



Digital Health & Care
Northern Ireland

DELIVERING CARE TOGETHER

GPIP

General Practice Intelligence Platform



Health and Social
Care Board

eHealth Senior Analytics Team

GPIP – General Practitioner Intelligence Platform

Quality data, Quality care

“Enabling early intervention and prevention while supporting quality improvement in Primary Care”

09/08/2021

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eHealth Senior Analytics – team structure

Chief Clinical Informatics Officer
Austin Tanney

SRO
Dr Margaret O'Brien

Senior Programme Manager
Lisa Whyte

Senior BI Developers

William Allen
(started Mar 21)

Phil Rodgers
(Nov 19)

Senior Data Scientists

Dr Tony Crockford
(Sept 19)

Christopher Cooley
(Sept 19)

Senior Analytics team – Service provision

- Regional Analytics service – across the wider HSC (Record Linkage)
- Centre of excellence for analytics – Specialised technical skills:
 - Senior Data Scientists, Business Intelligence developers & Senior Data Analysts
- Establish and develop initiatives - standardisation of data processing, data linkage opportunities, identification/adoption of new technologies for continuous improvements in analytics across the HSC.
- Training and support – specialist skills and knowledge transfer to other HSC teams/organisation, formal training and up-skilling of staff etc.
- Data driven service and data insights – support the delivery and quality of patient care:
 - data driven commissioning
 - proactive care management and early intervention
 - Service design and improvements to meet patient needs

What is GPIIP – a brief summary

- Intelligence platform will -
 - Provide the ability for GP practices to avail of analytical support to enable data quality in practice, improving the quality of service delivery.
 - Provide a single, integrated view of GP practice data.
 - Allow visualization for both individual patients and a GP practice as a whole.
- Build the capacity to collect and use Primary Care data:
 - Improve the planning and commissioning of efficient, effective and value for money services
 - Identifying gaps in care, what interventions have been made, what treatments are overdue or pending, and more.
- Decision making & planning of services -
 - Creates a platform that can be utilised to enable data driven care planning solutions across the HSC

GPIP – Origin, Sponsorship and Objectives

From the beginning:

- Project formally initiated in February 2018
- Sponsorship obtained through the eHealth and Data Analytics Dementia Pathfinder Programme (aka Dementia Phase 2)
- General Practices are key stakeholders in relation to the success of GPIP.
- Project Sponsor: Dr Margaret O’Brien

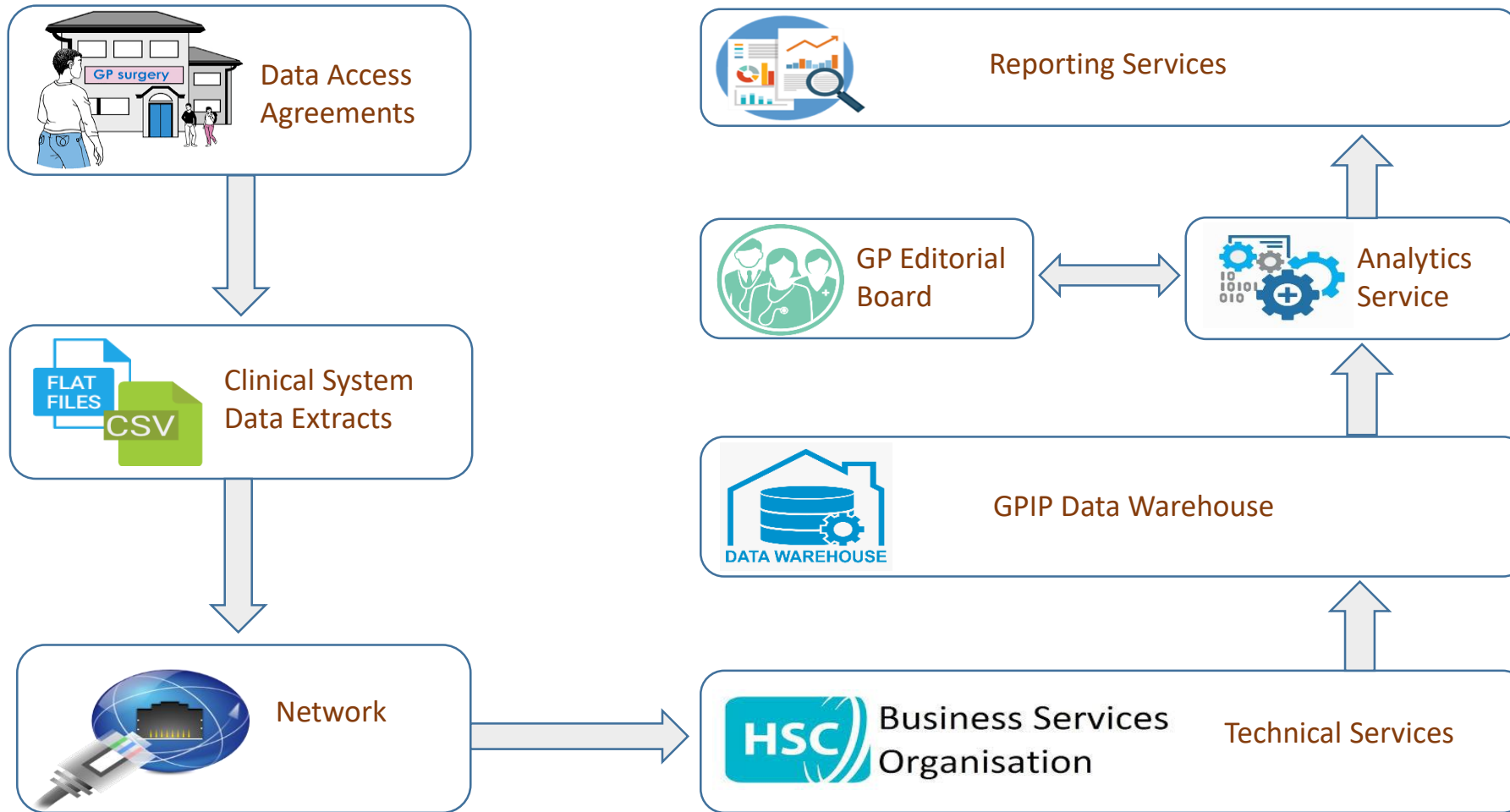
Dementia programme vision:

