Western Governors University
M.Sc. Integrated Healthcare Systems

Impact Assessment Framework

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Overview

“Strong reasons make strong actions.”
-William Shakespeare, King John, Act 3 Scene 4

Leaders and managers have many responsibilities, but one of the most important is the ability to make good decisions. There are many components to effective decision-making:

1. Understanding the right problem to be solved or the issue to be addressed;
2. Engaging the right people in the right way to help make a decision;
3. Evaluating decision alternatives using the best available information and understanding the impact of each potential choice;
4. Understanding and applying the values and priorities of an organization in making the decision;
5. Effectively communicating the decision to affected stakeholders.

This document is focused primarily on the third component – understanding the consequences of potential decision alternatives in order to help make decisions that best serve the interests of the organization and affected stakeholders.

Leaders who consistently make good decisions share a number of traits in common:

- They make evidence-based decisions that are founded on reliable data wherever possible, and not solely on instinct or emotions.
- They conduct a systematic analysis of the information available to them now, and identify useful information that will need to be acquired (within the constraints of time and available resources) to improve their decision making.
- Effective leaders think holistically. Most important decisions have many consequences that exist both inside and outside of the organization itself, and that interact with each other. Thoughtful decisions consider these many dimensions and focus on how the decision will impact important outcomes for all of the affected stakeholders.

Expressed in the language of psychology, good leaders do their best to minimize cognitive bias that can distort the decision-making process. One example is a decision made with “blinders on” – focused almost exclusively on one potential impact of a decision while paying too little attention to others. Modern organizations are almost by definition complex entities with a great many “moving parts,” which often interact with and influence each other. When developing an organization’s strategy and selecting the tactics to implement that strategy, there may be no obviously correct decision; only choices that will have differing “ripple effects.”

This document, the Impact Assessment Framework (IAF), provides both a model and a methodology for structured exploration of decision alternatives in order to encourage the behaviors of successful leaders.
Section 1: Decisions in Health Systems

Healthcare today is in a state of profound transition. New models of care delivery and reimbursement are beginning to proliferate; technology and innovation are empowering patients and providers in ways that have never been possible before; and the health system is beginning the journey from provider-centered to patient-centered care. As an example, see *Your Hospital’s Path to the Second Curve: Integration and Transformation*, published by the American Hospital Association.

In this shifting landscape, it’s possible to make unfortunate decisions with disastrous consequences for healthcare. As an example, consider the *Connecting for Health* initiative implemented by the UK National Health Service between 2005 and 2013 to establish a national network of interconnected electronic health records. By emphasizing the benefits of technologies that were not yet proven and failing to fully consider the impact of electronic health records on the patient and provider experiences of care (among other reasons), over £12B was spent on a program that failed to deliver many of its promised benefits before being cancelled.

The Impact Assessment Framework has a specific focus on analyzing decision alternatives in leading and managing health systems. Impacts on the experience of health and organizational capabilities are both considered.
Section 2: A Model for Analyzing the Impact of Decision Alternatives

When assessing the potential impact of any decision alternative, there are three fundamental questions to ask in order to perform effective analysis:

- **Are all of the major dimensions of impact being evaluated?** Dimensions cover all of the major stakeholders, organizational units, and business processes that could be impacted by the decision. For example, “Does this decision impact our organization’s finances, operations, or providers?” In effect, this is “scanning the horizon” to see the big picture of potential impacts. This serves as a “sanity check” to ensure the potential impact of a decision on the individual patient experience, health services offered by an organization, information technology, etc. are not neglected.

- **Are all the important outcomes of that decision alternative being evaluated?** It isn’t enough to just focus on the dimensions when performing analysis. To perform a meaningful impact assessment, it is important to go further. The important measures of performance for those dimensions that may change as a result of the decision must be considered. To continue the example above, a question may be “How will this decision affect our organization’s finances?” The decision could impact revenue, debt financing, and business strategy, among other outcomes. Once the financial dimension has been identified, each of these outcomes for that dimension has to be considered separately, and potentially together.

- **Are the individual considerations for that outcome being evaluated?** Considerations are a set of questions that can be asked about impacts on a particular outcome. To continue the example from above, an outcome could be “How will this decision potentially impact our organization’s revenue?” Considerations for that outcome may include analyzing whether the decision will result in new services being offered, or a change in demand for existing services, among other questions. Identifying these considerations may also require determination of whether the information needed for a consideration is readily available. If not, can it be found elsewhere in the organization, or does it require additional research? This may be influenced by constraints such as the time and resources available to answer the questions, and the importance of the outcome to the organization’s mission in that case.

