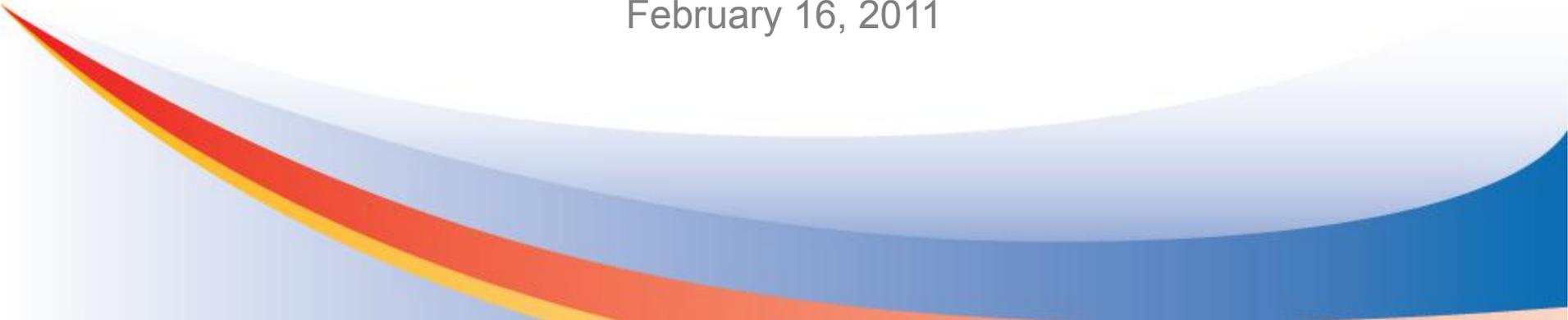The Office of the National Coordinator for
Health Information Technology

State HIE Strategic and Operational Plan Emerging Models

February 16, 2011

Goals and Objectives

The State HIE emerging models can be useful in a wide variety of ways, both within the ONC state-level HIE program and beyond it.

- **For states still in the plan approval process**, the models highlight approaches that approved plans have used to build on local assets and exchange conditions to enable Stage 1 meaningful use requirements.

- **For states whose plans have been approved**, the models can provide valuable perspective for the ongoing refinement and phasing of their approaches.

- **For all states**, the models can expedite the process for revision, review and technical assistance for state HIE plans.

- **For sub-state exchanges, providers, provider organizations, and commercial vendors**, the models can provide frameworks and strategies to help shape their own HIE plans and investments.

- **For researchers and industry analysts**, the models can provide evaluation frameworks to support study and analysis of the successes and challenges of emerging models.

State HIE Promising Practices

State plans approved to date display many common promising practices:

- **Focus on gap-filling strategies** that rapidly enable providers to achieve meaningful use.

- **Recognize and leverage existing assets within the state**, including REC, Beacon, existing regional/community efforts, etc.

- **Take a viable and incremental approach,** phasing services over time.

- **Monitor for change and adapt over time** to respond to stakeholder needs and the evolving market.

- **Support the "little guy"** such as critical access hospitals, rural clinics, and independent labs so that each can support providers in meeting meaningful use.

- **Leverage the market.**

Scope and Assumptions

- **Based only on currently approved models**. The models are based on the patterns observed in state plans that have been approved at the time of analysis. The models may shift or new models may emerge over time.

- **Models are illustrative constructs, not exact descriptions**. Some states are highlighted to showcase key elements of each of the models, and it should be noted that no model completely describes any particular grantee or set of grantees.

- **Models are tools, not answers**. The models serve only as a guide to highlight common practices and approaches among approved plans. A successful approach in any state will be one that is viable and achievable for the local characteristics of the state.

- **ONC does not approve or recommend any particular model**. The models are merely reflections of what exists in the approved plans today and are provided simply as a tool for plan development and refinement. Adopting a particular model or amalgam of models does not guarantee ONC approval of a plan or plan refinement.

- **Every model can stand on its own**. None of the models or approaches is favored over another, nor is there any assumption that the models represent "stages of maturity" or "levels of progression".

