Transfer of Care – Update

FHIR Structured Messaging
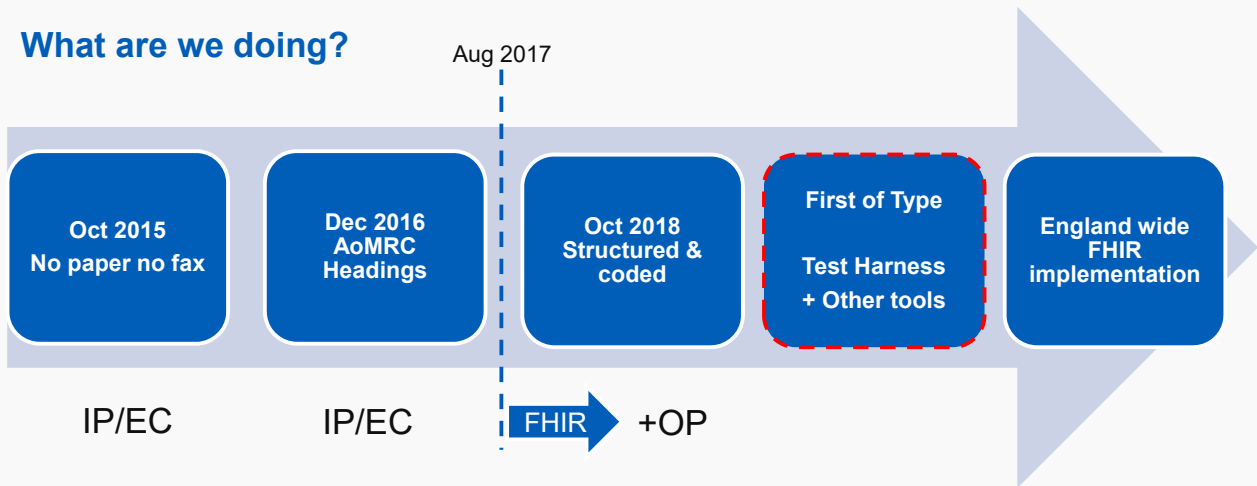
NHS Digital

Information and technology
for better health and care

presented by Dr Mike Moore,
Project Manager, Integrating Care

ToC is about the movement of a patient from one organisation to another. It requires that continuation of quality of care is facilitated by timely handover of appropriate documentation. Transfer of Care projects are also about doing this handover in a consistent manner across the whole of England, not just your local catchment area.

Digitisation Journey

What are we doing?

Aug 2017

| Oct 2015 No paper no fax | Dec 2016 AoMRC Headings | Oct 2018 Structured & coded | First of Type Test Harness + Other tools | England wide FHIR implementation |

IP/EC   IP/EC   FHIR +OP

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Transfer of Care is not something that has appeared overnight. It has been a mandated incremental process managed through the NHS Standard Contract over a number of years.
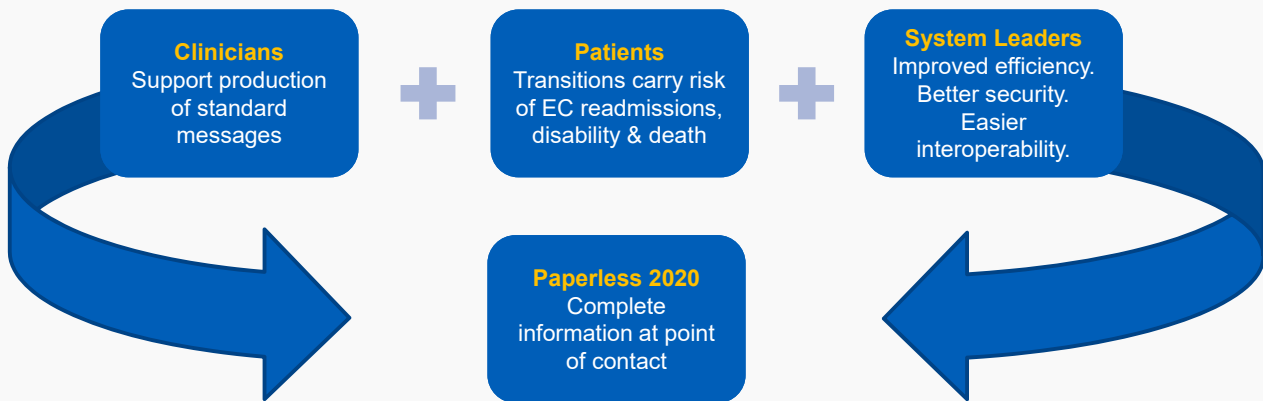
INCREMENTAL JOURNEY
- Oct. 2015 applicable to eDischarge (IP Discharge) & EC Discharge. Secure fax no longer permitted as Delivery Method – secure email or direct electronic transmissions acceptable.
- Dec. 2016 applicable to IP & EC Discharge.
- Aug. 2017 decision to deprecate Clinical Document Architecture (CDA) and adopt Fast Healthcare Interoperability Resources (FHIR – pronounced as "fire") . Other programmes such as "NHS 111" post-event messaging may still be using CDA. For ToC – FHIR only.
- Oct. 2018 applicable to all four message types. To facilitate uptake across England will engage with GDE sites to do FoT.

