

Transition from legacy

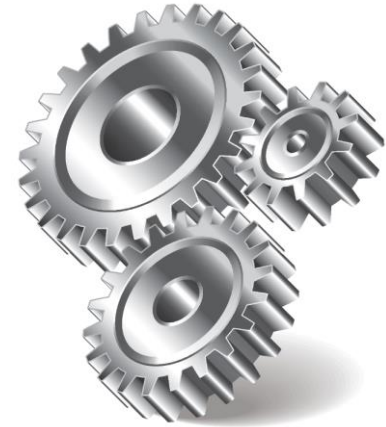
“EDIfact and XML,
you are FHIR’ed”

Nordic FHIR fagforum d. 8/2-2023

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Modernization from Danish legacy



- Messaging with EDIfact (1994)
 - Webservices with XML (2005)
 - Document sharing with CDA (2014)
 - Messaging with FHIR (2023)
-
- VANS network (1994) for messaging. Free choice of 3 approved VANS-operators
 - Sundhedsdatanet backbone network (2005) for webservices and websites
 - IHE XDS (2014)
 - EHMI with eDelivery+ (2023)
-
- ISO9001 proces for QMS test/certification (2015) + develop/maintain standards (2020)



Standard Catalog

<https://www.medcom.dk/standarder/standardkatalog-m-kontaktpersoner>

- Referrals and discharge letters (hospitals, municipalities, primary care)
 - Rehabilitationplan
- Laboratory orders and reports, Analysis Catalog
- Reimbursement
- Hospital Notification, Report of admission/discharge, End of treatment, Progress of care
- Birth Notification
- Exchange of PDF and Pictures (with reference to other message)
- Care Communication (Clinical E-mail)
- EHR exchangeformat GP (FNUX), Hospitals (SUP), Municipalities (FSIII)

National Repositories

- Messaging
 - Referral "hotel"
 - Laboratory orders
 - Laboratory reports
 - Diabetic feet "hotel"

- Webservice enabled
 - Medicine (FMK)
 - Sundhedsjournal (SUP) at national health portal (sundhed.dk)
 - Laboratory orders
 - Laboratory reports
 - National Databases (LPR)
 - ...

Document sharing (CDA)

- Patient overview
 - Masterdata incl. relatives phonenumbers (2022)
 - Appointments (2022)
 - Plans (2023)
- Patient Reported Outcome
 - Measurements by patients
 - Questionnaire
- Pregnancy Journal
 - Pregnancy plan
 - Measurements by Midwife
 - Clinical note

