

Mapping and evaluating Services for Children with Learning Disabilities and Behaviours that Challenge (MELD): Stage 1 – Statistical Analysis Plan

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SIGNATURE PAGE

The undersigned confirm that the following protocol has been agreed and accepted and that the Chief Investigator agrees to conduct the study in compliance with the approved protocol and will adhere to the principles outlined in the relevant study regulations, GCP guidelines, and CTU SOPs. I agree to ensure that the confidential information contained in this document will not be used for any other purpose other than the evaluation or conduct of the intervention without the prior written consent of the Sponsor.

I also confirm that I will make the findings of the study publicly available through publication or other dissemination tools without any unnecessary delay and that an honest accurate and transparent account of the study will be given; and that any discrepancies from the study as planned in this protocol will be explained.

Chief Investigator:		
Richard Hastings		
Name	Signature	Date

General Information This SAP describes the MELD study, and provides information about the statistical analyses for the study. Every care has been taken in drafting this SAP. However, corrections or amendments may be necessary. These will be circulated to the known Investigators in the study. Problems relating to the study should be referred, in the first instance, to the CI.

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Glossary of abbreviations

AE	Adverse Event
AIC	Akaike's Information Criterion
ASD	Autism Spectrum Disorder
AWE	Approximate weight of evidence
BIC	Bayesian Information Criterion
BLRT	Parametric bootstrapped likelihood ratio test
BtC	Behaviours that Challenge
CAIC	Consistent Akaike's Information Criterion
CAMHS	Child and Adolescent Mental Health Service
CCG	Clinical Commissioning Group
CF	Consent Form
CI	Chief Investigator
CQC	Care Quality Commission
GCP	Good Clinical Practice
GDPR	General Data Protection Regulation
HS&DR	(NIHR) Health Services and Delivery Research
ICS	Integrated Care Systems
iDMEC	independent Data Monitoring and Ethics Committee
ISRCTN	International Standard Randomised Controlled Study Number
LD	Learning Disability
LCA	Latent Class Analysis
LMR	Lo-Mendell-Rubin likelihood ratio test
MCAR	Missing completely at random
MAR	Missing at random
MNAR	Missing not at random
NHS	National Health Service
NIHR	National Institute for Health Research (NIHR)
PPI	Patient and Public Involvement
PIS	Participant Information Sheet
R&D	Research and Development
RA	Research Assistant
REC	Research Ethics Committee
SAG	Study Advisory Group

SAP	Statistical Analysis Plan
SIN	Service Identification Number
SMF	Study Master File
SMG	Study Management Group
SSC	Study Steering Committee
STP	Sustainable Transformation Partnerships
TCP	Transforming Care Partnership

1. Amendment History

The following amendments and/or administrative changes have been made to this SAP since the implementation of the first approved version.

Amendment No. <i>(specify substantial/non- substantial)</i>	SAP version no.	Date issued	Summary of changes made since previous version
1	V1.1	01/12/21	Variable recoding applied to variables: Q3/4, Q11, Q22. Collapsing categories further was required for the LCA analysis as some variables cell frequencies were too low.

2. Synopsis

Title	Mapping Services for Children with Learning Disabilities and Behaviours that Challenge
Acronym	MELD
Funder and ref.	NIHR 129577
Study design	Survey to map services and to identify distinct service models in England for children with learning disability and behaviours that challenge
Study participants	Staff in community services for children with a learning disability and behaviours that challenge
Planned sample size	48 leads for Transforming Care Partnerships in England (or successor organisations) Two staff from each of approximately 200 community services for children with learning disability and behaviours that challenge (400 Staff)
Inclusion criteria	The inclusion criteria for services are: <ol style="list-style-type: none"> 1. Geographically located in, and at least partially drawing referrals from, England 2. Community-based service 3. NHS, local authority or other (e.g., private, charity) service commissioned by a CCG/local authority/STP/ICS, or a service where individual places are purchased by CCG/local authority or other commissioners 4. Providing supports for children with LD 0-17 years of age with learning disabilities and behaviours that challenge or providing supports to this group of children as a clearly distinct care pathway (whilst also providing other services). Services will not be excluded if they also provide services to individuals 18+ years of age as well as within the 0-17 age range.
Exclusion criteria	Exclusion criteria are: <ul style="list-style-type: none"> • Inpatient service • Service commissioned by non-CCG or local authority commissioner (e.g., solely a special school service)