“Build capacity to collect and use dementia data to improve the planning and commissioning of efficient, effective and value for money dementia services.

Creates a platform that can be utilised to enable data driven care-planning solutions across the health and social care system.”

- Project formally approved and initiated May 2018.

GPIP Hi-Level Solution Model



Hi-Level Objectives - Technical

- Development of a Regional Data warehouse –
 - To develop a standalone data warehouse for GP data, hosted within the regional public sector data centres.
- Data Mapping –
 - Map data from all practice systems to a single data model to achieve standardisation of data and processes.
 - Development of Standard operating procedures – once for Northern Ireland
- Data Linkage –
 - To provide the ability to link to other datasets where there is agreement to do so.
- Data Source –
 - Provide an export capability – to feed extracts to other systems, where there is agreement to do so.
- Research Capabilities – Be a resource for data requests and research projects through the Honest Broker Service.
- Power BI Reports – to give GP's the ability for self service analysis on their own practices, includes Qof registers, MDT activity etc..

Hi-Level Objectives – Data Governance

- Engagement & Participation - To secure full participation by all GP practices.
- Data accessibility & availability - To provide self-service BI / Dashboards for GPs and GP Federations (operational and management purposes).
- Data Quality - improve the quality of GP data through data quality work streams, development of SOP's and MDT engagement
- Data Protection and Governance - To ensure GPIIP is fully compliant with GDPR.
- Patient health and Research - To support population health through analysis of GP data.
- Opt-in/out - To provide an opt-in /opt-out functionality for GP practices.

GPIP – Project Work Streams

- Technical Infrastructure -
 - Processing of data files from GP systems into GPIP database & analysis layer.
- Dashboards, Reporting and Analytics -
 - Analytics tools, production of reports, GPIP service.
- Information Governance -
 - Data Access Agreements, Privacy Impact Assessment
- Stakeholder Management and Communications -
 - Communications, briefings, engagement
- Data Quality -
 - Improve quality and consistency of data capture and coding with GP systems

GPIP – Project Work Streams

- Establishment of a regional analytics service -
 - Creating the foundations for the provision of a regional analytics service across the HSC
- Stakeholder engagement and networking -
 - Establishing multidimensional rapport and understanding across other teams and organisations involved in the analytics landscape
- Promoting analytics – benefits & challenges realisation -
 - Promoting the use of data and the highlighting the benefits of adopting analytics methods/processes across the HSC
 - Highlighting existing and future challenges of analytics across the HSC
- Communication Strategy and Plan – Development of a communication strategy and plan incorporating both GPIP and a regional analytics service.



