CENTRE FOR LONGITUDINAL STUDIES

UCL 200

CLS-DAC-approved use of NHS Hospital Episode Statistics (HES) data linked to CLS cohort studies

USE OF HES DATA LINKED TO CLS COHORT DATA 1
CLS METHODOLOGICAL PROJECTS (DAC-APPROVED) 2
RESEARCH PROJECTS FOR ACCESS VIA THE UK DATA SERVICE (DAC-APPROVED) 12

Use of HES data linked to CLS cohort data

The NHS Hospital Episode Statistics (HES) data comprise Admitted Patient Care, Outpatient, Critical Care, and Accident & Emergency. CLS have obtained permission from NHS England to link HES data to the four CLS cohort studies: NCDS, BCS70, Next Steps, and MCS.

The CLS aims agreed with NHS England are the following:

1. **CLS data management** to process, store, and generate a useful linked HES data resource linked to the CLS cohort data. These processed linked HES data are suitably pseudonymised and de-identified. This work is carried out within the secure UCL server used by CLS (UCL Data Safe Haven).
2. **CLS methodological work** to describe and assess the quality of the processed linked HES data and/or their benefit to health and social care, in order to facilitate onward sharing via user training, publication of methodological papers, and promotion of policy-related research. This work is carried out within the secure UCL server used by CLS (UCL Data Safe Haven).
3. **Onward sharing via the UK Data Service Secure Lab** to enable the safe sharing of the processed linked HES data with the research community where they can be analysed in combination with the cohort survey data. Researchers, including CLS staff, who want to use the data for research purposes must apply to the UK Data Service.

   The applications are reviewed by the CLS Data Access Committee (DAC) which is an independent committee that ensures that the information is used responsibly and safely. Researchers will only be given permission to use the data if they present a strong scientific case and explain the potential impact of the research and its wider value to society.

In addition to the standard UKDS SecureLab licence, access to these linked HES data is governed by a sub-licence between the applicant's institution and UCL, as agreed by NHS England.

CLS methodological projects (DAC-approved)

CLS DAC ref.	DAC / 113
UKDS project ref.	N/a (access via the UCL DSH)
Project title	Linkage of National Longitudinal Cohort Studies and Administrative Data: A Mutually Beneficial Arrangement
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	NCDS and Next Steps
Plain text abstract	The overall aim of this project is to address several methodological issues at the interface between linked cohort data and administrative data that are mutually beneficial for both data sources: missing data, data quality, residual confounding. This will be undertaken using existing data linkages in health and education with UCL Centre for Longitudinal Studies (CLS) cohorts. We will address the following three methodological research questions, which will be directly reflected in the project work packages: 1. How can linked administrative data aid the handling of missing cohort data? 2. How can linked cohort data improve our understanding of the quality of administrative data? 3. How can linked cohort data help address residual confounding in analyses of administrative data? The project will utilise data across two of the world-leading national longitudinal cohort studies run by CLS (1958 National Child Development Study and Next Steps) linked to three sources of administrative data (National Pupil Database, Hospital Episode Statistics and Higher Education Statistics Agency data)

Data requested	Selected variables from: • SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access • SN 8681 – Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	1 December 2020
Date approved	3 March 2021
Research outputs	*Working papers* • Silverwood RJ, Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB. Examining the quality and sample representativeness of linked survey and administrative data: linking the 1958 National Child Development Study to Hospital Episode Statistics data. CLS Working Paper 2022/5. London: UCL Centre for Longitudinal Studies; 2022. • Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB, Silverwood RJ. Using linked Hospital Episode Statistics data to aid the handling of non-response and restore sample representativeness in the 1958 National Child Development Study. CLS Working Paper 2023/1. London: UCL Centre for Longitudinal Studies; 2023. *Journal articles* • Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB, Silverwood RJ. Using linked Hospital Episode Statistics data to aid the handling of non-response and restore sample representativeness in the 1958 National Child Development Study. BMC Medical Res Methodol. 2023; 23: 266. • Silverwood RJ, Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB. Examining the quality and target population representativeness of linked survey and administrative data: guidance and illustration using linked 1958 National