# State HIE Strategic and Operational Plan Emerging Models

Elevator	Capacity-builder	Orchestrator	Public Utility
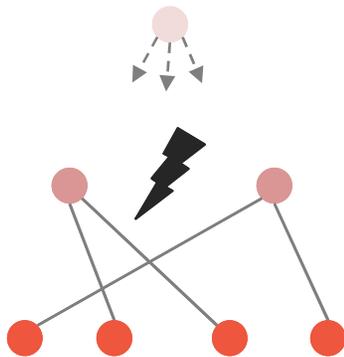
Rapid facilitation of directed exchange capabilities to support Stage 1 meaningful use

Bolstering of sub-state exchanges through financial and technical support, tied to performance goals

Thin-layer state-level network to connect existing sub-state exchanges

Statewide HIE activities providing a wide spectrum of HIE services directly to end-users and to sub-state exchanges where they exist

Preconditions:
- ✓ Little to no exchange activity
- ✓ Many providers and data trading partners that have limited HIT capabilities
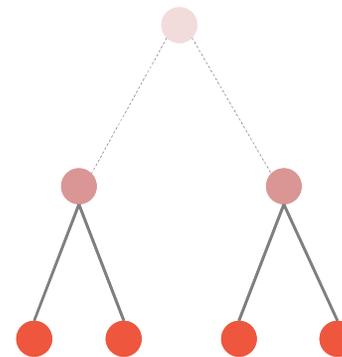- ✓ If HIE activity exists, no cross entity exchange
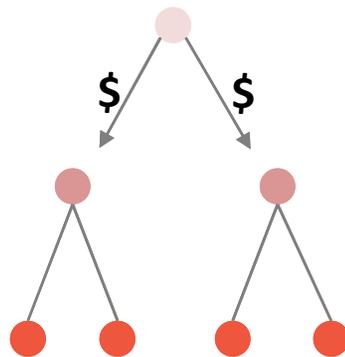
Preconditions:
- ✓ Sub-state nodes exist, but capacity needs to be built to meet Stage 1 MU
- ✓ Nodes are not connected
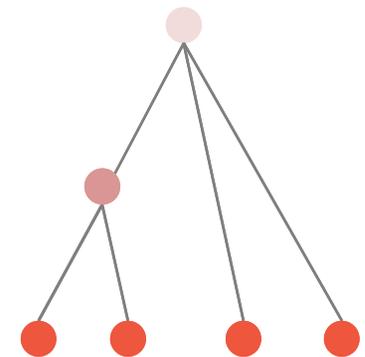- ✓ No existing statewide exchange entity

Preconditions:
- ✓ Operational sub-state nodes
- ✓ Nodes are not connected
- ✓ No existing statewide exchange entity
- ✓ Diverse local HIE approaches

Preconditions:
- ✓ Operational state-level entity
- ✓ Strong stakeholder buy-in
- ✓ State government authority/financial support
- ✓ Existing staff capacity

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Key Model Description Contents

**Description/
Key Principles**

- What approach is being used to accelerate meaningful use achievement and reach HIE program goals?

Preconditions

- Which environmental features are associated with different program approaches?

Organization

- Who will support state-level infrastructure and services?
- Who bears responsibility for end-user support?
    - How will end-users that currently do not use HIE services offered by another entity (sub-state node, etc.) be addressed?
    - How will providers/data trading partners that have limited HIT capabilities by supported?

Technical

- What technical architecture supports the model?
- What services will be centrally deployed at the state-level and what will be local?
- How will the implementation be phased?

Legal/policy

- What legal and policy foundation is needed to support the model?

Risks

- What are the main risks associated with the model?
- What mitigation strategies can help minimize risks?

Key success factors

- What are the key organizational, technical, and legal factors that can contribute to ultimate success when using the model?

Elevator	Rapid facilitation of directed exchange capabilities to support Stage 1 meaningful use

Preconditions
- May include limited to no HIE activity in the state or large portions of the state
- Sometimes a high degree of providers and data suppliers with limited HIT capabilities
- May include high-level of capability within but not across sub-state networks

Organization
- Partner with vendors to rapidly develop directed exchange (e.g. Direct when available)
- Work with REC to put boots-on-the-ground to assist providers and data trading partners with limited HIT capabilities with obtaining directed exchange services
- Enable HISP services to complement privately-developed HISP services and promote commercial "retail" service penetration as rapidly as possible

Technical
- Initial phase includes promotion of directed exchange services
- Includes services such as provider directories or certificate authority where they could lower cost or improve services of vendor-supplied directed exchange solutions
- Future phase may include more robust, modular state-level shared services; may transition to Public Utility or Orchestrator model

Legal/policy
- Minimal requirements for legal/policy infrastructure during phase 1
- Refinement of legal/policy framework when state moves to more robust exchange to meet Stage 2 and 3 MU