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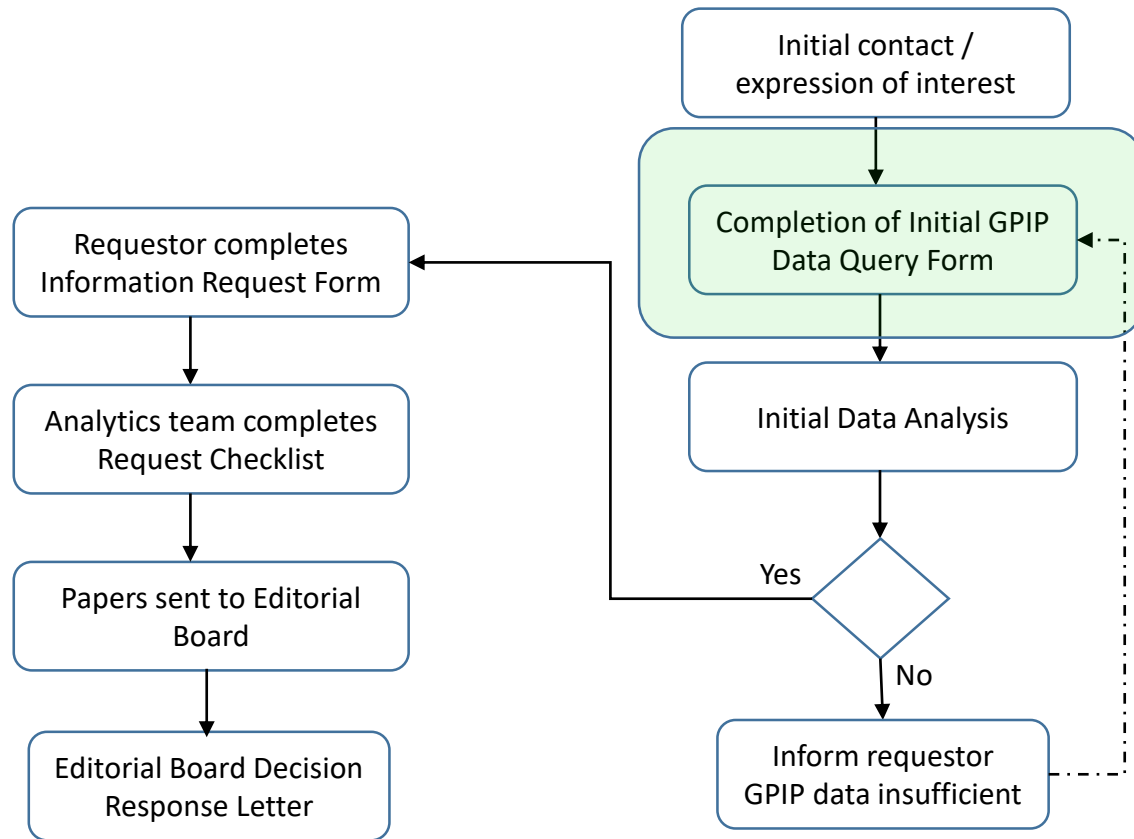


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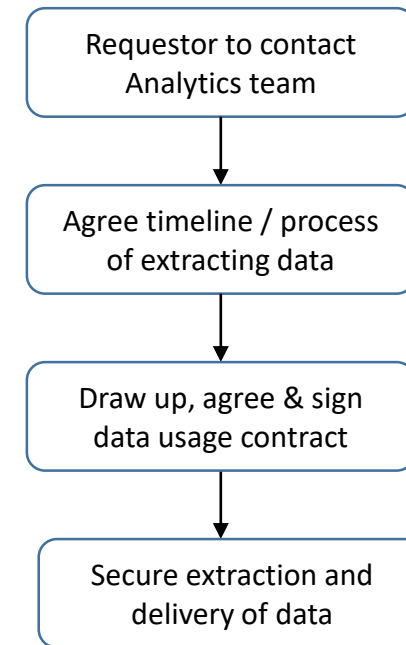
GPIP Data Requests Application Process

