

Teknisk interoperabilitet

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2022-10-21

1.0

Interoperabilitet



Interoperabilitet

Oxford Dictionary

1. interoperability (between/with something) the ability of computer systems or programs to exchange information
2. interoperability (between/with somebody/something) the ability of military equipment or groups to work together

Wikipedia

Interoperability is a characteristic of a product or system to work with other products or systems.

While the term was initially defined for information technology or systems engineering services to allow for information exchange, a broader definition takes into account social, political, and organizational factors that impact system-to-system performance.

TOGAF

A definition of interoperability is "the ability to share information and services" There are many ways to define interoperability and the aim is to define one that is consistently applied within the enterprise and extended enterprise.

Presentation Integration/Interoperability is where a common look-and-feel approach through a common portal-like solution guides the user to the underlying functionality of the set of systems

European Interoperability Framework (EIF)

interoperability is the ability of organisations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organisations, through the business processes they support, by means of the exchange of data between their ICT systems.

European Interoperability Framework



- 12 Principer
- 41 Rekommendationer
- Svenskt ramverk för digital samverkan

Teknisk interoperabilitet



Teknisk interoperabilitet

This covers the applications and infrastructures linking systems and services. Aspects of technical interoperability include interface specifications, interconnection services, data integration services, data presentation and exchange, and secure communication protocols.

Interface specification

HL7 FHIR

International Patient Summary Implementation Guide

1.3.4 | Version 1.0.0 | General Principles and Design | The IGS | Prior Artifacts | Downloads | Copyright

Tables of Contents **Artifacts Summary** **Allergy Intolerance [SPS]**

Generating Data Services, HL7 FHIR® Books, published by HL7 International, © 2018 HL7 International, Inc. This is an authorized publication. It is the copyright holder for version 1.0.0. This version is based on the current IGS version 1.0.0 and changes may occur. See the Directions of Change.

General Deleted Documents Listings Examples IHL BSNF XML

14.3.1 | Resource Profile: Allergy Intolerance (IIPS)

<https://www.hl7.org/fhir/resourceprofile-allergyintolerance.html> Version: 1.1.0
Last updated: 2020-05-17
Compatible Name: AllergyIntolerance

This profile represents the constraints applied to the AllergyIntolerance resource by the International Patient Summary (IIPS) R4B1 Implementation Guide. A record of an allergy or intolerance is represented in the patient summary as an instance of AllergyIntolerance resource constrained by this profile.

This profile represents the relevant allergies or intolerances (conditions) for a patient, describing the condition (e.g. `reaction`, `anaphylaxis`, ...), preferably the agent the patient is allergic to and correlate the condition and the reaction of the patient.

This profile constrains the representation of a record of an allergy or intolerance of the patient, in the context of the international patient summary as specified by the IIPS project.

Usage:

- Use as a Resource Profile: [Builder](#) - 105
- Refer to the Resource Profile: [Builder](#) - 105

14.3.1.1 | Formal Views of Profile Content

Description of Profile, Differences, Snapshot and how it differs from previous version - 105.

Differential Table **Key Element Table** **Snapshot Table** **Statistics/References** **All**

This structure is derived from [AllergyIntolerance](#).

Name	Path	Type	Description & Comments
allergyintolerance	1..1	AllergyIntolerance	Initial definition of the resource.
intolerance	1..1	ConditionConcept	ICD-10-CM chapter 10: Diseases of the skin and subcutaneous tissue
item	1..1	CodeableConcept	ICD-10-CM chapter 10: Diseases of the skin and subcutaneous tissue
intensity	0..1	Code	Severity level of the condition.
code	0..1	CodeableConcept	ICD-10-CM chapter 10: Diseases of the skin and subcutaneous tissue