The red bordered box is my primary focus as a project manager. In essence NHS Digital want to prove that the specifications you are being asked to adopt are fit for purpose. Once proven, adoption of FHIR structured messages for ToC should be capable of being rolled out throughout England.

What are the benefits?

Why are we doing it?

Clinicians
Support production of standard messages

Patients
Transitions carry risk of EC readmissions, disability & death

System Leaders
Improved efficiency. Better security. Easier interoperability.

Paperless 2020
Complete information at point of contact

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ToC is part of the digital vision defined by publications such as "Paperless 2020" (from National Information Board) and "Five year Forward View" (from NHS England).   ToC programme is about improving efficiency and effectiveness of handover of care, so NHS becomes one of the safest healthcare systems in the world.

DRIVERS FOR CHANGE / BENEFITS

CLINICIANS
Oxleas – Exploited their RiO system to improve the capture of ward round information and adapted electronic letters to introduce AoMRC headings. Easier for clinicians to compose message with standard template facilitating accurate and fuller content. Easier for GPs to absorb and utilise information with standard content.

https://digital.nhs.uk/binaries/content/assets/website-assets/services/transfer-of-care-initiative/oxleas-case-study.pdf

PATIENTS

Studies show a high proportion of patients discharged from hospital experience at least one adverse event in their continuing care because of incorrect information contained in their hospital discharge summary.

AUSTRALIA

https://www.racgp.org.au/afp/2017/januaryfebruary/an-australian-discharge-summary-quality-assessment-tool-a-pilot-study/

USA

https://www.ncbi.nlm.nih.gov/pubmed/12911647

Quicker turnaround/delivery of Transfer of Care message containing accurate and complete information -=> greater patient safety.

SYSTEM LEADERS
Remove delays and access problems with paper processes. Drive costs down for back office tasks. Reduce volume of paper transferred across NHS organisations. Reduce errors with activities such as rekeying information. Free time and funds for patient care.

Transfer of Care – Use Cases
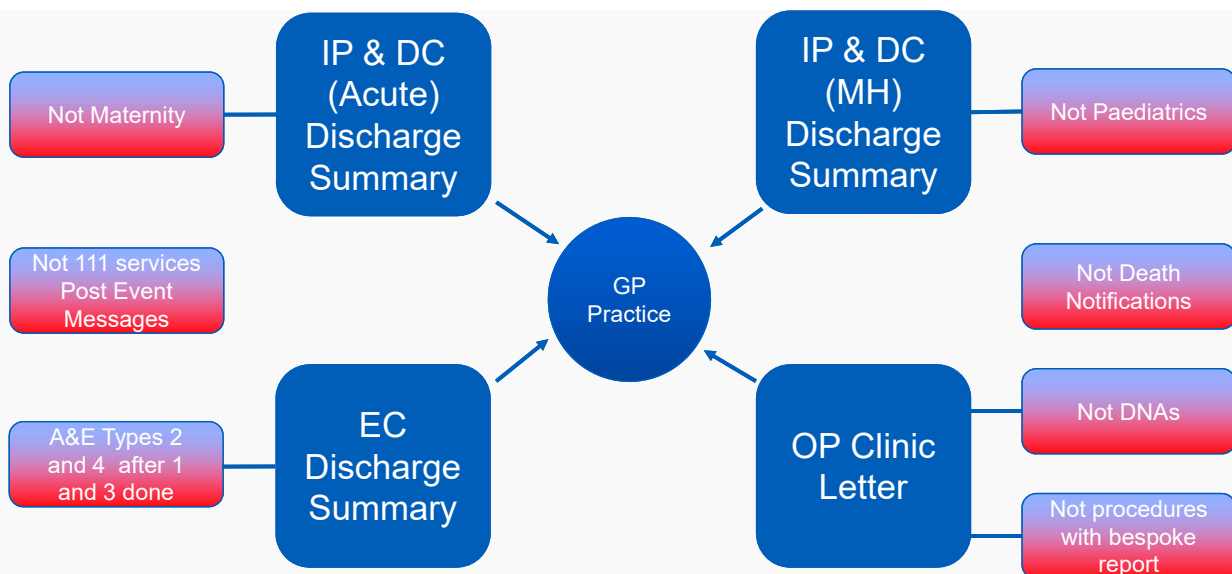
There are four message types or use cases defined for the ToC programme.