Ehealth.analytics@hscni.net

Process of requesting data from GPIIP



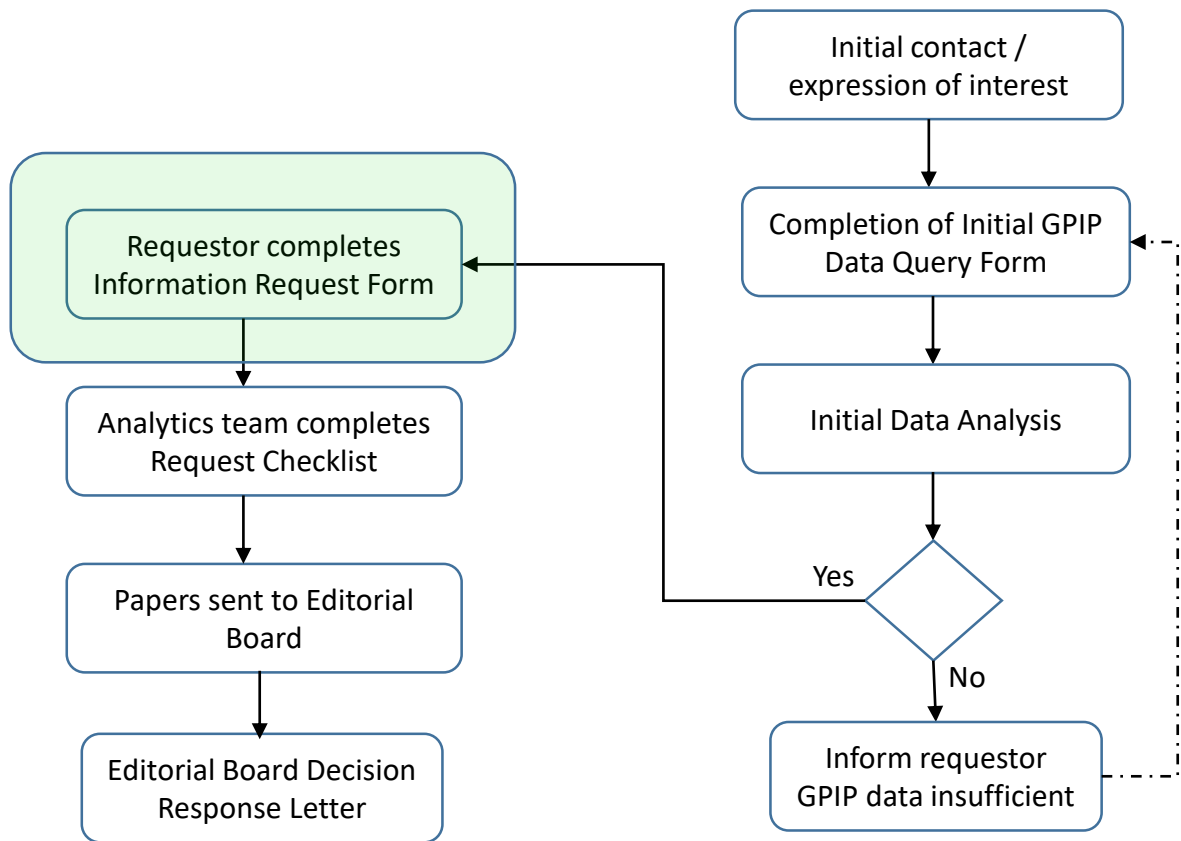
Obtaining data from GPIIP following approval



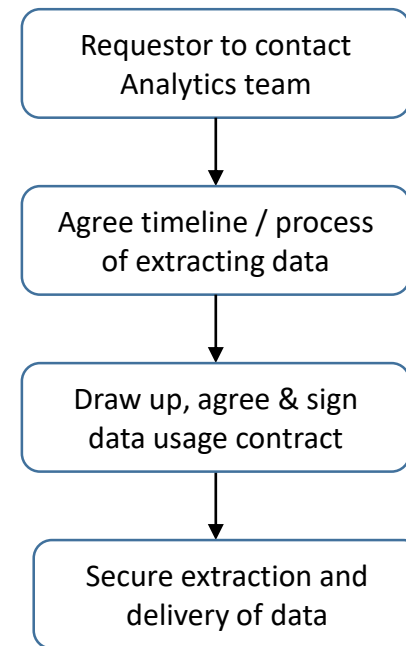
GPIP – Initial Data Query Form

- Initial information gathering exercise and clarification of the request details
- Helps GPIP team to advise on best approach

