



State of New Hampshire

Health Information Exchange Planning and Implementation Project

"Considering alternatives and narrowing options"
Discussion document for Governance Work Group

July 7, 2010

Agenda

Opening remarks - "Considering alternatives and narrowing options" phase

Discussion of transaction mapping to HIE building blocks

Discussion of prioritization

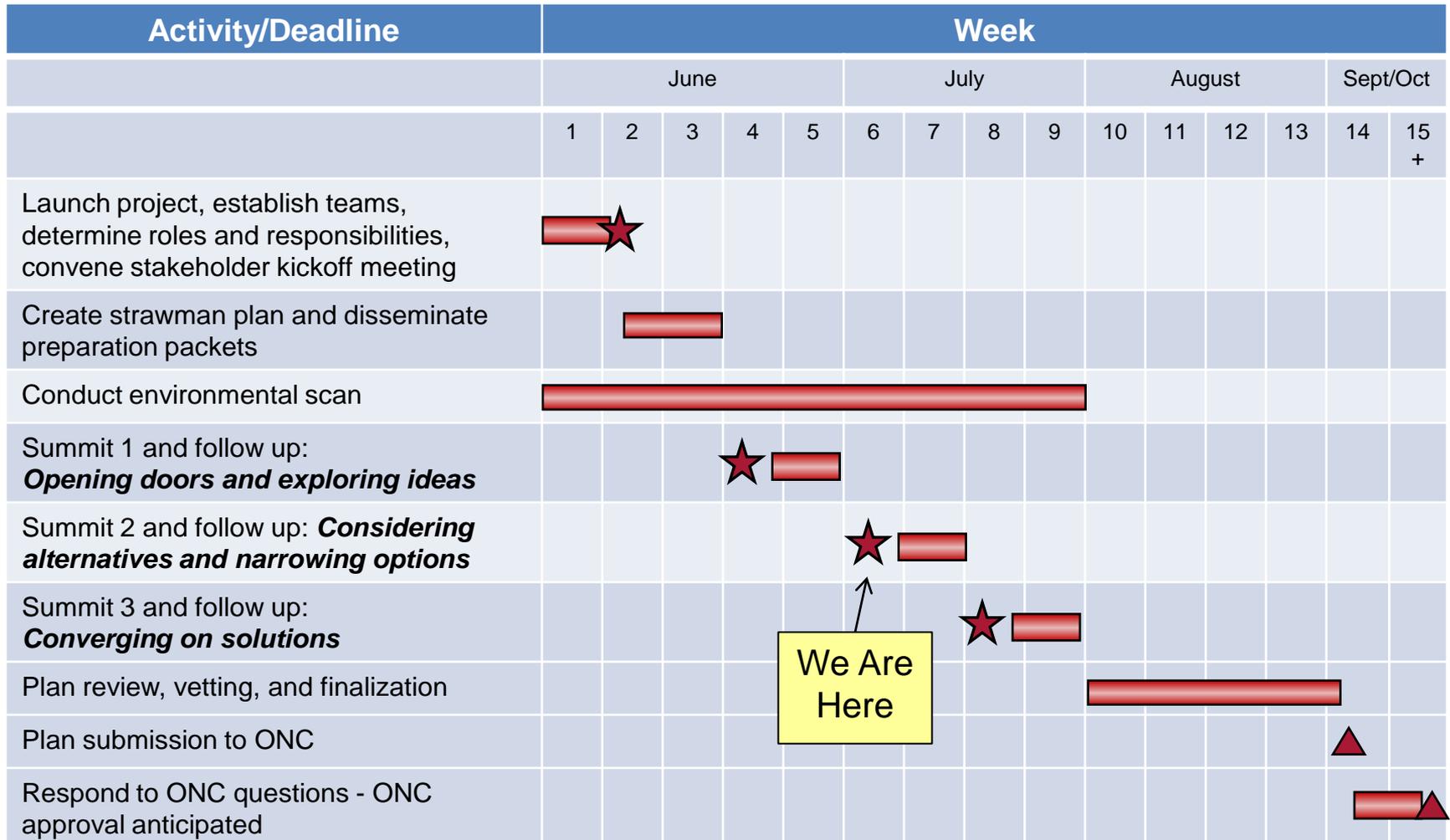
Review of initial technical infrastructure packages and business/technical operations approaches