	<ul style="list-style-type: none"> Service that is not yet operational (i.e., has received no referrals at the time of data collection)
Planned study period	12 months
Primary objective	To map community services for children with learning disability (LD) and behaviours that challenge (BtC) in England, to describe distinct service models
Methodology summary	<p>Leads of all 48 Transforming Care Partnerships (TCPs) (or successor structures) in England will be contacted for initial information about community services for children with LD and BtC in their region. Researchers will then contact service managers/lead clinicians or someone who is well-placed from identified community services. Service managers/lead clinicians or a someone who is well-placed will identify suitable staff members to complete an online survey and an optional interview to gather information about each service's structure, organisation and functions. In addition, services will be recruited via local authority websites, recruited service providers giving details of other services to contact, online recruitment via social media/website, or via expressions of interest. Additional recruitment options will be to contact R&D departments directly; contacting regional and national NHS England contacts; or using a Freedom-of-Information request (FOI). We estimate that there may be 200 such services in England. Latent Class Analysis combined with stakeholder consultation will be used to define distinct service models.</p>

3. Background and rationale for the current study

Learning disability (LD), used as the official term in the UK health system, is known as Intellectual Disability internationally. Intellectual Disability/LD is a condition described in ICD-11 as a Disorder of Intellectual Development (Salvador-Carulla et al., 2011). Consistent with contemporary definitions of this condition, LD emerges during the “developmental period” (usually taken to mean before age 18 years), and is characterised by low cognitive ability (using standardised tools an IQ <70) and low levels of adaptive behaviour (such as communication, social skills, independence skills - also assessed using standardised tools). Prevalence studies internationally suggest that approximately 2% of children and adolescents have a LD (Maulik et al., 2011). UK Learning Disability Observatory data also show just over 2% of children in England have been identified by local authorities/schools as

having LD (Hatton et al., 2014). Prevalence varies slightly with socio-economic factors but is broadly similar across the UK. In practice, and this is also reflected in the ICD-11 “sub-types” of intellectual disability, it is helpful to distinguish between levels of LD severity: mild (2-3 SDs below the mean on standardised IQ/adaptive behaviour assessments), moderate (3-4 SDs below the mean), and severe/profound (4 or more SDs below the mean). In addition, LD is associated with significantly higher prevalence of other neurodevelopmental conditions; in particular Autism Spectrum Disorder (ASD). The prevalence of LD among children and adolescents with ASD in UK population-based data has been shown to be as high as 52% (95% CI: 42%, 62%) (Totsika et al., 2011).

Children with LD are also likely to display challenging behaviour (or Behaviours that Challenge; BtC). Approximately 1 in 5 children with LD in the UK in contact with services display BtC (Emerson et al., 2001). Recent analysis of UK population data suggest 10-17% of children with LD show aggression towards others (Emerson et al., 2014). In some settings, prevalence rates are higher (e.g., 53% of children in a special school context; Nicholls et al., 2020). BtC are associated with poor care outcomes for children (e.g., increased exposure to restrictive care), for family carers (e.g., increased stress and mental health problems; Hastings, 2016), and increased costs of care to families (Einfeld et al., 2010) and to health and social care services (Iemmi et al., 2016). Children with more severe LD, and those with LD who also have autism, are more likely to display BtC (Nicholls et al., 2020).

