digital bridge

Preliminary Sustainability Plan

Initial Research and Recommendations

February 2017

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Executive Summary

The Digital Bridge sustainability workgroup has been charged with defining a sustainability plan for electronic case reporting (eCR) and providing a business model for supporting eCR infrastructure using inputs from the Digital Bridge requirements and technical architecture workgroups. Over the past few months, the workgroup has discussed what is needed to maintain eCR infrastructure, developed sample models for scalability and completed a business model canvas to inform the governance body and support decisions regarding the initiative's future efforts. These conversations were also aided by the experiences of each of the workgroup members, including the involvement of some members in the ASTHO Public Health Community Platform (PHCP). These deliverables will also serve as input for subsequent work in the legal and regulatory workgroup.

The following preliminary plan provides a compilation and summary of the work completed by the sustainability workgroup since its inception in November 2016, as well as content that was developed and shared with the governance body. This work includes the value proposition for eCR, sample business models, additional questions that need to be addressed post initial site implementations and next steps for Phase 3.

Workgroup Charge and Completed Activities

The sustainability workgroup officially kicked off in November 2016 and immediately began working on artifacts to support sustainability efforts for eCR and the Digital Bridge initiative as outlined in the workgroup's charge. The ultimate charge of the workgroup is to lead strategic efforts to develop a business model for eCR infrastructure. The following list of activities was completed by the workgroup in support of the charge set forth by the governance body.

Digital Bridge Application

Application designed for applicants interested in applying as Digital Bridge eCR implementation sites.

Site Selection Criteria

Recommendations on site selection criteria for the eCR implementation phase of Digital Bridge and accompanying application process description.

Sustainability Business Model Canvas

A strategic exercise completed by sustainability workgroup members to challenge business thinking around electronic case reporting. The exercise focuses on the partners, activities, resources, revenue streams and cost structure for eCR.

Preliminary Sustainability Infrastructure

Sample infrastructure outlining initial requirements to deliver electronic case reports using inputs from Digital Bridge's technical infrastructure and requirements workgroup.

Preliminary Sustainability Plan (current document)

Sustainability plan for delivering electronic case reports using the Digital Bridge technical infrastructure and shared services. The plan outlines the value proposition for eCR, potential business models supporting eCR, as well as additional analysis required to develop a long-term business plan.

The Value Proposition for Electronic Case Reporting

Understanding the value proposition for electronic case reporting was a key activity that was discussed with the workgroup using the business model canvas and was presented to the governance body and other participants of the January 19, 2017 in-person meeting. The lively discussion provided an opportunity to receive input and feedback on the value proposition being created by Digital Bridge. Below are some of the outputs from that discussion.

Providers
• Provides clear and consistent public health reporting requirements across the nation
• Provides better clinical decision support to meet legal obligations
• Increases quality of care
• Better awareness of emerging threats
• Reducing the reporting burden

Vendors
- Provides data consistency
- Better forecast and planning for software development
- Provides better customer service

Public Health Agencies
- Provides quality, timeliness, and completeness of data
- Helps to detect public health threats with great sensitivity and PPV
- Supports to trace, characterize, and protect contracts and vulnerable populations with greater effectiveness

What is Digital Bridge Sustaining?

Understanding exactly what Digital Bridge is sustaining will help to inform the infrastructure and business model in the long term. The workgroup spent some time brainstorming and discussing sample infrastructures and models that can support electronic case reporting. Based on these discussions, it was determined the following items need to be sustained to support sustainability.

Infrastructure

To support the proposed components of this initiative, the workgroup developed a sample infrastructure which can be seen below. One of the key components of the infrastructure outlined is a project management office (PMO) which will support all of the operations, technology, policy and regulatory functions for eCR sustainment. Within each of these major business functions, there is a number of subdivisions which will support program sustainment. They subdivisions include – Communications, Finance, Risk Management, Training and Onboarding, Data Management, Systems Management, Legal and Policy.

