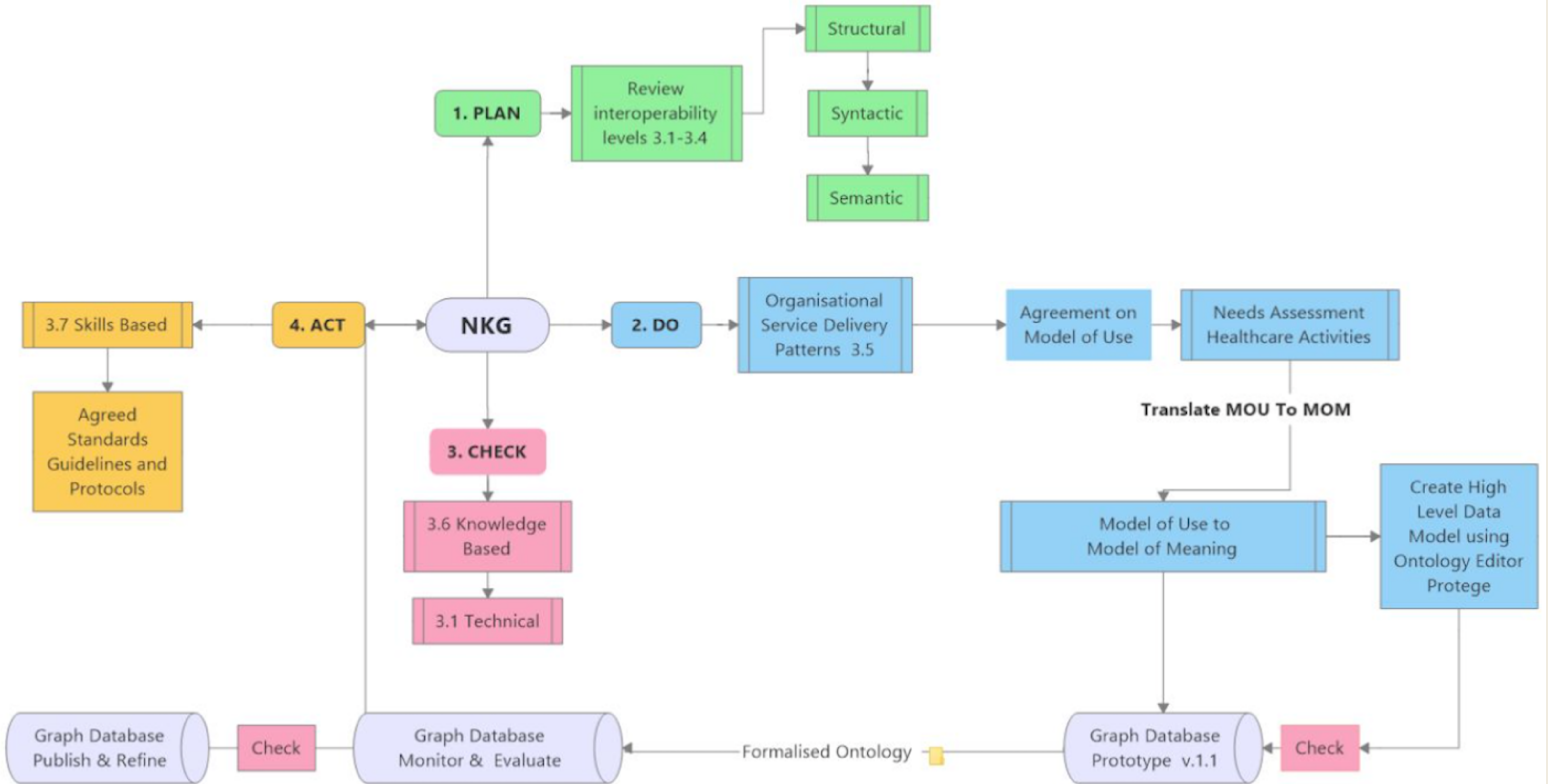

SUBHASHIS DAS
SUPERVISOR DR. PAMELA HUSSEY

Common Semantic Data Model (CSDM)