BtC are understood theoretically from a contextual perspective in terms of definition, vulnerability factors, and maintaining processes (Bowring et al., 2019; Hastings et al., 2013). First, BtC are a socially defined health and social care issue, rather than a medical disorder or diagnosis; defined as behaviours that are not typical for the culture the person lives in and that occur at a frequency, severity, or duration that places an individual at risk of harm, places carers or others at risk of harm, or that hinder inclusion in typical community settings (Emerson & Einfeld, 2011). BtC are defined in terms of their effects rather than topography. Nevertheless, individuals with LD often engage in a number of behaviours that are typically considered challenging, regardless of context: injuring themselves (e.g., banging their heads against hard surfaces, eye-poking, skin scratching leading to bleeding), physical aggression towards others (e.g., kicking, biting, pulling hair), physically destructive behaviours (e.g., throwing furniture, pulling down curtains), and other actions (e.g., absconding, high rate unusual repetitive behaviours such as body rocking, inappropriate touching, screaming). The second contextual dimension is that the vulnerability factors for BtC are primarily (though not exclusively) psycho-social, relating to the inequalities and life experiences of people with LD (e.g., impoverished social networks, lack of communication skills, exposure to negative life events

including abusive care, barriers to accessing health and care services). The third contextual dimension is that BtC are functional for the person engaging in them – they allow a certain amount of control over the (social) environment: the behaviour/response of others is then the main mechanism through which BtC are maintained and may worsen over time.

Given the prevalence of BtC, and continued high profile care scandals (e.g., BBC Panorama exposés of Winterbourne View in 2011, and Whorlton Hall in 2019), effective community-based services and supports are a national priority (NHS England, 2015). However, NICE guidelines for BtC (2015, 2018) found no high quality evidence relating to the design and organisation of services for children. This study focuses on that evidence gap.

There are currently no data on an England-wide basis about how health services are delivered for children with LD and BtC (service models), and the key features of these models. Given the lack of evidence overall, the findings from the proposed research will be directly relevant to the ongoing planning and delivery of health and social care services across the UK.

4. Study objective

In the proposed research, we will conduct a mapping study in England to describe all community services for children with LD and BtC; and use the data gathered to develop a typology of “service models” for this population.

If we can successfully identify distinct services models, we will proceed to a second stage of research in which examples of these service models are evaluated; testing effectiveness and cost-effectiveness of different models. This second stage will be described in a separate protocol and SAP.

The *research objective* is to develop a typology of the different models for providing services to children with LD and BtC currently operating in England.

5. Study Methods

5.1 Study design

The research design is a total population mapping exercise of services in England for children with LD and BtC. The current provision of services for children with LD and BtC will be described, and a

number of distinctive service models will be identified using a combination of statistical analysis and expert (including PPI) interpretation.

5.2 Variables and selection procedure

All variables from the survey will not necessarily be included into the proposed analysis as they may not be informative to the model but will be used as part of the description of classes and in further discussion around the identification of services. Some variables in their current format will require some pre-processing to be used in the main analysis. Table A, found in Appendix, shows all variables included into the analysis and briefly outlines any procedures used to reformat the variables for inclusion into the analysis.

6 Statistical considerations

6.1 Sample size

In the absence of current service mapping data, and drawing on the project team's detailed knowledge of several current TCPs, we anticipate an approximate average of 4-5 services per TCP/STP/ICS area (a total population of no more than 200 services). Therefore, we plan to collect detailed data about all of the identified services across England. An amendment to the data collection procedure has switched data collection to an online survey which all recruited service providers complete, and an accompanying interview for a subset of those respondents. We aim to target and collect as many service providers as possible within the designated data collection timeframe and aim for a minimum 150 responses.

A typology for service models will be informed by Latent Class Analysis (LCA). Statistical power in LCA depends on a number of inter-connected parameters, and as such a closed-form sample size formula does not exist. A sample size of 150 services will provide approximately 90% power (based on the bootstrap likelihood ratio test with an alpha of 0.05), or at least 93% power (based on using information criterion), for selecting a three-class model over a two-class model (Dziak et al., 2014). The final power in this study will depend on the number of classes to select, as well as class sizes, prevalence of items, and number of items. As detailed below, the LCA findings will not be confirmatory in their own right, but will be supplemented by consultations with key stakeholders.

