durable inputs will be pro-rated in line with the proportion of project participants who have benefitted. However, we do not anticipate that there will be durable inputs with benefits to those outside the project.
- All cost estimates will be generated assuming full compliance (i.e., that all participants received the full Cerridwen dosage, i.e., five months of one-to-one case work including two blocks of eight weeks of weekly one-to-one sessions each lasting two to three hours).
- Each estimate will be disaggregated into pre-requisite, set up and recurring costs.

Total costs will be presented for one year of delivery of Cerridwen, for example from April 2024 – April 2025. Total costs and average costs per participant will then be presented for set up, recurring and total costs, using the mandatory tables in YEF guidance, i.e., all assumptions and estimates will be set out in full.

## 7. Diversity, equity and inclusion

We work hard to ensure our approach considers and promotes diversity and inclusion. As such, we are committed to delivering the evaluation in line with race equity, diversity, equality and inclusion principles. Government statistics indicate that minority ethnic groups are over-represented throughout the criminal justice system; for instance, in 2020 a higher proportion of prosecutions against children were for Black (12%) and Mixed ethnic (14%) groups than for White (5%) defendants (Ministry of Justice, 2021). This is key for this study because the Cerridwen programme aims to address risk factors and strengthen preventative factors associated with offending behaviour with the aim of reducing the likelihood of young people's (including those from minority ethnic backgrounds) involvement with the criminal justice system.

All of Cordis Bright's evaluation work is delivered in line with our EDI strategy (available [here](#)) and EDI project toolkit (available [here](#)). This sets out our commitment, principles and approaches to ensure that our work is accessible to all. We commit to:

- (1) Providing equal opportunities in all aspects of employment and ensuring that we do not discriminate in recruitment or employment on the basis of a protected characteristic or any other characteristics or identities.
- (2) Opposing discrimination in all its forms, be it at a structural or institutional level or an inter-personal level. This includes direct discrimination, indirect discrimination, discrimination by association, discrimination by perception, victimisation, harassment and bullying.
- (3) Seeking to build our understanding of the barriers created by discrimination and inequality and ensure fair, equal and inclusive treatment for our staff, clients and the people whom our work aims to support.

In line with these commitments, to ensure diversity, equity and inclusion in this pilot trial and efficacy study we will:

- Provide clear accessible information so that young people from all communities can participate and delivery staff from all communities understand their involvement in evaluation activities.
- Use informed consent processes and materials that adhere to good practice guidelines, including YEF's and the Government Social Research Unit's, to ensure they are accessible, inclusive and culturally sensitive.
- Ensure all research methods and tools are accessible for all participants. As part of this, we will pilot tools to check for bias and accessibility.

- Monitor key demographic and socioeconomic information of all participants in the treatment and control groups. This will enable us to analyse any differences in referrals, recruitment, retention, and safe exit across different groups, and to assess whether they are representative of similar cohorts in the youth justice system and wider society.
- Deploy staff who have completed cultural competency training as well as undertaken projects on equality and inclusion including over-representation of children from minoritised ethnic groups in the youth justice system.
- Where the data enables sufficient statistical power, conduct exploratory subgroup analysis of differences in outcomes achieved by different demographic and socioeconomic groups, including by race/ethnicity.
- Use the IPE to explore how experiences of support have differed across different subgroups, e.g. those from racially minoritised/marginalised backgrounds, low-income household, or with SEND.
- Work with MAC to provide support to enable young people with SEND or literacy support needs to participate in the evaluation as required. This may include supporting tool use for young people with SEND or low literacy levels.
- Work with MAC to provide support to enable Welsh speakers and people for whom English is an additional language to participate in the evaluation as required (about 10% of young people MAC currently supports speak Welsh). This may include document and research tool translation (including outcomes measures scales) into community languages and/or simultaneous translation services (this could include the use of translators).
- Work with Cerridwen to ensure that where possible, young people from a range of minoritized and marginalised backgrounds who have worked with the programme are sampled as part of our approach to qualitative interviews through the IPE, and that they are explicitly asked about their views and experiences of the intervention in terms of race equity.

All members of our evaluation team are experienced at working with minoritized and marginalised communities at risk of or involved in youth crime and violence. As part of our commitment to continuous improvement we will discuss and reflect with MAC and YEF colleagues on the most effective ways to conduct research and evaluation in as equitable, inclusive and accessible a way as possible.

