Protocol

Assessment, Management and Outcomes for children and young people referred to a National Gender Identity Development Service

This protocol has regard for the HRA guidance and order of content

Research Team:

Professor Tim Doran

Professor Catherine Hewitt

Professor Karl Atkin

Dr Stuart Jarvis

Dr Trilby Langton

1.0 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 Declaration of Helsinki, the Sponsor's SOPs, and other regulatory requirement.

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 investigation 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.

For and on behalf of the Study Sponsor:

Signature: Date:

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Name (please print):

Michael Barber

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Position:

Contracts and Sponsorship Manager

.....

Chief Investigator:

Signature: ..... Date:

Name: (please print):

Professor Tim Doran

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2.0 Key Study Contacts

Chief Investigator	Professor Tim Doran
Sponsor	University of York
Data Controller	University of York
Funder(s)	NHS England
Key Protocol Contributors	Professor Tim Doran (TD) Dr Stuart Jarvis (SJ) Professor Karl Atkin (KA) Professor Catherine Hewitt (CH) Dr Trilby Langton (TL)

3.0 Study summary

Study Title	Assessment, Management and Outcomes for children and young people referred to a National Gender Identity Development Service
Short title	Outcomes for children and young people referred to a National Gender Identity Development Service
Study Design	Observational data linkage cohort study
Study Participants	All children and young people, resident in England, referred to the Tavistock Gender Identity Development Service service from 2009-2020
Planned Size of Sample	~9000
Milestones	REC/CAG/ HRA approval (Aug 2023) NHS Digital IGARD approval (Sep 2023) Clinical Data extraction (Sep 2023-Jul 2024) Data linkage complete (Jul 2024) Receipt of pseudonymised data (Aug 2024) Preliminary Analyses complete (Jan 2025) Final Analyses/write up (Jul 2025)
Planned Study Period	24 months
Research Question/Aim(s)	Aim: To examine the changing epidemiology of gender related distress in children and young people, in addition to the appropriate social, clinical, psychological and medical management. Objectives: 1. To describe the clinical and demographic characteristics of this population of children and their clinical management in the GIDS service; and 2. To assess the intermediate outcomes of this population of children utilising national healthcare data.
Study Steering Committee	This is one workstream of a larger study. There is a Study Steering Committee comprised of key academics and clinical experts.
Patient and Public and Stakeholder Engagement	Patient, Public and Stakeholder Engagement is integrated throughout the study.

4.0 Funding, sponsorship and study governance

This study has been funded under a competitive award process by NHS England.

The sponsor of the research is the University of York.

Funder and partners have an agreed contract for this research (which sets out the role and responsibilities of both parties.

The study is coordinated on a day-to-day basis by the Chief Investigator, with regular scheduled meetings with study investigators and researchers.

5.0 Background

5.1 Plain English summary

Some children and young people can experience significant levels of gender related distress in their course of their development. This distress is said to arise from a persistent mismatch between a young person's felt gender identity and the sex they were registered/assigned at birth[1].

The numbers of children and young people referred to the Tavistock and Portman's Gender Identity Development Service (GIDS) - the only NHS funded service for young people with gender related distress in England and Wales - have risen markedly over the last decade, resulting in lengthy waiting times and uncertainty for young people and their families. There have also been some significant changes in the group of young people referred, including an increase in the number of birth registered females being referred and an over representation of young people who have traits or a diagnosis of autistic spectrum condition (1). There is a limited and contested evidence base with which to inform current or future provision. Consequently, there is an important need to understand the needs of this changing population, identify the different management options and assess outcomes for young people who experience gender related distress.

This secondary data analysis study of linked healthcare data is part of a programme of academic research (including a series of systematic reviews and a primary qualitative study) to inform an independent review of gender identity development services for young people, reporting to NHS England, led by Dr Hilary Cass (https://cass.independent-review.uk/).

This study will use data that is collected within the NHS, including data from the Tavistock Gender Identity Development Service, hospital wards, outpatient clinics and emergency departments and adult gender identity clinics to assess the intermediate and longer-term outcomes for children and young people referred to the GIDS service. We will look at changing features of these children, e.g. age at referral, co-occuring diagnoses of autism and/or other mental health difficulties and assess if some groups of children are more likely to follow a medical approach to managing their gender related distress, and patterns of longer-term outcomes including successful transition, detransition and mental health outcomes.

This data should provide children and families more information on the different pathways through care to manage their gender–related distress and also provide evidence of for clinicians and policy makers delivering services for these children and young people.