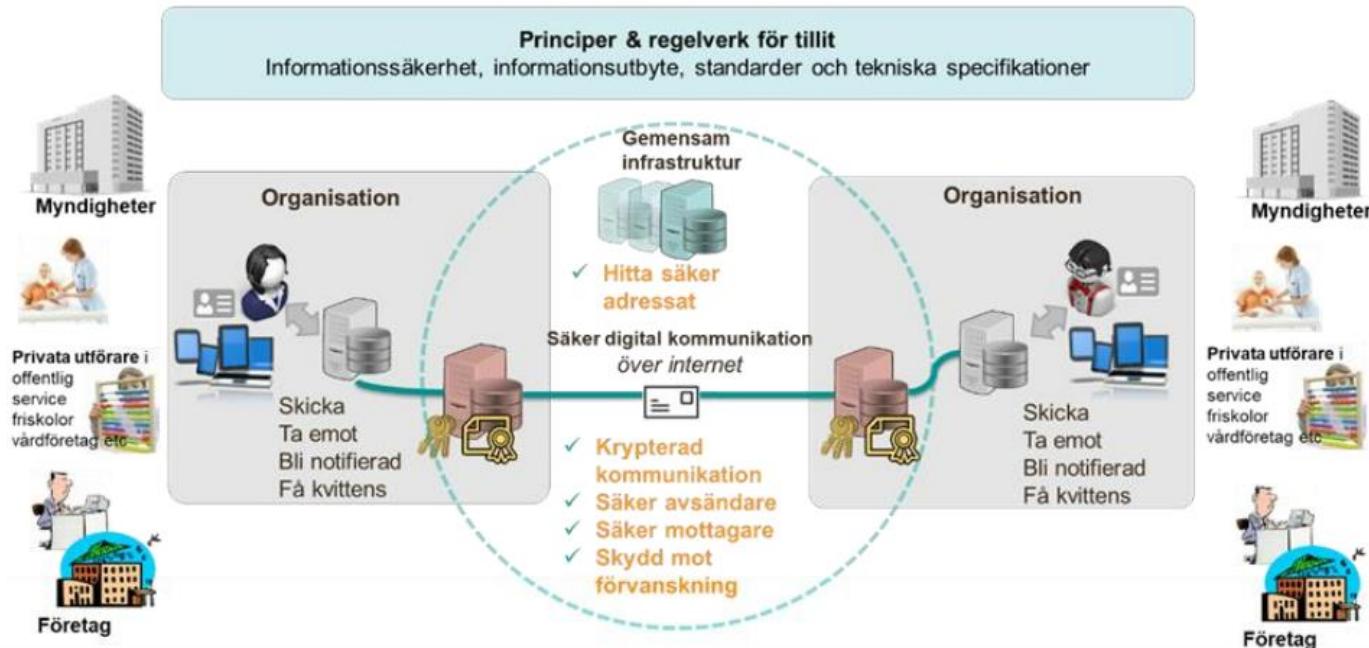
Binding: [Allergy Intolerance](#) (105) [Version 1.0.0](#) Type of the substance/agent, allergy or intolerance condition.

Additional Bindings	Reason
MeSH (MeSH 2018) (105) Version 1.0.0 Candidate Validation Binding	MeSH is a controlled vocabulary used to index articles in the National Library of Medicine's databases.
RxNorm (RxNorm 2018) (105) Version 1.0.0 Candidate Validation Binding	RxNorm is a controlled vocabulary used to index prescription drug terms in the National Library of Medicine's databases.
SNOMED CT (SNOMED CT 2018) (105) Version 1.0.0 Candidate Validation Binding	SNOMED CT is a controlled vocabulary used to index clinical terms in the National Library of Medicine's databases.
Allergen (105)	When referring to substances/agents.
Agent (105)	When referring to substances/agents.
Substance (105)	When referring to substances/agents.

This structure is derived from [AllergyIntolerance](#)