Wrap-up and next steps

Worksheets

Review of Approach and High Level Timeline

Segment 1 Timeline: June 1 – October 31



Agenda

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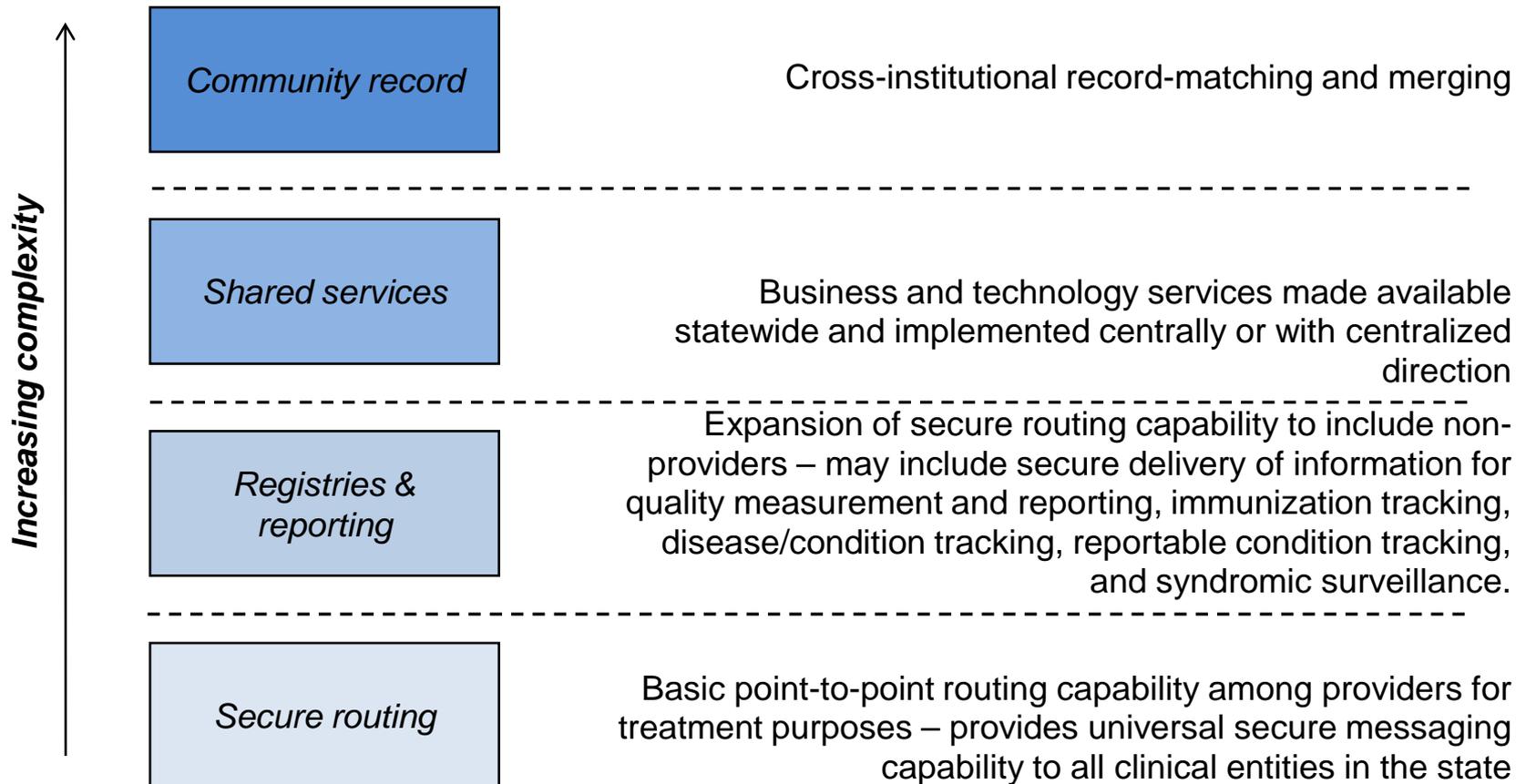
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RECAP: We started with these HIE Building Blocks...

Description



...and these Reference Use Cases

HIE Building Block	What	From whom	To whom
Secure routing	Discharge summary	Hospital	Referring physician and/or PCP
	Discharge summary	Hospital	Hospital
	Discharge summary	Hospital	Other care settings
	Departmental reports	Hospital	Referring physician and/or PCP
	Claims submission & eligibility checking	Hospital	Health plan
	Discharge summary	Hospital	Patient
	Imaging reports	Imaging center	PCP or specialist
	Images	Imaging center	PCP or specialist
	Lab results	Lab	PCP or specialist
	Referral -- Summary of care record	PCP	Specialist
	Referral -- Summary of care record	PCP or specialist	Hospital
	eRX	PCP or specialist	Pharmacy
	Lab order	PCP or specialist	Lab
	Imaging order	PCP or specialist	Imaging center
	Claims submission & eligibility checking	PCP or specialist	Health plan
	Post-visit summary	PCP or specialist	Patient
	Consult note -- Summary of care record	Specialist	PCP
Registries & reporting	Immunization record	Hospital	Public health
	Syndromic surveillance data	Hospital	Public health
	Reportable lab results	Hospital	Public health
	Quality measures	Hospital	CMS and/or NH Medicaid
	Immunization record	PCP or specialist	Public health
	Syndromic surveillance data	PCP or specialist	Public health
Community record	Access to health information	PCP or specialist	Patient
	Medication history	Pharmacy	Hospital
	Medication history	Pharmacy	PCP or specialist
	Community record	Multiple sources	Hospital
	Community record	Multiple sources	PCP or specialist

Recap of Summit 1

- ❑ Business Operations Working Group
 - Introduced framework and approach
 - Detailed review of reference Use Cases