	Child Development Study and Hospital Episode Statistics data. Int J Popul Data Sci. 2024; 9(1): 2137. *Presentations* • Silverwood RJ. Using linked Hospital Episode Statistics data to aid the handling of missing cohort data. St George's, University of London, Population Health Research Institute Seminar (Online, March 2022) • Rajah N. Using linked Hospital Episode Statistics data to aid the handling of missing cohort data. Health Studies User Conference (Online, July 2022) • Silverwood RJ. Examining the quality and sample representativeness of linked 1958 National Child Development Study and Hospital Episode Statistics data. International Population Data Linkage Network Conference (Edinburgh, September 2022) • Rajah N. Using linked Hospital Episode Statistics data to aid the handling of missing cohort data. International Population Data Linkage Network Conference (Edinburgh, September 2022) • Silverwood RJ. Examining the quality and sample representativeness of linked 1958 National Child Development Study and Hospital Episode Statistics data. Royal Statistical Society International Conference (Aberdeen, September 2022) • Silverwood RJ. Using linked Hospital Episode Statistics data to aid the handling of missing cohort data. Royal Statistical Society International Conference (Aberdeen, September 2022) • Silverwood RJ. Using linked administrative data to aid the handling of non-response and restore sample representativeness in cohort studies: The 1958 National Child Development Study and Hospital Episode Statistics data. Royal Statistical Society South West Local Group Seminar (Online, April 2023).

	• Silverwood RJ, Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB. Examining the Quality and Target Population Representativeness of Linked Survey and Administrative Data: Guidance and Illustration Using Linked 1958 National Child Development Study and Hospital Episode Statistics Data. European Survey Research Association Conference (Milan, July 2023). • Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB, Silverwood RJ. Using Linked Hospital Episode Statistics Data to Aid the Handling of Non-response and Restore Sample Representativeness in the 1958 National Child Development Study. European Survey Research Association Conference (Milan, July 2023). *Published abstracts* • Silverwood RJ, Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB. Examining the quality and sample representativeness of linked survey and administrative data: linking the 1958 National Child Development Study to Hospital Episode Statistics data. Int J Popul Data Sci, 2022; 7(3): 1990. • Rajah N, Calderwood L, De Stavola BL, Harron K, Ploubidis GB, Silverwood RJ. Using linked Hospital Episode Statistics data to better handle non-response and restore sample representativeness in the National Child Development Study. Int J Popul Data Sci, 2022; 7(3): 1997. *Training and capacity building* • Silverwood RJ. Analysing linked HES data. Part of "Using linked administrative data: Hospital Episode Statistics linked with the CLS cohorts" UCL Centre for Longitudinal Studies webinar (Online, December 2022)
Legal basis	Public task

CLS DAC ref.	DAC / 141

UKDS project ref.	N/a (access via the UCL DSH)
Project title	Analysis of Mental Health in Young People with Linked Data
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	Next Steps
Plain text abstract	There has been increasing policy focus on mental health in recent years given the rising prevalence of anxiety and psychological distress, and the COVID-19 pandemic has brought it into even sharper focus than ever before. In analysing whether mental health services are reaching those most in need, this project has the potential to transform how services are best targeted. The applicants will liaise closely with policymakers to ensure findings reach those designing and delivering services. In providing an in-depth understanding of the changes in mental health in young people over time, and exactly how services are meeting their needs, this work will enable policymakers to better plan and allocate healthcare resources for this generation. The impact on society will be far reaching, with the potential to benefit the lives of several thousands of individuals and their families.
Data requested	Selected variables from: • SN 8681 – Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	28 January 2022
Date approved	10 February 2022
Research outputs	*Presentations* • Baranyi G, Harron K, Rajah N, Fitzsimons E. *Psychological distress in childhood and mental health-related hospital attendance among young adults*. International Population Data Linkage Network Conference, Chicago (US, 2024)

	• Baranyi G, Harron K, Rajah N, Fitzsimons E. *Psychological distress in childhood and mental health-related hospital attendance among young adults*. SLLS International Conference, Colchester (UK, 2024) *Journal articles* • Baranyi G, Harron K, Rajah N, Fitzsimons E. Self-reported psychological distress in childhood and mental health-related hospital attendance among young adults: a 12-year data linkage cohort study from England. *Social Psychiatry and Psychiatric Epidemiology*. 2025 Feb 18. doi: 10.1007/s00127-025-02854-y
Legal basis	Public task