Review-1
4th Aug 2021

Context and Process



Patient Demographics	Person	Patient
<ul style="list-style-type: none"> • First Name • Last Name • Previous Name • Middle Name (incl Middle Initial) • Suffix • Birth Sex • Date of Birth • Race • Ethnicity 	<ul style="list-style-type: none"> • person_id • gender_concept_id • year_of_birth • month_of_birth • day_of_birth • race_concept_id • ethnicity_concept_id • location_id • provider_id • care_site_id 	<ul style="list-style-type: none"> • identifier • name • telecom • gender • birthDate • deceased • address • maritalStatus • multipleBirth • photo
USA-CMS	OMOP	FHIR4

Patient
<ul style="list-style-type: none"> • IHI • Forename • Surname • Sex • Date of birth • address • employmentStatus • Ethnic
NASS

[FIND OUT](#)

Common Data fields

We are in the business of translating and standardising the information.
Collect once and use many times

[Meaning/Semantic](#)

Patient Demographics	Person	Patient
<ul style="list-style-type: none"> First Name Last Name Previous Name Middle Name (incl Middle Initial) Suffix Birth Sex Date of Birth Race Ethnicity 	<ul style="list-style-type: none"> person_id gender_concept_id year_of_birth month_of_birth day_of_birth race_concept_id ethnicity_concept_id location_id provider_id care_site_id 	<ul style="list-style-type: none"> identifier name telecom gender birthDate deceased address maritalStatus multipleBirth photo
USA-CMS	OMOP	FHIR4

Patient
<ul style="list-style-type: none"> IHI Forename Surname Sex Date of birth address employmentStatus Ethnic
NASS

FIND OUT

Common Data fields

For example First name, Last name format need to be agreed in order to machine to process

Meaning/Semantic

Class hierarchy (inferred)

Class hierarchy

Class hierarchy: patient ? [] = [] X

Asserted

- owl:Thing
 - event
 - mentalObject
 - Organization
 - Physical-Endurant
 - Amount-Of-Matter
 - physicalObject
 - artifact
 - location
 - person
 - product
 - role
 - healthcareProfessional
 - patient
 - State

Annotations Usage

Annotations: patient

Annotations +

- rdfs:comment** [language: en]
Information about an individual receiving health care services
- database_cross_reference** [type: xsd:anyURI]
<https://www.hl7.org/fhir/patient.html>

Description: patient

Equivalent To +

SubClass Of +

- role**

General class axioms +

DESIGN

Ontology Schema

language independent machine understandable schema

30. Ethnic/cultural background*

[self-identified]

(circle code below)

1. Irish
2. Irish Traveller
3. Any other white background
4. Black African
5. Any other black background
6. **Asian Chinese**
7. Any other Asian background
8. Do not wish to answer this question
99. Not known

NASS

USE STANDARDS TERMINOLOGY

SNOMED-CT

- ▼ ● Asian - ethnic group (ethnic group)
 - ● Bajau (ethnic group)
 - ● Bangladeshi (ethnic group)
 - ● Bidayuh (ethnic group)
 - ● Black Indian sub-continent (ethnic group)
 - ● **Chinese (ethnic group)**
 - ● Iban (ethnic group)
 - ● Indian (East Indian) (ethnic group)
 - ● Indians (Hindi-speaking) (ethnic group)
 - ● Irani (ethnic group)
 - ● Iraqi (ethnic group)
 - ● Japanese (ethnic group)
 - ● Kadazan (ethnic group)

SMH-Clinical Examination

clinical examination form use for capturing regular medical observation of a service user.

Next

Page 1 of 5

Powered by [ArcGIS Survey123](#)



St. Michael's
House

SMH-Clinical Examination

Demography

Client Name:*

ex. patient or service user name

Client Unique Identifier (UID)*

ex. PPS Number,

Client Date of Birth:

 m/d/yyyy

Address-Street address:*

Address-City:*

WHOM

SERVICE PROVIDER OR STAFF (FOR ALL)

WHAT

SMH-Input Form

FOR WHAT

Data Collection

<https://arcg.is/CXamK>

HOW



SMH-Clinical Examination

clinical examination form use for capturing regular medical observation of a service user.