Cerridwen case managers will be supported to work with young people from a range of ethnic backgrounds and with a range of different life experiences. To ensure Cerridwen considers and promotes diversity and inclusion, the following will be in place:

- Information such as awareness raising literature as well as Cerridwen resources will be provided in accessible formats (including access to interpretation services).
- Communications and awareness raising with a range of community groups and networks.
- All staff will receive cultural competency training.
- Assessments will be person centred and include understanding young people's individual needs and strengths.
- Intervention plans will be coproduced with young people ensuring that their individual needs and requirements are considered and accommodated.
- Sessions will take place in safe and inclusive spaces and be mutually agreed with young people.
- Staff recruitment processes and strategy will be inclusive and celebrate diversity. MAC's commitment to inclusivity and diversity will be proactively highlighted during advertisement and recruitment campaigns.
- MAC's Managing Diversity Policy will be reviewed at least annually.
- All Cerridwen Case Managers will have regular supervision with a suitably trained supervisor. Supervisions includes reflective practice which provides a space to collaboratively reflect on practice and identify and address any barriers to engagement and inclusivity.



## **8. Ethics and registration**

Ethical approval has been obtained from the Royal Holloway University of London Research Ethics Committee. This involved submitting a detailed ethics application (alongside research tools and consent tools) which had been subject to review and scrutiny from YEF and MAC colleagues [REC Project ID: 4052].

There has been no delivery of the project or evaluation prior to ethical approval being obtained and confirmation of this provided to YEF.

The trial has been registered on the International Standard Randomised Controlled Trial Number (ISRCTN) website (ISRCTN 11258735).

## 9. Data protection

For this study, we (Cordis Bright, the evaluator) are the data controller of personal data throughout, as well as the processor of data, as specified in YEF data guidance (available [here](#)). We will deliver the evaluation in line with our Data Protection and Information Governance Policy, which sets out our approach to storing and handling personal data (available [here](#)). Cordis Bright is also registered under the Data Protection Act, has Cyber Essentials Plus accreditation, and is registered under the NHS Data Security and Protection Toolkit.

We will conduct a Data Protection Impact Assessment and agree and sign a Data Sharing Agreement with MAC before accessing activity and monitoring data.

For this evaluation, we have:

- A clear legal basis for sharing data with us, e.g., public interest/public task/informed consent.
- A robust process to transfer data, i.e., MAC will transfer data by secure methods such as secure email (CJMS) or using Switch Egress.
- Secure storage of data, i.e., data will be saved on our secure, cloud-based Microsoft 365 servers. Personal or sensitive data will have additional encryption with access only to designated/authorised members of our team. Participants will be informed that all information about them will be stored in this way. All personal data will be separated from questionnaire data and stored separately.
- Anonymisation and pseudo-anonymisation where possible including separating personal data from questionnaire data and separate storage. All participants will be assigned a unique ID number and pseudonyms will be used for interview notes. Published reports will not identify the research participant at any time.

Participants will be informed, through the privacy notice, of their data protection rights. Young people will have consented to having their data shared with the evaluator. Once the final evaluation report has been signed off with YEF archive we will anonymise all data and hold it on the Cordis Bright server until six years after the final report has been submitted to the YEF. We will securely delete the names and other personal data out of the datasets we hold after we give the data to YEF for data archiving in line with the YEF guidance (Youth Endowment Fund, 2022c).

## 10. Stakeholders and interests

This section provides information about the Cerridwen project delivery team and the evaluation team from Cordis Bright. There are no conflicting interests which we are aware of that may be perceived to influence the design, conduct, analysis or reporting of the trial.

The approach to the evaluation is being led by Cordis Bright and takes a collaborative approach with input from MAC and YEF. Details of key Cerridwen delivery and Cordis Bright evaluation team members are presented below.

