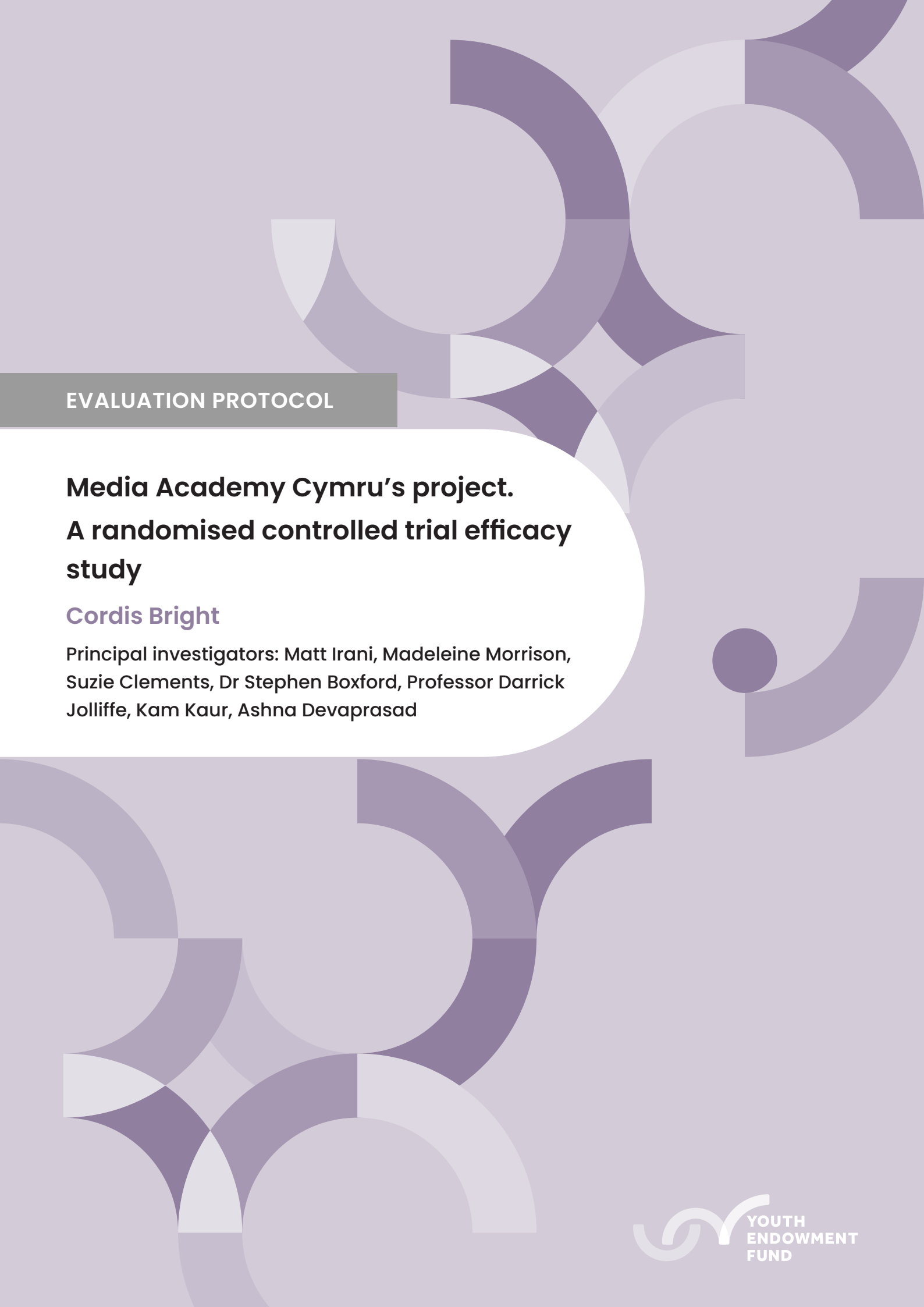




EVALUATION PROTOCOL

Media Academy Cymru's project. A randomised controlled trial efficacy study

Cordis Bright

Principal investigators: Matt Irani, Madeleine Morrison,
Suzie Clements, Dr Stephen Boxford, Professor Darrick
Jolliffe, Kam Kaur, Ashna Devaprasad

Media Academy Cymru's Cerridwen project. A randomised controlled trial efficacy trial.



Evaluation protocol

Evaluating institution: Cordis Bright

Principal investigator(s): Matt Irani, Madeleine Morrison, Suzie Clements, Dr Stephen Boxford, Professor Darrick Jolliffe, Kam Kaur, Ashna Devaprasad

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

Number of participants	592 young people
Primary outcome and data source	Self-reported offending (volume score on the Self-Reported Delinquency Scale) (See, Smith & McVie, 2003)
Secondary outcome and data source	Empathy (Basic Empathy Scale) (Jolliffe and Farrington, 2006) Pro-social values and behaviour (SDQ – pro-social behaviour subscale) (Goodman, 2005) Behavioural difficulties (SDQ – externalising behaviours score (combining conduct problems and hyperactivity/inattention subscales)) (Goodman, 2005)

Protocol version history

Version	Date	Reason for revision
1.2 [latest]		
1.1		
1.0 [original]		<i>[leave blank for the original version]</i>

Any changes to the design or methods need to be discussed with the YEF Evaluation Manager and the developer team prior to any change(s) being finalised. Describe in the table above any agreed changes made to the evaluation design. Please ensure that these changes are also reflected in the SAP (CONSORT 3b, 6b).

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Study rationale and background

Introduction

This is an efficacy study 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 included an internal pilot which identified that the programme was ready to progress to a full efficacy study. The internal pilot study report is available [here](#).

The internal pilot trial began in April 2024 and concluded in December 2024. The trial moved to full efficacy in January 2025, 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.

Local context

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

- There had been an increase in the number of incidents of youth violence over 2021 - 2022 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).