CLS DAC ref.	DAC / 159
UKDS project ref.	N/a (access via the UCL DSH)
Project title	Derived variables of mental health-related health services use in NCDS and BCS70
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	NCDS and BCS70
Plain text abstract	Although early life socioeconomic indicators and adverse childhood experiences (ACEs) are related to poorer mental health outcomes during adulthood, the extent to which they are related to mental health hospitalisations in adulthood has not been yet studied. Data linkages between the British birth cohorts and data on hospital admissions and treatment length provide a unique opportunity to investigate this and other relevant research questions. However, variables capturing the cohort members' health services that are user-friendly for the scientific community are not readily available in the linked datasets but rather have to be derived. The aim of this project is precisely to derive such user-friendly variables with the main objective of adding them to the CLS research data resource for wide data sharing to the scientific community. The value of

	these variables for health research will be exemplified by exploring their relationship with early life socioeconomic indicators and ACEs.
Data requested	NCDS and BCS70 variables
Date received	1 November 2022
Date approved	16 March 2023
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 184
UKDS project ref.	N/a (access via the UCL DSH)
Project title	Mental health service use in young people and its relationship with social media and digital technologies
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	MCS
Plain text abstract	Demand for mental health services has been increasing in recent years, particularly among young people. In response to this, many have blamed the rise of social media. But is there any truth to this accusation? Previous research has returned very mixed results and mostly uses self-reported measures of mental health. We can get a more objective view of mental health service use by turning to other sources, such as healthcare records. Therefore, the healthcare records provided by participants in the Millennium Cohort Study offer us a new opportunity to answer this question. Throughout their teens, participants answered questions about their use of social media, and at one point also filled in a time use diary. By combining these with the healthcare records, we hope to find out whether it could be

	possible that social media has caused more people to seek help for mental health conditions.
Data requested	Hospital Episode Statistics (Accident & Emergency, Admitted Patient Care, Outpatient, Emergency Care)
Date received	15 October 2023
Date approved	8 January 2024
Research outputs	*Presentations* • Metherell TE. Characterising the longitudinal relationship between social media use and psychiatric diagnoses in secondary care in adolescents in England. Society for Longitudinal and Lifecourse Studies Annual Conference (Fribourg, September 2025). *Working papers* • Metherell TE, Fassi L, Rashid R, Thornton H, Hayes JF, Ploubidis GB, Moreno-Agostino D. Characterising the longitudinal relationship between social media use and psychiatric diagnoses in secondary care in adolescents in England. PsyArXiv; 2025.
Legal basis	Public task

CLS DAC ref.	DAC / 185
UKDS project ref.	N/a (access via the UCL DSH)
Project title	Life course air pollution, physical and mental health in self-reported and service use data in childhood
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	MCS
Plain text abstract	Residing in areas with bad air quality has been associated with physical and mental health problems and related service use. However, available research is limited by cross-sectional or

	short-term longitudinal design without considering the timing of exposure to air pollution during the life course. This project aims to overcome previous limitations by estimating air pollution exposure from early life to young adulthood among cohort participants and by modelling different life course models (i.e., sensitive period, accumulation). Associations between selected life course models, self-reported mental health and hospital administrative records related to physical and mental health problems in childhood will be investigated, with a special focus on how self-reported problems predict future service use. We will also use the data for methodological work.
Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000-2019: Secure Access • A variable on who consented and got matched to health administrative data.
Date received	9 November 2023
Date approved	8 January 2024
Research outputs	*Presentations* • Baranyi G, Harron K, and Fitzsimons E. *Air pollution exposure, social disadvantage and general health among young people: Life-course analyses from the Millennium Cohort Study*. Urban Transitions Conference, Sitges (Spain, 2024) *Journal articles* • Baranyi, G., Harron, K., Shen, Y. *et al.* The relationship between early life course air pollution exposure and general health in adolescence in the United Kingdom. *Sci Rep* **15**, 10983 (2025). https://doi.org/10.1038/s41598-025-94107-w
Legal basis	Public task

CLS DAC ref.	DAC / 187
UKDS project ref.	N/a (access via the UCL DSH)
Project title	Health Consequences of Psychological Distress in Mid-Life: A Longitudinal Outcome-Wide Analysis of the 1970 British Birth Cohort
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	BCS70
Plain text abstract	This project investigates how psychological distress, encompassing symptoms of depression, anxiety, and stress, affects physical health as people reach middle age. We employ a novel research approach known as 'outcome-wide design,' which enables us to comprehensively examine how a single factor – in this case, mental health – impacts various physical health outcomes. This methodology offers insights into the interplay between mental and physical health and could identify physical health problems that may be alleviated through improved mental health care. Our analysis uses data from the 1970 British Cohort Study, with a particular focus on mental and physical health information gathered during participants' middle age. A key aspect of our research involves contrasting the health conditions reported by individuals with their medical diagnoses from electronic health records. This comparison aims to highlight potential biases in how people recall and report their health issues, which is crucial for the accuracy of research findings. Additionally, this project will contribute to refining statistical methods used in outcome-wide designs, thereby enhancing the quality of future studies in this area.
Data requested	Selected variables from: • SN 8733 – 1970 British Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access