Name	Flags	Card.	Type	Description & Constraints								
AllergyIntolerance		0..*	AllergyIntolerance	Allergy or Intolerance (generally: Risk of adverse reaction to a substance)								
abatement-datetime		0..1	dateTime	Abatement datetime URL: http://hl7.org/fhir/uv/ips/StructureDefinition/abatement-dateTime-uv-ips								
clinicalStatus		0..1	CodeableConceptIPS	Concept - reference to a terminology or just text								
verificationStatus		0..1	CodeableConceptIPS	Concept - reference to a terminology or just text								
type	S	0..1	code	allergy intolerance - Underlying mechanism (if known)								
criticality		0..1	code	low high unable-to-assess								
code	S	0..1	CodeableConceptIPS	Concept - reference to a terminology or just text Binding: Allergy Intolerance Substance - IPS (preferred): Type of the substance/product, allergy or intolerance condition or a code for absent/unknown allergy.								
<hr/>												
Additional Bindings												
<table border="1"> <thead> <tr> <th>Additional Bindings</th> <th>Purpose</th> </tr> </thead> <tbody> <tr> <td>Allergy/Intolerance - SNOMED CT IPS Free Set</td> <td>Candidate Validation Binding</td> </tr> <tr> <td>WHO ATC - IPS</td> <td>Candidate Validation Binding</td> </tr> <tr> <td>Absent or Unknown Allergies - IPS</td> <td>Candidate Validation Binding</td> </tr> </tbody> </table>					Additional Bindings	Purpose	Allergy/Intolerance - SNOMED CT IPS Free Set	Candidate Validation Binding	WHO ATC - IPS	Candidate Validation Binding	Absent or Unknown Allergies - IPS	Candidate Validation Binding
Additional Bindings	Purpose											
Allergy/Intolerance - SNOMED CT IPS Free Set	Candidate Validation Binding											
WHO ATC - IPS	Candidate Validation Binding											
Absent or Unknown Allergies - IPS	Candidate Validation Binding											
<hr/>												
patient	S	1..1	Reference(Patient (IPS))	Who the sensitivity is for								
reference	S	1..1	string	Literal reference, Relative, internal or absolute URL								