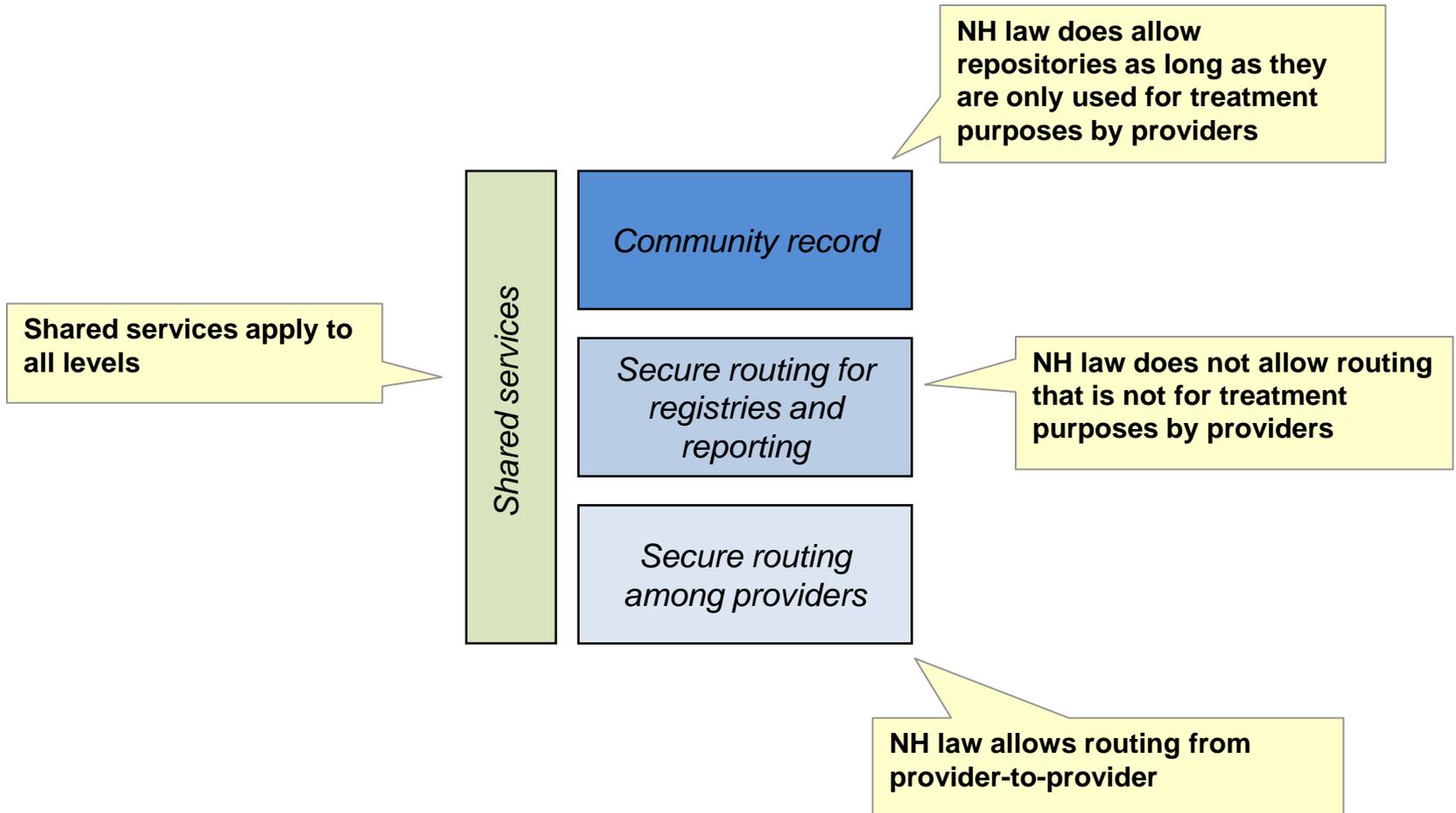
- ❑ Finance
 - Introduced framework and approach
 - Inventory of financing approaches and options

- ❑ Governance
 - Introduced framework and approach
 - Review of governance models and principles

- ❑ Technical infrastructure
 - Introduced framework and approach
 - Review of reference Use Cases

- ❑ Legal/Policy
 - Introduced framework and approach
 - Review of Use Cases in context of NH state law

Summit 1 review by all Working Groups have generated some refinements to the HIE Building Blocks....



...and some modifications to the Use Cases

❑ **Proposed additions to Use Cases**

- Add: Chart review by Public Health for case investigation
- Add: Creation of Radiation Exposure Registry
- Add: Public health labs
 - PH lab results to provider
 - PH lab results to other labs
 - Provider orders to PH labs
- Add: Patient summary request from provider to provider
- Add: Laboratory decision support for revenue cycle management
- Add: Commercial imaging centers and laboratories to use cases
- Add: Public health alerts as per Stage 2 MU recommendations
- Add: Medication history from other clinical sources (not just from pharmacy)
- Add: Quality measure delivery from ambulatory physicians to CMS and/or plans (already had hospitals, just needed to add ambulatory physicians)

❑ **Proposed modifications to use cases**

- Modify: Discharge *instructions* to patient (instead of discharge summary)
- Modify: ADT transactions from hospital to referring physician to PCP (instead of just discharge summaries; includes ED visits)

