

Proposed Interoperability Roadmap Considering the HITPC/HITSC Recommendations on the Jason Report

Approved by the EHR Association Executive Committee
January 2015

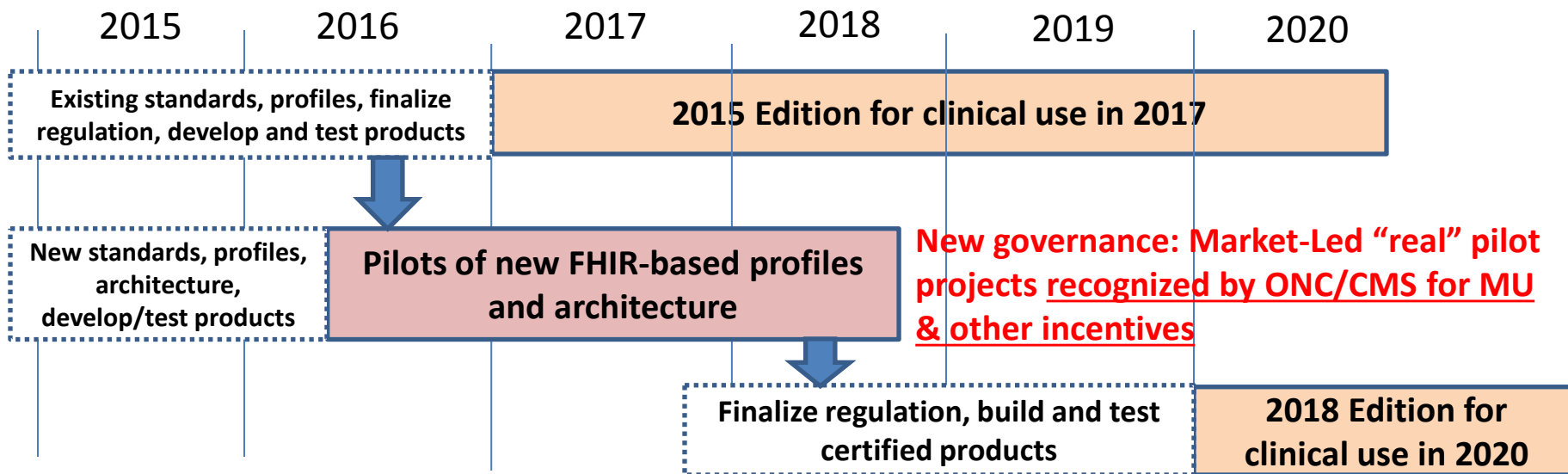
- This deck presents elements of a realistic Interoperability Roadmap to effectively deliver Interoperability to the nation leveraging the strong points of the HITPC/HITSC JTF Report
 - ➔ EHRA Proposed Interoperability Roadmap – 2015 - 2020
 - ➔ Input for response to the interoperability roadmap that ONC plans to issue for comments in January 2015
- Second part provides comment on the HITPC/HITSC Joint Task Force Report on Jason. Objective is not to critique the HITPC/HITSC JTF Report but to mature it into an actionable realistic roadmap that builds upon the real-world interoperability achieved so far
 - No step back

Constraints on Organizing an Interoperability Roadmap

- Recognition of XCA/XCPD given the effective deployment by several projects (eHealth Exchange, CommonWell Health Alliance, CCC, etc.)
- Readiness and maturity of FHIR is a critical planning element
 - Widely acknowledged FHIR is not yet available, but essential for certain interoperability use cases
 - Draft Standard for Trial Use (DSTU) V1 is available
 - A DSTU-V2 (some non-backward compatibility with DSTU-1) is planned for release end of 2015 and the FHIR standard sometime late in 2016
- FHIR has much flexibility and interoperability cannot be achieved without developing a set of profile specifications
 - Each FHIR profile is work that needs to be planned and resourced (typically much simpler than HL7 V3 Profile, needs reviews for quality and stability)
 - Essential FHIR-based profiles are not yet available or mature
 - Some will soon be available based on DSTU-1
 - Most will have to be adjusted once the standard is approved, then will need to be tested and used in pilots
- Large scale deployment: Stability required for interoperability