	• SN 8006 – 1970 British Cohort Study Deaths Dataset, 1970-2014: Special Licence Access
Date received	21 November 2023
Date approved	8 January 2024
Research outputs	*Presentations* • Danka, M., Bone, J., Ploubidis, G. B., & Silverwood, R. (2025, September). *Health consequences of psychological distress in mid-life: Comparing self-reported and linked hospital data from the 1970 British Cohort Study* [Conference presentation]. Society for Longitudinal and Lifecourse Studies (SLLS) Annual Conference 2025, University of Fribourg, Fribourg, Switzerland.
Legal basis	Public task

CLS DAC ref.	DAC / 261
UKDS project ref.	N/a (access via the UCL DSH)
Project title	CLS Resource Centre grant: evaluating the quality of linked survey and administrative records in the CLS cohort studies
Institution	Centre for Longitudinal Studies (University College London)
Cohort(s)	NCDS, BCS70, Next Steps, and MCS
Plain text abstract	Researchers increasingly utilise linkages between the UK's long-running cohort studies and administrative records held by government, for example, NHS hospital records and school records. These linked records are powerful, but it matters how accurate and complete they are. This project uses linked data across the CLS core cohorts and administrative data sources* to help assess this. Because cohort members are asked about things that are also recorded administratively, such as hospital stays, accidents, exam results, free school meals and school absence, we can compare the two sources where they overlap.

	This lets us judge how trustworthy each source is, and improves confidence in research that relies on them. The work is methodological: we describe and assess data quality, and do not study any individual person's health or education.
Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000–2019: Secure Access • SN 8481 – Millennium Cohort Study: Linked Education Administrative Datasets (National Pupil Database), England: Secure Access
Date received	15 July 2026
Date approved	6 August 2026
Research outputs	There are no outputs associated with this project
Legal basis	Public task

Research projects for access via the UK Data Service (DAC-approved)

CLS DAC ref.	DAC / 119
UKDS project ref.	203391
Project title	Socioeconomic inequalities in perinatal and maternal health care access
Institution	Imperial College London
Cohort(s)	Next Steps
Plain text abstract	In this paper, I will investigate the socioeconomic health inequalities in children's health and access to maternal healthcare. The time from conception to the age of 2 is a critical time for development and can impact physical health, mental health and opportunity throughout life. Health inequalities can be observed in early life as unfavourable birth outcomes. preterm birth, with substantially higher rates among women from more deprived areas both in the UK (de Graaf et al. (2013)). Perinatal mental health problems carry a total economic and social long-term cost to society of about £8.1 billion for each one-year cohort of births in the UK.
Data requested	Selected variables from the following NHS Hospital Episode Statistics datasets: Admitted Patient Care, Outpatient, Critical Care, and Accident & Emergency. These datasets are pseudonymised, de-identified, and available via the UK Data Service Secure Lab, as follows: • SN 8681 – Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	21 June 2021
Date approved	13 July 2021
Research outputs	*Journal articles*

	• Martínez-Jiménez, M., Hollingsworth, B., & Zucchelli, E. (2024). Socioeconomic deprivation, health and healthcare utilisation among millennials. Social Science & Medicine, 116961. • Martínez-Jiménez, M., Hollingsworth, B., & Zucchelli, E. (2025). Austerity and waiting times: Evidence on reproductive health care delays among young millennials in deprived areas. Public Health, 242, 111-116. https://doi.org/10.1016/j.puhe.2025.02.027.
Legal basis	Public task