Updated Reference Use Case List: Secure routing to providers

HIE Building Block	What	From whom	To whom
Secure routing to providers	Consult note -- Summary of care record	Specialist	PCP
Secure routing to providers	eRX	PCP or specialist	Pharmacy
Secure routing to providers	Hospital admission notification	Hospital	Referring physician and/or PCP
Secure routing to providers	Hospital admission notification	Hospital	Referring Hospital
Secure routing to providers	Hospital discharge summary	Hospital	Referring physician and/or PCP
Secure routing to providers	Hospital discharge summary	Hospital	Hospital
Secure routing to providers	Hospital discharge summary	Hospital	Other care settings
Secure routing to providers	Hospital ED visit summary	Hospital	Referring physician and/or PCP
Secure routing to providers	Images	Hospital	PCP or specialist
Secure routing to providers	Images	Imaging center	PCP or specialist
Secure routing to providers	Imaging order	PCP or specialist	Imaging center
Secure routing to providers	Imaging reports	Hospital	PCP or specialist
Secure routing to providers	Imaging reports	Imaging center	PCP or specialist
Secure routing to providers	Key clinical information summary	Hospital	Hospital
Secure routing to providers	Key clinical information summary	PCP or specialist	Hospital
Secure routing to providers	Lab order	PCP or specialist	Hospital
Secure routing to providers	Lab order	PCP or specialist	National lab
Secure routing to providers	Lab results	Hospital	PCP or specialist
Secure routing to providers	Lab results	National lab	PCP or specialist
Secure routing to providers	Lab results	Public health lab	Hospital
Secure routing to providers	Lab results	Public health lab	PCP or specialist
Secure routing to providers	Medication history	Pharmacy	Hospital
Secure routing to providers	Medication history	Pharmacy	PCP or specialist
Secure routing to providers	Referral -- Summary of care record	PCP	Specialist
Secure routing to providers	Referral -- Summary of care record	PCP or specialist	Hospital
Secure routing to providers	Request for key clinical information	Hospital	Hospital
Secure routing to providers	Request for key clinical information	Hospital	PCP or specialist

Updated Reference Use Case List: Expanded secure routing

HIE Building Block	What	From whom	To whom
Expanded secure routing	Claims submission & eligibility checki	Hospital	Health plan
Expanded secure routing	Claims submission & eligibility checki	PCP or specialist	Health plan
Expanded secure routing	Immunization record	Hospital	Public health
Expanded secure routing	Immunization record	PCP or specialist	Public health
Expanded secure routing	Laboratory ordering decision support	Payers	PCP or specialist and hospitals
Expanded secure routing	Public health alerts	Public health	Hospital
Expanded secure routing	Public health alerts	Public health	PCP or specialist
Expanded secure routing	Quality measures	Hospital	CMS and/or NH Medicaid
Expanded secure routing	Quality measures	PCP or specialist	CMS and/or NH Medicaid
Expanded secure routing	Radiation exposure report	Hospital	Radiation exposure registry
Expanded secure routing	Radiation exposure report	Imaging center	Radiation exposure registry
Expanded secure routing	Reportable lab results	Hospital	Public health
Expanded secure routing	Syndromic surveillance data	Hospital	Public health
Expanded secure routing	Syndromic surveillance data	PCP or specialist	Public health
Expanded secure routing	Discharge instructions	Hospital	Patient
Expanded secure routing	General medical summary	PCP or specialist	Patient
Expanded secure routing	Post-visit summary	PCP or specialist	Patient

Updated Reference Use Case List: Community record

HIE Building Block	What	From whom	To whom
Community record	Community record	Multiple sources	Hospital
Community record	Community record	Multiple sources	PCP or specialist
Community record	Medication history	Other clinical sources	Hospital
Community record	Medication history	Other clinical sources	PCP or specialist
Community record	Public health case investigation information	Hospital	Public health
Community record	Public health case investigation information	PCP or specialist	Public health

Possible Shared Service Candidates

- Terminology Service
- Format Conversions
- RLS
- MPI
- Certificate Authority
- Subscription Management Directory & Address Resolution Service (e.g. - Provider)
- Multi-factor Security Identity Proofing
- Credential Provisioning Gateway (e.g. NHIN)
- Consent Management
- Privacy Policy Enforcement
- Data Aggregation/Merging Other(s)

Agenda

Opening remarks - "Considering alternatives and narrowing options" phase

Discussion of transaction mapping to HIE building blocks

Discussion of prioritization

Review of initial technical infrastructure packages and business/technical operations approaches

Wrap-up and next steps

Worksheets

Strawman prioritization

- ❑ Based on WG discussion in Summit 1, we have taken a first-cut at a prioritization of use cases
- ❑ This is a strawman for discussion and modification through the consensus process

- ❑ Prioritization criteria
 - Legality: Adherence with NH State Law
 - Difficulty: Technical, Business/Governance, Legal complexity
 - Demand: Stakeholder interest; federal/state requirements
 - Current market availability: Ability of stakeholders to procure service through existing market health information exchange services

- ❑ Using these criteria, we created a Strawman Phase 1, Phase 2, and Phase 3
 - Does not yet consider that New Hampshire may not want to pursue some functions at all