[1] The research team acknowledge that there are ongoing debates about terminology. We have discussed this with PPI partners, including taking advice on the project title. When reporting our findings, we will reflect our participants' understandings of terminology.

5.2 Scientific Background

Numbers of children and young people referred to the Tavistock and Portman's Gender Identity Development Service (GIDS) - the only NHS funded service for young people with gender related distress in England and Wales - have risen markedly over the last decade, resulting in lengthy waiting times and uncertainty for young people and their families (2, 3{Butler, 2020 #49)}. There has been much discussion amongst stakeholder groups, in the media and within clinical and academic settings about the causal factors for this significant rise overall. Additional GIDS, as well as other international paediatric centres have all published papers documenting a marked increase in referrals of adolescent birth-registered females over recent years (4, 5) and an over-representation of children with autism or autistic spectrum traits (1) .

Young people who experience gender-based distress in childhood and adolescence appear to have a range of outcomes (6{Steensma, 2011 #52, 7, 8) and there has been an increase in focus on how young people's experiences can be fluid and wide ranging (9). Some of the children and young people seen in GIDS access psychosocial support only whilst others are referred to the services Paediatric Endocrinology Liaison Team for medical intervention following a process of assessment. Currently GIDS follows a staged model of care in which 'puberty blockers' or GnRH analogues are used firstly to suppress puberty. The GIDS service specifications state that further assessment and exploration is then offered to young people prior to a decision being made about the move onto either oestrogen or testosterone, with this decision being made at around age 16 and after a minimum of a year on puberty blocking treatment (10). At each stage young people and parents are required to understand and weigh up complex information about the known and unknown psychological and physical effects of the different treatments pathways.

The evidence base in relation to the use of puberty blockers for this population are limited. A recent systematic review by NICE showed that the use of puberty blockers did not reduce gender–related distress or result in changes in mental health, body image or psychological functioning. However, concerns were raised about the low small sample size and low quality of the nine included studies (11) - the largest study included only 143 adolescents (3). A study from the US, not included in the NICE review, using data from a survey of transgender adults concluded that those who received puberty blockers had significantly lower lifetime suicidal ideation than transgender adults who wished to have puberty blockers but did not receive them (12). There were other key differences between the groups including more family support in the blocker group and no difference in suicidal ideation with plan or suicide attempt. A more recently published uncontrolled study from the UK has confirmed no evidence of change in psychological function in these children after starting puberty blockers (13). An associated systematic review by NICE on the use of cross sex hormones (14) raised concerns about the quality of studies and concluded that a fundamental limitation of all the uncontrolled studies is that any changes in scores from baseline to follow-up could be attributed to a regression-to-the-mean, rather than the beneficial effects of hormone treatment.

The existing evidence base is, therefore, focused on small, selected populations with no larger, population-based studies of gender related distress in children and young people. This has led to calls from the research community for the assessment of longer term outcomes for these young people (15) . This study will utilise existing data collected within the National Health Service in England to assess the medium and longer-term outcomes of a population-based group of children with gender related distress.

6.0 Project plan

6.1 Aims

To examine the changing epidemiology of gender related distress in children and young people, in addition to the appropriate social, clinical, psychological and medical management

6.2 Objectives

1. To describe the clinical and demographic characteristics of this population of children and their clinical management in the GIDS service

2. To assess the intermediate outcomes of this population of children utilising national healthcare data.

6.3 Patient and Public Involvement and Engagement

A series of six online consultation events were held from Feb – June 2022. These events were advertised via:

- GIDs stakeholder group
- Yellow Door young person's group
- Stonewall
- Trans Actual
- Mermaids
- Gendered Intelligence

Across the sessions we spoke to 22 individuals. This was a mix of trans and gender questioning adolescents and young adults (n=12) and the parents of children and young people (n=10) who have been seen, or are waiting to be seen, at GIDs. Two further sessions were held in Autumn 2022, with another 23 individuals attending. A full report of the PPI work is in the PPI report. We plan further PPI engagement once the initial data analyses has been undertaken.

Transparency and trust are key to the success of this study. A plain English summary of the study will be available on the websites and distributed via the support organisations including those listed above.
A study specific opt out will be advertised via the Tavistock GIDS service, other support organisations and the University of York websites for 4 weeks prior to data extraction directing the young people to contact the Tavistock if they do not wish their data to be used. Any existing national opt outs will be upheld.

6.4 Research design

Retrospective secondary analysis of the Tavistock GIDS data and linked population level datasets available for children and young people referred to the GIDS service.

6.5 Participants

All children, teenagers or young adults aged ≤ 18 years old at the point of referral to GIDS, who have been referred to GIDS between 2009-2020.