Based on sample infrastructure, the Digital Bridge workgroups serve only in an advisory role, working directly with the PMO to support sustainability efforts. The implementation site liaisons are in a similar role, working directly with the PMO as the convener for the implementation sites. The liaisons serve as the point of contact, and will be the go-between. The PMO plays the crucial role of monitoring the day-to-day Digital Bridge activities and coordinating all activities from the initial implementation sites. It will be the responsibility of the PMO to be in constant contact with initial implementation sites and request information as deemed appropriate. It is important to note this proposed structure is in its infancy, with the expectation that functions will be added and/or changed as the workgroup learns best practices from initial site implementations. As feedback is received, additional considerations will be included such as the number of FTEs and costs to sustain structure. Additional details about the responsibilities of each entity are outlined below.

Governance Body
- Overarching executive forum for partner collaboration and strategic decision making
- Appoints board chair and WG chairs
- Maintains execute oversight of program and Digital Bridge's future
- Invites and approves organizations to join the membership
- Provides direction for Digital Bridge including charges and ask of workgroups, Program Management Office, and implementation sites

Program Management Office

- Supports the day-to-day operations of the Digital Bridge program
- Owns coordination between implementation sites and Governance Board
- Responsible for reporting up to Governance Board on site's activities and progress throughout implementation
- Works directly with implementation sites to support program evaluation and performance
- Manages program operations, technology, and legal/regulatory components of project
- Manages communications, finance, risk management, training & onboarding, data management, systems management, as well as legal, regulatory, and policy issues

Program Management Office Work Streams

Operations

- Responsible for tactical operational components of Digital Bridge including communications, finance, risk management, and training & onboarding
- The PMO will rely on the operations workstream to manage outreach with the implementation sites, help recruit additional sites, ensure all sites are ready to kick off their implementations, as well as manage risks associated with the implementation sites and project financial costs

Technology

- Responsible for all technology aspects of Digital Bridge including Data Management and Systems Management
- Supports systems maintenance (with RCKMS/AIMS), provides any technological support to implementation sites including help desk support.
- Supports Digital Bridge analytics and metrics – which includes collecting the appropriate data from each of the implementation sites

Legislative Affairs

- Responsible for legislative components of Digital Bridge including any legal and policy components that need to be taken care of
- Supports implementation sites with MOUs and other agreements to for grants and contracts management, as well as maintaining relationships with various policy organizations
- Supports Digital Bridge with future efforts such as standards development and future response efforts for new use cases
- Advisory group with external technical and operational expertise
- Made up of representatives (i.e. Vendors, Providers, and Public Health Agencies) from the Digital Bridge membership
- Helps to guide key policy and technical decisions through workgroup exploration
- Responsible for supporting and executing specific charges based on feedback and ask of the governance body

Implementation Sites

- Representatives from each Digital Bridge Program Site
- Provides updates to the Digital Bridge PMO
- Supports program evaluation and performance