Interconnection Service



Data integration Service

Aktörer

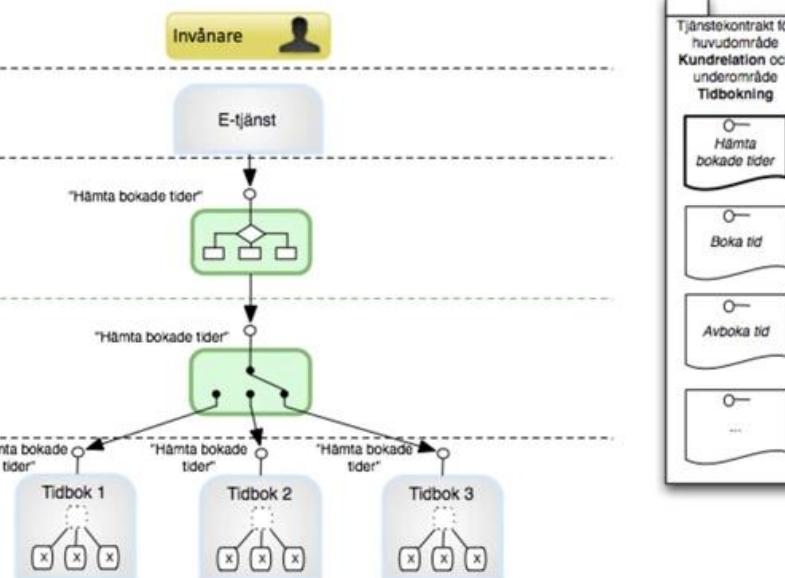
Åtkomst till IT-stöd
i fokus

Tjänstekonsumenter
Tillämpningen
i fokus

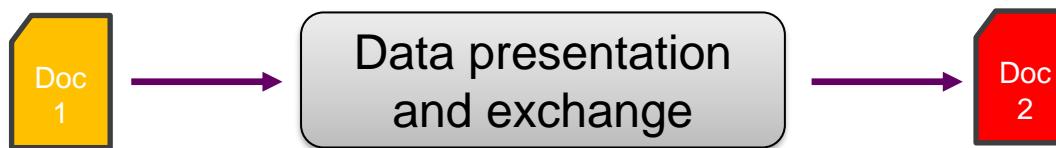
Aggergerande tjänster
Individen i fokus

Virtuella tjänster
Informationsågaren
i fokus

Tjänsteproducenter
Informationkällan
i fokus



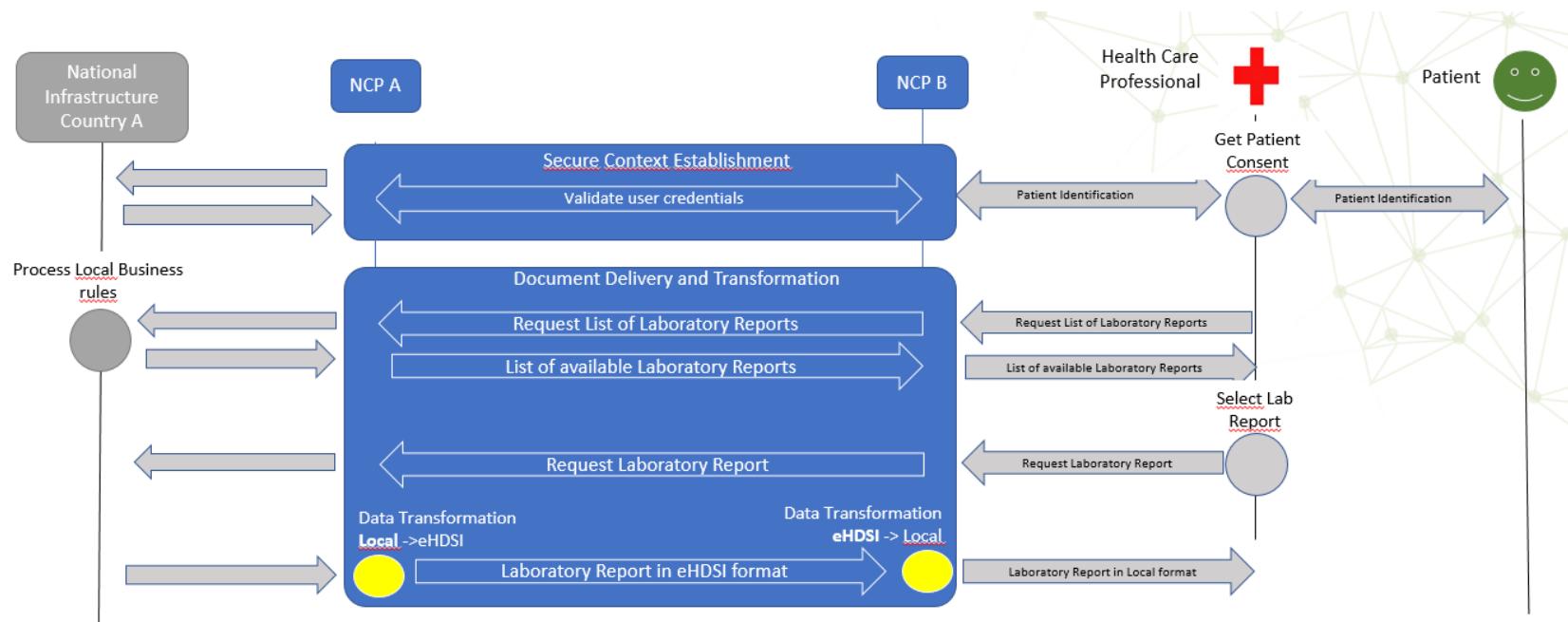
Data presentation and exchange



```
<value xsi:type="CE"  
      code="230291001"  
      codeSystem="2.16.840.1.113883.6.96"  
codeSystemName="SNOMED CT"  
      displayName= "juvenilná Parkinsonova  
choroba">  
</value>
```

```
<value xsi:type="CE"  
      code="G20"  
      codeSystem="2.16.840.1.113883.6.90"  
codeSystemName="ICD10"  
displayName="Parkinson's disease">  
<translation code="230291001"  
      codeSystem="2.16.840.1.113883.6.96"  
      codeSystemName="SNOMEDCT"  
      displayName=  
      "juvenilnáParkinsonovachoroba"/>  
</value>
```