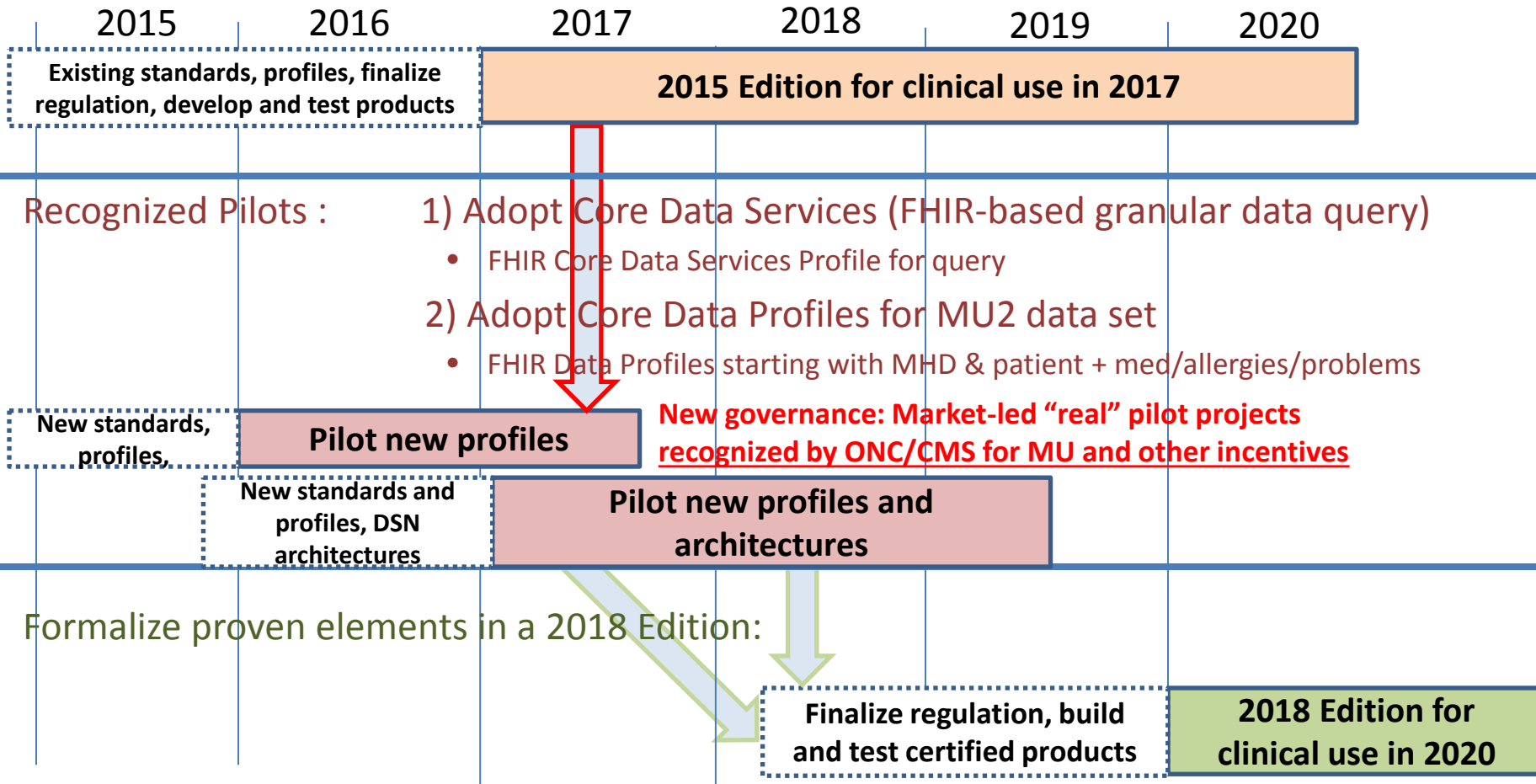
- Avoid regression from today’s interoperability
 - The industry cannot afford to re-create silos
 - Adopt what works: XCA/XCPD/XDS
- Regulation due for 2015 Q3 has to build upon robust standards/profiles to ensure low- risk adoption
 - Three year cadence with 2018 regulation
- Accelerate, while ensuring maturity *for specifying and piloting a successful first level of FHIR deployment*

➔ **Given the above constraints, consider a three-phased approach:**



Elements of a Realistic EHRA Interoperability Roadmap

- Add in 2015 edition:
 - 1) Adopt Data Access Framework (DAF)-based transport (options):
 - MHD (document push/pull) based on DSTU 1 (→ 2) + PDQm + IUA (oAuth)
 - XCA/XDS (SOAP-based) – already adopted through eHealth Exchange in MU2
 - 2) Move content to C-CCDA R2 for ToC