Rationale for the Cerridwen model

The Youth Endowment Fund (YEF) has identified mentoring-based interventions as a promising approach for reducing youth involvement in violence, but robust UK-based evidence remains limited. The YEF [Toolkit](#) estimates that the impact of mentoring and cognitive behavioural therapy on violent crime is likely to be 'Moderate' and 'High' respectively. This evaluation will contribute to the YEF's mission of building a stronger

evidence base for ‘what works’ in violence prevention, particularly in understanding the impact of structured case management combined with mentoring and cognitive behavioural approaches.

Unlike short-term diversion schemes, Cerridwen provides intensive, structured, one-to-one mentoring including elements of case management over six months, ensuring sustained engagement with young people. Cerridwen integrates mentoring and case management through a trusted adult model, where trained youth workers (referred to as case managers) provide weekly one-to-one sessions that combine the relational focus of mentoring with structured, goal-oriented case management (e.g. joint goal setting and progress review). It also uniquely integrates cognitive behavioural approaches, helping participants develop emotional regulation, consequential thinking, and pro-social decision-making skills. Additionally, Cerridwen operates in non-statutory settings, such as young peoples’ homes, making it more accessible to young people who may be resistant to traditional justice system interventions.

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 with services than statutory interventions for this cohort (National Lottery Community Fund, 2018).

Rationale for an efficacy RCT

There is a clear case for conducting an efficacy study (including a RCT and IPE) of Cerridwen, which will both build on promising initial evaluation findings and strengthen the evidence base for reducing youth involvement in violence.

There is limited robust UK-based evidence on what works to reduce offending among children and young people, particularly those aged 10-17 who are at risk of involvement in crime (Ross et al., 2011). However, there is emerging evidence that programmes which include mentoring approaches may support young people to stay out of crime, and further research is needed in this area (Jolliffe and Farrington, 2008). Cerridwen – an intervention combining structured mentoring and case management, rooted in cognitive behavioural approaches, is well placed to contribute to this evidence base.

Two previous evaluations of Cerridwen support the rationale for a full efficacy trial:

1. Preliminary evidence from a qualitative process evaluation of the programme (which has been delivered in Cardiff since 2015) conducted by Swansea University which 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); and
2. The findings of an internal pilot RCT conducted by Cordis Bright which aimed to test recruitment, randomisation, retention, validity and appropriateness of data collection tools, and fidelity to the co-designed Theory of Change, and demonstrated that a full efficacy trial of Cerridwen is feasible (the pilot trial report is available [here](#)).

Learning from the internal pilot supports progression to a full efficacy trial including some refinements:

- Recruitment and retention were broadly successful, with refinements to (a) assumptions about referral rates and (b) the delivery area (expansion to include Caerphilly) being incorporated into the trial progression.
- Consent and randomisation processes were accepted by young people, their families, MAC staff and wider partners.
- Outcomes measures were appropriate and completed to a high standard.
- Delivery fidelity was broadly good, with a refreshed focus on duration of support as the trial progresses to full efficacy.

At a policy level, the Cerridwen trial aligns with national priorities. The trial is funded under the YEF's mission to build evidence on 'what works' in preventing youth violence. At the time of funding, this aim was supported by the UK government's Serious Violence Strategy (HM Government, 2018) and the Youth Justice Board's Strategic Plan (2021–2024), which emphasised diversionary approaches to reduce reoffending and ensure proportionate responses for young people in contact with the criminal justice system. More recently, the UK

government's Turnaround Programme has expanded investment in early intervention services for children at risk of entering the youth justice system, aiming to prevent formal criminal justice involvement. Cerridwen's trauma-informed, relationship-based approach contributes to this broader effort to test alternative models of early intervention.

Racial inequalities in the criminal justice system

The Cerridwen trial also provides an important opportunity to explore whether flexible, relationship-based interventions can help address the persistent racial inequalities observed across the youth justice system.

The Lammy Review (2017) concluded that "BAME¹ individuals still face bias, including overt discrimination, in parts of the justice system". Subsequent research has reinforced this picture. The YEF's Children, Violence and Vulnerability (CVV) report (YEF, 2023) underscores how children from racialised communities are disproportionately represented at key points of the criminal justice pathway. For example, according to 2021 Census figures, Black children aged 10-17 make up 6% of the population but represent 28% of the average monthly youth custody population.

These disparities are not explained by differences in offending but reflect deeper structural inequalities, including differential treatment within the justice system, systemic racism in public services, and barriers to accessing early support. According to JUSTICE (Paul, 2021), data suggests that White children are more likely to be offered diversionary support than children from ethnic minority backgrounds. This indicates a disparity in the accessibility and availability of early intervention, which may prevent more serious offending.

Interventions such as Cerridwen, which offer flexible, one-to-one mentoring, may be particularly well placed to respond to these inequities by tailoring support to individual experiences, building trusted relationships, and strengthening engagement in education and prosocial activities (Gaffney, Jolliffe & White, 2022). Testing Cerridwen with a diverse participant group will provide valuable evidence on whether such approaches can contribute to reducing disproportionality in access to effective support.

¹ The term 'BAME' (Black, Asian, and Minority Ethnic) was commonly used in UK policy and research at the time of the Lammy Review. However, it has since been criticised for grouping diverse communities together in a way that overlooks distinct experiences and disparities. Many organisations now favour more specific terminology.

Intervention

Introduction

The Cerridwen programme (Cerridwen) works with young people aged 10–17 who are at risk of involvement in serious youth violence because they are exhibiting or are at risk of exhibiting violent behaviours. It is a six-month voluntary one-to-one mentoring and case management intervention, rooted in cognitive behavioural approaches, in which young people receive one-to-one mentoring from a case manager. Sessions take place in a safe and suitable location, such as the young person's home or school. Key referral sources include partners in education, NHS and health services and children's services. Cerridwen is delivered across Cardiff, Swansea, Merthyr Tydfil and Caerphilly.

Theory of Change

Cerridwen's Theory of Change 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 shows the Theory of Change.