Process of requesting data from GPIIP



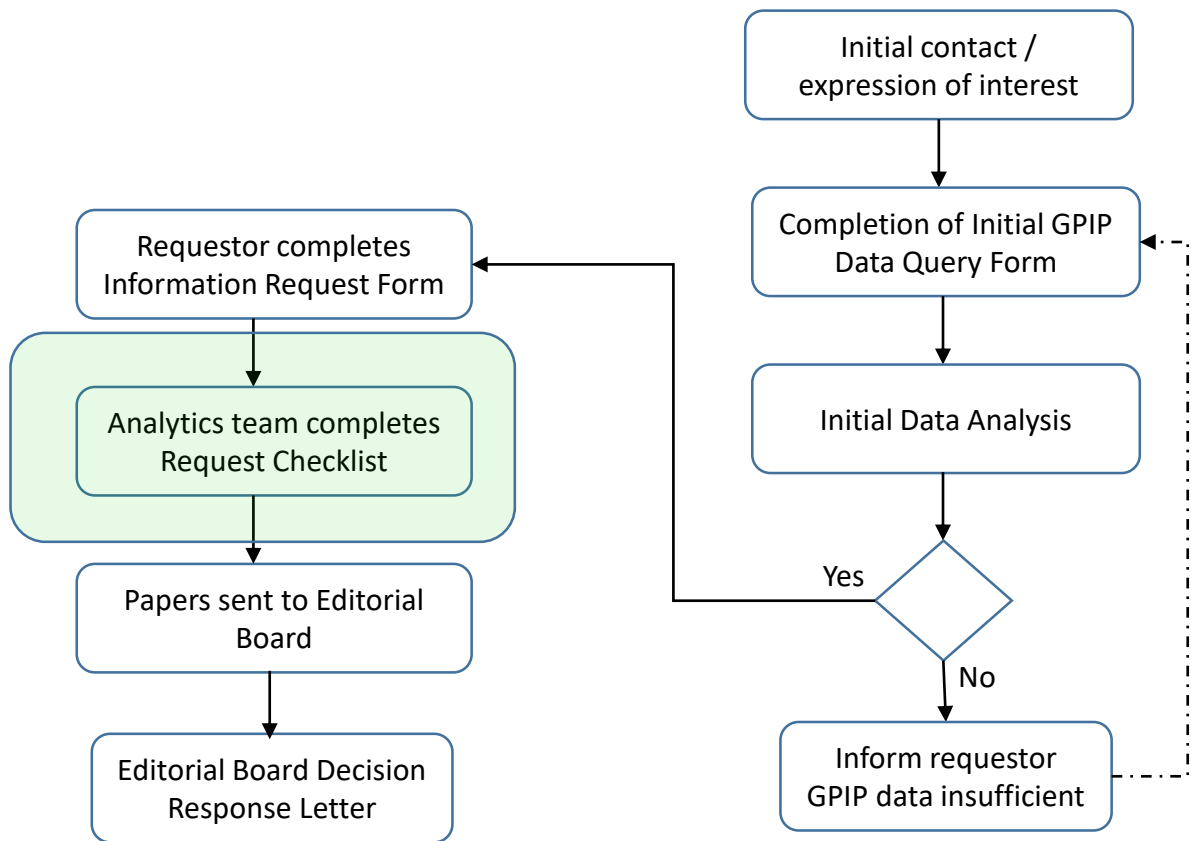
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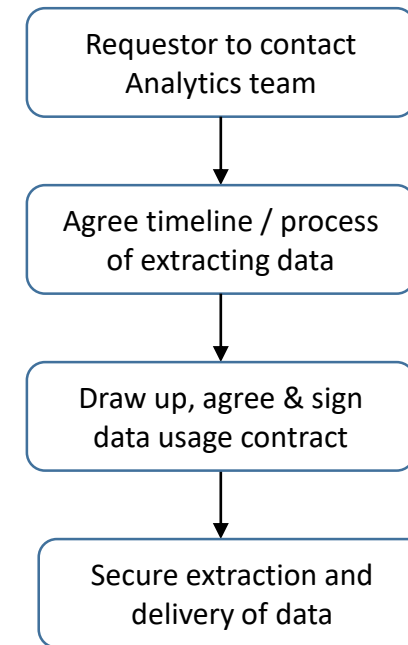
GPIP - Information Request Form

- The formal request for Data to the GPIP Editorial Board
- Based on the information gathered in the Initial Data Query process