6.2 Effect size

The purpose of this study is not to determine an effect of interest as is traditionally required to address a research question. In this study, we aim to investigate whether sub-groups of services are present and, if so, the typology and details of their composition.

6.3 Missing data

Missing data will be assessed for structure using Little's test for missing completely-at-random (MCAR; Little, R.J.A., 1988). If data is found to be missing-at-random (MAR), latent class analyses will default to using full information maximum likelihood as this is robust to MAR.

6.4 Procedures for reporting deviation(s) from the original Statistical Analysis Plan

Any deviations from the original SAP will be transparently recorded in subsequent versions.

6.5 Inclusion in analysis

All eligible services' data will be included in analysis.

6.6 Randomisation/Sampling

This study does not require randomisation as no intervention is being assessed. All eligible services are included up to our desired sample size (N=200).

7 Analysis

7.1 Data cleaning

Once data collection is complete, raw data from the survey will be downloaded from Qualtrics directly into R statistical software. Data will be cleaned and recoded, so that variables are in an appropriate format for latent class analysis in Mplus. This will involve splitting responses from multiple response questions into an appropriate format, whether categorical, binary or continuous, and recoding categorical text responses as factors.

7.2 Summary statistics

Data will be summarised using descriptive statistics (including confidence intervals) to provide an overall picture of services for children with LD and BtC in England. Categorical variables will be summarised as counts and percentages. Similarly, continuous variables will report means and SDs; alternatively, if skewed or non-normal, median and interquartile range. Where appropriate, plots of summaries by English NHS region will be reported.

7.3 Latent class analysis (LCA)

Latent class analysis (LCA) is a data driven approach focusing on the individuals' responses, or in this study, the service providers, rather than a variable-centred approach to determine if homogeneous subgroups or classes are present (Weller *et al.*, 2020). Patterns of scores from service providers are used to identify potential similarities and as a means of grouping individuals using a probabilistic model. Multiple latent class models are fitted with increasing numbers of classes and compared for model fit. The most statistically parsimonious solution is not ideally defined by a single index, so a range of fit indices, diagnostic plots (i.e. elbow plots of the fit indices), and likelihood tests (Masyn, 2013) will be used to choose the best model from a statistical perspective.

LCA will be used to inform the development of descriptions of service models rather than groups of individuals. By using this statistical approach, we assume that "service type" is a latent variable that can be characterised by a number of observed variables. Variables to include in LCA would be features of services and not other descriptors (such as deprivation in the catchment area, rural/urban mix). Variables will first be evaluated for lack of availability across services (floor and ceiling effects).

7.4 Statistical model selection procedure

We will follow the model selection steps outlined in Masyn (2013):

- i. Initial model is fitted with a single class as a reference. Recording the log-likelihood value (LL); number of parameters; Akaike's Information Criterion (AIC); Bayesian Information Criterion (BIC); Consistent Akaike's Information Criterion (CAIC), and approximate weight of evidence (AWE).
- ii. Next, fit a set of K-class models, where K increases by 1 for each new LCA model. The maximum number of LCA models fitted can be determined when the Kth model is not identified. We propose to fit a maximum K = 6 class model initially. A higher number of "service types" would need to be theoretically justified before fitting larger K models. In addition to the fit indices, likelihood-based tests (LMR and BLRT) will be recorded between all K and K-1 models and p-values reported accordingly (significance level, $\alpha = 0.05$).
- iii. All models fit indices and likelihood-based tests results will be reported in a table for comparison. Lower fit indices indicate improved fit. In addition, the fit indices will be plotted against their respective K-class index, known as an elbow plot, to aid interpretation of the correct LCA model. Interpretation of the most parsimonious model involves choosing the point at which the fit visibly changes, i.e. the "elbow" observed indicating a significant reduction in the differences in fit indices.