Figure 1: Cerridwen Theory of Change

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
Cerridwen has been developed to address: 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). 2) A gap in long-term case management services which focus on building trusting positive relationships available to young people in South	Focusing on increasing young people's empathy may help to avoid future offending (Bateman and Cook, 2021). 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)	Young people aged 10-17 who are: 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). Live in Cardiff, Swansea, Merthyr Tydfil or Caerphilly, or surrounding areas.	Six months of community-based one-to-one case work. Young people receive: - 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. - 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,	Young people: - Have an improved understanding of how their behaviour affects others. - Have improved skills in emotional regulation. - Report they have developed a positive relationship with their case manager. - Have improved understanding of and motivation for opportunities available to them (such as employment/ training	Young people: - Have improved empathy. - Have improved self-knowledge and self-regulation. - Demonstrate improved emotional health and wellbeing. - Have improved social and communication skills. - Report they have more healthy relationships with peers, family members, and teachers.	There is a reduction in: - Young people involved in violent and non-violent offending behaviour. - Young people experiencing behavioural difficulties. - School exclusions (fixed term and permanent). - The frequency and severity of arrests of young people.

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
Wales affected by violence (Ipsos).	(Ipsos² and Gaffney, Jolliffe, and White, 2022). There is evidence for the importance of protective social networks in reducing the risk of offending, including trusted-adult relationships (Ipsos and Gaffney, Jolliffe, and White, 2022). Targeted programmes which consider the individual characteristics and needs of young people are more likely to reduce attrition and reoffending rates	Willing to voluntarily engage with and complete Cerridwen (demonstrated through consenting to referral and confirming willingness to engage). Young people will not be eligible if they are in prison (young people who have been released are eligible).	consequential thinking, identity, and reflection. • A one-week review to reflect on progress and plan the next three months of support. • A second eight-week block of weekly one-to-one sessions, each lasting 2-3 hours, focused on transitioning out of the programme. 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.	opportunities, education opportunities, and opportunities in the community). • Report feeling a greater sense of ownership of their goals for the future and improved action-planning skills. • Have increased awareness around the consequences of engaging with criminal activity. • Have increased knowledge of risks and	• Demonstrate increased agency and self-esteem. • Demonstrate increased empowerment and knowledge to make decisions about their lives. • Demonstrate pro-social values and behaviour.	

² This source refers to a document which was shared with Cordis Bright entitled *Media Academy Cymru – Cerridwen. Theory of Change and Participant Journey Map* by Ipsos UK. The document is not dated, but we understand that it was produced as part of preparatory work undertaken by Ipsos UK with MAC colleagues prior to the beginning of the trial design phase.

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
	(Christensen, Hagler and Stams et al., 2020). Cognitive behavioural approaches and mentoring can be effective in reducing reoffending (Adler et al., 2016). Voluntary participation tailored to individual interests, taking a trauma informed approach, encourages better engagement by young people with services than statutory interventions for this cohort (National Lottery Community Fund, 2018).		As part of Cerridwen, case managers employ a youth work approach (Welsh Government, 2019) to build trusting relationships with CYP ensuring they: • Feel emotionally and physically safe during their sessions. • Feel listened to and understood. • Feel valued. • Want to continue to engage. Through this relationship, case managers help CYP to: • Reflect on their behaviours and consequences and attitudes about them. • Burn off the shame of past behaviours and think about how to change in the future. • Feel empowered to use their voice and make	protective factors.		

Why?		Who? Participants	How? Intervention	What? Outcomes		
Context	Evidence			Short term	Medium term	Long term
			their own decisions regarding their action plans and goal setting. • Understand and practice social and communication skills, e.g. empathy. • Access additional support or services where needed (through advocacy and onward referrals).			

Who does Cerridwen work with?

The target group for Cerridwen and therefore the internal pilot trial was young people aged 10-17 who met 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:
 - Expressing pro-violent thoughts and opinions.
 - 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, Merthyr Tydfil or Caerphilly and surrounding areas.
- **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. This is because Cerridwen aims to intervene at an earlier stage of criminal activity to prevent young people engaging in youth violence and offending behaviours that may lead them to entering or re-entering the criminal justice system.

A Communication Strategy is in place 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 is 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 are monitored. If at any stage 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.

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 “[Racial inequalities in the criminal justice system](#)”). Demographic characteristics, including ethnicity, are monitored from referral, and throughout project delivery and evaluation in line with YEF guidance (see [Exploratory analysis](#) for more detail).

What is required to deliver Cerridwen?

To deliver its intended activities and outcomes, Cerridwen requires the following inputs across the full delivery period (i.e. from April 2024 to the end of delivery, scheduled for April 2026):

- **Funding:**
 - Staff costs (delivery): £1,128,590.00
 - Staff costs (Central/management/training): £41,545.84
 - Equipment and materials: £22,617.35
 - Travel and expenses: £28,816.90
 - Other expenses (Young people activities/incentives and translation/speech and language): £79,900.26
 - Overheads: £217,618.19
- **Total: £1,519,088.54**
- **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).
 - Safety and Wellbeing (control) group workers (x4 FTE)

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 [Participant journey](#) 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 [Participant referrals and eligibility](#) 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:
 - **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 are all 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
Introductory period			

Session	Duration	Setting	Content / Theme
1	2 – 3 hours	Safe and suitable location e.g. young person's home	Cerridwen assessment & goal setting
First 8-week block			
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
Review phase			
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
Second 8-week block			

Session	Duration	Setting	Content / Theme
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
Disengagement meeting			
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

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.

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.

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.

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.

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 services 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 follow-up (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: 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.

Session	Duration	Setting	Content
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 should 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.

Impact evaluation

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.

Research questions

The primary research question for the impact evaluation is:

Is a dedicated mentoring and case management 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?

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 [Outcome measures](#).

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. **Iatrogenic 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 [Diversity, equity and inclusion](#).