Process of requesting data from GPIIP



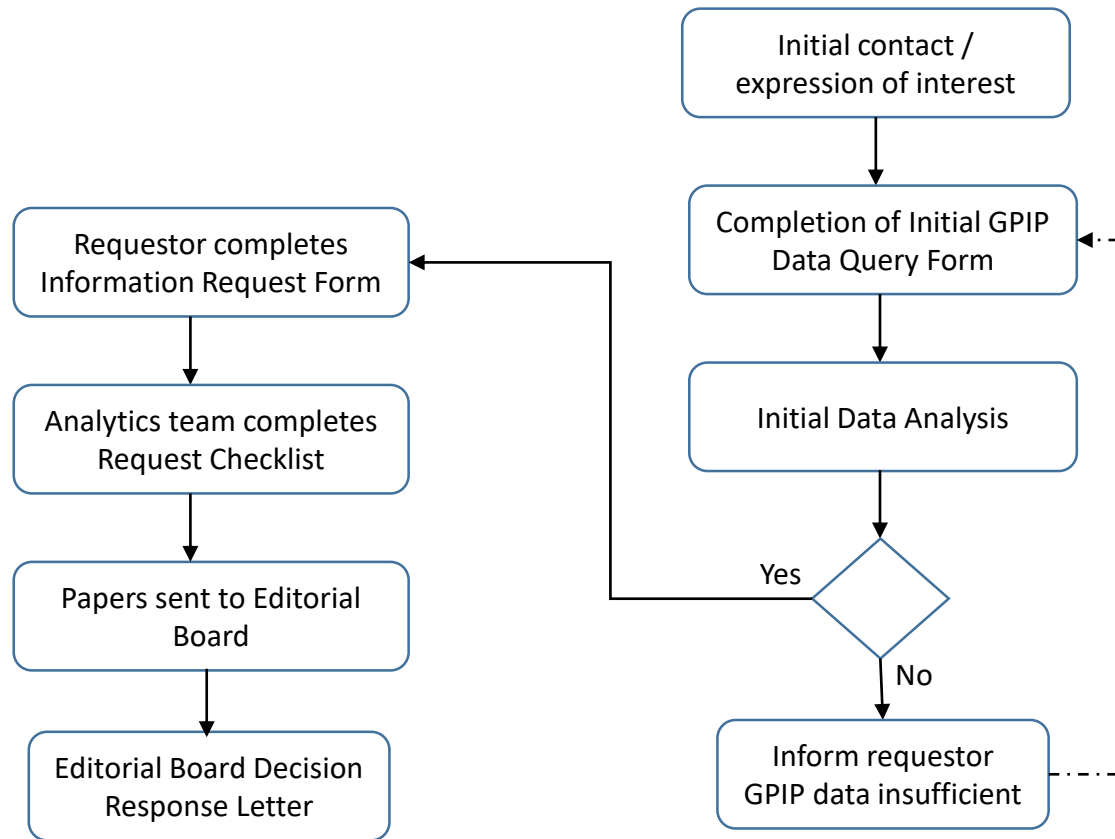
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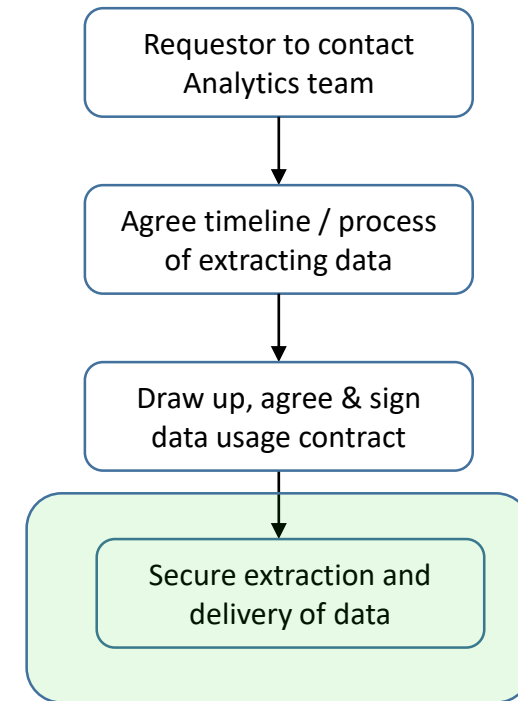
GPIP - GP Editorial Board Information Request Checklist

- This checklist is completed to ensure that requests have addressed potential queries, or that requestors are aware of these shortcomings in their applications, that may lead to applications being rejected
- Senior Analytics Team provide a summary of the application with comments and advice