		<i>Document Content</i>		<i>Granular Data Content</i>	
		C-CDA	C-CDA on FHIR	HL7 V2/V3	FHIR
<i>Transport</i>	SOAP Web Service (XDR/XDS/XCA)	<i>Mature</i>	<i>Standard and profile in progress</i>	<i>Mature (e.g., IHE QED (V3) or HL7 V2-based)</i>	<i>N/A</i>
	Direct (SMTP)	<i>Mature</i>	<i>Standard and profile in progress</i>	<i>N/A</i>	<i>Possible</i>
	REST	<i>Standard and profile in progress (MHD)</i>	<i>Standard and Profile in progress (MHD)</i>	<i>N/A</i>	<i>Std and profile for query in progress</i>
		<i>Low hanging fruit</i>	<i>Next target</i>		<i>Next target</i>

Standard and profile in progress

Relies on FHIR DSTU 1 – reasonable to migrate on FHIR DSTU 2 (end 2015)
Profiles are in advanced stage of development (MHD, PDQm, IUA)

Standard and profile in progress

Relies on FHIR DSTU 2 (end of 2015) to be reasonably stable and standard (end of 2016)
Profiles for query in development (focus on MU2 data set)

Low-hanging Fruit: 2015 Regulation Step - Content

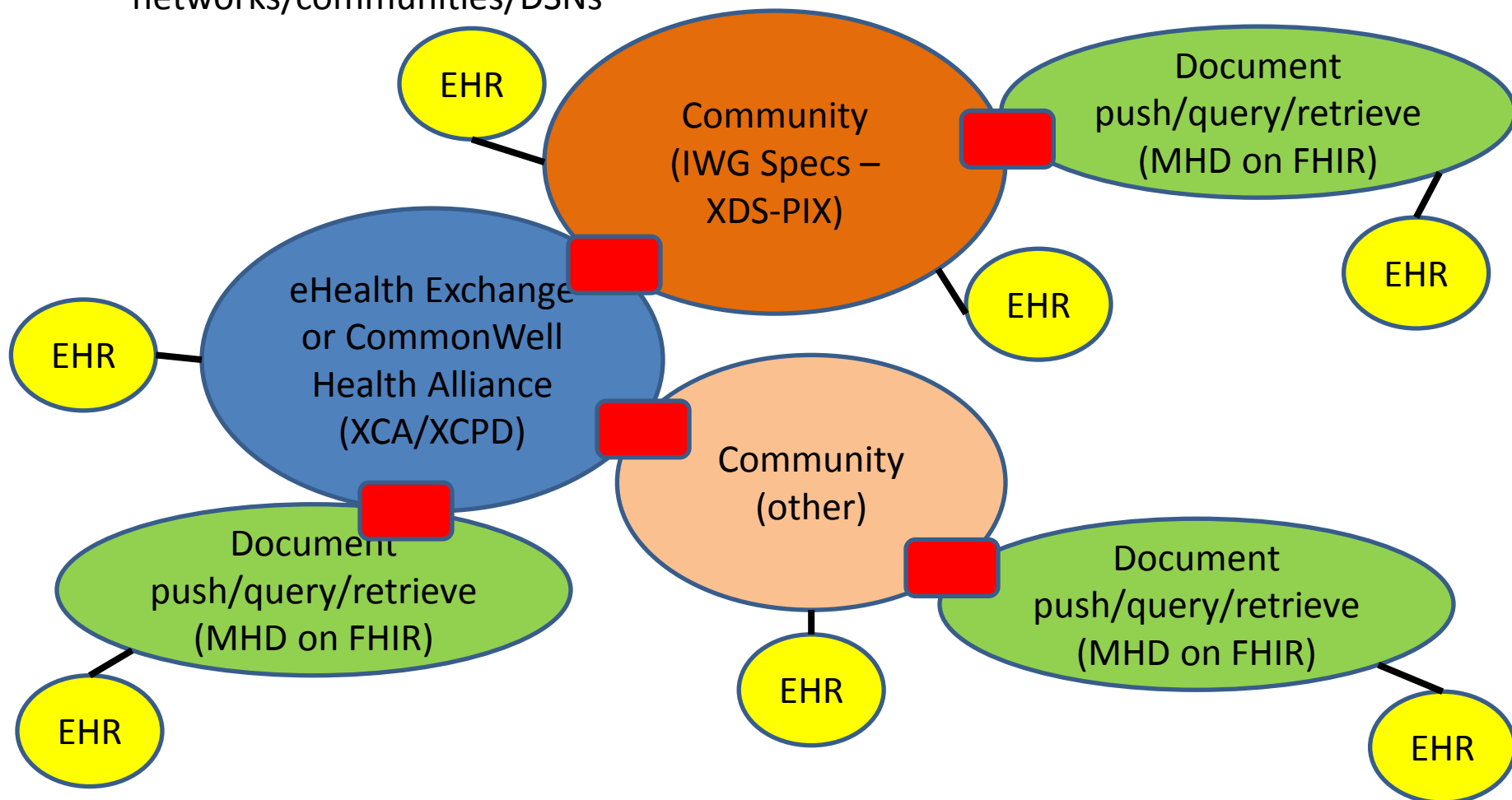
- What could be the next step for content?
 - Current State:
 - C-CDA R1.1
 - Proposal
 - C-CDA R2.0 is central to the plan
 - Want to improve the IG specification and test tools to close any gaps identified in 2014 Edition deployment
 - Ensure delivery of the next level of interoperability quality
 - Reap the benefits of three years of CDA investments
 - Same content on any transport greatly simplifies the gateways
 - Approach for 2015 Regulation:
 - Include C-CDA R2.0 (with cutover strategy from C-CDA R1.1)