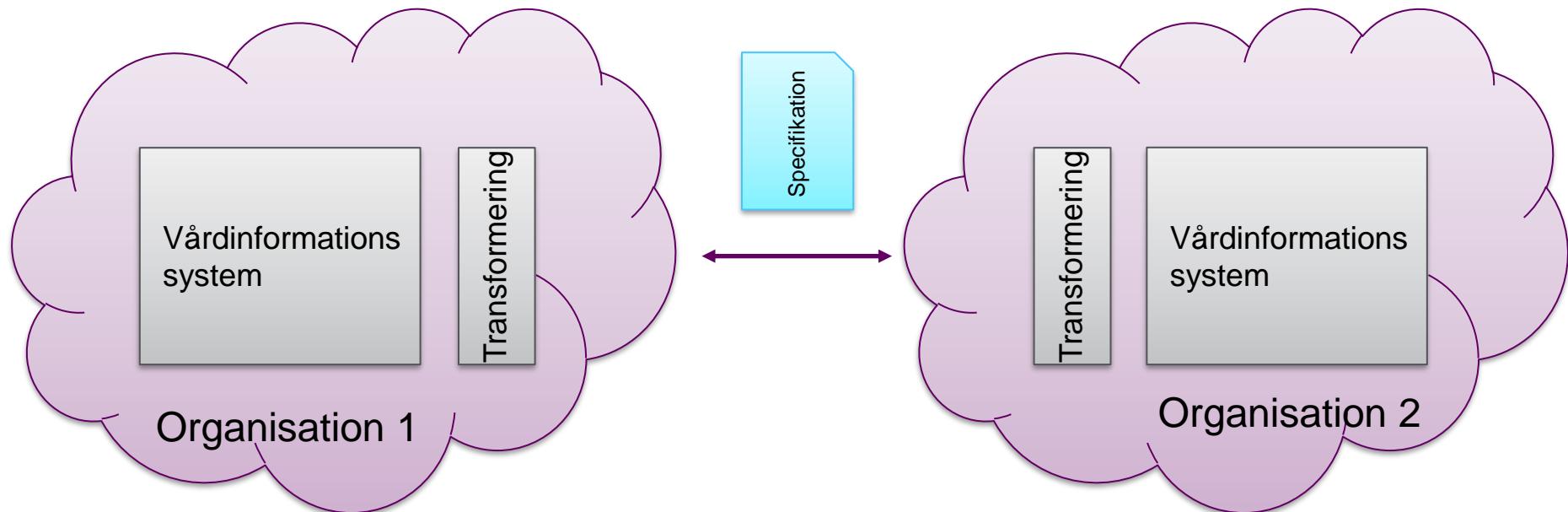
Secure communication protocol



Omtolkningsproblem



Transformering



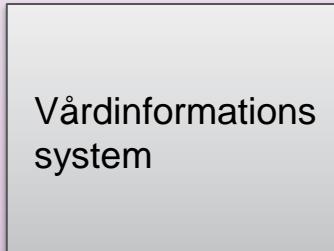
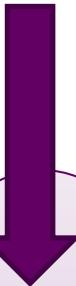
Exempel	System A	System B
Typ I A <-> B Lösbart med algoritm	Födelsevikt: 3300g Datum: 1954-03-13	Kroppsvikt: 3,3 kg Tidpunkt: 13 Mar 1954

Exempel	System A	System B
<p>Typ II</p> <p>A-->B</p> <p>Semantiska förluster och förvrängningar i omtolkningen.</p> <p>Algoritmiskt svårlosbart och riskfyllt</p> <p>B-->A</p> <p>Saknad information kan ibland efterfrågas, kompletteras och omtolkas manuellt av medicinskt kunnig person.</p> <p>Algoritmiskt olösbart...</p> <p>...men görs ganska ofta manuellt</p>	<p>Opereras senast: 2018-01-30 Preliminär operationstid: 2018-01-20 15:30 Huvuddiagnos*: 323291000119108 osteoartrit i vänster höftled Övriga diagnoser*: 25343008 sekundär lokalisering av osteoartros i bäckenregion 299308007 smärta i höftled vid rörelse Åtgärd*: 33788003 insättning av total protes eller protetisk utrustning i höft med methylmetakrylat Operationstyp**: Lubinus SP II med klack Önskad anestesi*: 18946005 epiduralanestesi NEWS2-score vid inskrivning: 1 Anestesibedömning: <ul style="list-style-type: none"> - Kondition: klarar lättare fysisk träning - Hjärta/kärl: u.a. (u.a. = utan anmärkning) - Lungor: u.a. - Svalg: u.a. - Mag/tarm*: 162030005 halsbränna med sur eller vatnig uppstötning </p>	<p>Operationsdatum: 2018-01-20 Diagnoskod: M167; Annan sekundär koxartros Operationskod: NFB49; Primär total höftledsplastik med cement Anesteskod: ZXH50; Epiduralanestesi ASA-klass: 1 – Frisk patient</p> <p>*) Koder från Snomed CT **) en särskild typ av höftledsplastik med cement</p>
	<p>Digital utbildningsserie om openEHR</p>	<p>Från Erik Sundvall</p>