6.6 Sample size

This is a full population cohort (n~ 9000)

6.7 Data Sources

The primary data source will be the clinical data from the Tavistock GIDS service (see Table 1 for all data items and source). For objective 2 these data need to be linked to:

1. The data from the paediatric endocrinology services at UCLH and Leeds Teaching Hospitals Trust.

2. The data from the NHS Gender Identity Clinics for Adults in England – this data is required directly from these clinics
    - The Tavistock and Portman NHS Foundation Trust, Gender Identity Clinic, London (formerly Charing Cross)
    - Leeds Gender Identity Clinic, Leeds
    - Northampton Gender Identity Clinic, Daventry
    - Northern Region Gender Dysphoria Service, Newcastle
    - The Nottingham Centre for Transgender Health
    - Porterbrook Clinic Gender Identity Service, Sheffield
    - The Laurels Gender Identity Clinic, Exeter

3. Other healthcare data – Data controller NHS Digital

    - Hospital Episodes Data – Admitted Patient Care
    - Hospital Episodes Data – A and E (pre 2019) and Emergency care dataset (from 2019)
    - Hospital Episodes Data – Outpatient
    - Mental Health Minimum data set
    - Community prescribing data
    - Death Registration data

Requirements for the clinical services are outlined in the Appendices.

Table 1 Data sources and key variables

	Tavistock GIDS (Primary dataset):	**Adult GIC**	**Community Prescribing Data (from 2015)**	**Hospital admission data (HES)**	**Outpatient data (HES)**	**A & E data (HES)/Emergency Care Dataset**	**Mental Health Minimum Dataset (MHSDS)**	**Death registration data (ONS)**
Data required for Linkage	Date of birth NHS Number Postcode Birth sex	Date of birth Postcode (NHS number)	NHS Number	Date of birth NHS Number Postcode	Date of birth NHS Number Postcode	Date of birth NHS Number Postcode	Date of birth NHS Number Postcode	Date of birth NHS Number Postcode
Data required for analyses	Month/year of birth Age Birth Sex Ethnicity LSOA (deprivation score) Date of referral to GIDS Source of referral Date of first appt Number of appts & professionals Diagnoses of gender dysphoria Family structure	Age Gender Treatment Centre Date and type of Medical Rx Date and type of Surgical procedures	Age Gender Ethnicity Deprivation score • Name, Strength, Form of medicine • Quantity and cost • Details of prescriber and service and dispenser	Age Sex Ethnicity Deprivation score Diagnoses (ICD10 codes) Procedures (OPCS codes) Date of admission Source of admission Specialty of admission Emergency or planned admission Date of discharge Discharge destination	Age Sex Ethnicity Deprivation score Date of appointment Specialty of appointment	Age Sex Ethnicity Deprivation score Date and time of attendance Diagnoses/reason for attendance Outcome Treatment	Age Gender Gender Identity Ethnicity Disability Looked after status Educational assessment Type of service input Autism and/or learning disability	Date of death (month and Year) Cause(s) of death Place of death

	Associated physical or mental health conditions CBCL data Date of referral to endocrine clinic Date of start of Puberty blockers Date of start of cross sex hormones Other Rx Date of discharge Destination on discharge			Date of death (month/year)(if occurred)				

6.8 Data extraction

Objective 1:

Note: Any data from NHS services where a ***gender dysphoria ICD10 code*** is recorded is transferred to NHS Digital without any patient identifiers. Therefore these data cannot be linked to other healthcare data within NHS Digital and data extraction from the Tavistock clinic electronic and paper records is required.

The data collection in the Tavistock clinic has varied over the years – all demographic data required for linkage is stored electronically so can be extracted easily. The other clinical data (see Table 1) will require manual extraction from paper and/or electronic records. For more recent referrals much of this information will be available on a summary assessment and discharge form. This task is estimated to require six research assistants for six months – 10-15 notes per day. These research assistants will be trained by the CI and TL – our clinical co-investigator.

A unique study ID (pseudonym) will be used to retain the link between the non-identifiable data collected and the confidential patient data. The confidential patient data will be retained on the Tavistock system until required for transfer to NHS Digital for linkage with NHS Digital datasets. The pseudonymised data will be securely transferred to the Department of Health Sciences server at the University of York.

Research assistants will only access case notes for the purpose of extracting key data items. Clinical reviews of case notes, including assessments of quality of care and safeguarding issues, will not be conducted. In the unlikely event that a safeguarding concern is raised during data extraction, the study CI will be informed and the issue will be reported to the safeguarding lead at the relevant site. In order to protect confidentiality, the wider research team will be made aware of the existence of a safeguarding issue but will not be made aware of the identity of the subject.