Low-hanging Fruit - 2015 Regulation Step

- What could be the next step for transport?
 - Current State:
 - DIRECT slow to deploy
 - IHE XDR (SOAP Push) supported 2014 only as option
 - IHE XCA/XCPD (SOAP) query is supported in 2014 Edition (through eHealth Exchange) widely deployed
 - Proposal:
 - Introduce IHE MHD and PDQm
 - Reasonable effort – just time to develop test tools and pilot
 - Based on FHIR for document push and query/retrieve (transport only)
 - Uses FHIR DSTU 1 (doc and patient resources) – easy to migrate over DSTU 2
 - Ensures consistency with XDS, XDR, XCA, and Direct
 - Gateways to/from MHD supported thus ensuring nation-wide “connectivity”
 - Use IUA (oAuth 2.0) profile for authorization
 - Approach for 2015 Edition:
 - Include XCA/XCPD/XDS and MHD/PDQm/IUA (realistic first step for FHIR)

Low-hanging Fruit: 2015 Regulation Step - Query

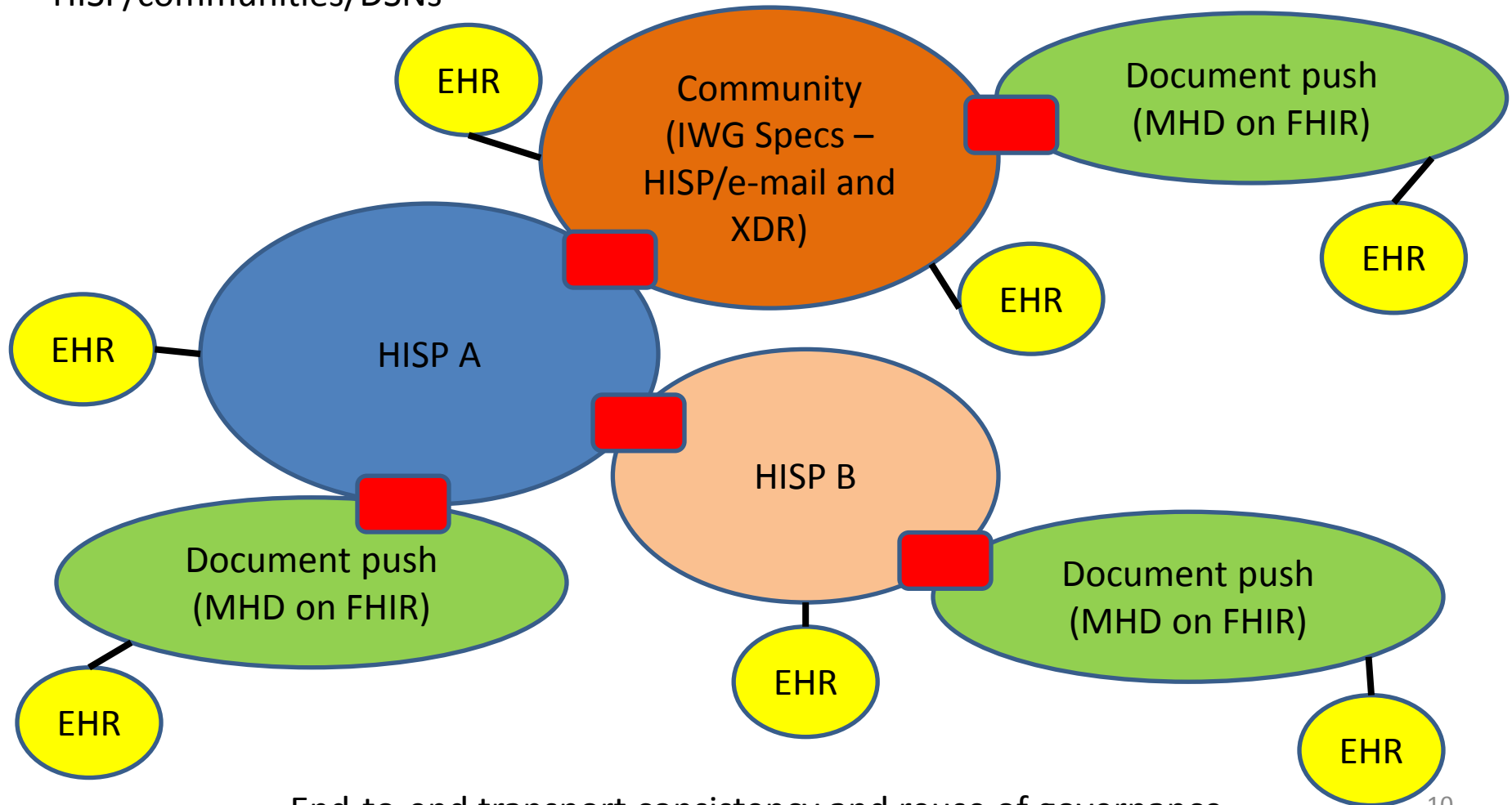
- MHD with gateways (red boxes) enable document query across disparate networks/communities/DSNs



End-to-end transport consistency and reuse of governance

Low-hanging Fruit: 2015 Regulation Step – Push/Direct

- MHD with gateways (red boxes) enable document push across disparate HISP/communities/DSNs



End-to-end transport consistency and reuse of governance

Low hanging fruit - 2015 Regulation Step

- Conclusion
 - Minimal impact of issuance of 2015 edition (Q3 2015)
 - Ensures delivery of improvements in clinical end-to-end quality in interoperability