Lessons learned

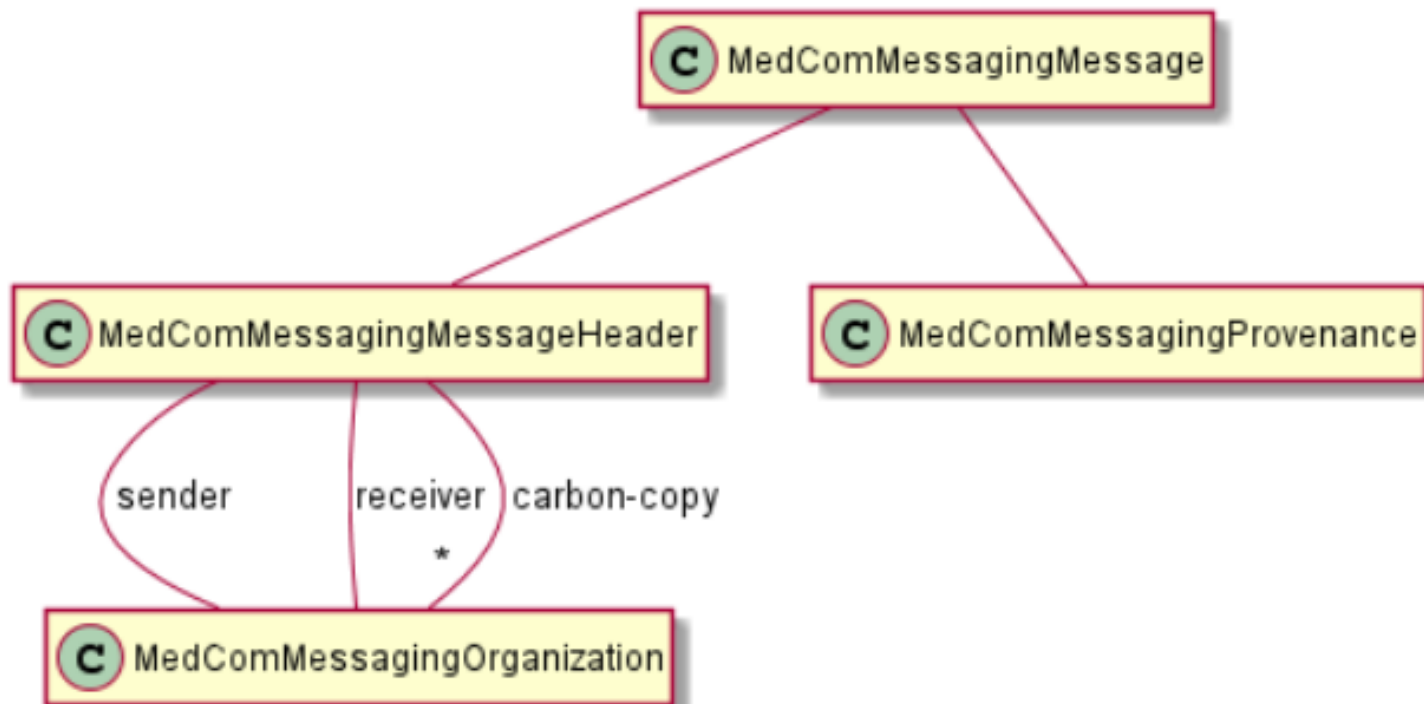
- Loose Coupling between Standards and Infrastructure is good
- No 1:1 transition to FHIR
 - Some messaging should change for other datashare paradigm
- Not only a technical upgrade. Whats in it for the clinicians?
 - Start with the messagetypes where there is a clinical need for modification
- Start with the messagetypes that best fit the message paradigm
 - Transfer of responsibility for the patient
- FHIR was more expensive than expected