Next

Page 1 of 5

Powered by [ArcGIS Survey123](#)



St. Michael's
House

SMH-Clinical Examination

Demography

Client Name:*

ex. patient or service user name

Client Unique Identifier (UID)*

ex. PPS Number,

Client Date of Birth:

 m/d/yyyy

Address-Street address:*

Address-City:*

WHOM

SERVICE PROVIDER OR STAFF

WHAT SYSTEM

Distributed system

FOR WHAT

Data Collection

<https://arcg.is/CXamK>

HOW



SMH-Clinical Examination						
Client Name:	Client Unique Identifier (UID)	Client Date Of Birth:	Gender	Address-Street address:	Address-City:	Address-Country:
John Murphy	2458658LB	Apr 29, 1959	Male	23, Whitehouse Lane, Ston Town, Lusk	Dublin	Ireland

SMH-Clinical Examination

Submitted by: Anonymous user

Submitted time: Feb 6, 2021, 8:14:57 PM

Demography

Client Name:

John Murphy

Client Unique Identifier (UID)

WHOM

SERVICE MONITORING STAFF

WHAT SYSTEM

Centralize Database

FOR WHAT

Data Storage

WHAT KIND OF SYSTEM

Cloud-based

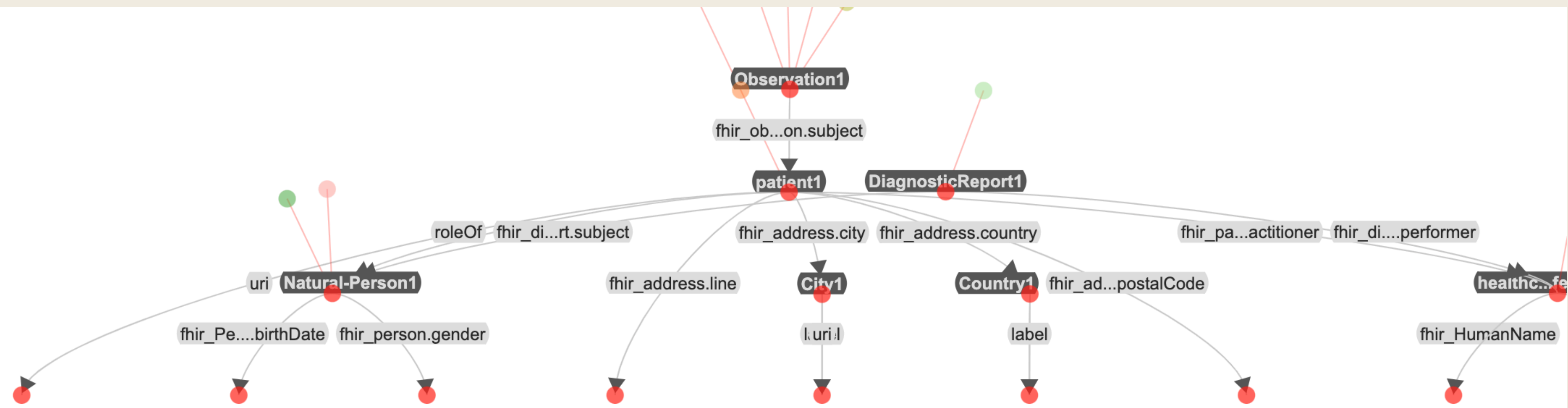
HOW

System Admin

LOGIN
PASSWRD



Translation MoU->MoM



WHOM **TECHNICAL STAFF**

FOR WHAT

Mapping

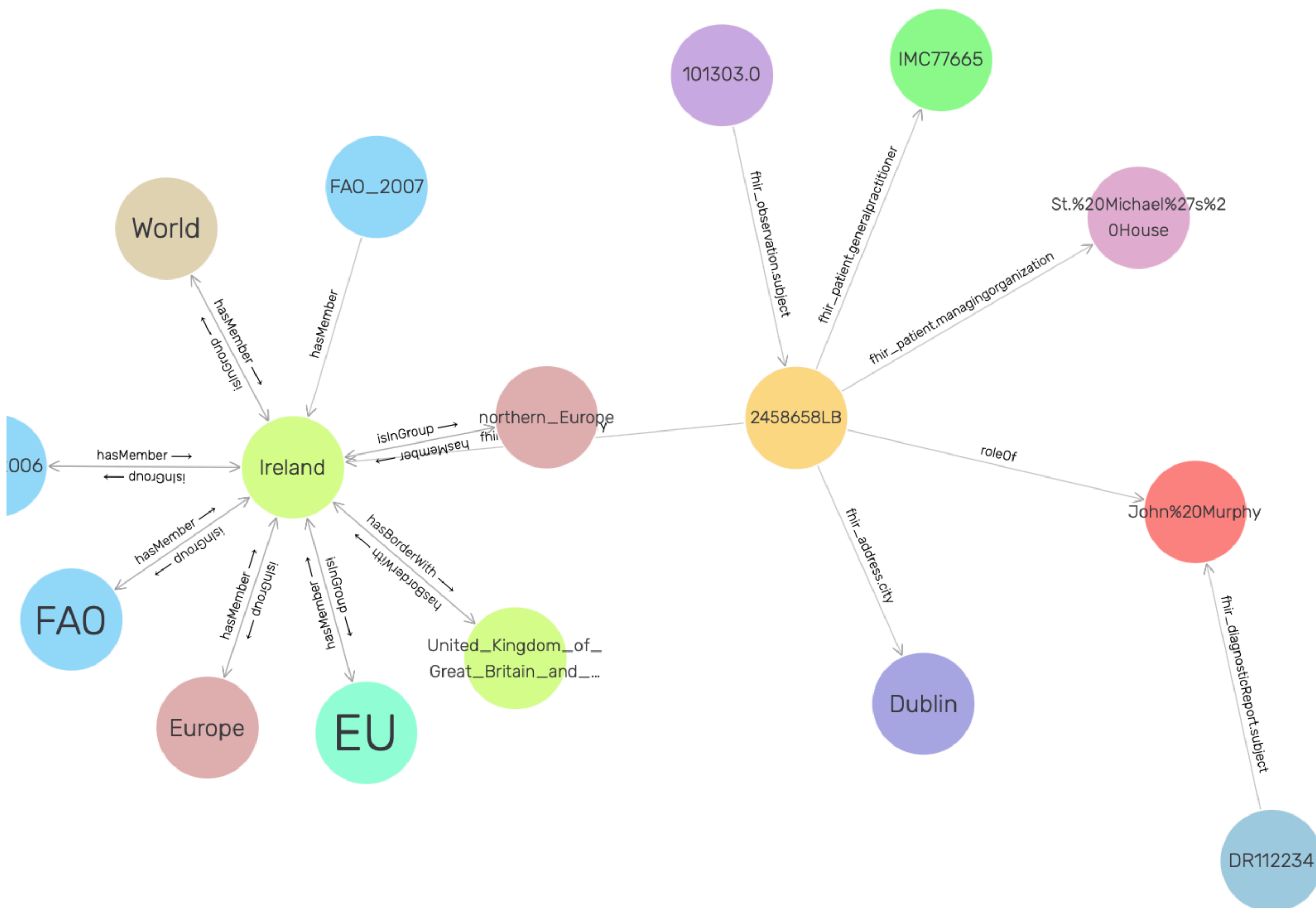
WHAT KIND OF SYSTEM

Data Integration

Client Unique Identifier (UID) ▾	Client Date of Birth: ▾	Gender ▾	Address-Street address: ▾	Address-City: ▾	Address-Country: ▾	Address-PostalCode ▾	F Suggest ▾
2458658LB	4/29/59 12:00	Male	23, Whitehouse Lane, Ston Town, Lusk	Dublin	Ireland	D07W6Y4	Dr. Gery McGuine IM