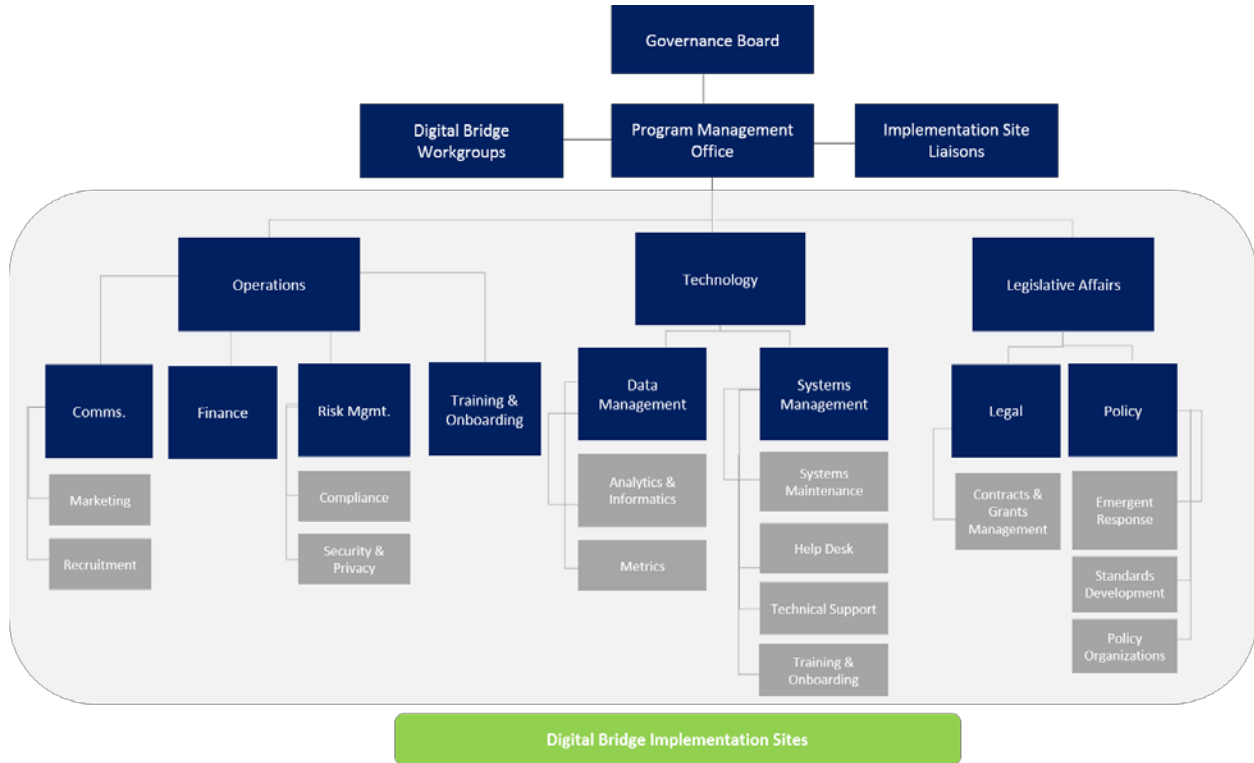- Supports implementation of program objectives and policies based on guidance from the governance body

Figure 1: Sample eCR Infrastructure

Sample Business Models

Over the course of the workgroup meetings, the group discussed a number of business models that might be able to support eCR and Digital Bridge. During these high-level conversations, the ideas of a membership model, a transactional model and a utility model were discussed. A few points about these models are highlighted below.

Model	Description	Strengths	Challenges
Membership	- Members pay a fee to participate in the Digital Bridge and/or pay for a seat on the governance body - Membership fees would be decided by the governance body, with the possibility of scaling pricing for members (e.g., different pricing for	- Predictable revenue stream - Benefits for participating members (i.e., ease of case reporting, etc.) - All members have an active voice in Digital Bridge decisions - Builds a cohesive network of Digital Bridge participants - Members and	Members are required to pay to participate in program

Model	Description	Strengths	Challenges
	EHR vendor vs. PHAs) • The entirety of the membership serves as "one voice" in industry, with the voice growing • stronger as more members are added	additional revenue provides an opportunity to support additional case reporting and enhance Digital Bridge capabilities	
Transactional	• The exchange of the case report between the provider and the Public Health Agencies would be considered a "transaction" • Digital Bridge receives revenue based on the number of "transactions" • The model assumes the case report is moving from one subsystem (i.e. • clinical) to another (i.e., Public Health), bi-directionally	• More opportunities to monetize due to the large number of electronic case reports being transferred • Revenue is based on the number of "transactions"	• Unpredictable sources of revenue • More complex data structure required – detailed infrastructure needed for transactions and submissions • Highest costs
Utility	• Digital Bridge and data sharing is seen as a "public good"	• Helps to control costs and care quality	• Existing industry infrastructure

Table 1: Sample Business Models

Business Proposition – Additional Questions & Concerns

While there have been many efforts in the past to develop bidirectional health information exchange with public health, many of these efforts faced challenges around the larger questions of sustainability – particularly costs and scalability. The question of sustainability is a very large one and requires the appropriate amount of effort to develop the appropriate infrastructure and governance to support projects like Digital Bridge.