Trial design

The evaluation of Cerridwen will be an efficacy study two-armed parallel randomised controlled trial (RCT) evaluation. As part of the efficacy study, an internal pilot was completed between April and end of December 2024.

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

		Pro-social values and behaviours measured by the Strengths and Difficulties Questionnaire pro-social behaviour subscale (SDQ) (Goodman, 2005). Behavioural difficulties, measured by the Strength and Difficulties Questionnaire externalising behaviours score (combining conduct problems and hyperactivity/inattention subscales) (SDQ) (Goodman, 2005).
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	Empathy Pro-social values and behaviours Behavioural difficulties
	measure (instrument, scale, source)	Empathy, measured by the Basic Empathy Scale. Pro-social values and behaviours measured by the Strengths and Difficulties Questionnaire pro-social behaviour subscale (SDQ). Behavioural difficulties, measured by the Strength and Difficulties Questionnaire externalising behaviours score (combining conduct problems and hyperactivity/inattention subscales) (SDQ).

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.

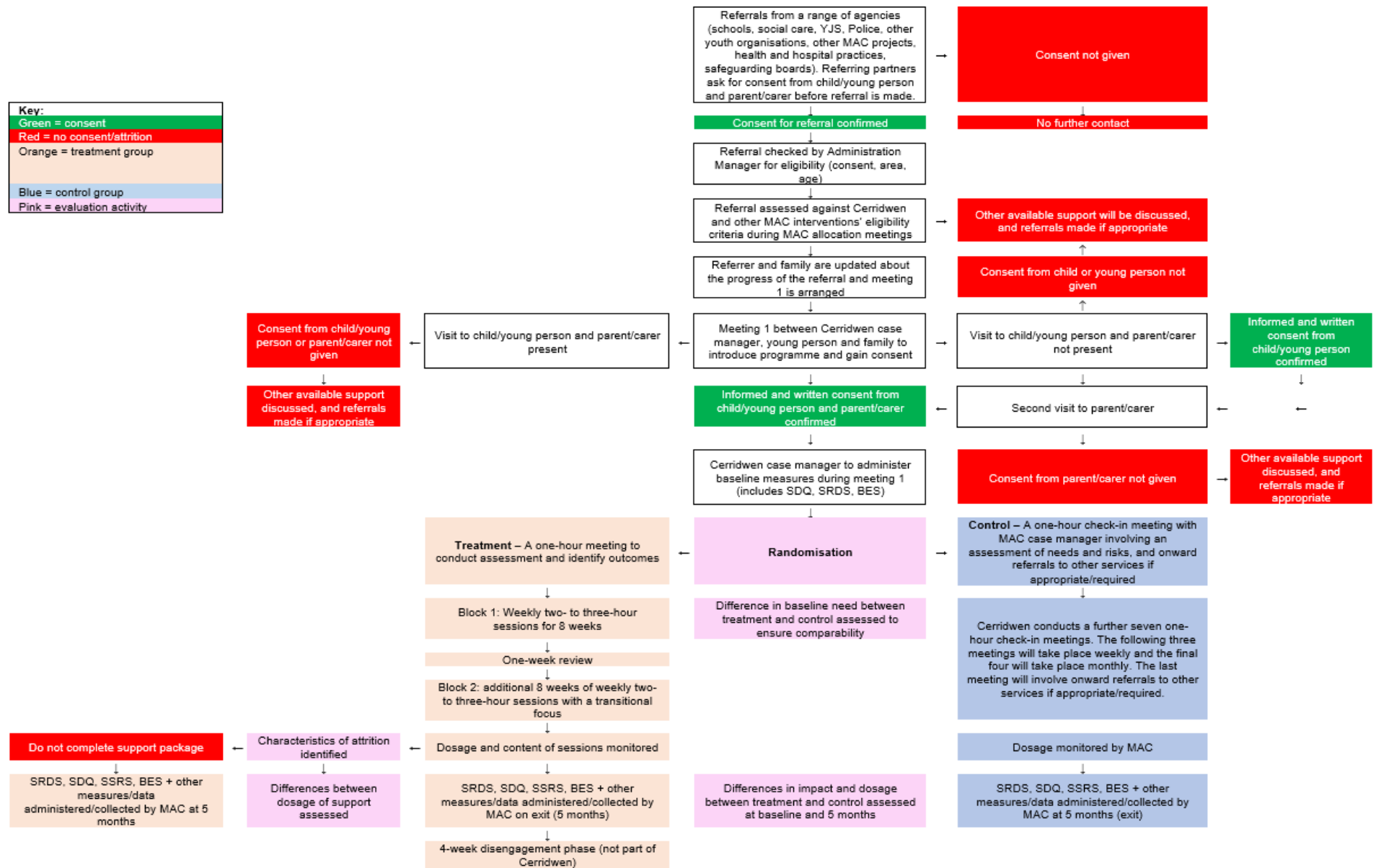
The use of block sizes of four, six and eight therefore supports an even spread of allocation month-by-month, enabling MAC case managers to be allocated appropriately across the localities and to operate at capacity in each area.

Participant journey

Figure 5 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.

Figure 5: Cerridwen trial diagram



Participant referrals and eligibility

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

- Social Services (Children's Services).
- Schools and Pupil Referral Units.
- Youth Services.
- Youth Offending Services.
- Third Sector Organisations.³
- Self-referrals including young people and parents/carers.⁴

Referral partners complete a MAC referral form and send this to MAC via email. These referral forms are checked against the basic eligibility criteria for the wider MAC service by the Administration Manager (i.e. age, consent and area). If young people meet these criteria, the referral is then 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 should take place within five working days of receiving the referral.

During this meeting, MAC colleagues 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 South Wales. Young people who have received MAC services previously that adopted a trusted adult approach and delivered

³ 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.

⁴ 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.

a structured intervention that aimed to address youth violence/offending are not eligible for the Cerridwen project. Appendix 2 provides a table which presents a summary of MAC services available in the areas where Cerridwen is delivered. It summarises those services that, by attending, make 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 does not make young people ineligible for Cerridwen and is be treated as 'business as usual'. MAC keep a record of which MAC services these young people may attend prior to and during the evaluation.