There is a separation between Acute and Mental Health Inpatient & Daycase Discharge Summaries because of a recognition of the considerable differences in information flows. Mental Health Discharge is for Adults, and using the specifications for paediatrics should not be attempted.

The Outpatient Letter is that triggered by a patient attending an outpatient clinic, where there is information to share which the GP will need to act on. Where there is no information for a GP to act on then an Outpatient Letter is not needed. The ToC OPL use case does not include Did Not Attends. If a procedure is conducted in an Outpatient setting such as Endoscopy then a bespoke report may be used instead of a ToC structured message.

For Emergency Care, it is suggested that A&E Types 1 (consultant-led 24-hr service) and 3 (minor injury) are done first, and then Types 2 (consultant-led mono-specialty) and 4 (Walk-In Centres).

Initial focus is on messages flowing from secondary care to registered GP Practice of patient. Next phase could be for any secondary care organisation to receive a message type. That is, in time secondary care organisations will need to have a direct electronic FHIR receive capability.

Preparation – Breakdown of Activities
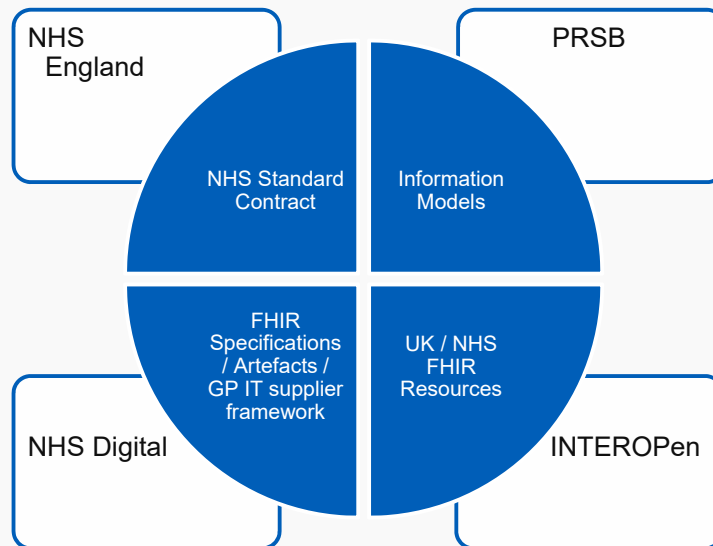
NHS England prepare the **NHS Standard Contract**. NHS England have updated the NHS Standard Contract Guidance document in August 2018 to specifically reference use of FHIR and PRSB headings.   CCGs use the NHS Standard Contract to commission secondary care services. CCGs have responsibility for ensuring secondary care organisations conform with the contract. NHS England are also applying pressure on organisations to determine how compliant they are with the NHS Standard Contract.

The Academy of Medical Royal Colleges (AoMRC) is the coordinating body for the UK and Ireland's 24 medical Royal Colleges and Faculties (including RCN, RCP, RCGP and AHP).   In 2013 it published "Standards for the clinical structure and content of patient records". This document covered Referral, Outpatient, Admissions, and Discharge headings, i.e. a list of clinical record headings and description of the information that should be recorded under each heading. AoMRC standards have been adopted by PRSB who have since issued several updates to the standards. A maintenance upgrade to the standards was published in August 2018.

Professional Record Standards Body (PRSB) aim is to help define the standard for good care records. Objective is to achieve an electronically transferable record which is up to date and accessible to all those responsible for care. PRSB can be thought of as a rebrand of AoMRC.