CLS DAC ref.	DAC / 137
UKDS project ref.	204521
Project title	Health Outcomes of Care Experienced Young People
Institution	University of Edinburgh
Cohort(s)	Next Steps
Plain text abstract	This project aims to look at what experiences affect the mental health of care experienced people. Understanding this is important given the high rates of poor mental health amongst this population compared to their non-care counterparts. Statistical tests shall be run to assess whether or not key experiences throughout the life-course e.g., parental socio-economic status, care placement, length of time in care, poverty, housing, etc. are associated with mental health outcomes. This includes an assessment of their positive and negative effects at different ages. Having an awareness of what affects the mental health of care experienced people will contribute towards our understanding of what can be done to effectively support this population. Specifically, it will allow us to develop policies, services and practices that are best placed to both support positive

	outcomes and protect against poor mental health for this population.
Data requested	Selected variables from: • SN 8681 – Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	29 October 2021
Date approved	4 October 2022
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 166
UKDS project ref.	209167
Project title	Young people's barriers to mental health services
Institution	University of Southampton
Cohort(s)	NCDS and Next Steps
Plain text abstract	On any given day in the United Kingdom 28.5% of children/young people aged 5 to 19 experience mental health problems. Only one in four of these children/young people receive formal support for these problems. There is a lack of knowledge of what happens to those young people not receiving mental health services. Mental health problems have been shown to limit economic, vocational, and social functioning and international studies have found that 50 to 70% of young people who receive services for their mental health problems continue to experience these problems in adulthood.

	In this current study we would like to explore the barriers experienced by young people in obtaining mental health services. Our aim is to use a developmental epidemiological perspective to: a) Explore characteristics (demographic, onset/development/progression mental health problems, environment) of those young people not receiving professional services for their mental health problems and determine if they have access to informal support. b) Examine resilience of young people not receiving mental health services for their problems during unpredictable challenging times (COVID pandemic) c) Employ a statistical technique that is novel to the field of mental health research to adjust for missing data (Missing-Not-At-Random – NMAR modelling)
Data requested	Selected variables from: • SN 5545 – Next Steps: Sweeps 1-8, 2004-2016 • SN 8681 – Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access • SN 8658 – COVID-19 Survey in Five National Longitudinal Cohort Studies: Millennium Cohort Study, Next Steps, 1970 British Cohort Study and 1958 National Child Development Study, 2020-2021
Date received	3 February 2023
Date approved	10 March 2023
Research outputs	*Presentations* • Mengxuan, Z. Exploring mental health journeys from adolescence to young adulthood. YoungMinds, London (online, December 2023) • Driessens, C. Young people that make up the missing middle. YoungMinds, London (presentation to young people 2025)

	• Driessens, C. Young people's access to mental health services. Oral presentation at ADR UK conference, Cardiff (18 September 2025) • Driessens, C. Use of no use: young people's engagement with mental health services. Oral presentation at ARC Wessex online seminar, 3 November 2025) *Posters* • Driessens, C. Secondary mental health care utilization among British youth. Poster presentation at RCPSYCH conference, London (18 March 2025) • Driessens, C. Factors shaping adult mental health service use among British young people. Poster presentation at MQ/DATAMIND conference, London (1 May 2025) • Driessens, C. The missing middle who are they? Poster presentation at ESCAP conference, Strasbourg, France (29 June 2025) *Manuscript* • Driessens, C. Use of no use: young people's engagement with mental health services. Submitted to Journal of Psychiatric Research (9 May 2025, under review)
Legal basis	Public task

CLS DAC ref.	DAC / 169
UKDS project ref.	233913
Project title	Physical activity, sedentary behaviour, and diet: impact on cardiometabolic and women's health
Institution	University College London (UCL)
Cohort(s)	NCDS and BCS70
Plain text abstract	Many different health outcomes are influenced by lifestyle behaviours such as physical activity, sleep, and diet. Our research focuses on two main health clusters: cardiovascular related health and women's health. Lifestyle behaviours, that

	are often interlinked and influenced by the social environment, may have both synergistic and specific effects on health across the life course in ways we do not completely understand. Our main aim of the proposed project will be to understand how lifestyle behaviours (physical activity, sleep, diet, alcohol, smoking) as well as specific components of each behaviour (e.g., activity type, duration, frequency, context, intensity) across the life course influence HES-data derived health outcomes including diagnoses and healthcare use. We have two main work packages in this project. First, we intend to examine cardiometabolic related conditions (diabetes, stroke, heart disease etc) and second, we intend to examine outcomes related to women's health. Cohort data on women's health is traditionally poor quality due to a greater emphasis being placed on questions relevant to both sexes and due to a historical lack of understanding of the importance of these outcomes. Within each of these, we can calculate costs associated with each HES activity using HRG grouper assigning NHS tariffs to better understand how behavioural factors such as physical activity, sedentary behaviour and diet contribute to health care costs. We hypotheses that greater physical activity, less sedentary time, never smoking, better diet parameters, and lower alcohol consumptions will be associated with positive health outcomes. However, our aim is to quantify specific components so that we can better identify and make recommendations about health behaviours beyond what is currently known. Of particularly note, we are keen to understand how different accumulation via bouts of activity or sedentary behaviours impact health. We also want to understand what type of activity and diet may positively impact different components of menstrual health including menopause and more severe experiences across adulthood. These findings will have direct benefits for society as it allows us to identify specific components of health behaviours that improve health, whilst having the robustness of HES and SMR