MAC colleagues attending the allocation meetings are 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.

If a referral meets the eligibility criteria for Cerridwen (please see [Who does Cerridwen work with?](#) for more detail), feedback is given to the referral partner before a Cerridwen case manager makes contact with the young person and family.

MAC have experience of recruiting and engaging with young people from a diverse range of backgrounds. They are working 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 uses assessments to modify the delivery approach to accommodate the needs of different groups. This enables 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 is 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.

Collecting informed consent

If a young person is referred into MAC, screened and assessed as suitable for Cerridwen, a Cerridwen case manager arranges an initial meeting with the young person and the family within 10 working days. This takes place in the most appropriate venue (i.e. school, home, or in the community). During this meeting, the case manager makes 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), introduces the project and evaluation, and gains written consent from parents/carers and young people using information sheets and consent forms. These materials were developed collaboratively by Cordis Bright and MAC colleagues during the evaluation set-up and mobilisation phase.

Training and an evaluation handbook have been provided to Cerridwen case managers by Cordis Bright which supports case managers in administering the informed consent materials.

Data collection

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

Following this meeting and baseline questionnaire completion, young people are randomised into either the treatment (Cerridwen) or control (safety and wellbeing support) group. Please see [Randomisation approach](#) for more detail.

If young people are randomised into the treatment group, they receive case management support from a different case manager to the case manager who conducted the introductory visit. If they are randomised into the control group, they receive safety and wellbeing support from a Cerridwen 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).

Cerridwen case managers administer the follow-up 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 administer the five-month tools to the control group. Again, these meetings take place in a safe space agreed with the young person.

Cerridwen case managers and MAC case managers 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 is critical in ensuring a good response to the outcome measurement tools. Our approach ensures that young people are not influenced by Cerridwen practitioners when completing tools through the following mechanisms:

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

We have reviewed this process as part of the internal pilot and no changes have been deemed necessary.

Sample size calculations

Our original approach to estimating the sample size for this efficacy study using Power Calculations is conservative and was 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 also considered Cerridwen's estimated programme recruitment and attrition rates. Estimated programme recruitment rates are based on MAC's experience of delivering projects in the three delivery areas for more than a decade, and of delivering the Cerridwen project in Cardiff. We anticipated that recruitment rates would be 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. Estimated attrition of 10% from recruitment (completion of baseline T1 data collection) to T2 data collection, has also been factored into recruitment targets, in line with YEF guidance.
- **Pre-test/Post-test correlation.** We have suggested a pre-test/post-test correlation of 0.5 based on values obtained from unpublished data from an RCT using the same outcome measure and in a similar population of adolescents (Humayun et al., 2017).

Based on the above, Figure 6 below shows that a total sample of 592 (296 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.

These calculations were made with the Powerup! software package (Dong, N. and Maynard, R. A., 2013).

Figure 6: Sample size calculations

		Protocol	Randomisation
Minimum Detectable Effect Size (MDES)		0.20	
	level 1 (participant)	0.5	

		Protocol	Randomisation
Pre-test/ post-test correlations	level 2 (cluster)	N/A	
Intraclass correlations (ICCs)	level 1 (participant)	N/A	
	level 2 (cluster)	N/A	
Alpha		0.05	0.05
Power		0.8	0.8
One-sided or two-sided?		Two-sided	
Number of participants	intervention	296	
	control	296	
	total	592	

During the internal pilot trial period, in collaboration with MAC and the YEF we remodelled estimated recruitment numbers for the efficacy trial based on actual recruitment rates and estimated impact of mitigations which have been identified.

In the time and resource available for the efficacy study the modelling estimates that a sample size of 367 (rounded up to 368 to allow for an even split between groups) is realistic and factors in attrition of 21%, in line with the attrition rate observed during the pilot trial. This sample would achieve an MDES of 0.25. The [pilot report](#) provides detail about the modelling that informs this estimate.

However, we will be working with MAC to make every effort to achieve a sample size as close as possible to 592 as this would be desirable and in line with YEF guidance.

Recruitment rates

Based on original modelling which factored in (a) a target sample size of 592, and (b) referrals ending at month 20 of delivery (November 2025), we developed target recruitment rates as shown in Figure 7.

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 592 required in line with the Power Calculation. This is because the referral number required to achieve the target sample size of 592 will be reached 'in-month' (during October 2025), and referrals will continue to be received for the remainder of that month for operational reasons.

Figure 7: Cerridwen programme recruitment rates as originally modelled

Quarter →		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Months →		Apr 24 - Jun 24	Jul-24 - Sep 24	Oct-24 - Dec	Jan-25 - Mar	Apr-25 - Jun 25	Jul 25- Sep 25	Oct-25 - Dec	Jan-26 - Mar
Target number of children and young people referred into the project	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 do not result in them being recruited to the project and evaluation	Quarterly	-8	-11	-15	-15	-15	-15	-5	-
	Cumulative	-8	-19	-34	-49	-64	-79	-84	-84
Target number of children and young people recruited to the project and evaluation	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 withdraw/drop out before completing the full 5 months of	Quarterly	-5	-8	-12	-12	-15	-15	-5	-
	Cumulative	-5	-13	-25	-37	-52	-67	-72	-72

Quarter →		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
intervention/control group									
Target number of children and young people who complete the full 5 months of intervention/control group	Quarterly	-	8	48	85	105	110	120	120
	Cumulative	-	-	56	141	246	356	476	596

Based on learning from the pilot period, we have also developed alternative modelling in which the trial would achieve a total sample size of 368 (MDES of 0.25). This modelling is based on:

- Monthly referral rates observed during the pilot period.
- MAC's experience of delivering projects in these local authority areas for more than a decade.
- A timeline accounting for delivery ending in September 2025 to allow sufficient time for all young people to complete the full intervention and follow-up data measures by April 2026.
- Estimated attrition according to two different scenarios: one based on a modelled attrition rate from baseline to follow-up data collection of 10% (in line with YEF guidance), and a second based on a modelled attrition rate of 21% from baseline to follow-up data collection of 21% (in line with the attrition rate observed during the pilot).