PRSB have via the Royal Colleges produced standards for communication and

converted these into Information Models. Standards have been ratified by the relevant professional bodies.

These Information Models feed into a curation process under the guidance of INTEROPen. That is, mapping activities have been undertaken to compare the Information Models against International FHIR resources and were necessary resources for UK / NHS use have been profiled. This has been done in collaboration with commercial suppliers of IT systems to the NHS.

PRSB and INTEROPen are each a Community Interest Company – i.e. they use their profits and expertise for public good. Membership for INTEROPen includes Tech UK and BCS.   INTEROPen membership is available to all.

NHS Digital have created the document bundles (payload) and ITK3 bundle for satisfying Transfer of Care. This includes a Test Harness, and scenario examples. NHS Digital have responsibility for conducting First of Type Testing.

Achieving 'Generic FHIR Receiver' (GFR) Capability
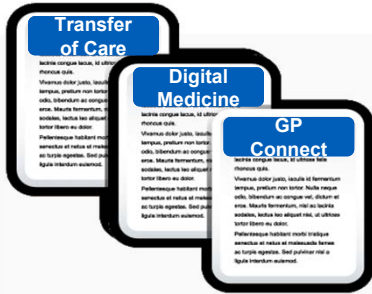
Three Programmes

Transfer of Care – use cases for IP/DC discharges, EC discharges and OPLs.

Digital Medicines – e.g. use case is Community Pharmacy informing registered GP that patient has received a flu vaccine, or an emergency supply of medicine without a prescription.

GP Connect – use case is a federated GP Practice providing attendance/consultation details via a 'write- back' to patient's registered GP practice.

Common elements for solution

All interactions will be asynchronous – Using messages transferred from a sender to a recipient (via MESH).

ITK v3 – is the common envelope for all FHIR messages.

Common set of HL7 FHIR STU3-based profiles, e.g. 'Patient', 'Practitioner', 'Encounter', 'Medication', 'Allergy Intolerance'. This helps avoid multiple interfaces for two way communication.

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ToC Programme is aligned with strategic direction of NHS Digital to adopt FHIR. In addition there are a number of other programmes such as GP Connect and Digital Medicines also wanting to make use of FHIR messages.

The GFR capability has been requested from the four principal GP IT suppliers. NHS Digital believe the case for satisfying this is strengthened by fact that there are three programmes dependent upon this capability. In the future other projects and programmes are likely to be dependent on it.

In terms of technology any solution implemented will have considerable commonality across the programmes. That is, the individual programmes will all use messages that are asynchronous, based on ITK3 for distribution and are built on CareConnect profiles.

ITK=Interoperability Toolkit
STU=Standard for Trial Use

GP IT systems are not currently enabled to receive FHIR messages. This is a critical dependency for the delivery of Transfer of Care FHIR messages.

GP Supplier Engagements
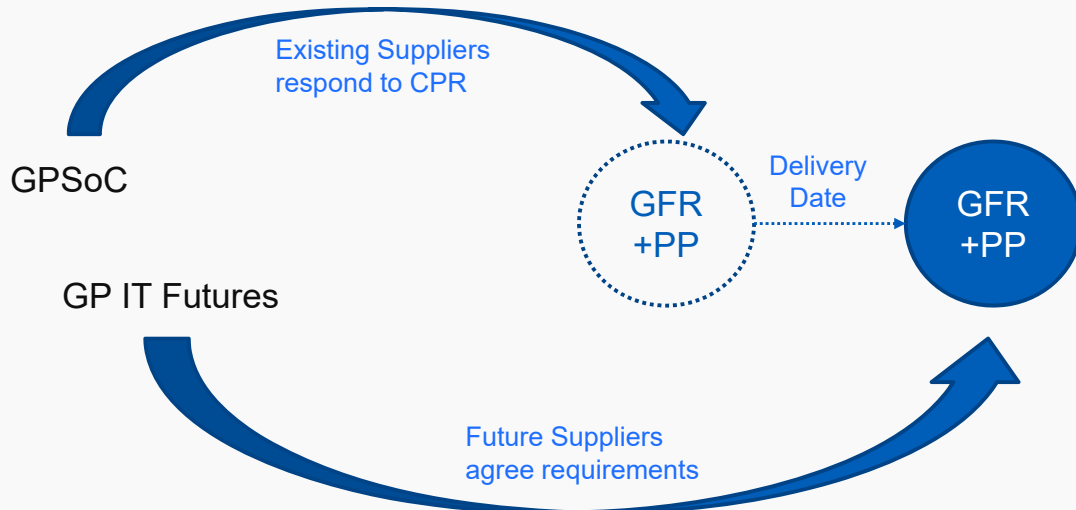
Secondary care cannot go live with FHIR structured messaging until GP Practices have taken delivery of a GFR capability in their principal systems.