 - Reduce risk on FHIR DSTU 2 by starting with patient (PDQm profile) and document resources (MHD profile) with oAuth authorization (IUA profile)
 - Recognition of XCA/XCPD/XDS deployments in 2015 Edition given the effective deployment by several projects (eHealth Exchange, CommonWell Health Alliance, CCC, etc.)
 - Cross-DSN policies: leverage existing multi-communities policies (e.g., Direct Trust, eHealth exchange, EHR-HIE Interop WG and NY State, etc.).
 - Include in 2015 the ability for ONC/CMS to recognize pilot implementations for MU credit to foster the piloting of the FHIR-based core data services and core services for next step in regulation (likely 2018)

Alignment with HITPC/HITSC Jason Task Force (JTF) Report

		JTF Report Proposal for 2015 Edition	EHRA Proposal for 2015 Edition	EHRA Proposal for Pilots	EHRA Proposal for 2017
Push-Pull	Core Data Services (MHD on FHIR)-Doc Only-push/pull	Yes	Yes	Yes	Yes
	XCA/XDS Support (explicit)	Assumed	Yes	Yes	Yes
	Use of C-CDA R2 for doc content	Yes	Yes	Yes	Backward Compatible
	Core Data Profiles-Basic Documents (C-CDA on FHIR)	Yes	No	Yes	Yes
	Core Data Profile (FHIR)s- Advanced Docs	No	No	No	Yes
Query	Core Data Services (FHIR)-Data Elements Pull Only	Yes	No	Yes	Yes
	Core Data Profiles (FHIR)-MU2 data set	Yes	No	Yes	Yes
	Core Data Profiles (FHIR)-Rich Data Elements	No	No	No	Yes
Other	Encryption, Authorization	Yes	Yes	Yes	Yes
	Coordinated Architecture	Yes (basic)	Evolutionary	Yes (basic)	Yes
	DSN Legal and Business Framework	Yes	Reuse current	Yes	Yes
	Public API Policy	Yes	Yes	Yes	Yes
	Patient Locator	Unclear	No	Yes	Yes