Process of requesting data from GPIIP



Obtaining data from GPIIP following approval



GPIP – Extracted Dataset

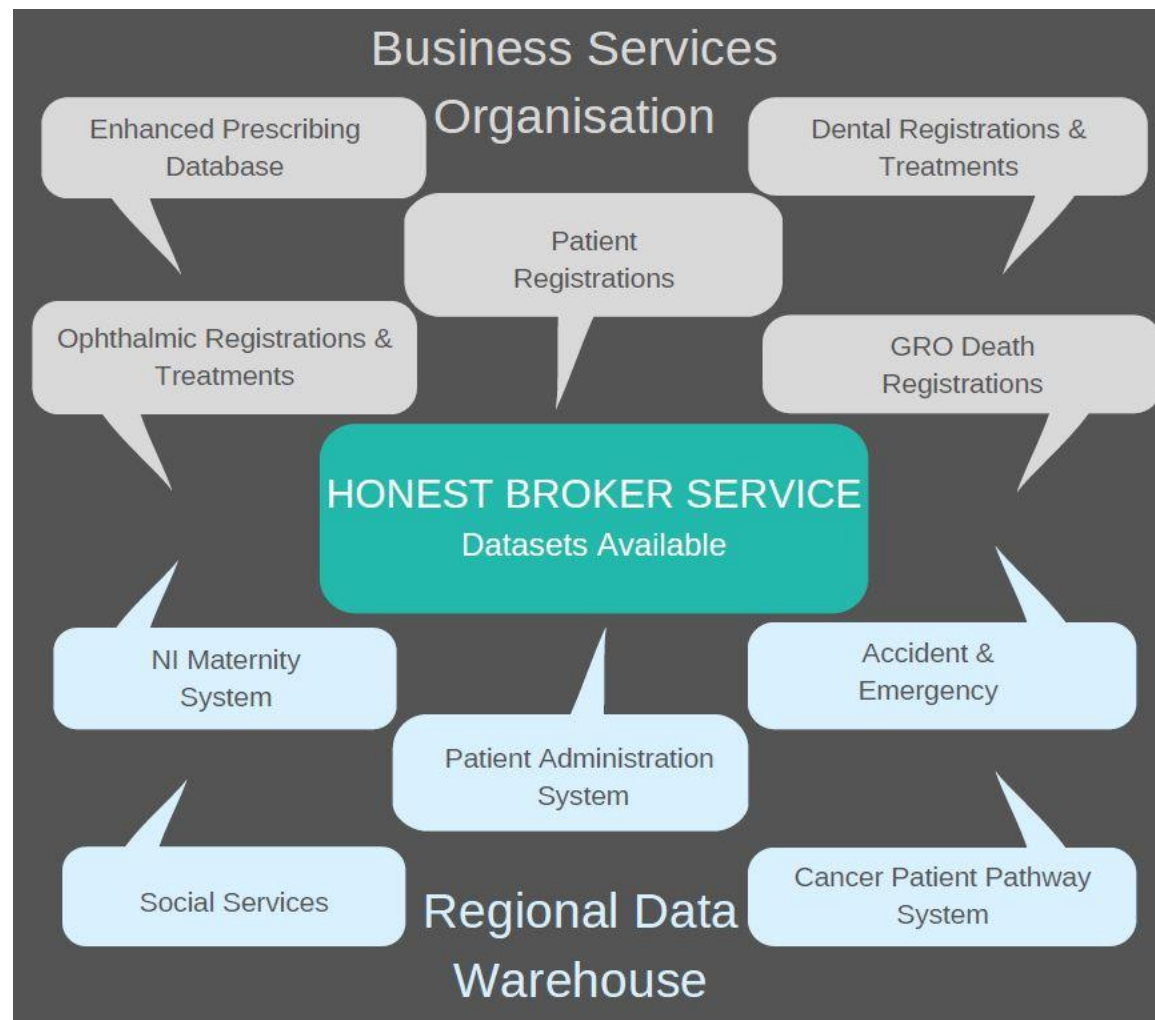
- Datasets that require no linking may be made available directly to GPs, if the GP is the requestor
- Datasets that require linking or are for non-GP use, will be available via the Honest Broker Service and the GPIP anonymous linkage process