Objective 2:

Tavistock GIDS service: The confidential patient data required for linkage to other NHS datasets (Date of birth, NHS Number, Postcode and Birth registered sex) can be extracted from the electronic records at the Tavistock clinic.

NHS Gender Identity Clinics for Adults in England: The confidential patient data required for linkage to the Tavistock data and other NHS datasets (Date of birth, current NHS Number, Postcode and Birth registered sex) can be extracted from the electronic records at the Adult GIC clinics. To reduce flows of confidential patient data, this will only include those aged up to age 30 years (the oldest young person referred to GIDS in 2009 would be 30 in 2020).

6.9 Data linkage

All data linkages will be undertaken by NHS Digital (see figure 2). This is a more complex process than for other populations for several reasons.

Gender recognition legal position

The **Gender Recognition Act 2004** Act applies to England and Wales. It is an offence for a person who acquires protected information in an official capacity to disclose the information to any other person. 'Protected information' means information which relates to a person who has made an application for a gender recognition certificate. It is not an offence to disclose protected information relating to a person if, the person by whom the disclosure is made, does not know or believe that a full gender recognition certificate has been issued.
Gender Recognition Act 2004 (legislation.gov.uk)

Any patient can at any time request that their gender is changed on their primary care records.

> NHS guidance for Primary Care providers
> Patients may request to change gender on their patient record at any time and do not need to have undergone any form of gender reassignment treatment in order to do so. When a patient changes gender, the current process on NHS systems requires that they are given a new NHS number and must be registered as a new patient at your practice. All previous medical information relating to the patient needs to be transferred into a newly created medical record. When the patient informs the practice that they wish to register their new gender on the clinical system, the practice must inform the patient that this will involve a new NHS number being issued for them. Subsequent changes to gender would involve a new NHS number. Please confirm this has been discussed with the patient when notifying PCSE.
> https://pcse.england.nhs.uk/media/1481/14.pdf

If a patient choses to have their gender officially changed on NHS records then a ***new NHS number*** is issued and there is no method within NHS Digital of linking these two records as the old NHS number is *invalidated*:

> **"Invalidated** – Similar to a logical deletion. Used where a change of identity is involved, e.g. adoption or gender reassignment, and some complex data quality cases. A new number will be allocated to the patient. Once a number has been invalidated it cannot be traced and there is no system link between the invalidated number and the new number."

This has implications for linkage. The standard methods used to link data within NHS Digital is via the Master Person Identifier (MPS) which attempts to match all the records to a *single NHS Number* held in the Personal Demographic Service (PDS). MPS also checks demographic details supplied in the submitted data file, such as age, gender and postcode, for their 'closeness' to the data held in PDS and produces an associated match confidence score.

Proposed routes to data linkage

The data linkage will be undertaken by NHS Digital. This approach ensures that the minimum flow of patient identifiable data will need to be transferred. Data flows are shown in Figure 1 below and data variables listed in table 1.

The linkage processes described below will be undertaken in parallel, but it is useful to set out how the process will differ between those who have and have not changed their NHS number.

For those individuals who have not changed NHS number:

1. The confidential patient information required for linkage (NHS number, date of birth. Postcode, birth registered sex) and unique study ID will be transferred from the Tavistock to NHS Digital.
2. The confidential patient information required for linkage (NHS number, date of birth, postcode, birth sex) and GIC serial number will be transferred from the adult GIC clinics to NHS Digital. To reduce flows this will only include those aged up to age 30 years (the oldest young person referred to GIDS in 2009 would be 30 in 2020).
3. NHS Digital will utilise the MPS and Patient Demographic Service to link to the five datasets they control.
4. The GIC serial number with unique study ID will be returned to the adult GIC clinics.
5. Clinical data from the adult GIC and unique study ID will be securely transferred to the University of York.
6. The clinical information from NHS digital will flow with unique study ID to the University of York where it can be linked with the pseudonymised data from the Tavistock GIDS (from objective 1) and the adult GIC clinics.