Discussions are taking place with existing and potentially new suppliers to establish delivery date for GFR and ToC Programme Payload (PP) capabilities.

Via GPSoC Team
GP System of Choice (GPSoC) contract ended in March 2018. There are some development sprints left over from this contract. Discussions have been occurring to get these sprints allocated to the GFR requirement and to the payloads of dependent programmes. Initial estimates of cost and delivery time have already been received from suppliers.

Intention is to submit Continuity Period Requests (CPR) to each of four suppliers. There are issues with capacity and the ability of GP IT suppliers to complete existing work prior to taking on new work, i.e. GFR/ToC Payload. There are also issues for some suppliers with sprints and costs potentially not fitting into available capacity and demand (CoD) process.

Via GP IT Futures Team
Requirements for GFR and ToC payload have been submitted to GP IT Futures Team for Sept. 2018 deadline. This allows GFR to be considered for inclusion as an entry requirement. IF ACCEPTED – suppliers would need to meet requirement by

June/July 2019 (estimated). IF NOT ACCEPTED as entry requirement it would be expected to come in next tranche of standards/requirements scheduled for March 2020.

Clarity on expected Delivery Date
By end of Oct. 2018 expect both routes to have reached a point where delivery dates will be known with greater certainty.
Formal stage of CPR is expected to see return of final costs and timescales within next few weeks.
GP IT Futures team is expected to confirm the entry baseline by end of October 2018.   With GP IT Futures route, suppliers meet requirements at their 'own' cost.

ToC Deadline - Actions still needed

- Cease ToC post, fax and secure email.
- Adopt direct electronic transmission.
- Implement PRSB headings.
- Produce and share plans with NHS England for adoption of ToC structured messages.
- **Make changes with due diligence.**

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The 1st October 2018 deadline originally requested the adoption of FHIR structured messages. This is not possible in the absence of a GFR capability.

Due diligence may well mean that secondary care organisations focus first on GPs within their own catchment area and don't break what works for out-of-catchment areas.

Global Digital Exemplars (GDEs) & FoT

Status

Acute IP/DC Discharge	MH IP/DC Discharge
Cambridge *Leeds TH*	*Worcestershire Birmingham & Solihull*

EC Discharge	OP Clinic Letter
West Suffolk	*UH Birmingham*

- UAT of Test Harness near completion.
- Test Harness access provided to 5 out of 6
- Messages sent to Test Harness by 4
- Local development resources used by 3
- 3rd party specialist agent used by 1
- Additional parties have also requested access to Test Harness & have been successful in its use.

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The FoT offering is effectively a support partnership between NHS Digital and the sender site. NHS Digital help with technical expertise and the sender site provides feed back on the suitable of adopting the artefacts in the real world.

Intention has been to focus on GDEs and willing organisations (e.g. Leeds TH) to act as First of Types.

Transfer of Care have confirmed Expressions of Interest for First of Type testing for all four message types:
- Day Case & inpatient discharge summary   - Mental Health discharge summary
- Emergency Care discharge summary   - Outpatient Clinic Letters