	data. We employ several complex epidemiological techniques such as compositional data analysis, random effects model, mediation analysis, etc and have a cluster of questions with which we intend to explore the data.
Data requested	Selected variables from: • SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access • SN 8733 – 1970 British Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	2 March 2023
Date approved	20 April 2023
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 176
UKDS project ref.	229440
Project title	Hospital use over the life course
Institution	University College London (UCL)
Cohort(s)	NCDS and BCS70
Plain text abstract	Frailty is a valuable concept, widely used to inform and guide the clinical care of older people. Still, its relevance in people aged less than 65 is not clear. This research examines different approaches to frailty measurement that could be applied across the NHS to see if they usefully identify the risk of future poor outcomes.

	We will use nationally representative studies following people since birth ('birth cohorts') to make a 'frailty index'. This is a means of measuring the level of frailty and can be applied to different patient groups and over time. Frailty indices work by identifying common factors associated with frailty and determining how many are present in any individual. This gives rise to a frailty index, which has been shown to link to adverse outcomes in studies of older – and some younger – people. Because data have been collected since birth, we can explore the life course factors that may influence the development of frailty at any age of adulthood. In parallel, we will test a Hospital Frailty Risk Score (HFRS). This can be automatically created from NHS electronic records for all people admitted to a hospital in England. We will assess the ability of this risk score to predict how long people stay in hospital and whether they die. We will create a frailty index and an HFRS in the same individuals through linked birth cohort and NHS electronic records. We can then see how the two different approaches to frailty measurement compare for hospital outcomes such as length of stay and death, but also outcomes such as quality of life, physical or cognitive function. Once we understand the factors associated with frailty in younger adults, we can think about treatments that could be applied over the life course to slow or prevent the development of frailty. To inform and support these analyses, we will engage with lay and professional stakeholders with an interest in frailty at younger ages. Together we will consider which clinical outcomes are meaningful to younger people with a range of long-term conditions. Then, using their perspectives on experiencing frailty earlier in adulthood, we will explore the implications of the emerging findings.
Data requested	• ICD-10 codes and hospital outcomes Selected variables from:

	• SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access • SN 8733 – 1970 British Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	5 June 2023
Date approved	13 July 2023
Research outputs	There is a report for NIHR and a publication due in the coming months
Legal basis	Public task

CLS DAC ref.	DAC / 178
UKDS project ref.	236210
Project title	Examining structural racism in the processes of identifying mental health needs for children and young people in the UK
Institution	University College London (UCL)
Cohort(s)	MCS
Plain text abstract	This project aims to examine inequalities in the identification of mental health difficulties for children and young people in the UK. The project aims to address the gap in research on mental health difficulties experienced by racially minoritised children and young people, specifically, exploring whether there are systematic differences across racial-ethnic groups in which children and young people are identified with mental health difficulties within administrative data systems.
Data requested	Selected variables from:

	• SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000-2019: Secure Access • SN 8481 – Millennium Cohort Study: Linked Education Administrative Datasets (National Pupil Database), England: Secure Access
Date received	8 August 2023
Date approved	13 September 2023
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 194
UKDS project ref.	240413
Project title	Long Run Impacts of Education on Health Outcomes
Institution	London School of Economics and Political Science (LSE), University of London
Cohort(s)	NCDS
Plain text abstract	In this study I aim to test how an increase in completed education may impact on health outcomes as measured by outpatient visits as captured in the Health Episodes Statistics (HES) dataset.
Data requested	Selected variables from: • SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	24 May 2024
Date approved	30 May 2024

Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 197
UKDS project ref.	226584
Project title	Exome sequencing of the Millennium Cohort study: rare variant effects on traits and disorders relevant to neurodevelopment
Institution	Wellcome Sanger Institute
Cohort(s)	MCS
Plain text abstract	To investigate the effect of rare and common variants on traits and disorders related to neurodevelopment, including school achievement, intellectual disability, and mental health conditions.
Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000–2019: Secure Access
Date received	7 March 2024
Date approved	21 May 2024
Research outputs	There are no outputs associated with this project
Legal basis	Legitimate Interest

CLS DAC ref.	DAC / 206
UKDS project ref.	221625
Project title	BMI change during life course; Evaluating the determinants and the adverse health effects

Institution	University College London (UCL)
Cohort(s)	NCDS and BCS70
Plain text abstract	The overarching aim of the proposed research is how modern data science methods can provide insights for the improvement of obesity preventions policies and the reduction of chronic diseases' risk attributable to obesity using data from i) CALIBER (EHR) and ii) 3 birth cohorts (46' NSHD, 58' NCDS and 70' BCS). This will be pursued through three objectives that maximise the benefit from the appropriate implementation of statistical methods used from the three main data science tasks, that is i) Description, ii) Prediction and iii) Causal inference. Below, I describe my objectives and highlight which variables I have requested. • Objective I; Description: Assess the sociodemographic, lifestyle and psychological risk factors in adolescence associated with adult obesity in middle life • Objective II; Prediction: Develop risk prediction scores from factors measured in adolescence for obesity in middle life • Objective III; Causal inference: Estimate the effect of different BMI change patterns on a range of chronic diseases
Data requested	Selected variables from: • SN 8733 – 1970 British Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2022: Secure Access • SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	12 August 2024
Date approved	19 November 2024
Research outputs	There are no outputs associated with this project

Legal basis	Public task

CLS DAC ref.	DAC / 222
UKDS project ref.	243887
Project title	Rethinking Special Educational Needs
Institution	University of York
Cohort(s)	MCS
Plain text abstract	Our project - Rethinking SENs- is concerned with understanding how we can better identify and support children with special educational needs. In this project, we made use of the MCS survey data from early childhood (i.e., 3-5 years), middle-childhood (i.e., 7 years), and adolescence (11-17 years) to answer the following research questions: • How do language, cognition, social functioning, and mental health cluster in early and middle childhood? • To what extent are clusters connected to each other?
Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000-2019: Secure Access
Date received	17 March 2025
Date approved	8 May 2025
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 239
UKDS project ref.	273990

Project title	Quantifying the health and social impacts of obesity during childhood
Institution	University College London (UCL)
Cohort(s)	MCS
Plain text abstract	The purpose of this research is to quantify the impact of obesity in children and young people on their physical and mental health, social and emotional wellbeing, and educational outcomes.
Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000-2019: Secure Access • SN 8481 – Millennium Cohort Study: Linked Education Administrative Datasets (National Pupil Database), England: Secure Access
Date received	10 December 2025
Date approved	17 February 2026
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 241
UKDS project ref.	269392
Project title	Targeting interventions to optimise school-age outcomes for children with hearing loss in a population with newborn screening
Institution	University College London (UCL)
Cohort(s)	MCS

Plain text abstract	Each year, 1-2 in every thousand children is diagnosed with hearing loss (HL) in one or both ears. This can lead to problems with language, communication, literacy and emotional wellbeing and children often lag behind their peers in school assessments. Children with HL often have other medical conditions. Since 2006, there has been a newborn hearing screening programme (NHSP) in England. We propose to: 1. compare school-age health, development and education outcomes for children with and without HL who had newborn hearing screening, including whether their outcomes have changed over time since screening was introduced; 2. describe outcomes for children with different patterns of HL, such as HL that is mild, fluctuating or progressive, affects one ear only or is detected later in childhood; 3. explore when and what support gives children with HL the best chance of good health, development and success at school-age; and 4. assess whether linked health and education records can be used to monitor the performance of screening now and in the future. Our study will use novel linked health and education records, from MCS, ECHILD and NHSP, to answer gaps in our understanding about health, neurodevelopment and educational outcomes at school-age for a national population of children living with HL. This will inform improvements to NHSP and the timing and targeting of interventions to optimise outcomes. A Parent and Professional Joint Advisory Group, involving representatives and parents from support charities for deaf children and NHSP parent and professional groups, is being recruited to contribute to the design and conduct of the study. They will make sure that the study focuses on the knowledge gaps about health, education and neurodevelopmental outcomes that are most relevant to children and families.