For those who have changed their NHS number:

1. The confidential patient information required for linkage (NHS number, date of birth. Postcode, birth sex) and unique study ID will be transferred from the Tavistock to NHS Digital.
2. The confidential patient information required for linkage (NHS number, date of birth. Postcode, birth sex) and GIC serial number will be transferred from the adult GIC clinics to NHS Digital. To reduce flows this will only include those aged up to age 30 years (the oldest young person referred to GIDS in 2009 would be 30 in 2020).
3. NHS Digital will use a modified linkage process using postcode and date of birth alone to match between the individual in the GIC and then utilise the MPS and Patient demographic service to identify the two NHS numbers that relate to that individual.
4. NHS Digital will utilise these NHS numbers to link to the five datasets they control.
5. The GIC serial number with unique study ID will be returned to the adult GIC clinics – clinical data for these matching individuals only will be extracted from the electronic or paper clinic records by members of the research team. Data availability and recording varies between the Adult GIC clinic so a different approach may be required for each service.
6. Clinical data from the adult GIC and unique study ID will be securely transferred to the University of York.
7. The clinical information from NHS digital will flow with unique study ID to the University of York where it can be linked with the pseudonymised data from the Tavistock GIDS (from objective 1) and the adult GIC clinics.

Under each linkage approach, the University of York team will receive pseudonymised clinical data from the Tavistock, UCLH, NHS Digital and Adult GIC clinics.

Legal Basis

For both objective 1 and 2 an application to the Confidentiality Advisory Group will be made under section 251 of the National Health Service Act 2006 and its current Regulations, the Health Service (Control of Patient Information) Regulations 2002. The NHS Act 2006 and the Regulations enable the ***common law duty of confidentiality*** to be temporarily lifted so that confidential patient information can be transferred to an applicant without the discloser being in breach of the common law duty of confidentiality. All data flows in the data diagram (flows 1- 11) will be covered by the s251 approval and retention and processing of the final dataset will also be in scope of the s251 approval.

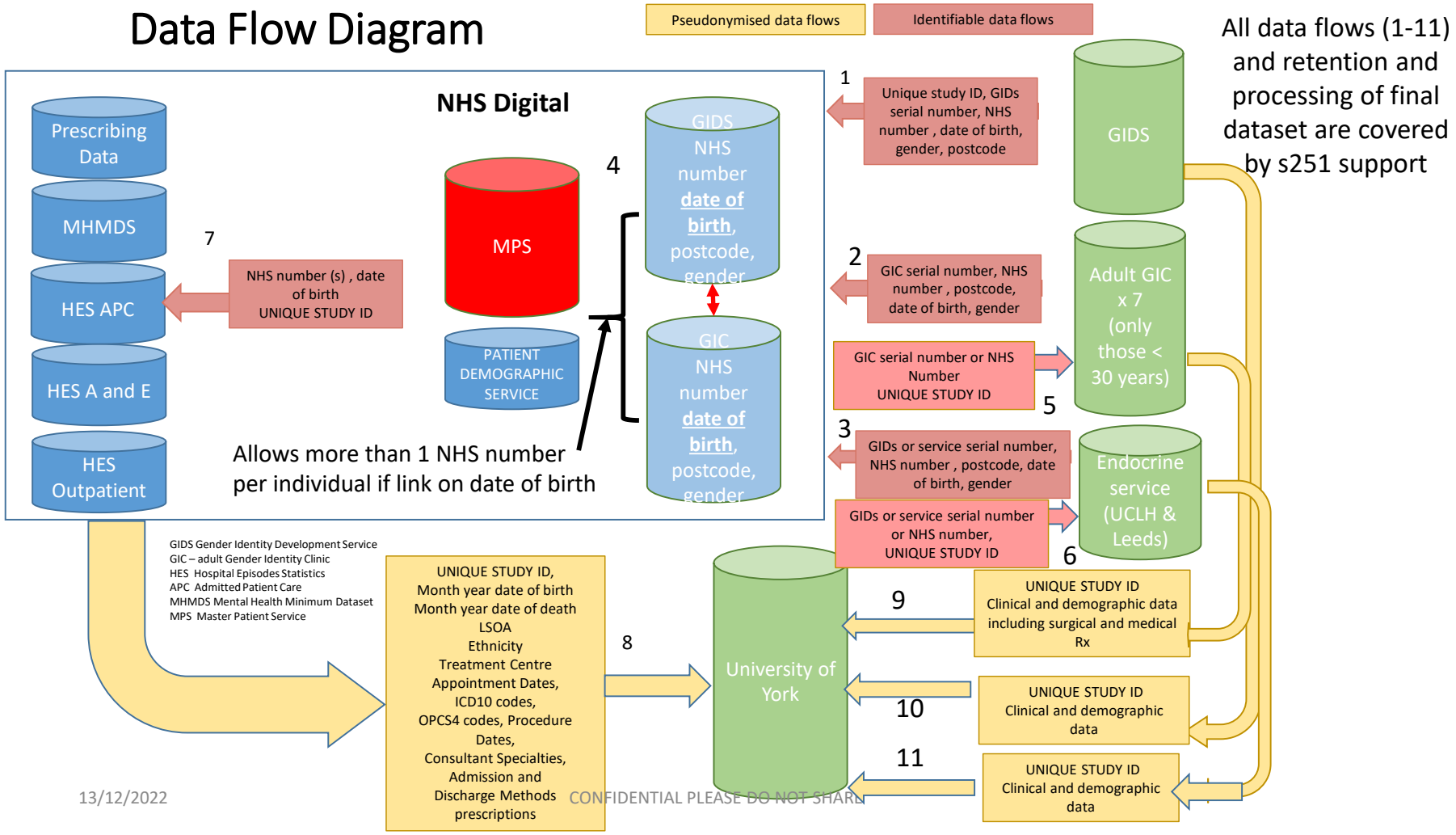
Compliance with the ***Gender Recognition Act*** is required for objective 2 – advice was sought from the National Data Guardian and a request to the Secretary of State for Heath to enact section 22 point 5 of the GRA as the legal basis for this study: *"The Secretary of State may by order make provision prescribing circumstances in which the disclosure of protected information is not to constitute an offence under this section"*. A Statutory Instrument has been laid by the Secretary of State for Health for the specific purposes of this study which can be found here: https://questions-statements.parliament.uk/written-statements/detail/2022-06-30/hcws170