Other organisations who have registered for access to the Test Harness include Nuffield Health, Allscripts, IMS Maxims, Intersystems, System C, Synertec (Print Service provider), and Winscribe/Nuance. Meditech have also requested access to the Test Harness.
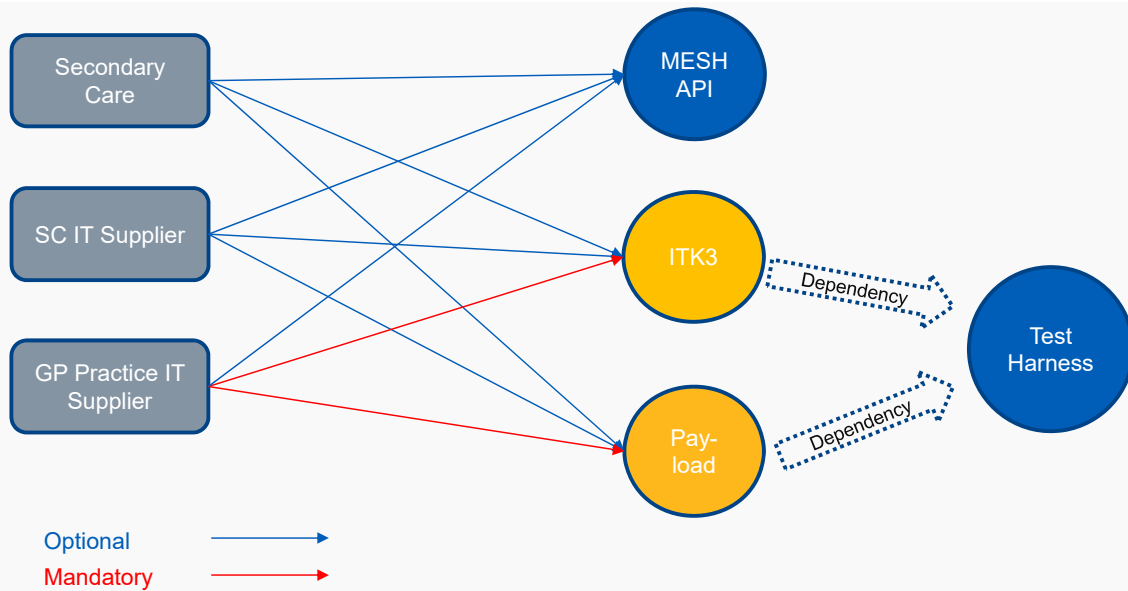
MESH API certification exists now. NB this does not include MESH client. A MESH API Target Operating Model (ToM) has been defined.   To give an example of who has successfully been through MESH API certification – look at supplier for Rhapsody Integration Engine.

Approach for certification for ITK3 and Payload is still being discussed. Likely it will end up as two separate TOMs. With generic TOM for ITK3 which can be used by multiple programmes and a specific TOM needed for ToC Payload.

It is likely that certification at secondary care level will be voluntary. It is expected to be mandatory at GP Practice level.   Both ITK3 and Payload certification is probably going to be dependent on the Test Harness.

Current timescale expectations is that TOMs will be available in draft form by the end of October 2018. Would like to get feedback for draft from FoTs and a range of suppliers.

Messaging Exchange for Social Care and Health

The Transport Layer

MESH is a secure electronic transport layer – previously known as DTS. It is a NHS provided service.

Transport Layer – MESH

A 'national-reach' (England wide) transport layer. Secondary care sites can exploit it for local and out-of-catchment area deliveries.

End Point Lookup Status
A new lookup function allowing the MESH Mailbox ID of the patient's GP to be found from a search using Patient Surname, Date of Birth and NHS Number.

Toggled on in LIVE environment 17th May 2018.
Previously toggled on in INT (test) environment for users with HSCN (N3) connections.
Available in OpenTest environment (non-HSCN connections) for Transfer of Care Test Harness users.

Further Queries

MESH: MESH@nhs.net

Test Environment/Test Harness Registration: ITKConformance@nhs.net

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Messaging Exchange for Social care and Health (MESH).   About maximising return on investment in NHS infrastructure.

MESH End Point Lookup was designed to facilitate Transfer of Care.

Reference Material for Transfer of Care

With Programme Contact Details

Technical Products

Products	Links
FHIR Bundles (Payload)	https://developer.nhs.uk/transfer-care-specification-versions/
ITK 3.0 Messaging Distribution	https://developer.nhs.uk/interoperability-tool-kit-itk-specification-versions/
Test Harness Information for Transfer of Care	https://developer.nhs.uk/itk3-test-harness/
Test messages and test scenarios available	https://github.com/nhsconnect/ITK-Test-Harness/tree/develop
Flow of expected responses from the ITK3 Test Harness	https://developer.nhs.uk/apis/itk3messagedistribution/explore_response_patterns_1.html
Clinical Assurance Tool	https://data.developer.nhs.uk/document-viewer

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ITK3 / FHIR Specifications have reached beta status. This is effectively the final status.   No further development is planned / scheduled. NHS Digital may only undertake minor changes as a result of FoT sites reporting issues / bugs. Release Candidate status is normally not declared until end-to-end testing has been completed.

ToC – Points of Contact

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For general queries please use information.standards@nhs.net and use subject line to indicate for attention of "Transfer of Care" or "Integration Projects Team".

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