GPIP – PURPOSE OF HONEST BROKER SERVICE

- To provide anonymised, or in some cases pseudonymised, datasets to DoH or HSC colleagues (via Memorandum of Understanding) to carry out service evaluation and/or clinical audit of services
- To prepare anonymised datasets for research purposes, and facilitate access to these datasets via a secure research environment
- HBS 'Safe Haven' located in Franklin Street, Belfast
 - Remote access via the UK Secure e-Research Platform (UK SeRP)
 - HBGB must approve use of UK SeRP
 - May not be possible for particularly sensitive datasets
 - Currently not possible for projects requiring GRO mortality data

honestbrokerservice@hscni.net

GPIP – HONEST BROKER SERVICE



GPIP – Example Data Requests

- Diabetes
 - Proof of concept extract for patients with a diagnosis of diabetes (type 1 and type 2), and their latest blood pressure recording.
 - Another request specific to patients with type 2 diabetes. Quarterly extract in first instance. As more GP practices come into GPIP extract to move to every 6 months.
 - Population Health data analysis of patients with a diagnosis of diabetes registered with Belfast GP Practices
- Early identification of people with palliative care needs (likely to be in the last year of life)
- Virtual Care for Long Term Medical Conditions: Remote Control of Atrial Fibrillation.
- Cardiovascular Prevention Programme – Base line of BP at time of diagnosis and 9 months after
- Patient with dementia on an antipsychotic with no diagnosis of psychosis.
- Patients on a bisphosphonate for longer than 5 / 10 years.
- National PINCER prescribing safety Indicators.
- Anticholinergic burden score – increased mortality with the number and potency of anticholinergic drugs prescribed



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GPIP Challenges and Current Position

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GPIP – CHALLENGES

- 3 different suppliers of GP clinical systems. Which gives different challenges.
 - Standardised coding across 3 systems, Vision and EMIS use Readv2, EMIS and Merlok CTV3. (SNOMED to come in the future)
 - A standard data extract from all 3, working with suppliers to add additional fields.
- Signing up as many GP practices as possible, DAA's and DPIA.
- Data Quality – different practices on different systems can record activity in different ways.
- Volume of data, observations alone over 1Billion records, designing a data warehouse that is efficient.
 - Processing extracts nightly: 36 Emis, 992 Vision, 192 Merlok files.
- DATA SECURITY , access to the system has to be watertight.
- COVID work and other projects.

GPIP – PROJECTS AND WORKSTREAMS

- Shielded Patients – high risk/vulnerable patients identified in primary and secondary care – validation of patient wanting to avail of the priority shopping delivery slots – over 200K patient record processed
- COVID Contact centres – analysis and reporting of patients contacting the regional COVID contact centres.
- COVID close contacts pilot (0-7 days) – processing and reporting of individuals tested as positive for COVID 19 and the identification of any person they had been in contact with.
- COVID Analytics platform development – scoping of an analytics platform using cloud based technology
- StopCOVID App – Analysis and presentation of proximity App data
- Oxford Risk Stratification – collection of a complex dataset from all NI patients over 18 – analysis and dissemination of algorithm output
- COVID Symptom checker – automation of extraction of 4 databases into a single dataset
- Vaccination Management System – vaccination data extracts from GP clinical systems, data cleansing etc
- Vaccination Certification – development of systems and processes for the verification of vaccination certificates for individuals travelling
- COVID Vaccination Reporting – working alongside external suppliers to produce public facing dashboards and reports

GPIP – ANALYTICS UPDATE

- Data Access Agreements - 285 GP Practices (88%) signed across the 3 GP clinical systems
 - New DAA/DPIA has been submitted to include data linkage to other systems and also any additional data items required for primary care reporting
- GPIP architecture – data warehouse architecture has been developed and currently being refined to ensure the collection, integration, storage and analysis of data is accurate and the appropriate levels of stability for the system are achieved.
- Exploratory Data Analysis and Data Quality checks - analytics layer currently being developed alongside sense checking:
 - Records are currently being sense checked and reconciled to ensure accuracy of data transfer
 - Currently working with GP practices from each clinical supplier to reconcile data from the source GP systems to GPIP data store
- Dashboards and reporting – various dashboards are being developed to assist with data quality and primary care reporting (disease registers etc)
- GP practice Share point sites – each GP practice provided with a secure share point site
- Technical methodologies and documentation developed –
 - to assist with the standardisation and quality assurance of primary care data – deliver the highest levels of accuracy for data analysis and reporting

GPIP – CURRENT POSITION

- Working to improve data quality.
- Working with Vendors to resolve issues with extracts.
- Close to producing a v1 of Power BI Dashboards
 - Using an Agile approach to provide core features.
 - Stimulate discussion, and new ideas from end users.
 - Drive an agreed specification for the next version and plan major updates.
 - Working with GP's and practices to validate versions before release.
- Continuing to work on COVID priorities.



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**Thanks for your time.
We are happy to answer any
questions.**

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