Strawman Phase 1

HIE Building Block	What	From whom	To whom	Phasing
Secure routing to providers	Consult note -- Summary of care record	Specialist	PCP	1
Secure routing to providers	Hospital admission notification	Hospital	Referring physician and/or PCP	1
Secure routing to providers	Hospital admission notification	Hospital	Referring Hospital	1
Secure routing to providers	Hospital discharge summary	Hospital	Referring physician and/or PCP	1
Secure routing to providers	Hospital discharge summary	Hospital	Hospital	1
Secure routing to providers	Hospital ED visit summary	Hospital	Referring physician and/or PCP	1
Secure routing to providers	Imaging reports	Hospital	PCP or specialist	1
Secure routing to providers	Key clinical information summary	Hospital	Hospital	1
Secure routing to providers	Key clinical information summary	PCP or specialist	Hospital	1
Secure routing to providers	Lab results	Hospital	PCP or specialist	1
Secure routing to providers	Referral -- Summary of care record	PCP	Specialist	1
Secure routing to providers	Referral -- Summary of care record	PCP or specialist	Hospital	1
Secure routing to providers	Request for key clinical information	Hospital	Hospital	1
Secure routing to providers	Request for key clinical information	Hospital	PCP or specialist	1

Strawman Phase 2

HIE Building Block	What	From whom	To whom	Phasing
Secure routing to providers	Hospital discharge summary	Hospital	Other care settings	2
Secure routing to providers	Lab order	PCP or specialist	Hospital	2
Secure routing to providers	Lab results	Public health lab	Hospital	2
Secure routing to providers	Lab results	Public health lab	PCP or specialist	2
Expanded secure routing	Immunization record	Hospital	Public health	2
Expanded secure routing	Immunization record	PCP or specialist	Public health	2
Expanded secure routing	Laboratory ordering decision support	Payers	PCP or specialist and hospitals	2
Expanded secure routing	Reportable lab results	Hospital	Public health	2
Expanded secure routing	Syndromic surveillance data	Hospital	Public health	2
Expanded secure routing	Syndromic surveillance data	PCP or specialist	Public health	2
Community record	Community record	Multiple sources	Hospital	2
Community record	Community record	Multiple sources	PCP or specialist	2
Community record	Medication history	Other clinical sources	Hospital	2
Community record	Medication history	Other clinical sources	PCP or specialist	2

Strawman Phase 3

HIE Building Block	What	From whom	To whom	Phasing
Secure routing to providers	eRX	PCP or specialist	Pharmacy	3
Secure routing to providers	Images	Hospital	PCP or specialist	3
Secure routing to providers	Images	Imaging center	PCP or specialist	3
Secure routing to providers	Imaging order	PCP or specialist	Imaging center	3
Secure routing to providers	Imaging reports	Imaging center	PCP or specialist	3
Secure routing to providers	Lab order	PCP or specialist	National lab	3
Secure routing to providers	Lab results	National lab	PCP or specialist	3
Secure routing to providers	Medication history	Pharmacy	Hospital	3
Secure routing to providers	Medication history	Pharmacy	PCP or specialist	3
Expanded secure routing	Claims submission & eligibility checki	Hospital	Health plan	3
Expanded secure routing	Claims submission & eligibility checki	PCP or specialist	Health plan	3
Expanded secure routing	Discharge instructions	Hospital	Patient	3
Expanded secure routing	General medical summary	PCP or specialist	Patient	3
Expanded secure routing	Post-visit summary	PCP or specialist	Patient	3
Expanded secure routing	Public health alerts	Public health	Hospital	3
Expanded secure routing	Public health alerts	Public health	PCP or specialist	3
Expanded secure routing	Quality measures	Hospital	CMS and/or NH Medicaid	3
Expanded secure routing	Quality measures	PCP or specialist	CMS and/or NH Medicaid	3
Expanded secure routing	Radiation exposure report	Hospital	Radiation exposure registry	3
Expanded secure routing	Radiation exposure report	Imaging center	Radiation exposure registry	3
Community record	Public health case investigation inform	Hospital	Public health	3
Community record	Public health case investigation inform	PCP or specialist	Public health	3

Backup: Prioritization matrix details – Phase 1 and Phase 2

HIE Building Block	What	From whom	To whom	Legality	Difficulty	Demand for service	Current market availability	Phasing
Secure routing to providers	Consult note -- Summary of care record	Specialist	PCP	1	1	1	2	1
Secure routing to providers	Hospital admission notification	Hospital	Referring physician and/or PCP	1	1	1	2	1
Secure routing to providers	Hospital admission notification	Hospital	Referring Hospital	1	1	1	3	1
Secure routing to providers	Hospital discharge summary	Hospital	Referring physician and/or PCP	1	1	1	2	1
Secure routing to providers	Hospital discharge summary	Hospital	Hospital	1	1	1	3	1
Secure routing to providers	Hospital ED visit summary	Hospital	Referring physician and/or PCP	1	1	1	2	1
Secure routing to providers	Imaging reports	Hospital	PCP or specialist	1	1	1	2	1
Secure routing to providers	Key clinical information summary	Hospital	Hospital	1	1	1	3	1
Secure routing to providers	Key clinical information summary	PCP or specialist	Hospital	1	1	1	2	1
Secure routing to providers	Lab results	Hospital	PCP or specialist	1	1	1	2	1
Secure routing to providers	Referral -- Summary of care record	PCP	Specialist	1	1	1	2	1
Secure routing to providers	Referral -- Summary of care record	PCP or specialist	Hospital	1	1	1	2	1
Secure routing to providers	Request for key clinical information	Hospital	Hospital	1	1	1	3	1
Secure routing to providers	Request for key clinical information	Hospital	PCP or specialist	1	1	1	2	1