- iv. Models will be selected based on all evidence from the above measures and the selected K-class model will be reported. A path diagram of the selected LCA model and corresponding class profile plot will be included as part of the results to further aid interpretation.

A brief note on model validation. Split-half validation is not possible as the available sample of data is constrained by the number of services in the UK, so adequate sample size for each half of the data would be insufficient to achieve satisfactory model fit. Therefore, will only report the models based on the complete sample.

7.5 Class interpretation and designation of service model labels

The statistical identification of potential typology of service models will be used as part of the evidence base in combination with typologies identified by the qualitative analyses and expert interpretation to decide on the final typology. The face validity of these classes and the classification of services will be discussed, and decisions around further groupings (either collapsing or expanding classes) will be documented leading to a final description of current service models for children with LD and BtC. As noted by Weller et al. (2020), adding representative class labels should be with reference to theoretical justifications. Statistically-derived classes will be identified and the contributing variables summarised for each class to provide an holistic description of the potential service model.

When attaching class labels to statistical groupings, data describing the context for the services (i.e. additional information from the interview and available demographics details), not used in the LCA, will also be used to enrich the descriptions of each potential service model.

7.6 Assumption violation/Model non-convergence

LCA models may require tuning after initial model fit to ensure convergence. These models can be sensitive to local maxima if weakly identified, indicating that the log-likelihood surface is relatively flat and may contain multiple potential solutions causing non-convergence or that a solution is not replicated. Often this can be an indicator that the model does not support the data and too many classes are trying to be estimated. In this scenario, the model's complexity will be reduced or investigation of variables that may be problematic will be carried out and the models potentially adjusted as a result.

7.7 Statistical analysis software

Latent class analyses will be conducted using Mplus, version 8.6, whereby we will estimate the probability of "service type" membership, given observed variables. Data wrangling, summary

statistics, plots, and missing data evaluation will be conducted using the statistical software, R (version 4.0.3 - 2020-10-10), and making use of packages Naniar, ggplot2, tidyverse, and psych.

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Appendix

Table A shows the variables included into the analysis and any data wrangling/cleaning procedures used.

Variable	Variable type (No. of categories)	Description (original survey question)	Variable manipulation from original survey questions (recategorized or transformed)
Q1	Continuous	How long has the service been in place? Years Months	Variable has been transformed to a single scale in months only, rather than two variables (years, months).
Q3/4	Categorical (3)	<p>Q3 Does the service stand-alone or is it part of/a sub-team of another service?</p> <ul style="list-style-type: none"> Stand-alone service Part of another service <p>Q4 Please describe what other service or sub-team your service is part of (<i>only display if answer 'part of another service' to Q3</i>)</p> <p>Open ended</p>	<p>Information from these two questions has been combined and categorised by the research team:</p> <ol style="list-style-type: none"> Stand-alone service A larger children's service A larger children's mental health service A larger child LD/autism service OR in a LD team covering a wider age range than just children
Q5/6	Multiple dichotomous (5)	Q5 Who commissions the service? If this service is jointly commissioned, please select all that apply. If there is more than one commissioner, you will then be asked to explain the rough proportions of share in funding.	<p>Convert to multiple items:</p> <ol style="list-style-type: none"> single vs multiple commissioner dichotomous items -

		<ul style="list-style-type: none"> • NHS specialist commissioning • Local authority: Education • Local authority: Social care • Private organization or company • Voluntary organization or charity • Private individual • Clinical commissioning group (CCG) • Transforming care partnership (TCP) • Integrated care system (ICS) • Sustainable transformation partnership (STP) • Other (text from 'other' answer in Q5): 	<p>These items capture the types of commissioner:</p> <ul style="list-style-type: none"> i. Any Local authority (including social care or education or both) (yes/no) ii. Any Clinical Commissioning Group (CCG) (yes/no) iii. Any Transforming Care Partnership (TCP)/Integrated Care System (ICS)/ Provider collaborative(yes/no) iv. Any NHS England specialist commissioning (yes/no)
		<p>Q6 You selected more than one commissioner. Please tell us the approximate percentage of funding that comes from each of the options you selected? <i>(only display if 2 or more options selected in Q5. Only options selected in Q5 displayed)</i></p>	
Q8	Dichotomous	<p>What are the ages of the children and young people with behaviours that challenge who</p>	<p>This variable was reclassified into the following two categories:</p> <ul style="list-style-type: none"> 1) 0 -25+ (all age) 2) 12 – 25+ (adolescent and young adult only)