The SI has also now been laid on gov.uk, with the explanatory memorandum here: The Gender Recognition (Disclosure of Information) (England) Order 2022 (legislation.gov.uk)

This Statutory Instrument came into force on the 28th July 2022 and will last for 5 years.

The University of York will be the data controller for this study.

Figure 1 Data Flow Diagram – objective 2



6.10 Data Quality

An assessment of the impact of opt-outs will be made and the proportion of individuals matched to NHS D and Adult GIC data will be calculated. This information will be used in interpretation of the findings from this study.

Once data linkage has been undertaken an assessment of data quality and completeness will be undertaken for all the key clinical and demographic variables of interest (Table 1). Data conflicts will be solved using 1) Qualitative assessment based on demographic data; 2) Count of missing data, 3) Use the most common recorded value (either exact or nearest for dates).

No attempts to impute missing data will be made. Where a large proportion of missing data for key variables exists these data will not be used as the findings will be considered unreliable.

6.11 Data analysis

Objective 1:
A population based retrospective cohort study will be undertaken using data from electronic and paper records in the GIDS. The population will include all children and young people referred to the Tavistock GIDS resident in England referred from 2009- 2020 (12 years). These analyses will aim to

a. Describe the demographic of children referred to GIDS;
b. Assess the treatment pathways, including endocrine treatment, of children in GIDS;
c. Describe the referral sources of children referred to GIDS; and
d. Describe the destination of children after GIDS assessment.

Derivation of variables:

Some of the key demographic variables (e.g. ethnic group, deprivation score) will be obtained by combining different data sources. In this situation if any conflict between data sources occurs we will assign the most commonly recorded ethnic group (census 2011 categories) assuming that is not 'unknown'. We will use standard small number suppression rules when publishing data (no cell size <10).

Descriptive Statistics:

The demographic profile of this cohort of children and young people will be described using counts and percentages for categorical data (e.g., ethnic origin) and means and standard deviation for continuous data (e.g., age at referral). Demographic data will include whether or not children have begun puberty at the point of referral, either determined from records at the GIDS or by use of an age cut-off, e.g. 12 years. The number of appointments and clinical assessments will be described and any change over time of the source of referral and the destination on discharge will also be detailed.

Treatment pathways are an important outcome for this population so we will use log-binomial or robust (modified) Poisson regression models to assess whether any of the clinical or demographic data are associated with being more likely to be referred for endocrine treatment. This will be in the form of models with a binary outcome (referral to endocrine clinic or no referral to endocrine clinic) with independent variables selected from demographic data (ethnic group, deprivation group, birth sex) and other clinical data (e.g. co-occurring conditions such as autism) and puberty status at referral, based on model fit as assessed by Akaike's Information Criterion and the Bayesian Information Criterion.

Objective 2:
Once data linkage has been undertaken an assessment of data quality and completeness will be undertaken for all the key clinical and demographic variables of interest (Table 1).