HIE Building Block	What	From whom	To whom	Legality	Difficulty	Demand for service	Current market availability	Phasing
Secure routing to providers	Hospital discharge summary	Hospital	Other care settings	1	2	1	3	2
Secure routing to providers	Lab order	PCP or specialist	Hospital	1	2	2	3	2
Secure routing to providers	Lab results	Public health lab	Hospital	1	2	3	3	2
Secure routing to providers	Lab results	Public health lab	PCP or specialist	1	2	3	3	2
Expanded secure routing	Immunization record	Hospital	Public health	3	1	1	3	2
Expanded secure routing	Immunization record	PCP or specialist	Public health	3	1	1	3	2
Expanded secure routing	Laboratory ordering decision support	Payers	PCP or specialist and hospitals	3	3	1	2	2
Expanded secure routing	Reportable lab results	Hospital	Public health	3	1	2	3	2
Expanded secure routing	Syndromic surveillance data	Hospital	Public health	3	1	2	3	2
Expanded secure routing	Syndromic surveillance data	PCP or specialist	Public health	3	2	2	3	2
Community record	Community record	Multiple sources	Hospital	1	3	2	3	2
Community record	Community record	Multiple sources	PCP or specialist	1	3	2	3	2
Community record	Medication history	Other clinical sources	Hospital	1	3	1	3	2
Community record	Medication history	Other clinical sources	PCP or specialist	1	3	1	3	2

Backup: Prioritization matrix details – Phase 3

HIE Building Block	What	From whom	To whom	Legality	Difficulty	Demand for service	Current market availability	Phasing
Secure routing to providers	eRX	PCP or specialist	Pharmacy	1	3	1	1	3
Secure routing to providers	Images	Hospital	PCP or specialist	1	3	2	2	3
Secure routing to providers	Images	Imaging center	PCP or specialist	1	3	3	3	3
Secure routing to providers	Imaging order	PCP or specialist	Imaging center	1	3	3	3	3
Secure routing to providers	Imaging reports	Imaging center	PCP or specialist	1	2	3	3	3
Secure routing to providers	Lab order	PCP or specialist	National lab	1	3	2	1	3
Secure routing to providers	Lab results	National lab	PCP or specialist	1	3	2	1	3
Secure routing to providers	Medication history	Pharmacy	Hospital	1	3	1	1	3
Secure routing to providers	Medication history	Pharmacy	PCP or specialist	1	3	1	1	3
Expanded secure routing	Claims submission & eligibility checki	Hospital	Health plan	3	3	3	1	3
Expanded secure routing	Claims submission & eligibility checki	PCP or specialist	Health plan	3	3	1	1	3
Expanded secure routing	Discharge instructions	Hospital	Patient	3	3	1	1	3
Expanded secure routing	General medical summary	PCP or specialist	Patient	3	3	1	1	3
Expanded secure routing	Post-visit summary	PCP or specialist	Patient	3	3	1	1	3
Expanded secure routing	Public health alerts	Public health	Hospital	3	3	2	3	3
Expanded secure routing	Public health alerts	Public health	PCP or specialist	3	3	2	3	3
Expanded secure routing	Quality measures	Hospital	CMS and/or NH Medicaid	3	3	3	2	3
Expanded secure routing	Quality measures	PCP or specialist	CMS and/or NH Medicaid	3	3	3	3	3
Expanded secure routing	Radiation exposure report	Hospital	Radiation exposure registry	3	3	3	3	3
Expanded secure routing	Radiation exposure report	Imaging center	Radiation exposure registry	3	3	3	3	3
Community record	Public health case investigation infor	Hospital	Public health	3	3	3	3	3
Community record	Public health case investigation infor	PCP or specialist	Public health	3	3	3	3	3