Moving into Phase 3, the sustainability workgroup will share the below questions and input requests with the initial implementation sites (with the help of the communications team) to help support the discussion of long term sustainability. These questions were developed based on the activities and stakeholder/customer interactions identified in the business model canvas exercise. These questions will serve as an opportunity to help Digital Bridge and its sustainability efforts by learning from the experiences of the initial implementation sites and

obtain information from each of the sites to help gain an understanding on larger sustainability challenges such as costs, resources and onboarding needed to support eCR implementation and Digital Bridge in the long term. Please note, questions are not intended for all stakeholders (i.e., providers, vendors, PHAs) and questions are divided based upon which group an initial implementation site falls in.

Sustainability Questions

Costs

- What has been your overall cost of ownership to participate in Digital Bridge as an initial implementation site? Break these costs down by thinking of implementation costs vs. operational costs. For example what were your one-time costs to stand up your initial implementation site vs. operational costs to keep your site going during initial implementation?
- What were your implementation and operational costs associated with consultant or staff hours or FTEs needed to support initial implementation sites?
- What were your implementation and operational costs associated with system hardware (i.e. maintenance, etc.)?
- What were your implementation and operational costs associated with system software (i.e. licensing, etc.)?
- Have your costs decreased, remained the same, or increased since joining Digital Bridge as an initial implementation site?
- Are there different costs that you are experiencing now being part of Digital Bridge that you did not experience before? If so explain.

Case Reporting

- How much consultant or staff time (total hours and hours/person) has your site spent on case reporting and follow-up before vs since joining the Digital Bridge initiative?
- Have you seen any time savings since joining Digital Bridge? Please explain.
- Have you seen an increase in the number of cases reported? Has your site been able to handle this new case load? Please stratify by disease.

Messaging and Data Reporting

- Since joining Digital Bridge has the quality (as measured by timeliness, completeness and sensitivity and specificity by condition) of the data you've received improved?
- Since joining Digital Bridge have you seen a reduction or increase in duplicate cases? Please stratify by disease.
- Based on past experiences, does the eICR contain the right information you need to complete your job functions?
- How much consultant or staff time (in hours) was needed to embed RCKMS into your existing platform?

Onboarding and Training

- How long did it take (total hours and hours/person) to get things up and running after onboarding and initial training efforts?
- What were your training needs during implementation? Do you anticipate additional training needs for future implementations (i.e., additional diseases/conditions)?

Resources

- Describe the different consultant or staff resources you needed for major implementation activities. Please include information on the exact number of hours or FTEs and the skillsets required for these resources.
- How did your site manage to assign resources to these activities? What sort of funding mechanisms were used?
- Before joining the Digital Bridge initiative, what resources was your site using fore case reporting?
- What resources were being used during and after implementation? Was there an increase in resources?

Legal

- What type of legal agreements/legal models did your organization need to put in place to participate in Digital Bridge?
- How long did it take to get these legal agreements into place?
- What aspects of your agreement/model worked well? What aspects needed to be changed? Please explain.
- Were there any additional efforts or challenges with regards to your legal agreements? Please explain.

Overall

- Based on your overall experience with the pilot, in your opinion what do you feel could have been done better?
- Name one future thing that could be used to better support the Digital Bridge effort.
- What was the biggest value you received in participating in the Digital Bridge initiative?
- Does your site have any additional recommendations for scalability?
- Did you share information, best practices, or lessons learned with other initial implementation sites? If so, how did you go about communicating with them and what content did you share?
- What advice would you give another organization that is considering participating in eCR and/or Digital Bridge? What items would you include in a checklist for other organizations looking to implement eICR?

Timeline and Next Steps

The sustainability workgroup has finalized and closed out all activities for Phase 2 with the last meeting occurring on Tuesday February 14, 2017. The workgroup will be on hiatus until the summer and will pick back up in Phase 3 once the initial implementation sites have officially gotten off the group. Once the workgroup reconvenes in Phase 3, inputs from initial site implementation will be used to develop a more robust sustainability plan to include formal proposed business models as well as cost estimates, and a proposed plan for scalability.