NYHDIF

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Accessing GP data and use in Population Health Management
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Introduction
GPSOC IM1 Interfaces
GP IT Futures

- Foundation and non-foundation suppliers
- Modular
- SaaS model
- Per patient pricing (commoditised)
- Interface challenges:
  - Demand
  - Scalability
  - Performance
  - Throttling
  - Recovery
  - Governance
- Architecture models:
  - Direct links to supplier
  - NHS Digital acting a clearing house ("care.data2")
  - LHCREs
  - Data warehouses
  - Cloud based services
  - Distributed architecture
  - Aggregators
Data harnessing

N3 Network

Clinical Supplier Domain
- EMIS Web
- INPS
- Microtest
- TPP

When practice content is received, the relevant supplier releases their clinical data.

Data is securely routed directly to the practice.

Practice Domain
- GP 1
- GP 2
- GP 3
- GP 4
- GP 5
- GP 6
- GP 8,000

Data is received at the practice and processed via the Apollo regulator service to create a GP Practice database. Once the on-site database is established, it can be interrogated by the SQL Suite reporting tool and outputs produced that are pseudonymised, anonymised, aggregated or patient identifiable, dependent on agreed IG model. Daily Delta Updates ensure that the data remains current.

Data Processing Service

Onsite Practice Database

SQL Suite Reporting Tool

Secure encrypted file transfer

A scheduling service sets practice reports to run at a specific time and logs their success or failure.

Report templates are delivered directly to the practice for projects that they have consented to participate in.

Customer Endpoint

The data customer can choose to receive an overview of report runs for all practices via email or secure dashboard.

Pseudonymised, anonymised, aggregated or patient identifiable encrypted output files from all successful report runs are delivered to a designated endpoint or loaded into a Centralised BI Tool.

- Secure encrypted file transfer
- Dependant on IG Model: Pseudonymised/Anonymised Aggregated or Patient Identifiable Data
- Fully automated
- Scheduled to run out of hours
- Reduced GP Burden
- Scalable
- IG Controlled by Practice
- Clearly defined purpose
- Relatively low cost
Projects harnessing data
Growth in demand for data harnessing projects

**Projected Practice Deployments**

- Mar-19, 6620
Harnessing healthcare data - use cases

- Disease surveillance
- Risk stratification/patient safety
- Demand and capacity planning
- Clinical research/real world evidence
- Clinical trials/patient recruitment
- Health checks/screening
- Integrated care programmes
- Local health care records
Northern Ireland Flu Surveillance (1.9m patients)

- **Detection of future flu outbreaks** to alert and prepare hospitals for an increase in patients.
- By monitoring the incidence of flu and flu-like illness during GP consultations, trends identified to guide logistical planning.

RCGP RSC Communicable and Respiratory Disease Monitoring (2m+ patients)

- Information analysis and interpretation concerning the onset, patterns, prevalence and **trends of morbidity in primary care**.
- Most important activity is the surveillance of influenza and the monitoring of **vaccine effectiveness** on behalf of Public Health England using linked data pseudonymised at source.
Risk stratification/Patient safety (12m+ patients)

- Improved patient safety through **appropriate prescribing**
- Identification of ‘at risk’ patients
- Major financial savings
  - emergency admissions
  - A&E attendances
  - total hospital admissions
  - Total outpatient attendances
Demand and capacity planning

- **GP Access Fund**
  - Demand and capacity support for GP practices
  - Improved access to GP services
  - Sufficient routine appointments evenings and weekends
  - Provide evidence GPAF initiative delivering expected benefits for practices and patients by monitoring appointment slots availability and usage
Clinical Research/Real World Evidence

- **UK Biobank**
  - 500,000 volunteers consented for linkage to their primary care data to study the interaction of genes, lifestyle and environment to help researchers identify why diseases develop.

- **Salford Lung Study – Real World Evidence Study**
  - First Real World Evidence study – Asthma & COPD (Data linkage with other sources of data).
  - Positive healthcare outcomes allowing appropriate drugs to be brought to market faster benefitting patients, healthcare organisations and the pharmaceutical industry.

- **Greater Manchester Connected Health City**
  - Building rapid Interventions to reduce antimicrobial resistance (BRIT). Antibiotic Prescribing initiative to improve the health of patients
Clinical Trials/Patient Recruitment

- Identification of appropriate patients for particular studies
- Manage patient consents
- Making patients aware of clinical trial options
- Support recruitment of patients
- Bring treatment to patients sooner
NI Diabetic Eye Screening Programme

- Secure electronic data transfer of consented diabetic patients to Belfast Trust for screening/recall.
- Replaced labour intensive paper based mechanisms for data collection in results reporting and referrals to secondary care
- Eliminated the opportunity for confidential patient data collection forms to go missing in the post
- Improvement in quality of data by eliminating transcription errors.
- Onward referrals to ophthalmology not delayed
Improving Child Health Immunisation in East of England

- Integration of GP systems with local child health record systems (EMIS and TPP)
- Fully managed, automated service
- Reduction in transcription errors
- Reduced GP practice burden

- Provide CHIS deliver service to whole of East England and report:
  - a 4% increase in the number of pre-school boosters
  - a 1% rise in primary school immunisations
  - a reduced waiting list for vaccines as a result of better scheduling
  - a greater certainty that GP practice and Provide CHIS records match due to the automated process
  - a saving of 455 Practice Nurse hours as a result of automating the data input process
Integrated Healthcare

- **North West London Collaboration** – Wholes Systems Integrated Care Programme
  - Single record for each patient from a range of providers
  - GP data linked with patient activity data from acute, community, mental health and social care settings to ensure better care is provided
  - Improved Healthcare for 2 million London residents
  - Joined up approach to patient treatment
  - Large scale analytics engine
  - Analytics dashboards made available for clinicians, care professional and managers
  - Supports movement towards **capitation budget for new models of care**
  - Supports population health management and pathways redesign
  - Drives more tailored, effective care and focussed risk management
What is Apollo Connect?

Large scale data extraction and services

Bulk data sets delivered seamlessly for population health management, risk stratification and medical research

Single patient interface for clinical care

Near real-time structured data from primary care practices for use in clinical care
Apollo single record transaction process

Data Extraction API
- EMIS
- TPP
- Vision
- Microtest
- A.N.Other

Data Repository

Response
Request

Load Balancing
Authentication/Authorisation
Communication Management
System Logging

Queue Cache

Apollo Hosted

Response
Request

Real-time API

Customer Hosted

Practice Hosted
How Apollo Connect works

Structured data

REST and FHIR
Apollo Connect Features

Innovative distributed edge architecture delivering scalable and low cost infrastructure

Refreshed daily to support clinical decision making and fully integrated into Stratus

Access records from all GP systems through automated, fully managed service

Access the full record with structured data feed
Thank you