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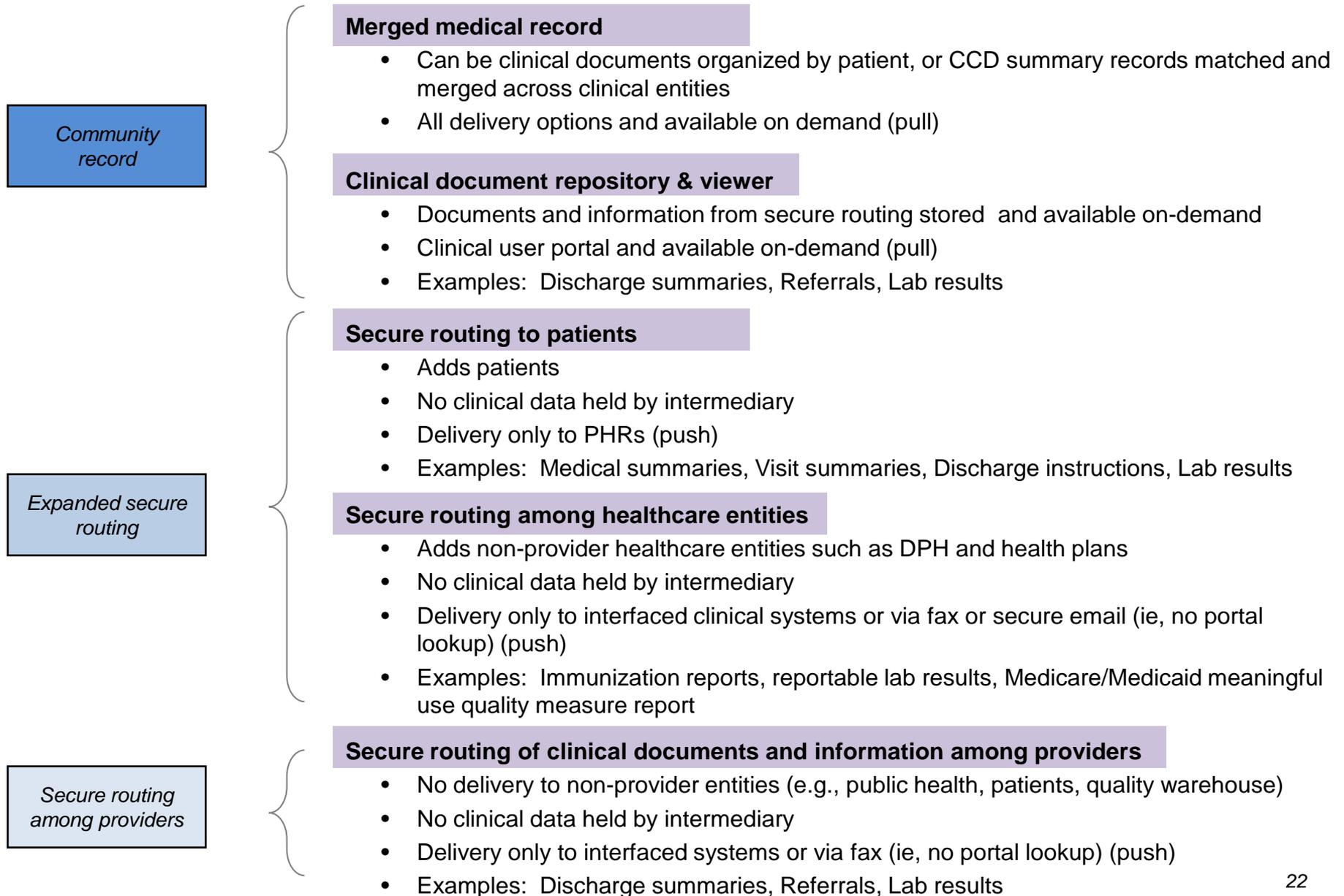
Discussion of prioritization

Review of initial technical infrastructure packages and business/technical operations approaches