		<p>can access the service? Please select all that apply</p> <ul style="list-style-type: none"> • 0-4 years • 5-11 years • 12-15 years • 16-19 years • 20-25 years • 25+ years 	
Q9	Categorical (2)	<p>At what age do children and young people with behaviours that challenge transition out of the service to a service for individuals who are older?</p> <ul style="list-style-type: none"> • There is no adult service to which they transition • They stay with the same service/team • 16 years of age • 17 years of age • 18 years of age • 19 years of age • 20 years of age • 21 years of age • 22 years of age • 23 years of age • 24 years of age • 25 years of age • 26+ years of age 	<p>This variable was reclassified into the following four categories:</p> <ol style="list-style-type: none"> 1) 16 – 18 years of age OR “There is no adult service” 2) 19-26+ years of age OR “stay within the same service”
Q11	Categorical (2)	<p>What groups of children and young people with behaviours that challenge is the service for (in terms of inclusion criteria for</p>	<p>This variable was reclassified into the following three categories:</p> <ol style="list-style-type: none"> 1) Learning (intellectual) disabilities AND/OR Autism only

		<p>the service)? Please select all that apply</p> <ul style="list-style-type: none"> • Children and young people with learning (intellectual) disabilities • Children with global developmental delay • Autistic children and young people who do not have a learning (intellectual disability) • Children and young people who both have learning (intellectual) disabilities and who are also autistic • Other disabled children and young people • Non-disabled children and young people • Other children and young people with particular “diagnoses” (please describe if selected): 	<p>2) Learning (intellectual) disabilities and Autism and Other</p>
Q12	Dichotomous	<p>Is the service only for children and young people with behaviours that challenge (even if they also have other support needs)?</p> <p>Yes No</p>	<p>Unchanged from raw survey data</p>
Q14	Dichotomous	<p>Who can refer children and young people with behaviours</p>	<p>Information from this question has been re-categorised by the research team into a dichotomous variable:</p>

		<p>that challenge into your service? Please select all that apply</p> <ul style="list-style-type: none"> • General Practitioners/Primary Care • Self-referrals/Referral directly from the child's carer • School – mainstream • School - special • Child and Adolescent Mental Health Services (CAMHS) • Other health professionals • Pre-schools • Social services • Third sector organisations • Paediatricians • Other (please describe) 	<p>“Does the service accept self-referrals as well as professional referrals?”</p> <ol style="list-style-type: none"> 1) No, Professional referral only 2) Yes, Professional or Self-referral
Q18	Continuous	<p>Approximately what is the current total active caseload for the service of children and young people with behaviours that challenge?</p> <p>Numerical</p>	<p>Initially included into the LCA analysis without manipulation, but may require a transformation if problematic in initial model runs.</p>
Q19	Categorical (4)	<p>For each of the following professional groups, please indicate how many staff in the service are from this background. If nobody of this profession works in the service, please answer '0'. Please categorise staff by main role. There will be a follow up question asking about approximate full time equivalent for those professional groups</p>	<p>This variable was reclassified a categorical variable indicating profiles of skills mixes in each service:</p> <ol style="list-style-type: none"> 1) Mostly psychologists (clinical and/or assistant) (>50%); 2) Mostly Learning Disability nurses (>50%);