### Cerridwen delivery team

- **Nick Corrigan (Chief Executive Officer of MAC)** has overall responsibility for all MAC activities and is the Designated Safeguarding Lead for MAC. He is also the Designated Data Protection Lead and is registered as such with the Information Commissioner's Office. Nick will provide overall strategic direction and regularly review performance.
- **Sam Heatley (Deputy Chief Executive Officer of MAC)** has responsibility for ensuring that the project is delivered to a high standard via providing strategic direction and overseeing quality assurance processes.
- **Melanie Holdsworth (HR, Facilities and Administration Manager of MAC)** has responsibility for ensuring that resources and budgets allocated to the project are managed effectively.
- **Regional Manager.** 1 FTE Cerridwen Manager has responsibility for the day-to-day delivery of the project and line management of Cerridwen Case Managers & Mentors.
- **Regional Project Assurance Officer.** 1 FTE Regional Cerridwen Project Assurance Officer has responsibility for monitoring compliance against agreed project activities and milestones, as well as performance reporting.
- **Cerridwen Case Managers.** 9 x FTE Cerridwen case managers have responsibility for managing a caseload of young people and delivering the Cerridwen intervention.
- **MAC Case managers.** 3 x FTE MAC case managers have responsibility for managing a caseload of young people selected for the control group and conducting regular check in sections.

## Evaluation team

- **Matt Irani, Principal Investigator, Project Director**, has responsibility for ensuring the evaluation is delivered to a high standard and specification.
- **Dr Stephen Boxford, Co-Principal Investigator, Quality Assurance**, has responsibility for providing quality assurance throughout the project.
- **Professor Darrick Jolliffe, Royal Holloway, University of London, Co-Principal Investigator**. Responsibilities include evaluation design, shaping approaches, designing tools, and conducting analysis and quality assuring evaluation outputs.
- **Suzie Clements, Co-Principal Investigator and Project Manager**. Suzie oversees day-to-day project delivery and is the main point of contact for YEF and the project delivery team.
- **Kam Kaur, Head of Safeguarding and Co-Principal Investigator** provides expert input on safeguarding and consultation with young people.
- **Madeleine Morrison and Ashna Devaprasad, Co-Principal Investigators, Researchers**, provide ongoing support to Cerridwen practitioners with administration of the evaluation tools, conducting fieldwork and drafting analysis, analysis of quantitative data and support with report drafting.

## 11. Risks

The following table outlines a number of key risks to the evaluation. We will be using this risk register to support the delivery of the evaluation. It will be reviewed regularly by Cordis Bright and MAC and updated to reflect progress. Please also note that these risk factors will be explored in the pilot trial.

Figure 12: Risks and mitigations

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
Challenges with randomisation/counterfactual approaches	Likelihood: high  Impact: high	<ul style="list-style-type: none"> <li>• Working with MAC to explain the benefits of RCTs to referral partners and Cerridwen staff.</li> <li>• Embedding randomisation into the project approach.</li> <li>• Face-to-face staff training and ongoing support.</li> <li>• A co-developed evaluation handbook for Cerridwen staff.</li> </ul>
Recruitment and attrition from the trial	Likelihood: high  Impact: high	<ul style="list-style-type: none"> <li>• Providing clear and accessible information and consent materials to young people and families.</li> <li>• Embedding recruitment and data collection into everyday practice.</li> <li>• Providing meals as a thank you for young people's time in</li> </ul>

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
		<p>completing outcomes tools/interviews.</p> <ul style="list-style-type: none"> <li>• Reviewing data capture progress regularly.</li> <li>• Regular data monitoring and audits.</li> <li>• Allocating resource to follow-up participants who may have moved-on.</li> <li>• Exploration and application of keep-in-touch techniques used in longitudinal studies, for instance regular contact with participants in the control group.</li> <li>• Staff training to explain the study to young people and support engagement including the evaluation handbook.</li> <li>• Factoring in slower recruitment rates in the first few months of the project to ensure sufficient time is allowed to reach the required sample size.</li> </ul>
Challenges engaging young people from diverse	Likelihood: low	<ul style="list-style-type: none"> <li>• Provide clear accessible information to</li> </ul>

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
backgrounds with the evaluation	Impact: medium	<p>participants that adhere to good practice guidelines, including YEF's and the Government Social Research Unit's, to ensure they are accessible, inclusive and culturally sensitive.</p> <ul style="list-style-type: none"> <li>• Ensure all research methods and tools are accessible for all participants.</li> <li>• Deploy staff who have completed cultural competency training and experience working with young people from minoritised backgrounds in similar projects.</li> <li>• Provide support to enable young people with SEND, literacy support needs or who speak other languages to participate in the evaluation as required. This may include support tool use and/or translation services.</li> <li>• Work with Cerridwen to ensure that, young people from a range of minoritized and</li> </ul>