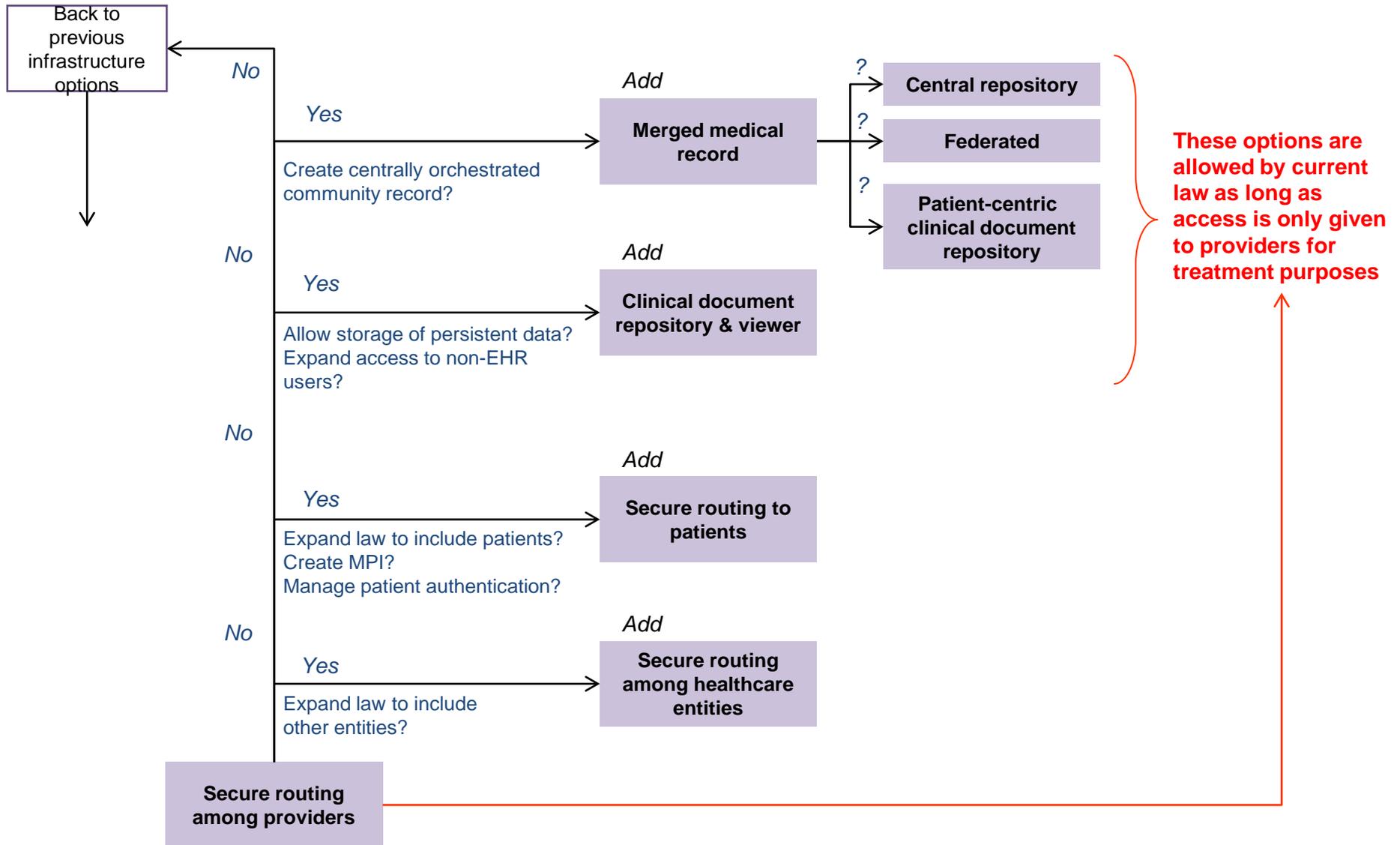
Wrap-up and next steps

Worksheets

HIE Building Block Options Mapped to Infrastructure Components



Infrastructure Components Logic Tree



HEALTH INFORMATION EXCHANGES

HIE building block

Infrastructure components

Added complexity of each block

Merged medical record

Add integrated clinical records

Patient directory (MPI)
Clinical document or clinical data repository

- Persistent data
- Requires patient-matching
- For merging records, minimally requires message structure/format standardization

Clinical document repository & viewer

Add portal access for non-EHR users

Message/document repository
Clinical user portal

- Persistent data
- Requires management of end-user authentication & authorization and support for portal end-users
- Can add patient-matching to organize documents, but not required for document delivery and viewing

Secure routing among health care entities & patients

Add delivery to patients

Patient directory (MPI)
Delivery adaptor (PHR)

- Adds entities not allowed by current NH law
- Requires patient-matching and authentication

Secure routing among health care entities

Add delivery to non-provider entities

Non-provider entity registry (e.g., public health, quality warehouses, social services, etc)

- Adds entities not allowed by current NH law

Secure routing of clinical documents and information among providers

Core infrastructure: Secure routing to providers

Authentication & secure transport
Provider entity registry
Provider directory
Message format translation & validation
Message routing
Delivery acknowledgement
Audit/logging
Delivery adaptors (clinical system, fax, secure email)

- Simplest step up from current state
- No persistent data
- No patient-matching
- Only includes providers
- No portal

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Wrap up and next steps

- ❑ Next conference call: Wednesday, July 14th, 1pm-3pm
- ❑ Next Summit: #3 Converging on Solutions- Tuesday, July 20th, 9am-1pm
- ❑ Meeting summary to be distributed to all workgroups
- ❑ Offline consideration of transaction prioritization

Agenda

Worksheets

Governance Workgroup

Organizational form considerations

HIE building block

Considerations for each level

Add integrated clinical records

Central clinical data repository	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
Federated Clinical data repository	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
Patient-centric clinical document repository	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z

Add portal access for non-EHR users

Clinical document repository & viewer	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
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Add delivery to patients

Secure routing to patients	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
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Add delivery to non-provider entities

Secure routing among healthcare entities	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
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Core infrastructure:

Secure routing among providers	<ul style="list-style-type: none"> • A • B • C 	<ul style="list-style-type: none"> • X • Y • Z
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Governance structure/membership considerations

HIE building block

Considerations for each level

Add integrated clinical records

Central clinical data repository

- A
- B
- C

- X
- Y
- Z

Federated Clinical data repository

- A
- B
- C

- X
- Y
- Z

Patient-centric clinical document repository

- A
- B
- C

- X
- Y
- Z

Add portal access for non-EHR users

Clinical document repository & viewer

- A
- B
- C

- X
- Y
- Z

Add delivery to patients

Secure routing to patients

- A
- B
- C

- X
- Y
- Z

Add delivery to non-provider entities

Secure routing among healthcare entities

- A
- B
- C

- X
- Y
- Z

Core infrastructure:

Secure routing among providers

- A
- B
- C

- X
- Y
- Z

Organizational process considerations

HIE building block

Considerations for each level

Add integrated clinical records

Central clinical data repository	• A	• X
	• B	• Y
	• C	• Z
Federated Clinical data repository	• A	• X
	• B	• Y
	• C	• Z
Patient-centric clinical document repository	• A	• X
	• B	• Y
	• C	• Z

Add portal access for non-EHR users

Clinical document repository & viewer	• A	• X
	• B	• Y
	• C	• Z

Add delivery to patients

Secure routing to patients	• A	• X
	• B	• Y
	• C	• Z

Add delivery to non-provider entities

Secure routing among healthcare entities	• A	• X
	• B	• Y
	• C	• Z

Core infrastructure:

Secure routing among providers	• A	• X
	• B	• Y
	• C	• Z