Figure 8 shows this modelling, demonstrating that over the course of the RCT:

- Assuming a 10% attrition rate, MAC will need to recruit a minimum of 412 young people (i.e. 206 to the treatment group to receive the Cerridwen intervention and 206 to the control group to receive safety and wellbeing support).
- Assuming a 21% attrition rate, MAC will need to recruit a minimum of 448 young people (i.e. 224 to the treatment group to receive the Cerridwen intervention and 224 to the control group to receive safety and wellbeing support).

Figure 8: Modelling of efficacy study recruitment rates

Quarter →	Q1 (actual)	Q2 (actual)	Q3 (actual)	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 recruited to the project and evaluation (i.e. completing baseline T1 measures) (quarterly) – assuming 10% attrition	56	52	43	87	87	87	0	0
Target number of children and young people recruited to the project and evaluation (i.e. completing baseline T1 measures) (cumulative) – assuming 10% attrition	56	108	151	238	325	412	412	412
Target number of children and young people recruited to the project and evaluation (i.e. completing baseline T1 measures) (quarterly) – assuming 21% attrition	56	52	43	99	99	99	0	0
Target number of children and young people recruited to the project and evaluation (i.e. completing baseline T1 measures) (cumulative) – assuming 21% attrition	56	108	151	250	349	448	448	448
Projected number of completed T2 measures (cumulative)	-	-	27	95	133	211	289	367

Outcome measures

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 [Theory of Change](#)), 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 [Theory of Change](#)). 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				
Empathy	Basic Empathy Scale	Full measure	20	Baseline, 5 months post randomisation

Outcome from the theory of change	Measure	Subscale(s)	Number of items	Collection point(s)
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	Externalising behaviours score (combining the conduct problems and hyperactivity/inattention subscales)	10	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 [Data collection](#).

In addition to the self-report measures described above, we are also exploring whether policed 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.

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.

Secondary outcomes

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

- 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.

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 is set out in the [Statistical Analysis Plan](#) for the study. As part of developing the [Statistical Analysis Plan](#) (which is available on YEF's website), we explored the potential for using sensitivity testing should the data be sufficiently powered to understand more about compliance in the context of the trial.

Quantitative analysis

This section outlines our high-level approach to:

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

Primary outcomes analyses

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 and SDQ subscales 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 is included in the evaluation's Statistical Analysis Plan.

Secondary outcomes analyses

The secondary outcomes measures of interest in this RCT are:

- 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 externalising behaviours score (combining the conduct problems and hyperactivity/inattention subscales (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 for secondary outcomes where baseline data is available (i.e., SDQ subscale final scores, and BES), using treatment allocation (Cerridwen or control group) as the key predictor. We will calculate Hedges' G and the corresponding confidence intervals for these analyses. We outline more about our approach to analysis in the Statistical Analysis Plan (available on YEF's website).

Empathy, pro-social values and behaviours and behavioural difficulties will be measured at baseline and follow-up.

Exploratory analysis

We will evaluate the extent to which positive relationships between the young person and case manager (treatment group), or significant adult (control group) influenced the primary outcome over and above the impact of the Cerridwen Intervention (as measured by the SSRS – see call-out box below). This analysis is proposed because the Cerridwen theory of change suggests that a key mechanism of change for the intervention is that it has its effect through an increase in positive relationships with a trusted adult. This will take a mediation analysis approach, i.e. we will estimate the direct and indirect effects, following the approach outlined in Gunzler et al. (2013).

About the Social Support and Rejection Scale (SSRS)

The **SSRS** has four dimensions: Feels valued, trust, mentoring, and negativity. Each item is scored from 1 (never) to 5 (always). Each subscale score is the average of items that make up the subscale. Higher scores on the negativity scale reflect higher levels of stress and negativity within the relationship. For the overall scoring of the scale a high score represents a positive relationship.

Quality of relationship between young person and Cerridwen case manager measured by the SSRS 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.

We also 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.

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.

As part of the internal pilot, we assessed 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. 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.

Implementation and process evaluation

Overview

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

The rest of this section covers:

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

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:

1. Understand the association between aspects of the Cerridwen programme's implementation and successful outcomes.
2. 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?

- g. *Adaptation*: Are any changes needed to accommodate context and need?
2. **Factors affecting implementation**: Which factors have acted as enablers or barriers to implementation of the Cerridwen programme?
- a. *Locality level factors*: Which factors have impacted implementation at the locality level? For example, level of need, readiness for change, and/or policy practice and funding context?
 - b. *Organisation level factors*: Which factors have impacted implementation at the organisational level? For example, capacity, skills and training, co-ordination and resources?
 - c. *Unexpected factors*: Which other factors have had an impact?
3. **Experiences of support**: What are young people's experiences of support?
- a. Which aspects of the Cerridwen programme have supported positive outcomes?
 - b. How have experiences of support differed across subgroups, e.g., those from racially minoritized/marginalised backgrounds, low-income households or with SEND?
4. **Guidelines for future implementation**: What are the implications for future replication, scale and spread?

Research methods

The IPE will use a mixed methods approach. The qualitative evidence captured from the IPE will be triangulated with quantitative evidence from the RCT to support evidenced recommendations concerning the ways in which the Cerridwen programme could improve in the future and also potential for future development and roll-out of both the initiative and evaluation. **Error! Reference source not found.** provides an overview of data collection methods to address the IPE research questions. The rest of this section outlines these methods in more detail.