EHRA Comments on the HITPC/HITSC Joint Taskforce Report on the Jason Report

Assumptions for audience of the following slides:

- Familiar with the original Jason Report
- Aware of EHRA comments on Jason Report
- Aware of EHRA presentation to the HITPC/HITSC Jason Task Force
- Familiar with HITPC/HITSC Jason Task Force Report (JTF) – Report on the Report

- Underlying goals of the JASON Report are generally good, but its analysis of the current state is not complete or current
- Detailed proposals for moving forward contain a number of good suggestions that are, unfortunately, mixed with some oversimplifications, unproven approaches, and concepts not yet supported by market demand
- Proposed timeline for implementation is too aggressive (MU Stage 3) to address the oversimplifications as well as essential piloting steps to achieve the desired level of interoperability
- Good news: Industry is further along than the report portrays, pursuing an evolutionary approach that is more realistic and sustainable than the report's specific implementation of a shared vision of interoperability

Recommendation to HITPC and ONC:

- *The proposals in the report for specific API requirements as part of ONC certification are neither realistic nor necessary*
- *The growing industry adoption of standards-based API work such as FHIR, if focused on a few specific high-value use cases, is the more appropriate and sustainable path to accelerated use of APIs across the industry*

For EHRA Comments on the JASON Report on "A Robust Health Data Infrastructure" see: [EHR Association Responds to JASON Report on "A Robust Health Data Infrastructure" \(July 2014\)](#)

- *JTF states:* The JASON Report's conclusions regarding the state of interoperability do not adequately characterize the progress that has been made in interoperability in recent years
 - However, we agree with JASON's fundamental proposition that the industry is not yet positioned to achieve the level and depth of health information exchange needed to support patients and healthcare providers in the future.
 - ➔ **EHRA: We agree with JTF's assertion and suggest we should continue to build on what we have achieved to date.**
- *JTF states:* While the JTF agrees with the JASON call to catalyze faster progress in interoperability, we disagree with the JASON assertion that such progress can be achieved by replacing existing core clinical and financial systems.
 - ➔ **EHRA: We agree that there is a need to focus more on interoperability to enable data to "go with the patient" and ensure this happens using consistent definitions and architectures.**
 - ➔ **However, we should clarify that open APIs should not be only based on FHIR, but could also be based on HL7 V2 message, or SOAP Services with CDA documents (e.g., IHE-XCA/XDS) – these will continue to coexist as different use cases require different type of APIs.**
 - ➔ **While the original JASON report does give the impression that interoperability can only be achieved using services, if not RESTful FHIR-based services, we understand and agree that the JTF is not calling on the exclusive use of RESTful FHIR APIs-based services and that not all interoperability use cases will require such APIs – e.g., lab orders do not require the level of integration as certain queries or services.**
 - ➔ **We should not require that all interoperability is RESTful FHIR-based.**
 - ➔ **Moving progressively towards FHIR-based data definitions makes sense to avoid having to map/harmonize across V2, CDA, and FHIR, whether SOAP, RESTful, messages, documents – this can evolve over time.**

- *JTF states:* JASON proposes an aggressive timeline for enacting fundamental change in the current interoperability paradigm
 - However, their timelines assume that this is solely a software engineering problem and do not take into account highly complex interdependencies with non-technical factors, such as business, legal, policy, and cultural factors, which are more challenging barriers to rapid change.
 - ➔ *EHRA: We agree with the Jason Taskforce that highly aggressive timelines such as those proposed in the JASON Report cannot be developed without consideration of these important, rate-limiting, non-technical factors, as well as more formalized structures and processes for market coordination of technical, policy, legal, business, and socio-technical issues which need to evolve to support more rapid progress.*
- *JTF states:* JASON proposes an essentially regulatory approach to compelling change across the industry
 - However, growth in demand for interoperability and the inherent complexity of the market suggest that market-oriented approaches, rather than top-down regulation, are likely to be more effective.
 - ➔ *EHRA: We agree with the JTF Report that market-driven approaches are likely more effective, while the role of government should focus on establishing endorsed standards, where such standards are essential to enable clear and common communication across healthcare stakeholders.*