Data requested	Selected variables from: • SN 9030 – Millennium Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 2000-2019: Secure Access • SN 8481 – Millennium Cohort Study: Linked Education Administrative Datasets (National Pupil Database), England: Secure Access
Date received	6 January 2026
Date approved	17 February 2026
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 255
UKDS project ref.	279814
Project title	The costs and long-term impact of child maltreatment in the UK
Institution	University College London (UCL)
Cohort(s)	NCDS
Plain text abstract	Child abuse, neglect and maltreatment are growing concerns in the United Kingdom. According to the Office for National Statistics, one in five adults in England and Wales aged between 18 and 74 suffered from at least one form of maltreatment before the age of 16 [1]. Furthermore, the statistics show that adults who experienced abuse when children had a higher prevalence of other forms of abuse (52%) compared to those who did not (13%) [2]. Consequently, there is an increased need for a better understanding of the short- and long-term consequences of child maltreatment on later life outcomes.

	This project is part of the research programme "Assessing and improving access to health and social care services for children rendered vulnerable by abuse" (SERENA) , funded by HORIZON-Europe. Within this framework, we are located in Working Group 11: "Societal costs of maltreatment; economic evaluation of short-term and long-term excess costs of health services and productivity losses", led by the UCL Institute for Global Health (Dr. Neha Batura) and the Erasmus School of Health Policy and Management (Prof. dr. Leona Hakkaart-van Roijen), with partners in Denmark, France, and Greece. At UCL, we will study the long-term effects of child maltreatment in England. Specifically, we will: a) Estimate the short-term and long-term excess costs incurred by health service utilisation resulting from child maltreatment, encompassing medical treatments, mental health services, rehabilitative care, and social support services. b) Study the effects of child maltreatment on educational achievements, both in the short- and long-term. c) Assess productivity losses incurred across various employment sectors due to child maltreatment among people in vulnerable situations. We will test the following hypothesis: a) Increased healthcare utilisation: Individuals who experienced child maltreatment in childhood and adolescence will have higher short- and long-term healthcare utilisation due to increased use of medical, mental health, rehabilitative, and social support services, compared to those who have not suffered maltreatment. b) Higher healthcare costs: The greater utilisation of healthcare services and the complexity of treatment for individuals affected by child maltreatment will result in increased overall healthcare costs. c) Educational, employment and productivity losses: Child maltreatment can negatively impact educational

	achievements in both the short term (childhood) and long term (adolescence and adulthood). The combined effect of reduced educational achievements, along with the long-term mental and physical consequences of child maltreatment, can impair work performance and decrease productivity in adulthood.
Data requested	Selected variables from: • SN 8697 – National Child Development Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	18 May 2026
Date approved	6 July 2026
Research outputs	There are no outputs associated with this project
Legal basis	Public task

CLS DAC ref.	DAC / 257
UKDS project ref.	281858
Project title	All women are born (un)equal: menopause, HRT and women's wellbeing
Institution	University College London (UCL)
Cohort(s)	BCS70
Plain text abstract	Every woman will experience menopause, at some point in her life. Around 80% of women will experience menopausal symptoms, and for many of them, these symptoms will be quite severe and have a significant impact on everyday life. For most women, Hormone Replacement Therapy (HRT) is an effective treatment against symptoms, however controversies still exist on its risks and benefits. Despite the increase in awareness and availability of HRT occurred in England in the

	last few years, many women still 'suffer in silence', are 'forced' to reduce their participation in the labour force and are penalised in many aspects of their lives. In front of anecdotal evidence and news headlines, little hard research-based evidence exists on the consequences of menopause, the benefits of HRT, and the barriers to menopause care in England – and whether some women are penalised, or benefit, more than others. The proposed research intends to fill this gap, and to providence robust causal evidence on (a) the consequences of menopause, and of HRT, on health care use, physical and mental health, cognitive functions, personal relationships, economic outcomes and welfare use; (b) the role of education, information provision, access to specialist services, drug availability and prices on HRT usage. Crucially, it will examine whether disadvantaged women are harmed more by the menopausal transition, and benefit less from HRT, potentially increasing inequalities in women's well-being. The results will inform possible policies to support women in the workplace, and to ensure fairness in HRT prescription, availability and pricing.
Data requested	Selected variables from: • SN 8733 – 1970 British Cohort Study: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997-2017: Secure Access
Date received	12 June 2026
Date approved	6 August 2026
Research outputs	There are no outputs associated with this project
Legal basis	Public task