Visualisation

Visual graph i



John%20Murphy i

John%20Murphy

Types:
<http://ontology.ip.rm.cnr.it/ontologies/DOLCE-L>

RDF rank:
0

datatypes-definitions1:fhir_HumanName
John Murphy

person-definitions1:fhir_Person.birthDate
4/29/59 12:00

person-definitions1:fhir_person.gender
Male

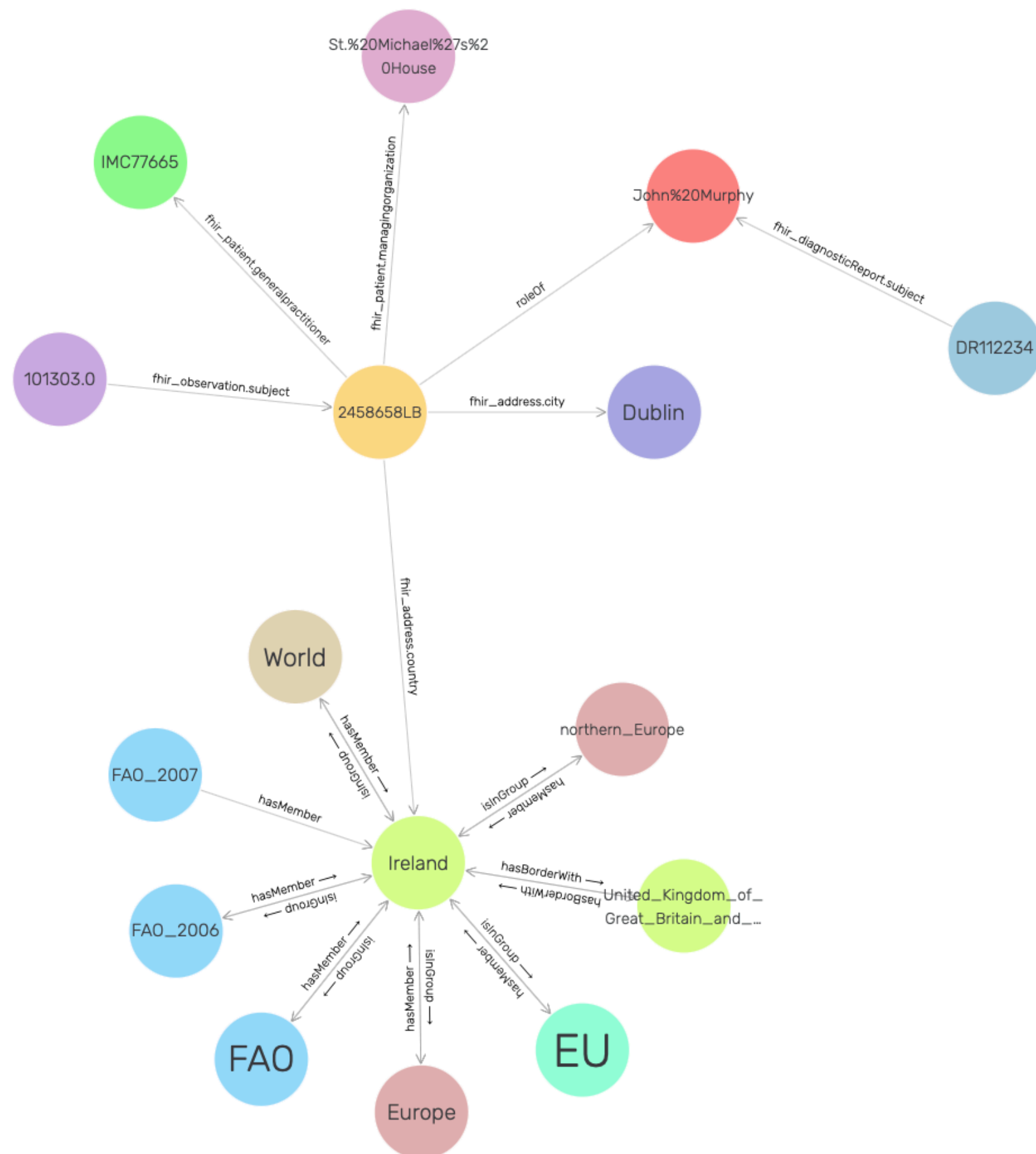
WHOM **TECHNICAL STAFF**

FOR WHAT
Visualisation

WHAT KIND OF SYSTEM
GraphDB

Visualisation

Visual graph ?



Ireland ?