Exempel	System A	System B
Typ III <p>Omöjligt att veta rätt omtolkning om data t.ex. aggregerats (förvanskats) på <u>olika</u> sätt.</p>	<p>Antal rökta cigaretter per vecka: 6-10 ...angivna i ett system med alternativen: 0, 1-5, 6-10, 11-15, 16-30, 31-50, 51-100, 101+</p>	<p>Antal rökta cigaretter per vecka: ? ...angivna i ett system med alternativen: 0, 1-3, 4-7, 8-14, 15-28, 29-69, 70+</p>

Vilka omtolkningsproblem kan lösas var?

Typ II och Typ III



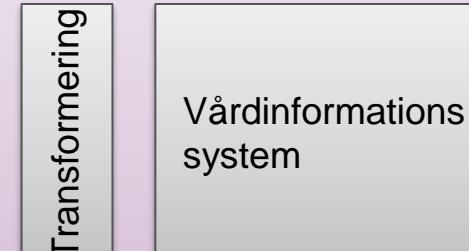
Organisation 1

Typ I



Specification

Typ II och Typ III

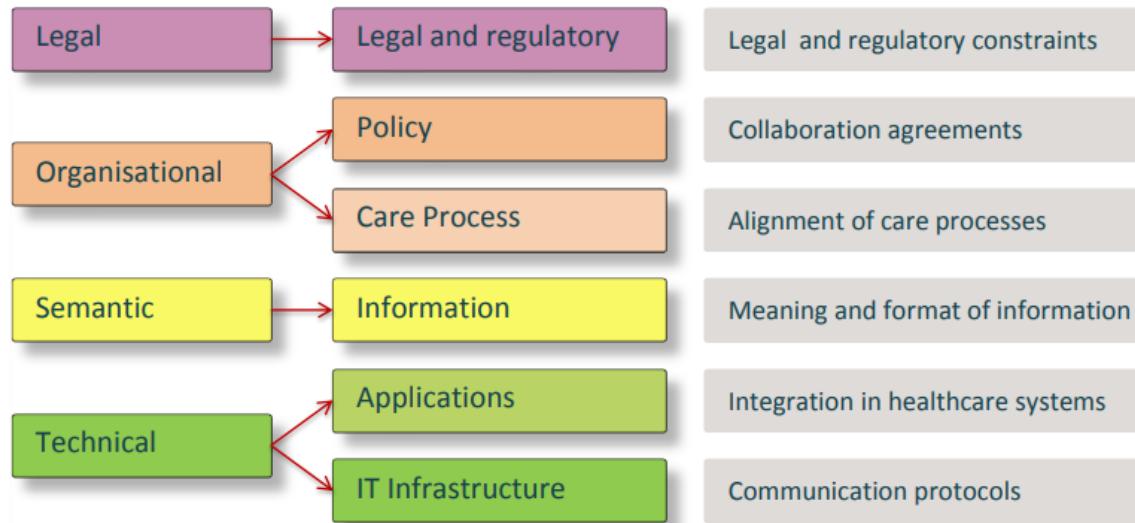


Organisation 2

Refined eHealth European Interoperability Framework (ReEIF)