Risks
- May not lay foundation for cost-effective approach to Stage 2/3 MU
- May lead to heterogeneity in services, service levels, pricing, etc. that undercut effectiveness or efficiency of other activities such as public health

Key success factors
- Coordination with REC or others to provide on-the-ground support to providers/data trading partners with limited HIT capabilities
- Strategy to support more advanced HIE methods and meeting later stages of MU

Capacity-builder

Bolstering of sub-state exchanges through financial and technical support, tied to performance goals

Preconditions
- Multiple sub-state nodes that cover large portion of state in various stages of development
- Near-operational sub-state nodes have momentum but require assistance to become fully operational

Organization
- State-sponsored grants program to help sub-state nodes fill capability gaps or to address needs of stakeholders with limited HIT capabilities
- Leverage sub-state nodes to assure access for providers not affiliated with a sub-state node or white space
  - Could issue RFP to procure services to cover un-tethered providers/white space

Technical
- Phase 1 includes development and implementation of funding program (creation of eligibility criteria, review and section process, and program monitoring and evaluation)
- Phase 2 may transition to Orchestrator model providing thin backbone of state-level shared services to facilitate node-to-node exchange and other value-added services
  - Messaging/routing, provider directory, security services
  - NWHIN, MPI/RLS

Legal/policy
- Policies/procedures to address funding program requirements, including performance goals

Risks
- Dependency on sub-state nodes for state-level sustainability
- Potential lack of coverage for un-tethered providers/white space
- Potential for heterogeneity in HIE across state (service levels, pricing, etc.)

Key success factors
- Strategy to support un-tethered providers/white space
- Strong coordination including program monitoring, management and remediation to ensure funding program success

| **Orchestrator** | **Thin-layer state-level network to connect existing sub-state exchanges** |

Preconditions
- Multiple nodes of exchange cover large portion of state
- High level of operational exchange within nodes but little across nodes
- Strong backing by state government and/or strong stakeholder buy-in

Organization
- Criteria to define, monitor, enforce "qualified organizations" for state-level exchange
- Strategy to connect end-users not affiliated with a sub-state exchange or white space may leverage sub-state nodes
- Does not typically include state-level service provision to end-users directly , only through sub-state networks

Technical
- Phase 1 includes focus on directed exchange (push) to connect sub-state networks in alignment with Stage 1 MU requirements
  - Messaging hub, security services, provider directory
- Phase 2 may include expansion of core infrastructure to support query/retrieve (pull) of patient data and other value-added services such as data aggregation, analytics, or patient access to information according to market demand and buy-in

Legal/policy
- Light layer state-level policy infrastructure to allow minimum necessary alignment for statewide exchange

Risks
- Dependency on sub-state nodes for state-level sustainability
- Potential lack of coverage of un-tethered providers/white space
- Potential for heterogeneity in HIE across state(service levels, pricing, etc.)

Key success factors
- Strong public-private collaboration with actively engaged state government
- Development of certification/accreditation processes for sub-state exchange participation in state-level network

| **Public Utility** | **Statewide HIE activities providing a wide spectrum of HIE services directly to end-users and to sub-state exchanges where they exist** |

Preconditions
- Operational statewide entity/exchange already covering large portion of state
- Strong backing by state government and strong stakeholder buy-in
- Well-developed HIE legal or policy infrastructure

Organization
- State-level entity implementation responsibility to connect stakeholders (end-users and sub-state networks as they exist) to state-level infrastructure
- Close coordination with REC to provide technical assistance to end-users
- Established staff manages day-to-day operations of state-level infrastructure/services

Technical
- Phase 1 includes connecting stakeholders to existing infrastructure and enhancements to support Stage 1 MU
  - May include provisioning of end-user applications and other services such as hosting, training, help-desk
- Phase 2 includes expansion of core infrastructure to support query/retrieve access to longitudinal care record, connection to NWHIN, consumer access (PHRs), etc.