 - Vendors+ recommend FHIR
 - Costs are: FHIR knowledge, FHIR messaging paradigm, new functionality
- Mapping to legacy is difficult (prevent data loos).
 - Big-Bang Transition is Utopia.

FHIR standards

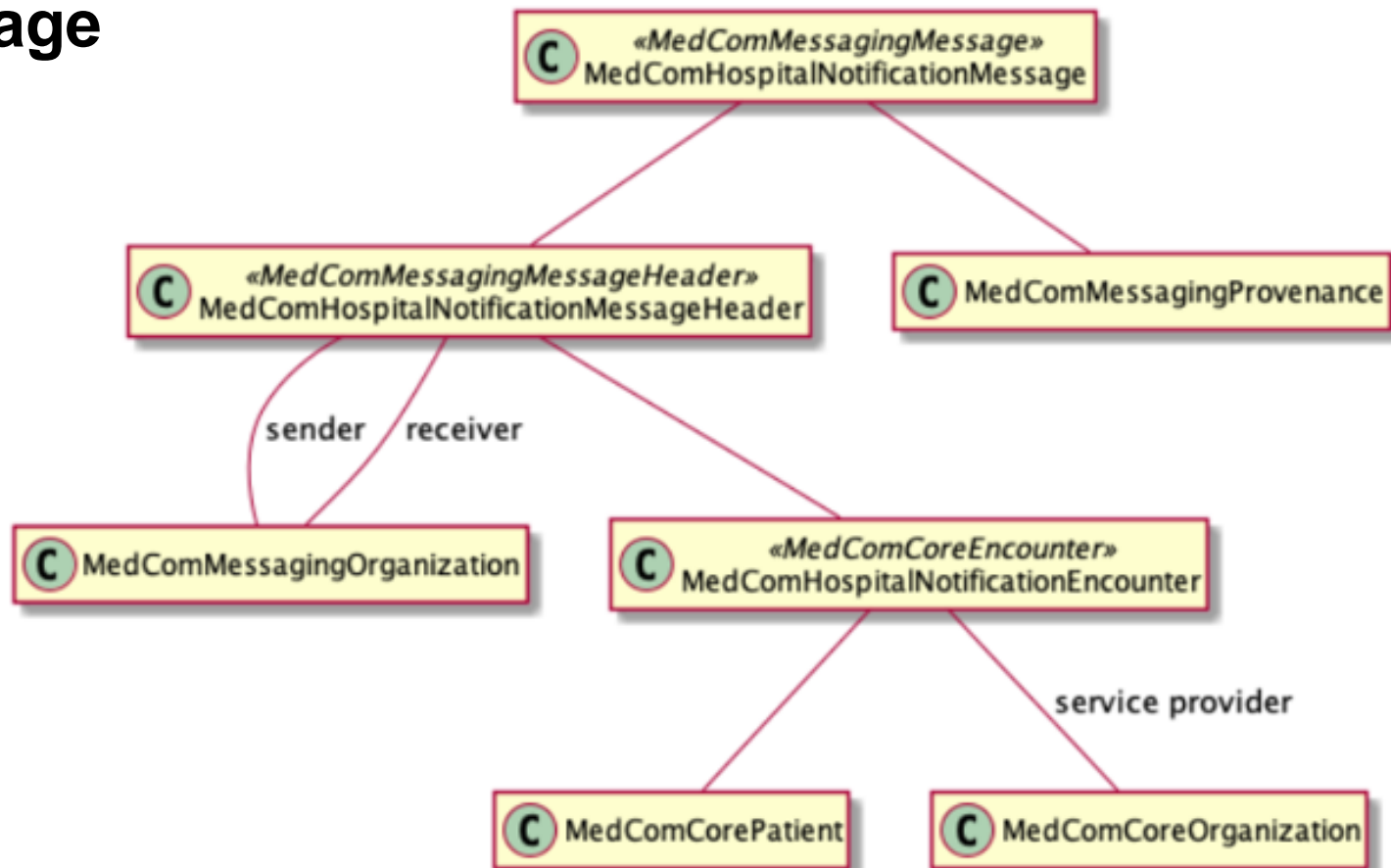
- Messaging in old infrastructure (2023)
 - Hospital Notification (admission+, discharge, leave)
 - CareCommunication
 - Acknowledge
- Messaging in new infrastructure (2024)
 - Laboratory result from Municipality to GP