- *JTF states:* JASON architecture requires top-down orchestration
 - However, they do not articulate the source and nature of such orchestration .
 - ➔ *EHRA: We agree with the concerns that the JTF raises.*
- *JTF states:* ONC and CMS should align the MU program to focus on expanding interoperability through the use of Public APIs
 - ➔ *We reiterate that not all Public APIs need to be RESTful nor FHIR-based. However, migration towards FHIR-based data definitions for Public API payload is desirable. (see slide 4)*
 - ➔ *We agree with the JTF that appropriate incentive programs are essential to establish the necessary infrastructure.*
 - *We suggest that not only MU, but also other emerging incentive programs, must focus on interoperability rather than the functional requirements on which MU has been focused.*
 - ➔ *However, we disagree that certification in its current form is essential to make progress.*
 - *Formal attestation based on strong testing tools and appropriate incentives that promote standard interoperability mechanisms are likely to become sufficient.*
 - *We realize that the relevant statutes call for “certified” software, but we believe that this can be achieved more efficiently and effectively than the current program prescribes.*
 - ➔ *We agree with the JTF for the need to accelerate FHIR profile definitions to enable consistent implementation of interoperability and avoid one-offs (such as happened with V2, CDA, as well as FHIR DSTU 1).*

- *JTF states:* Recommends that a market-based exchange architecture be defined to meet the nation's current and future interoperability needs based on the following key concepts:
 - a. Coordinated Architecture
 - b. Public API
 - c. Data Sharing Network (DSN)
 - d. Core Data Services – Fundamental, standards-based data services that implementations of the Public API are expected to provide
 - e. Core Data Profiles
 - ➔ *EHRA: We are concerned that the process to define Core Data Services can quickly lead to too many services that are required vs. truly fundamental – e.g., record location would be fundamental, or immunization query perhaps, but a research query would not. To address this concern, we suggest that clear governance must be anchored in the broad stakeholder community to decide what is truly fundamental.*
- *JTF states:* The nationwide exchange network should be based on a Coordinated Architecture that "loosely couples" market-based Data Sharing Networks (DSNs)
 - ➔ *EHRA: We agree with the need that any national data exchange should be based on a set of standards that enable loosely coupled networks and providers to exchange data – i.e., the focus should be on cross-DSN data sharing, while DSNs' internal technologies are up to them.*
 - ➔ *Such a set of standards, or Coordinated Architecture, is also needed to ensure that silos are not created with already-deployed 2014 edition transport (e.g., Direct and XCA/XDS) and other emerging data exchange use cases.*

- JTF states: The “Public API” should enable data- and document-level access to clinical and financial systems in accordance with Internet-style interoperability design principles and patterns
 - ➔ *EHRA: We reiterate that Public APIs are not only RESTful FHIR-based services, thus stating that Public APIs can only be FHIR-based is not practical.*
 - *A Public API must expose data using a well-defined standard/implementation guide/profile – in the messaging space, such APIs frequently uses V2; in the document space, such APIs use a mix of Direct/XCA/XDS/XDR and C-CDA; in the services space such APIs are starting to use FHIR.*
 - *Over time, migrating toward FHIR-based services for messages, documents, services, and queries would be ideal to remove mappings and variances but, realistically, this takes time while in the meantime the API at hand is well-defined, works, and is public.*
 - ➔ *While increasing the focus on expanding on and improving the already-available set of Public APIs, national programs should pull back on functional requirements, thus allowing for more focus on interoperability and innovation.*
- JTF states: Core Data Services and Profiles should define the minimal data and document types supported by all Public APIs.
 - ➔ *EHRA: Considering that not all public APIs need be services, we suggest that this recommendation only applies to service-based APIs.*
 - ➔ *Specifically, we disagree with the passive approach on XCA/XDS. Much benefit can be gained by harmonizing and promoting document-based queries and exchanges, as documents will remain an integral part of the interoperability fabric with messages and services.*
 - ➔ *Consequently, we suggest the adoption of these document-based methods and combine SOAP-based transport with FHIR-based MHD Profile (XDS on FHIR).*

- JTF states: ONC should assertively monitor the progress of exchange across Data Sharing Networks and implement carefully-crafted, non-regulatory steps to catalyze the development of DSNs and the Coordinated Architecture
 - ➔ *EHRA: We agree with the JTF recommendation, but suggest adding a focus on well-defined test tooling and attestation to help self-regulate adherence to the standards.*
 - ➔ *To further enable this, we agree with transparent measures that allow for evaluation of progress in interoperability.*