Legal/policy
- Statewide policy framework relatively well-developed including consent, auditing, and other privacy/security policies

Risks
- Reliance on single organization and infrastructure – "single-point of failure"
- Requires high level of policy, business, organizational, and technical infrastructure that takes adequate time and resources to fully implement

Key success factors
- Development and maintenance of full-service organization to meet demands of model
  - Boots-on-the-ground support to assist end-users
- Strong public-private collaboration with actively engaged state government

Approved State Plans by Model

U.S Territories:
- American Samoa
- Guam
- Northern Mariana Islands
- Puerto Rico
- Virgin Islands
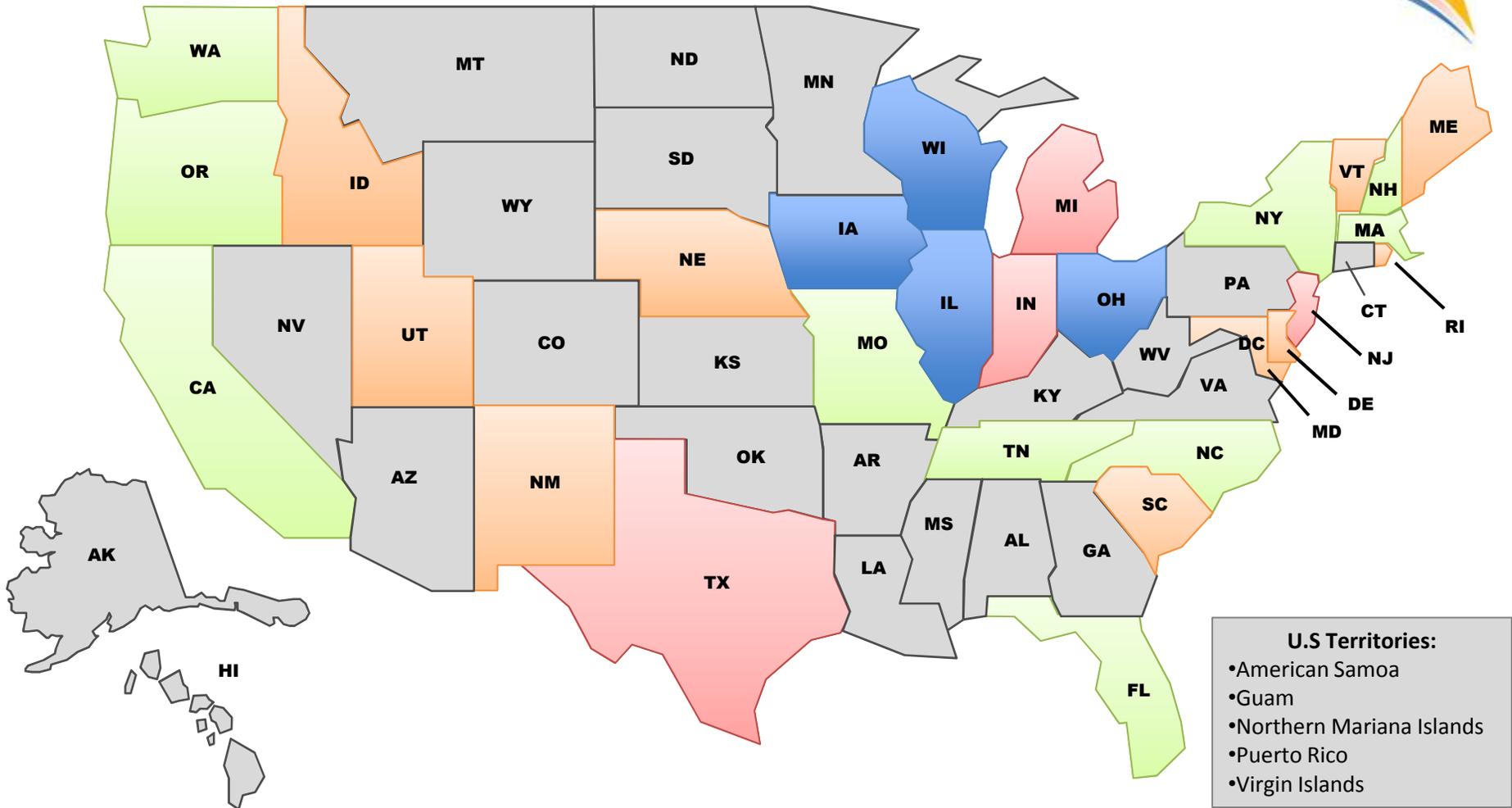
Elevator   **Capacity-builder**   **Orchestrator**   **Public Utility**

**Please note that most grantees display characteristics of more than one model

Putting Models into Practice

Using the State HIE emerging models for technical assistance can help:

- **States in the planning phase…**
  - Determine if any model or models may work well in their current HIE environment
  - Address key success factors and risks

- **States in the implementation phase…**
  - Look for ways to improve current implementation plans
  - Moving from one model to another (if necessary and appropriate)

- **States in the evaluation phase…**
  - Assess whether key goals and objectives have been obtained and make adjustments as necessary

Questions and Discussion