FHIR messaging



FHIR message



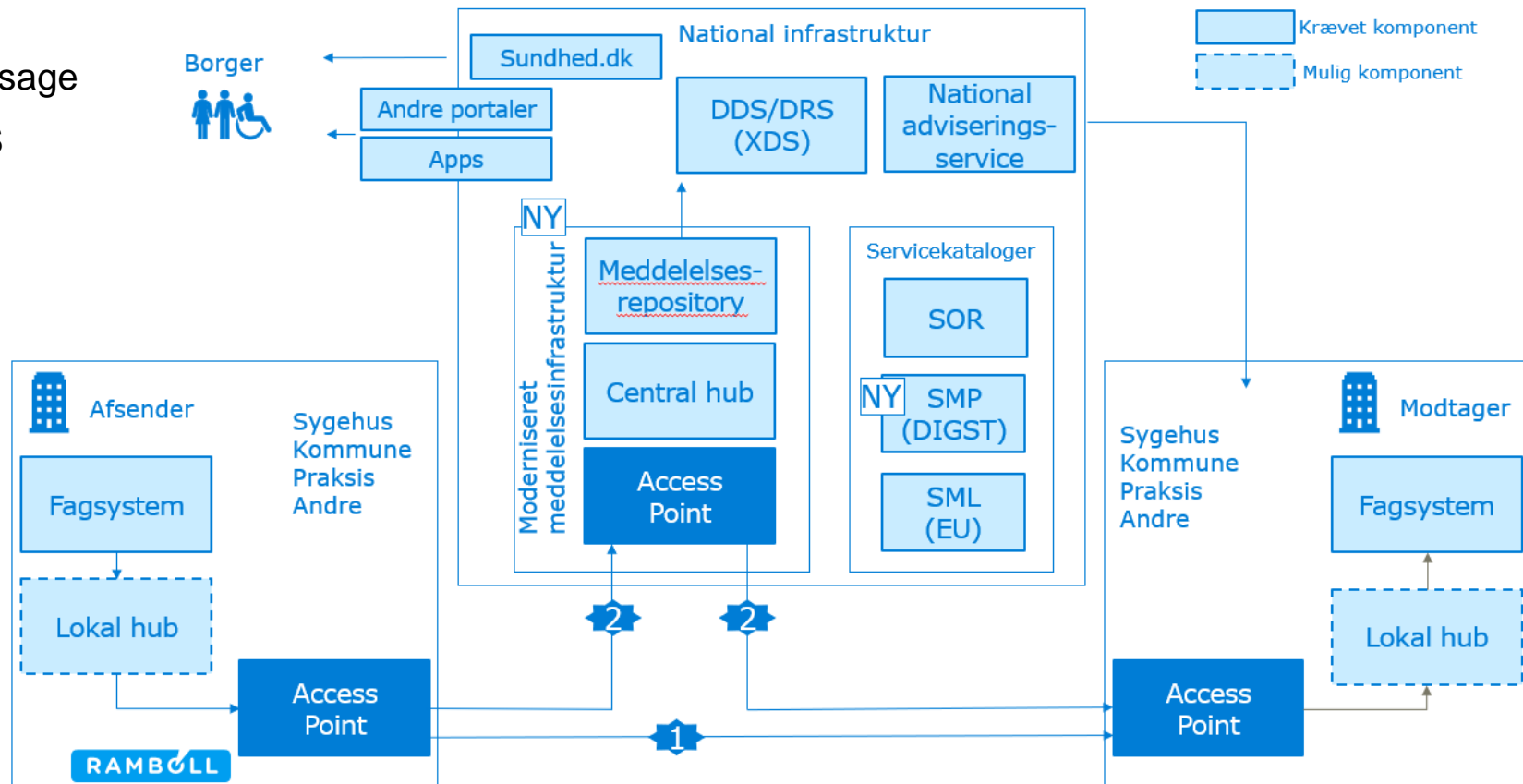
FHIR services

- MedCom FHIR services (RESTful API)
 - Diagnosis from GP (2023)
 - In search for more pilot projects

- Other FHIR services
 - Gateway from the 98 Municipalities
 - Telemedicine (FUT)
 - ...

New Infrastructure "EHMI"

- Message
- XDS



Test & Certification – is more than transport

- I'm sixty years old
- I'm sixty
- I am sixteen
- I am six
- I'm sexy
- Mm Sexy
- Sexy
- Sexy?
- Hexy
- Hex



Semantic Interoperability

- Technical integration
 - Transport, acknowledge, format, codepage
- Shared information
 - Message content, Terminology, Completeness, "references"
 - Not userinterface design, usability, workflow
- Dialog with Vendors

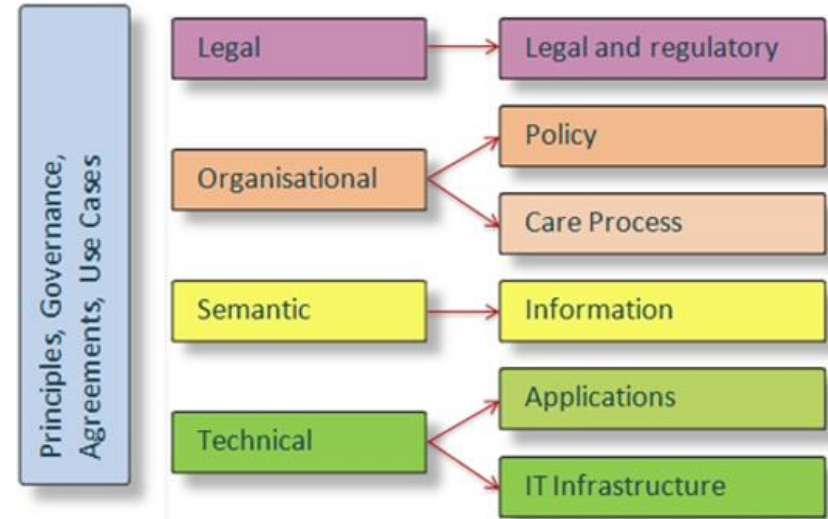
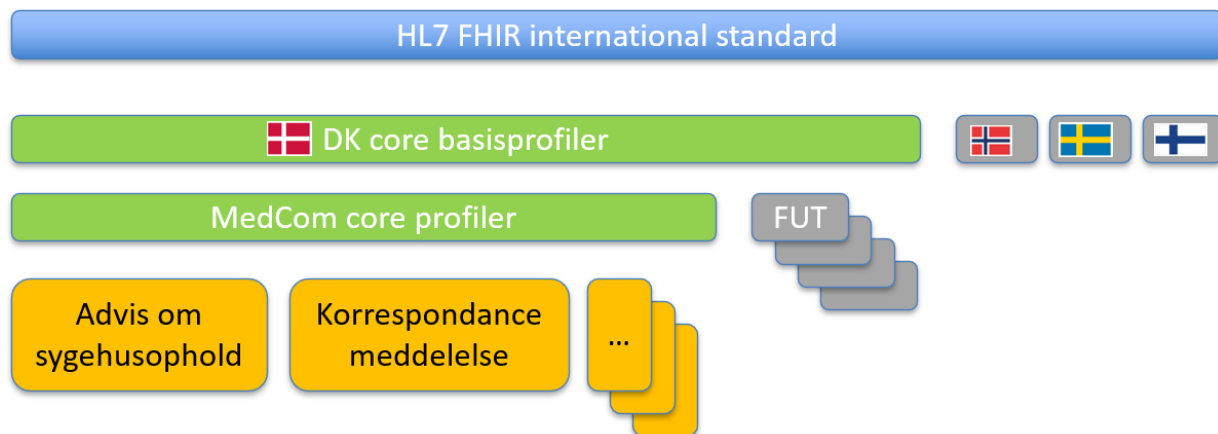