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
		<p>marginalised backgrounds are sampled in IPE qualitative interviews.</p> <ul style="list-style-type: none"> <li>• Regular data monitoring and audits to ensure young people from a diverse range of backgrounds are being reached.</li> </ul>
<p>The Cerridwen programme changing its delivery approach during the Efficacy Trial</p>	<p>Likelihood: low Impact: high</p>	<ul style="list-style-type: none"> <li>• Working closely with the project to understand challenges.</li> <li>• Flexibility in research design where possible.</li> <li>• Ensuring all stakeholders are aware of the impact changes have on evaluation.</li> </ul>
<p>Data collected not addressing the key evaluation questions</p>	<p>Likelihood: low Impact: high</p>	<ul style="list-style-type: none"> <li>• Co-design approach.</li> <li>• Tools and analysis approach will be tested in the internal pilot to ensure they are fit-for-purpose.</li> <li>• Working closely with MAC to understand changes.</li> <li>• Building in flexibility in research design where possible.</li> </ul>



Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
		<ul style="list-style-type: none"> <li>• Working to ensure changes are reflected in monitoring data collection processes.</li> <li>• Ensuring all stakeholders are aware of the impact changes have on evaluation.</li> </ul>
Safeguarding/public safety	Likelihood: low  Impact: medium	<ul style="list-style-type: none"> <li>• Evaluation team have ongoing safeguarding training.</li> <li>• Kam Kaur, Head of Safeguarding and youth justice provides expert input on safeguarding and consultation with young people.</li> <li>• Take actions as agreed with YEF/project protocols.</li> <li>• Ensure that there is learning across the team about what happened and what steps could be taken in future.</li> <li>• Take these relevant steps going forward.</li> <li>• Introduce additional training if required.</li> <li>• Re-visit methodology if required.</li> </ul>

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
		<ul style="list-style-type: none"> <li>• Agree an appropriate communications strategy.</li> </ul>
Data breach	Likelihood: low  Impact: medium	<ul style="list-style-type: none"> <li>• Drafting a Data Protection Impact Assessment and Data Sharing agreement to securely access data.</li> <li>• Following data protections processes outlined in chapter 9.</li> <li>• Take actions as agreed with YEF/project protocols.</li> <li>• Ensure that there is learning across the team about what happened and what steps could be taken to avoid in future.</li> <li>• Take these relevant steps going forward.</li> <li>• Introduce additional training if required.</li> </ul>
Illness to attrition in the evaluation team	Likelihood: medium  Impact: medium	<p>The evaluation team includes multiple team members to avoid reliance on an individual. Contingency plan is:</p> <ul style="list-style-type: none"> <li>• Re-deploy other members of the team to undertake tasks.</li> </ul>

Risk	Likelihood (low/medium/high)  Impact (low/medium/high)	Mitigation
		<ul style="list-style-type: none"> <li>• If absence is longstanding, draw on wider team members/network of associates and agree with client before doing so (details available on the Cordis Bright website).</li> <li>• As a last resort, consider extending timescales.</li> </ul>

## 12. Timeline

Dates	Activity	Staff responsible/leading
October 2023	Set up and mobilisation period begins	Cordis Bright and MAC
October 2023	Data Protection Impact Assessment and Information Sharing Agreement discussions begin  Draft outcomes measure tools	Cordis Bright
November 2023	Scoping consultation with key stakeholders  Randomisation approach agreed and finalised	Cordis Bright and MAC
December 2023	Ethics application submitted to the Royal Holloway ethics committee  Revise and agree outcomes measures  Research tools agreed and finalised  Refine Trial Protocol	Cordis Bright
January 2024	MAC approach to recording monitoring data agreed and finalised  Scripts and guidance developed for Cerridwen practitioners	Cordis Bright
February 2024	Data Protection Impact Assessment and Information Sharing Agreement agreed and put in place  Incorporate YEF feedback and deliver final revised study protocol	Cordis Bright
March 2024	Cerridwen practitioners receive training and support in rolling out research tools  Ethics clearance achieved from the Royal Holloway Ethics committee  MAC will begin accepting referrals (these will not become active referrals or considered at MAC allocation meetings until 1 April)	Cordis Bright