		<p>that you indicate you have 1 or more staff of in your service. If there are staff in your service from other backgrounds, please indicate these in the 'other care staff' option.</p> <ul style="list-style-type: none"> • Assistant Psychologist • Assistant Social Worker • Clinical Psychologist • Dietician • General Nurse • Health Care Assistant • Learning Disability Nurse • Mental Health Nurse • Occupational Therapist • Physiotherapist • Psychiatrist (e.g., Consultant Psychiatrist, Staff Grade Doctor) • Qualified teacher • Speech and Language Therapist • Social worker • Support worker • Other (please describe) 	<p>3) Mostly 'other care staff' or support worker (>50%, other includes behavioural analyst, practitioners, outreach workers)</p> <p>4) Mixed (mixture of professional groups with no overall majority, either 50:50, or lots of smaller proportions for more professions)</p>
Q21/22	Categorical (x2)	<p>Q21 Do any of the staff in the service have any specialist training and qualifications (with some certification such as University or other training provider awards/credits) in behaviours that challenge <u>beyond their professional training</u>? For example, in positive behaviour support?</p> <p>Yes No</p>	<p>These variables will be reconfigured into three categorical variables indicating their intensity of expertise on each of the three domains from Q22:</p> <ul style="list-style-type: none"> • Positive behaviour support course <p>Categories for each variable will be as follows:</p>

			<p>1) No staff with specialist training or less than 50% have specialist training</p> <p>2) 50-75% of staff have specialist training</p> <p>3) >75% have specialist training</p>
		<p>Q22 How many staff in the service have had specialist training and qualifications in behaviours that challenge <u>beyond their professional training</u>? Please enter total number of staff for all that apply. If no staff have these qualifications please enter 0 (zero). <i>(only displayed if 'yes' selected in Q21)</i></p> <ul style="list-style-type: none"> • Positive behaviour support course • Challenging behaviour course • Other (please describe) 	<p>These variables will be reconfigured into three categorical variables indicating their intensity of expertise on each of the three domains from Q22:</p> <ul style="list-style-type: none"> • Challenging behaviour course <p>Categories for each variable will be as follows:</p> <p>1) No staff with specialist training or less than 50% have specialist training</p> <p>2) >50% of staff have specialist training</p>
Q24	Categorical (3)	<p>What intervention approaches does your service typically carry out that involve <u>directly delivering</u> interventions to children and young people with</p>	<p>Information from this question has been re-categorised by the research team into a four-category variable:</p> <p>1) Behavioural and skills development (Behavioural interventions that concern behaviours that challenge, Writing a behaviour support plan, Delivering a multi-</p>

		<p>behaviours that challenge? Please select all that apply.</p> <ul style="list-style-type: none"> • Reducing challenging behaviour using medication • Behavioural interventions that concern behaviours that challenge • Writing a behaviour support plan • Delivering a multi-element behaviour support plan • Increasing communication skills • Increasing other adaptive skills (e.g., social or independence skills) • Psychological therapies for mental health problems • Physical health interventions • Pharmacological interventions for mental health problems • Psychological / pharmacological interventions for poor sleep • Other therapies (e.g., art therapy, music therapy, play therapy) • Sensory interventions • Other (please describe) 	<p>element behaviour support plan, Increasing communication skills, Increasing other adaptive skills (e.g., social or independence skills))</p> <p>2) Most categories of interventions</p> <p>3) Other categories (excluding those from (1))</p>
Q31	Dichotomous	<p>What outcome domains does your service typically measure for children and young people with behaviours that challenge</p>	<p>Information from this question has been re-categorised by the research team into a dichotomous variable:</p>

		<p>and their families? Please select all that apply</p> <p>The child and/or young person's behaviours that challenge</p> <p>The child and/or young person's quality of life</p> <p>The child and/or young person's skills, such as communication skills, social skills, independence skills</p> <p>The child and/or young person's mental health (e.g., anxiety, mood/depression)</p> <p>Family carer well-being and quality of life (including quality of life of the family as a whole)</p> <p>Family carer experience and satisfaction with services/support received</p> <p>Other (please describe)</p>	<p>1) Child measures only</p> <p>Child and parent family measures</p>
			<p>2)</p>