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
Data analysis	Activity and dosage data collected by Cerridwen project co-ordinators	All young people who have received Cerridwen and those in the control group.	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.
Semi-structured interviews	Interviews with young people	36 young people in the intervention group. This will involve a range of ages, compliance, year groups and	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
		ethnicities. 15 were interviewed in the internal pilot phase and further 21 will be interviewed later on in the Efficacy study.		RQ2. Which factors have acted as enablers or barriers to implementation of the Cerridwen programme? RQ3. What are young people's experiences of support? RQ4. What are the implications for future replication, scale and spread?	guidelines for future implementation.
Semi-structured interviews	Interviews with Cerridwen project staff	20 programme staff. 14 were interviewed in the internal pilot phase and a further 6 will be interviewed	Thematic analysis	RQ1. How effectively has the Cerridwen programme been implemented? RQ2. Which factors have acted as	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
		later on in the Efficacy study.		enablers or barriers to implementation of the Cerridwen programme? RQ3. What are young people's experiences of support? RQ4. What are the implications for future replication, scale and spread?	guidelines for future implementation.
Semi-structured interviews	Interviews with wider stakeholders	48 key wider stakeholders. 24 were interviewed in the internal pilot phase and 24 will be interviewed later on in the Efficacy study.	Thematic analysis	RQ1. How effectively has the Cerridwen programme been implemented? RQ2. Which factors have acted as enablers or barriers to implementation of	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
				the Cerridwen programme? RQ3. What are young people's experiences of support? RQ4. What are the implications for future replication, scale and spread?	

Interviews with young people

We will conduct in-depth, semi-structured interviews with a total of 36 young people receiving support from Cerridwen (i.e., those from the treatment group). 15 young people were interviewed in the internal pilot stage, and a further 21 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 to decide whether telephone interviews or face-to-face interviews would be most appropriate for each individual young person. 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 case manager (although they will have the option to have their case manager 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 Toolkit⁵ 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.

⁵ Available here: <https://www.cordisbright.co.uk/news/equality-diversity-and-inclusion-in-projects>

Interviews with Cerridwen staff and wider stakeholders

We will conduct in-depth, semi-structured interviews with a total of 20 Cerridwen staff. 14 members of staff were interviewed during the internal pilot and a further 6 will be interviewed towards the end of the efficacy evaluation.

We will also conduct in-depth, semi-structured interviews with a total of 48 wider stakeholders. Because parents and carers can refer into Cerridwen, they will be included in this sample. During the pilot we interviewed a total of 22 wider stakeholders, and we will interview a further 26 towards the end of the efficacy evaluation.

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.

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.

Analysis

The qualitative evidence captured through the IPE study will be recorded in a matrix, which maps responses against the research questions in Research questions. 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.

Cost data reporting and collecting

Capturing cost data

We intend to work with MAC to report on the pre-requisite, set up and recurring costs of Cerridwen. Our approach has been agreed with MAC and YEF colleagues following exploration around the most appropriate approach to cost data reporting in the pilot trial. We anticipate the primary sources of information to inform our calculations will be:

- MAC's Cerridwen programme budget
- Discussions with key MAC stakeholders

In line with general principles set out in YEF's [guidance](#), this approach will:

- **Estimate the costs of delivery only.** MAC colleagues have been delivering Cerridwen in line with the budget, which means the budget is representative of costs of delivery.
- **Use the 'bottom-up' principle to derive estimates.** The Cerridwen budget was calculated using a 'bottom-up' principle, which means using budget to capture the cost of delivery follows the 'bottom-up' principle.
- **Estimate costs from the perspective of the organisation delivering the intervention.** The key touchpoints between MAC colleagues and other organisations (i.e. referral partners) sit within the remit of other organisations (i.e. those organisations already exist and working with interventions like Cerridwen is part of their remit).
- **Capture all the resources involved in delivering the intervention but not how costs change compared to business as usual.** The budget is representative of the resources used in the delivery of Cerridwen and does not seek to compare costs to business as usual.

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).

Category	Information to be used for analysis (upfront, recurring, total costs)
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).

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., six 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).

Total costs will be presented for an appropriate time period within the first year of delivery as per YEF guidance. However, the exact time period will be confirmed in consultation with YEF to ensure consistency with the cost reporting approach and to reflect practical considerations. 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.

This approach is fully aligned with YEF's Cost Reporting Guidance, including its core principles relating to delivery costs, bottom-up estimation, perspective of the delivery organisation and comprehensive resource identification.

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 include reflective practice which provides a space to collaboratively reflect on practice and identify and address any barriers to engagement and inclusivity.

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).

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 have also conducted a Data Protection Impact Assessment and agreed and signed 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).

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.
- **Tammie Court (Cerridwen Coordinator, MAC)** has responsibility for the day-to-day delivery of the project.
- **Mia Sklavounos (Cerridwen Project Support and Administration Officer, MAC)** supports Tammie in managing the day-to-day delivery of the project and maintains monitoring data.
- **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.** 4 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.
- **Madeleine Morrison, Co-Principal Investigator and Project Manager**. Responsible for overseeing day-to-day project delivery and acting as the main point of contact for the YEF and the project delivery team. Madeleine has taken over this role following Suzie Clements' contributions to the initial phase of the evaluation.
- **Suzie Clements, Co-Principal Investigator and Project Manager**. Played a key role in the early stages of the evaluation, overseeing initial project delivery and serving as the main point of contact for the 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.
- **Ashna Devaprasad, Co-Principal Investigator, Researcher**, provides 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.

Risks

Figure 12 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. No major changes were made to the risk register during 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	• Working with MAC to explain the benefits of RCTs to referral partners and Cerridwen staff. • Embedding randomisation into the project approach. • Face-to-face staff training and ongoing support. • A co-developed evaluation handbook for Cerridwen staff.
Recruitment and attrition from the trial	Likelihood: high Impact: high	• Providing clear and accessible information and consent materials to young people and families. • Embedding recruitment and data collection into everyday practice. • Providing meals as a thank you for young people's time in completing outcomes tools/interviews. • Reviewing data capture progress regularly. • Regular data monitoring and audits. • Allocating resource to follow-up participants who may have moved-on.