Key outcome data derived from the linked healthcare data will include:

1. Any surgical management of gender dysphoria (adult GIC data);
2. Any medical management of gender dysphoria (GIDS data, adult GIC data, national community prescribing data);
3. Mental health diagnoses and treatment (community mental health services dataset, A and E data, community prescribing data).
4. Co-occurring diagnoses of autistic spectrum disorder (community mental health services dataset, GIDS data)

We will then describe the destinations of young people referred to the Tavistock clinic by describing the proportion who:

- accessed assessment and psychosocial support only and were discharged?
- were prescribed hormone blocking treatment only?
- were prescribed hormone blocking treatment followed by cross sex hormone treatment?
- later accessed sex reassignment surgery in adulthood?
- appear to have de-transitioned?
- had co-occurring mental health diagnosis?
- had a diagnosis of autistic spectrum disorder?
- had self-harmed and the extent to which other mental health conditions vary within these groups of young people?

Appropriate statistical models (e.g. as described above for objective 1) will be used to assess whether any clinical or demographic features, including puberty status at referral are associated with these outcomes.

7.0 Regulatory requirements

7.1 Research Ethics Committee (REC), Confidentiality Advisory Group (CAG) review & reports

Before the start of the study, a favourable opinion will be sought from the HRA, Confidentiality Advisory Group and the NHS REC for the study protocol, and other relevant documents. Substantial amendments that require review by NHS REC or CAG will not be implemented until that review is in place. All correspondence with the REC, HRA and CAG will be retained.

Annual reports, annual progress reports, and end of study notifications will be the responsibility of the Chief Investigator. An annual progress report (APR) will be submitted to the REC and CAG within 30 days of the anniversary date on which the favourable opinion was given, and annually until the study is declared ended. If the study is ended prematurely, the Chief Investigator will notify the REC and CAG, including the reasons for the premature termination. Within one year after the end of the study, the Chief Investigator will submit a final report with the results, including any publications/abstracts, to the REC and CAG.

7.2 Amendments

If a substantial amendment (as determined by the sponsor, advised by the Chief Investigator) is required to the REC application or the supporting documents, the sponsor will submit a valid notice of amendment to the REC and CAG for consideration. Amendments will also be notified to the HRA and communicated to the participating organisations (R&D office and local research team) departments of participating sites to assess whether the amendment affects the NHS permission for that site. Minor amendments will be notified to the HRA, and with their approval, to participating organisations. Amended documentation or the protocol will be sequentially numbered and dated.
The requirements for amendments may be identified by the research team, participating sites, or funder.

7.3 Protocol compliance

Accidental protocol deviations can happen at any time. They will be adequately documented and reported to the Chief Investigator and Sponsor immediately. Deviations from the protocol which are found to frequently recur are not acceptable, will require immediate action and could potentially be classified as a serious breach.

8.0 Data protection and patient confidentiality

All investigators and research staff will comply with the requirements of The Data Protection Act 2018, the UK's implementation of the General Data Protection Regulation (GDPR), with regards to the collection, storage, processing and disclosure of personal information and will uphold the Act's core principles.

8.1 Confidentiality, data handling and security

Data storage and handling will comply with data controllers, processers and University of York policies. This will include locked storage, password protection, encryption of the pseudonymised data. Data will be stored on the secure University of York Department of Health Sciences servers and encrypted, pseudonymised data files. Data will be stored on a distinct area of a secure server, accessible only by authorised members of the research team, encrypted and password protected.

8.1.1 Storage, back up and security

All data is stored directly on the University of York Department of Health Sciences Departmental Server.

A combination of an encrypted web VPN session and an authenticated connection to the Departmental local Remote Desktop Server is required to access the data remotely. The service does not permit remote file copy, paste or download, to prevent transmission or removal of data beyond the organisation network perimeter. The data will only be transmitted between the filestore and Departmental desktop computer over the locally protected Departmental network. Only users registered by the security manager will be provided with a valid username and password. Valid authentication using these credentials is required to access any data. Only traffic originating from the Health Sciences Departmental desktop computers or secure Remote Desktop via the encrypted University VPN is permitted. VPN and desktop service requires Windows authentication with alpha-numeric password of at least 8 characters.

Firewall - WAN and LAN Checkpoint Firewall blocks external and non-approved traffic. The Server is Windows based with local windows firewall enabled, auto updating anti-virus software from a local server, and auto updating window patches, from a local WSUS server. The Departmental LAN firewall connecting through to the JANET network does not manage access into any untrusted networks (e.g. the internet). Windows based Desktop PC's are also protected by a local operating system firewall.