Ireland

Types:

geopolitical:self_governing

EWS:Country **owl:NamedIndividual**

RDF rank:

0

Search instance properties

geopolitical:GDPNotes

Estimated

geopolitical:GDPTotalInCurrentPrices

227193.0

geopolitical:GDPUnit

millions of US dollars

geopolitical:GDPYear

2009

geopolitical:HDINotes

Calculated

WHOM **TECHNICAL STAFF**

FOR WHAT

Visualisation

WHAT KIND OF SYSTEM

GraphDB

Output

1. **HUSSEY, P., DAS, S., FARRELL, S., LEDGER, L., & SPENCER, A. (2021). A KNOWLEDGE GRAPH TO UNDERSTAND NURSING BIG DATA: CASE EXAMPLE FOR GUIDANCE. *JOURNAL OF NURSING SCHOLARSHIP*.**
2. **DAS, S AND HUSSEY, P. (2021). DEVELOPMENT OF AN INTEROPERABLE -INTEGRATED CARE SERVICE ARCHITECTUREŸ FOR INTELLECTUAL DISABILITY SERVICES: AN IRISH CASE STUDY. SPRINGER, CHAM.**
3. **CONTSONTO: A FORMAL ONTOLOGY FOR CONTINUITY OF CARE (S DAS, P HUSSEY). P-HEALTH CONFERENCE, ITALY 2021 SUBMITTED**
4. **CODE & DOCUMENTATION: ONTOLOGY OF CONTINUITY OF CARE [HTTPS://SUBHASHISHHH.GITHUB.IO/CONTSYSDOC/](https://subhashishhh.github.io/contsysdoc/)**
5. **DEMONSTRATOR: [HTTPS://ARCG.IS/CXAMK](https://arcg.is/cxamk)**

Next Steps

This research has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. [801522](#), by Science Foundation Ireland and co-funded by the European Regional Development Fund through the [ADAPT Centre](#) for Digital Content Technology grant number 13/RC/2106_P2 and [Davra Network](#).

Next Steps

- 1. BUILD CORE DATASET AND DEMONSTRATOR FOR REVIEW AND DISCUSSION**
- 2. FOCUS WITH KEY STAKEHOLDERS ON KEY REQUIREMENTS TO PREPARE SMH FOR TECHNOLOGY AND DIGITAL ADVANCEMENT IN LINE WITH NATIONAL POLICY**
- 3. TRAIN SMH STAFF ON KEY THEORY AND PRACTICE RELATED SKILLS FOR ACHIEVING SLAINTECARE - INTEROPERABILITY MICRO CREDENTIAL**
- 4. EVALUATE AND REPORT TO SIG IN SMH**
- 5. ANY OTHERS SUGGESTIONS AND Q&A**

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Research



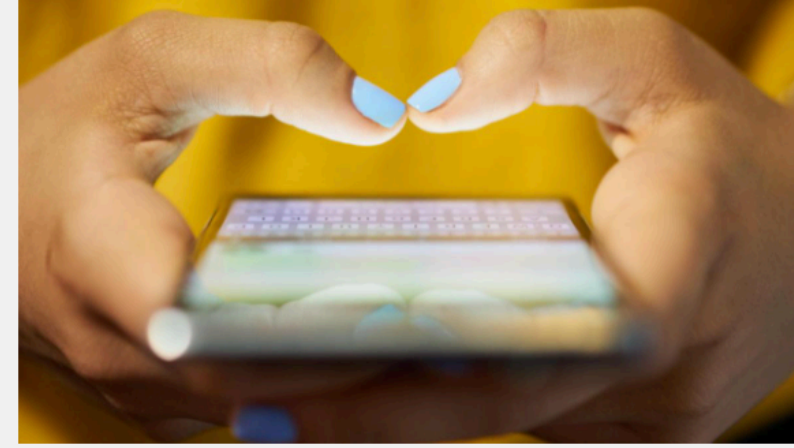
Our research is taking our Vision and Mission to help deliver our Strategy for the citizen read all about it here.

Teaching & Learning



The CeIC is a champion of further education for those that are interested in improving the heathcare delivery to the cit...

Contact us



Talk to us... tell us what you think or if you want to discuss some research and ideas get in touch.