Dates	Activity	Staff responsible/ leading
April 2024	Pilot phase launch Delivery of Cerridwen begins Baseline data collection begins Pilot tools with first 20 young people and conduct data quality audit	MAC with support from Cordis Bright
September 2024– November 2024	IPE interviews with young people, stakeholders, and project staff Start drafting Statistical Analysis Plan to be delivered by October 2024	Cordis Bright and MAC
November 2024	Pilot Trial data completed	MAC
December 2024 - February 2025	Pilot analysis and reporting	Cordis Bright
February 2025	First draft of Pilot Trial report submitted	Cordis Bright
February - March 2025	Efficacy protocol and Statistical Analysis Plan updated Consent materials amended if needed Pilot Phase review	Cordis Bright
April 2025 – May 2025	Efficacy protocol and Statistical Analysis Plan amended incorporating YEF Feedback	Cordis Bright and MAC
October 2025	Completion of all baseline data collection Referrals stop	MAC
December 2025 – February 2026	IPE interviews with young people, stakeholders and staff	Cordis Bright
April 2026	Delivery of Cerridwen ends Completion of all exit data	MAC

Dates	Activity	Staff responsible/ leading
April 2026	Disengagement phase ends	MAC
March 2026 – July 2026	Efficacy study analysis and reporting	Cordis Bright
July 2026	Submission of draft final evaluation report	Cordis Bright
June -September 2026	Report reviewed by YEF, peer review, and MAC	YEF and MAC
October-December 2026	Submission of final revised evaluation report incorporating feedback  Prepare and submit data to the YEF data archive	Cordis Bright

## **Appendix 1: Summary of MAC services**

The table below provides a summary of MAC services that it currently delivers in Swansea, Cardiff and Merthyr Tydfil.

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
MAC Education	Post 16+ training delivering accreditations in creative media courses.	16 – 25	No	No	Yes – this is a business-as-usual universal service that does not aim to address youth violence/offending.
Peer Active Collective	Young people led research and social action project.	10 – 25	No	No	Yes – this involves a non-trusted adult approach and the intervention is not aimed at addressing violence
Divert	10-17 Diversion service commissioned by Cardiff Youth Justice System	10 - 17	No	Yes	Yes - this would be considered a business-as-usual service as this is a commissioned service by Cardiff YJS and equivalent support is available in all areas of Wales. This team and equivalent teams in other YJS's would be a key referral route for Cerridwen. Referral sources and support received will be monitored throughout the Cerridwen intervention and evaluation.



MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
Braver Choices	Structured Intervention aimed at young people at risk of or engaging in carrying a knife.	10 - 17	Yes	Yes	No – This is a structured intervention that adopts a trusted adult / case management approach. Therefore, the risk of contamination is high.
Delivering Resilience	Structured Intervention aimed at young people at risk of or victim of child criminal exploitation	10 - 17	Yes	Yes	No – This is a structured intervention that adopts a trusted adult / case management approach. Therefore, the risk of contamination is high.
Parallel Lives (adolescent to parent violence)	4 Tier service aimed young people and parents who are experiencing adolescent to parent violence.	10 – 17	Yes	Yes (for young people accessing Tier 4 – Beyond)	No - where young person has engaged in Tier 4 – Beyond. Tier 4 – Beyond is a structured intervention that adopts a trusted adult / case management approach. Therefore, the risk of contamination is high.

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
					Yes, for Tiers 1-3. In these tiers only the parents receive intervention and support. Therefore, the risk of contamination is low.
Positive Masculinity	1:1 and group work intervention aimed at young boys to address concerns around toxic masculinity and promote positive self-identity.	10 – 17	Yes – although not exclusively	Yes – although not exclusively.	<b>No – where the young person has engaged in 1:1 support via a trusted adult approach</b>  Yes – where the young person has previously only engaged in group workshops
Hospital Navigator	Support provided to young people who access Singleton Hospital as a victim of a serious assault / Knife crime.	10 – 30	Yes	Yes – although not exclusively.	<b>No – where the young person has engaged in 1:1 support via a trusted adult approach</b>  Yes – where the young person has only engaged in initial triage assessment and a referral to another service (e.g. Cerridwen) is appropriate.

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
					Although the Hospital Navigator does provide ongoing 1:1 support assessing and referring young people to specialist intervention, addressing identified need is a key aim of this project. Also, there is another equivalent service provided by another organisation in Cardiff, therefore this project could be considered business as usual.
Creative Media Drop ins and Workshops	Sessions for young people in a variety of creative media subjects including art and music.	10 – 25	No	No	Yes – non trusted adult approach and not intervention aimed at addressing violence

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