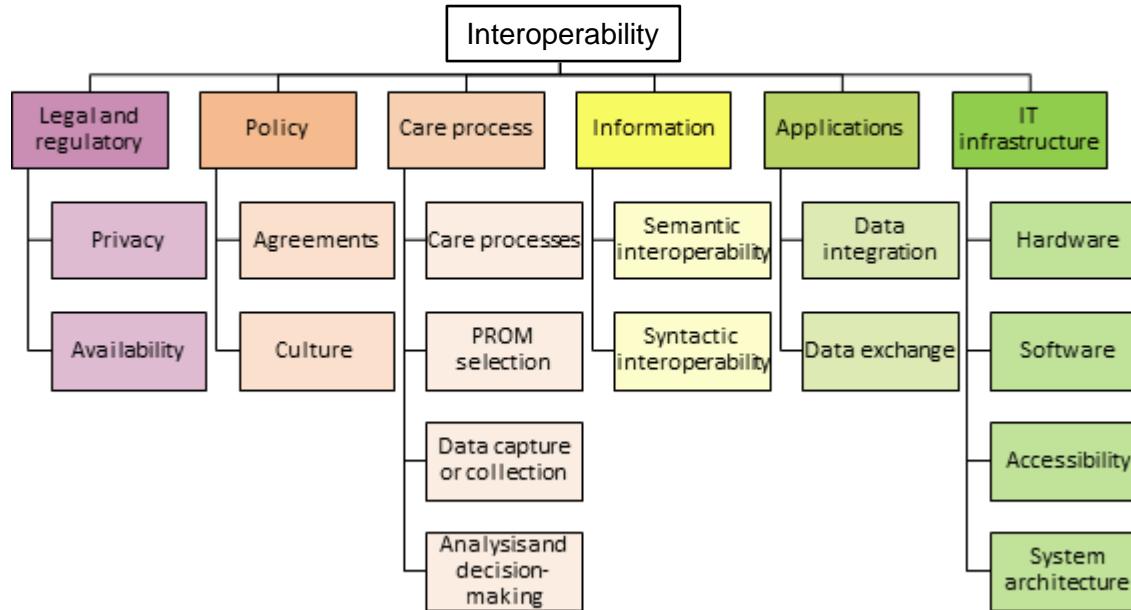


Refinement of the eHealth European Interoperability Framework (ReEIF)



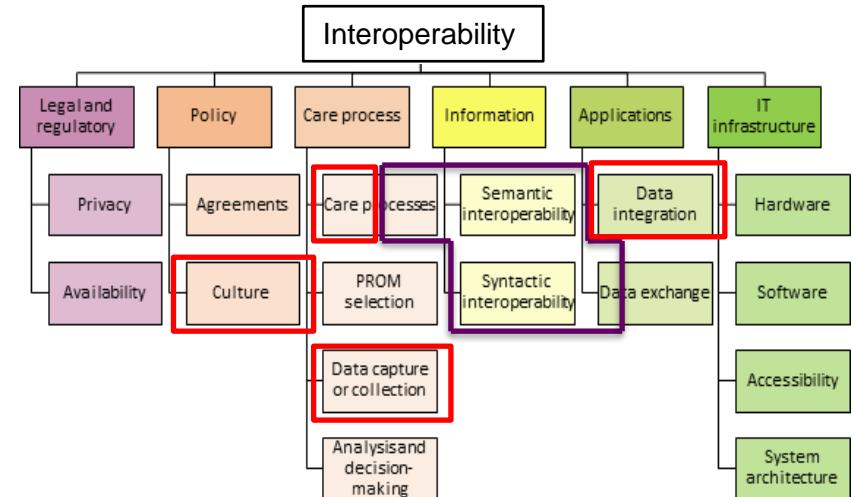
Refinement of the eHealth European Interoperability Framework (ReEIF)

ReEIF detaljering



Exempel Nationella Läkemedelslistan (NLL)

Nästa steg är att införa det SKR kallar skrifunktionalitet. Den kommer att göra att förskrivarna också kan skicka recept direkt via NLL. Att få detta på plats i alla regioner kommer enligt SKR att ta betydligt längre tid eftersom det ”innehör **stora tekniska och logiska utmaningar** både för systemleverantörerna och för regionernas systemförvaltningar”. Dessutom kommer detta steg att påverka **vårdens arbetssätt** mer. Bland annat behöver **tusentals ordningsmallar** göras om och **tidigare ordinationer** överföras till ett nytt format.



Rekommandationer



Rekommendationer

1. Ha ett systemtänk
2. Involvera alla parter
3. Öppenhet och transparens - Tillgängliggör alla dokument och specifikationer
4. Återanvänd – Skapa byggblock
5. Fuska inte med informatiken
6. Använd standarder

Interoperability is the ability of organisations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organisations

Kontaktuppgifter

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Tack