Total Segregation - The server only receive local antivirus and windows patching updates, all outgoing traffic on open ports are restricted by firewall scope to the Departmental subnet and University secure VPN, except for specific rules to allow for these updates. Sophos Anti-virus software v9 is installed, which includes spyware, and malicious software/content detection and is configured for local auto-updates every four hours.

Windows Patching - Microsoft Windows patching is automatically configured from a local WSUS server run daily at 5am.

Extra Layers of Security - The Sophos Anti-virus software also includes anti-spyware. Penetration testing is undertaken

8.1.2 Data archiving, preservation and destruction

Data will be archived for 5 years following the end of the project. Data will be stored in the University of York in accordance with GDPR and the University of York guidelines. At the end of the default retention period (5 years) all data will be confidentially destroyed by a secure method.

8.2 Indemnity

The study is indemnified by the study sponsor: University of York

8.3 Data sharing

As per agreements with NHS Digital and the Tavistock, individual level data will not be shared beyond the research team.

9 Dissemination policy

The study outcomes, generated in consultation with key stakeholders, will provide robust research evidence, on which to base optimal care that respects - and is responsive to - a diverse range of experiences.

To ensure visibility and transparency, all outputs (including protocols) will be available from a designated study website.

This study will provide:

• a description of the changing population of children being referred to the GIDS service, which includes providing gender related healthcare interventions and short-term outcomes;

• recommendations on the potential improvement of data collection the GIDS service;

• a comprehensive assessment of the gender related and other healthcare utilisation of this population; and

• an accessible plain English summary aimed at children, young people and their families, which offers a narrative overview of these outputs.

Broader dissemination will integrate the findings from the different stages of the project (systematic reviews, qualitative study and secondary data analyses). Working with our stakeholders (including the CASS review team) we will ensure the maximum distribution of these documents and make them available on various other professional and community websites.

Further, the project will generate peer reviewed publications in high-ranking journals (e.g., Social Science and Medicine, Sociology of Health and Illness, British Medical Journal, Archives of Disease in Childhood); articles in professional orientated outlets (e.g., RCPCH, RCGP); presentations at academic conferences, professional meetings and community workshops. Peer reviewed publications will be open access.

10 Study Steering group

A *Study Steering Committee* has been established with an independent chair and representation from topic experts and academics. This panel will meet 3 times per year to assess progress of the study against the defined milestones and deliverables and provide advice and expertise to the Study Management Team.

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Appendix 1 – Tavistock GIDS Service

Activities required

Phase 1 – Data Linkage

1. Compile list of identifiable data for patients referred to the GIDS clinic from 2009-2020

2. Check for National Data Opt outs using your standard process for this. Remove anyone with a national data opt out

3. Remove anyone who has requested a local opt out by directly contacting your clinic

4. Generate a unique study ID for each patient

4. Securely share the list of identifiers with NHS Digital

a. NHS Number(s)
b. date of birth
c. gender
d. postcode
e. unique study ID

Phase 2 – Data Extraction

1. Enable the research team access to the paper and medical records to extract the clinical data (see Table 1 for data items to be extracted by the research team).

2. Enable access to the mapping of study IDs to identifiable information so that the data extraction team can pseudonymise the data prior before transfer to the University of York

Appendix 2 – Endocrine Services

Activities required

Phase 1

1. Compile list of identifiable data for patients referred to the clinic from 1/1/2009-31/12/2020

2. Check for National Data Opt outs using your standard process for this. Remove anyone with a national data opt out

3. Remove anyone who has requested a local opt out by directly contacting your clinic

4.Securely share the list of identifiers with NHS Digital

a. NHS Number(s)
b. date of birth
c. gender
d. postcode
e. clinic ID

Phase 2

5. NHS Digital will securely share the unique study IDs with clinic ID or NHS number for eligible patients.

6. Extract/provide clinical data (see table 1 for data items) for these eligible patients and remove identifiable information and replace with unique study IDs

7. Securely share these pseudonymised data with the research team when requested.

Appendix 3 – Adults GICs

Activities required

Phase 1

1. Compile list of identifiable data for patients referred to the adult clinic with date of birth from 1/1/1990- 31/12/2002.

2. Check for National Data Opt outs using your standard process for this. Remove anyone with a national data opt out

3. Remove anyone who has requested a local opt out by directly contacting your clinic

4.Securely share the list of identifiers with NHS Digital

f. NHS Number(s)
g. date of birth
h. gender
i. postcode
j. clinic ID

Phase 2

5. NHS Digital will securely share the unique study IDs with clinic ID or NHS number for eligible patients.

6. Enable research team access to the paper/electronic medical records and the study ID for those eligible patients (See Table 1 for data items that will be extracted by the research team).