Figure 1: Refined eHealth European Interoperability Framework

Danish core FHIR profiles

- Danish HL7 affiliate
 - FHIR Special Interest Group develop DK-core
 - MedCom performs review and achieves approval from National Health Authorities
- Ressources in DK-core
 - Patient
 - Organization, Practitioner
 - Condition
 - Observation (2023)



Channel Strategy

- National Danish channel strategy (2023)
- Choice of datashare paradigm
 - Messaging
 - Documentsharing CDA and FHIR (IHE XDS)
 - FHIR service (substitute webservice)
 - Linking from one EHR, to another EHR or portal or ...
- Sustainable modernization
 - Don't add extra nice-to-have functionality
 - Have a close dialogue with Vendors





Deloitte Analysis (January 2022)

Igangværende	Advis om Sygehusoph. <small>DIS17, DIS20</small>	Korrespondancemedd. <small>DIS91</small>	Kvittering <small>CTL01, CTL02, CLT03</small>		Henvvisning	Henvisning, primær sektor <small>REF01, REF02, REF06</small>	Henvisning, specialist <small>REF07, REF08, REF10, REF12</small>	Henvisning, kommunal <small>XREF15, XREF22</small>	Rehabiliteringsplan <small>GGOP</small>	Indlejres: BIN01 BIN02
Epikrise	Epikrise, primær sektor <small>DIS01, DIS02, DIS03, DIS05, DIS06, DIS07</small>	Epikrise, specialist <small>DIS08, DIS09, DIS10</small>	Bookingsvar <small>DIS13</small>	Kommunebrev <small>XDIS15, XDIS22</small>	Laboratorie	Svar fra laboratorie <small>RPT01, RPT03, RPT04, XRPT05, RPT07</small>	Rekvisition <small>REQ01, REQ03</small>	Analyseregister <small>DA001</small>	Fodstatus-skema <small>RPT01F</small>	Udfases: RPT02
Kommune-meddelelser	Rapport om indlæggelse <small>XDIS16</small>	Rapport om udskrivelse <small>XDIS18, XDIS19, XDIS21</small>			Sygesikrings afregning	Afregning, Generel <small>RUC01, RUC02, RUC03, RUC04, RUC06, RUC08, RUC10, RUC11</small>	Afregning, Apotek <small>RUC07</small>	Afregning, Laboratorie <small>RUC09</small>	Udfases: RUC09	
Udvekslings-formater	Fødsels-notifikation <small>XDIS32</small>	FNUX <small>FNUX</small>	Sundheds-journal <small>SUP</small>	FSIII <small>FSIII</small>	Udfases: PID01, PID02 PID03, PID04, PID05	Øvrige	Recept-fornyelse <small>PRE60</small>		Udfases: DIS90	Uafklaret: RPT01P

Standard Catalog – In the new FHIR world

- Referrals(+) and discharge letters(M) (hospitals, municipalities, primary care)
 - Rehabilitationplan(M)
- Laboratory orders and reports(+), Analysis Catalog(R)
- Reimbursement(R)
- Hospital Notification, Report of admission/discharge, End of treatment, Progress of care (M)
- Birth Notification(R)
- ~~Exchange of PDF and Pictures (with reference to other message)~~
- Care Communication (M) (Clinical E-mail)
- EHR exchangeformat (R) GP (FNUX), Hospitals (SUP), Municipalities (FSIII)

REST Message REST+Message