Risk	Likelihood (low/medium/high) Impact (low/medium/high)	Mitigation
		• Exploration and application of keep-in-touch techniques used in longitudinal studies, for instance regular contact with participants in the control group. • Staff training to explain the study to young people and support engagement including the evaluation handbook. • 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.
Challenges engaging young people from diverse backgrounds with the evaluation	Likelihood: low Impact: medium	• Provide clear accessible information to 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. • Ensure all research methods and tools are accessible for all participants. • Deploy staff who have completed cultural competency training and experience working with young people from minoritised backgrounds in similar projects. • Provide support to enable young people with SEND, literacy support needs or who speak other languages to

Risk	Likelihood (low/medium/high) Impact (low/medium/high)	Mitigation
		participate in the evaluation as required. This may include support tool use and/or translation services. • Work with Cerridwen to ensure that, young people from a range of minoritized and marginalised backgrounds are sampled in IPE qualitative interviews. • Regular data monitoring and audits to ensure young people from a diverse range of backgrounds are being reached.
The Cerridwen programme changing its delivery approach during the Efficacy Trial	Likelihood: low Impact: high	• Working closely with the project to understand challenges. • Flexibility in research design where possible. • Ensuring all stakeholders are aware of the impact changes have on evaluation.
Data collected not addressing the key evaluation questions	Likelihood: low Impact: high	• Co-design approach. • Tools and analysis approach will be tested in the internal pilot to ensure they are fit-for-purpose. • Working closely with MAC to understand changes.

Risk	Likelihood (low/medium/high) Impact (low/medium/high)	Mitigation
		• Building in flexibility in research design where possible. • Working to ensure changes are reflected in monitoring data collection processes. • Ensuring all stakeholders are aware of the impact changes have on evaluation.
Safeguarding/public safety	Likelihood: low Impact: medium	• Evaluation team have ongoing safeguarding training. • Kam Kaur, Head of Safeguarding and youth justice provides expert input on safeguarding and consultation with young people. • Take actions as agreed with YEF/project protocols. • Ensure that there is learning across the team about what happened and what steps could be taken in future. • Take these relevant steps going forward. • Introduce additional training if required. • Re-visit methodology if required. • Agree an appropriate communications strategy.

Risk	Likelihood (low/medium/high) Impact (low/medium/high)	Mitigation
Data breach	Likelihood: low Impact: medium	• Drafting a Data Protection Impact Assessment and Data Sharing agreement to securely access data. • Following data protections processes outlined in <u>Data protection</u>. • Take actions as agreed with YEF/project protocols. • Ensure that there is learning across the team about what happened and what steps could be taken to avoid in future. • Take these relevant steps going forward. • Introduce additional training if required.
Illness to attrition in the evaluation team	Likelihood: medium Impact: medium	The evaluation team includes multiple team members to avoid reliance on an individual. Contingency plan is: • Re-deploy other members of the team to undertake tasks. • If absence is longstanding, draw on wider team members/network of associates and agree with YEF and MAC before doing so.

Risk	Likelihood (low/medium/high) Impact (low/medium/high)	Mitigation
		As a last resort, consider extending timescales.

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 partners 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	Cordis Bright

Dates	Activity	Staff responsible/leading
	MAC will begin accepting referrals (these will not become active referrals or considered at MAC allocation meetings until 1 April)	
April 2024	Pilot phase launch Delivery of Cerridwen begins T1 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, wider partners, and project staff Start drafting Statistical Analysis Plan to be published in spring 2025	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 – June 2025	Efficacy protocol and Statistical Analysis Plan updated Consent materials amended if needed Pilot Phase review	Cordis Bright
June 2025 – July 2025	Efficacy protocol and Statistical Analysis Plan amended incorporating YEF Feedback	Cordis Bright and MAC
September 2025	Completion of all T1 data collection Referrals stop	MAC
December 2025 – February 2026	IPE interviews with young people, wider partners and staff	Cordis Bright

Dates	Activity	Staff responsible/ leading
April 2026	Delivery of Cerridwen ends Completion of all exit data	MAC
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: Changes since the previous YEF evaluation⁶

Appendix Table 1: Changes since the previous evaluation⁷

Feature		Pilot to efficacy stage
Intervention	Intervention content	<i>No change</i>
	Delivery model	<i>The only change has been to expand the geographical area to include Caerphilly for both recruitment and delivery of Cerridwen.</i>
	Intervention duration	<i>No change</i>
Evaluation	Eligibility criteria	<i>No change</i>
	Level of randomisation	<i>No change</i>
	Outcomes and baseline	<i>The only changes have been to revise the planned approach for scoring the SDQ (using externalising behaviours score instead of the conduct problems subscale, and to use the SSRS for exploratory analysis rather than as a data source for secondary outcomes. This does not have implications for questionnaires.</i>
	Control condition	<i>No change</i>

⁶ Please delete this section if it is not applicable.

⁷ Delete columns from the table if they are not applicable or adjust titles as relevant.

Appendix 2: Summary of MAC services

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

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.
Braver Choices	Structured Intervention aimed at young people at	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. However, if a young person has

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
	risk of or engaging in carrying a knife.				been referred but hasn't engaged with this service, or if they have completed a one-off Braver Choices session, they would be considered for Cerridwen.
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. 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	10 – 17	Yes – although not exclusively	Yes – although not exclusively.	No – where the young person has engaged in 1:1 support via a trusted adult approach Yes – where the young person has previously only engaged in group workshops or in a one-off session

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
	and promote positive self-identity.				
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.	No – where the young person has engaged in 1:1 support via a trusted adult approach Yes – where the young person has only engaged in initial triage assessment and a referral to another service (e.g. Cerridwen) is appropriate. 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.

MAC Service	Description	Ages eligible	Intervention specifically addresses youth violence/offending	Trusted Adult / Case Manager Approach	Eligible for Cerridwen and rationale
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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