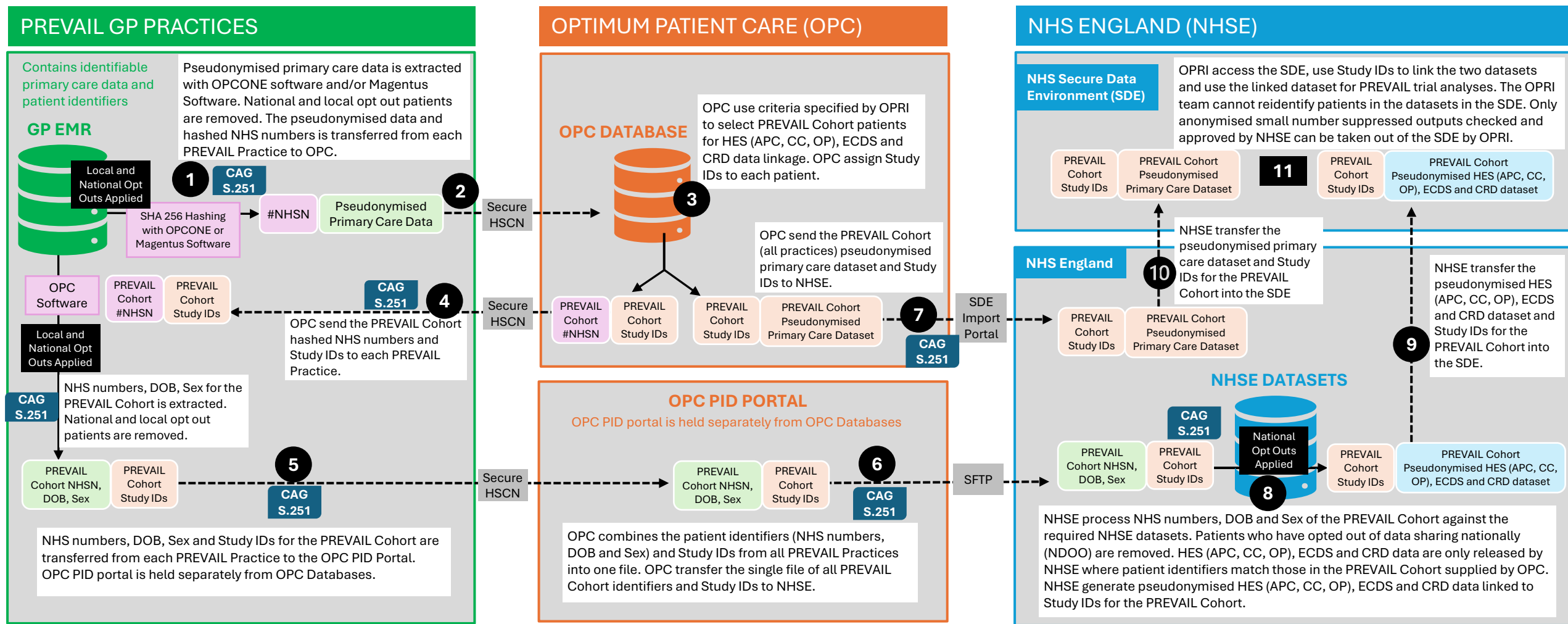


PREVAIL HES Data Linkage Flow Diagram:

Using PID (single dataset from OPC, linked datasets held in NHSE SDE)

Version 2
24 November 2025



ABBREVIATIONS

GP General Practice	DOB Date of Birth	HES Hospital Episodes Statistics	OPRI Observational and Pragmatic Research International Ltd
EMR Electronic Medical/Health Records	CAG HRA Confidentiality Advisory Group	APC HES Admitted Patient Care	OPC Optimum Patient Care Ltd
SHA Secure Hashing Algorithm	S.251 Section 251 Support	CC HES Critical Care	OPCRD Optimum Patient Care Research Database
NHSE NHS England	HSCN Health and Social Care Network	OP HES Outpatients	SDE NHS England Secure Date Environment
NHSN NHS Numbers	SFTP Secure File Transfer Protocol	ECDS Emergency Care Data Set	NDOO National Data Opt Out – England
#NHSN Hashed NHS Numbers	PID Patient identifiable data	CRD Civil Registrations of Death	

1. Primary care data is securely extracted and pseudonymised (including SHA256 hashing) at each PREVAIL GP practice, using OPCONE software or Magentus software. National and local opt out patients are removed.
2. Pseudonymised primary care data with hashed NHS numbers only (so no patient identifiable data) is transferred securely via HSCN to OPC and held in OPC Database.
3. OPC use criteria specified by OPRI to select PREVAIL Cohort patients for HES (APC, CC, OP), ECDS and CRD data linkage. A unique randomly generated ID, called the Study ID, is assigned to each patient in the PREVAIL Cohort.
4. OPC send the PREVAIL Cohort hashed NHS numbers and Study IDs to each PREVAIL Practice.
5. NHS numbers, DOB, Sex for the PREVAIL Cohort is extracted. National and local opt out patients are removed. The NHS numbers, dates of birth (DOB) and Sex, and Study IDs for the PREVAIL Cohort is transferred from each PREVAIL practice via secure route (e.g. HSCN or SFTP) to the OPC PID Portal . This is a secure portal held separately from OPC Databases and only used for receiving, collating and sending patient identifiers for data linkage to NHS England.
6. OPC combines the patient identifiers (NHS numbers, DOB and Sex) and Study IDs from all PREVAIL Practices into one file. OPC securely transfer the single file of all PREVAIL Cohort patient identifiers and Study IDs from the OPC PID Portal to NHS England via a secure route e.g. SFTP.
7. OPC also transfer the pseudonymised primary care dataset and Study IDs for the PREVAIL Cohort (all practices) to NHS England via a secure route e.g. SFTP or using the NHS England Secure Data Environment (SDE) Import Portal.
8. NHS England process the NHS numbers, DOB and Sex of the PREVAIL Cohort against the required NHS England datasets. Patients who have opted out of data sharing nationally (NDOO) are removed. HES (APC, CC, OP), ECDS and CRD data are only released by NHS England where patient identifiers match those in the PREVAIL Cohort supplied by OPC. NHS England generate pseudonymised HES (APC, CC, OP), ECDS and CRD data linked to Study IDs for the PREVAIL Cohort.
9. NHS England transfer the pseudonymised HES (APC, CC, OP), ECDS and CRD dataset and Study IDs for only the PREVAIL Cohort into the SDE.
10. NHS England transfer the pseudonymised primary care dataset and Study IDs for only the PREVAIL Cohort (received from OPC) into the SDE.
11. OPRI research team are provided access to the SDE. OPRI team use the Study IDs to link the two datasets and use the linked dataset for PREVAIL trial analyses. The OPRI team cannot reidentify patients in the datasets in the SDE. Only anonymised small number suppressed outputs which have been checked and approved by NHS England can be taken out of the SDE by OPRI when study analysis is completed.