The Impact Assessment Framework is structured as a three-tiered model in exactly the same fashion, starting from general organizational impacts and moving down to more finely detailed assessment of how those impacts affect the organization at a tactical or operational level.

To begin with, at the highest level the IAF model is organized into eight dimensions. The dimensions are grouped into two categories, as illustrated in the figure below:
Each of the eight dimensions identifies the stakeholders, organizational units and business processes that constitute a typical healthcare organization. They are meant to be collectively comprehensive in scope for any healthcare organization. These dimensions can be grouped into two categories:

- **Experience of health** dimensions are primarily concerned with the direct impact of decisions on how health is experienced by the individual recipients themselves and their caregivers, by an organization’s health providers, and by the larger community that the organization serves and interacts with. These dimensions represent the primary mission of organizations that deliver health services in one form or another. In certain cases any negative impact of a decision alternative may be considered largely or completely unacceptable, such as choices that may unfavorably affect the safety of health services received by individuals, for example.

- **Organizational capability** dimensions impact the experience of health indirectly, by describing the impact of decisions on other parts of the health organization that provide the necessary foundations for health and health providers. These dimensions typically focus on internal processes and resources within the organization, although they often interact with and affect external stakeholders.
Each of the eight dimensions, in turn, has a number of outcomes associated with it. Outcomes are the second level of the model, and represent measures of performance for each dimension that could be impacted by the decision. For example, success in delivering health services can be measured by the extent to which individuals receive safe, high quality and efficient care that continuously improves, while giving providers the best possible support for their roles.

The table below shows the minimum set of outcomes for each dimension (each outcome is treated in greater detail in Appendix A):

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>A1: Experience of health</td>
</tr>
<tr>
<td></td>
<td>A2: Health across settings</td>
</tr>
<tr>
<td></td>
<td>A3: Privacy</td>
</tr>
<tr>
<td></td>
<td>A4: Empowerment</td>
</tr>
<tr>
<td></td>
<td>A5: Behavior</td>
</tr>
<tr>
<td>Health Services</td>
<td>B1: Patient safety and quality of care</td>
</tr>
<tr>
<td></td>
<td>B2: Advancing the standard of care</td>
</tr>
<tr>
<td></td>
<td>B3: Care efficiency</td>
</tr>
<tr>
<td></td>
<td>B4: Provider experience of care</td>
</tr>
<tr>
<td></td>
<td>B5: Health services model</td>
</tr>
<tr>
<td>Community</td>
<td>C1: Access to health services</td>
</tr>
<tr>
<td></td>
<td>C2: Public health</td>
</tr>
<tr>
<td></td>
<td>C3: Population health management</td>
</tr>
<tr>
<td></td>
<td>C4: Community engagement</td>
</tr>
<tr>
<td>Organization and Workforce</td>
<td>E1: Leadership and culture</td>
</tr>
<tr>
<td></td>
<td>E2: Organizational structure</td>
</tr>
<tr>
<td></td>
<td>E3: Personnel</td>
</tr>
<tr>
<td></td>
<td>E4: Human resources</td>
</tr>
<tr>
<td></td>
<td>E5: Performance</td>
</tr>
<tr>
<td>Strategy and Finance</td>
<td>F1: Revenue</td>
</tr>
<tr>
<td></td>
<td>F2: Operating costs</td>
</tr>
<tr>
<td></td>
<td>F3: Investment and debt</td>
</tr>
<tr>
<td></td>
<td>F4: Financial performance</td>
</tr>
<tr>
<td></td>
<td>F5: Business strategy</td>
</tr>
<tr>
<td></td>
<td>F6: Innovation strategy</td>
</tr>
<tr>
<td>Risk Management</td>
<td>G1: Clinical</td>
</tr>
<tr>
<td></td>
<td>G2: Regulatory</td>
</tr>
<tr>
<td></td>
<td>G3: Financial</td>
</tr>
<tr>
<td></td>
<td>G4: Operational</td>
</tr>
<tr>
<td></td>
<td>G5: Ethical</td>
</tr>
<tr>
<td>Information Management</td>
<td>H1: Information</td>
</tr>
<tr>
<td></td>
<td>H2: Systems</td>
</tr>
</tbody>
</table>

As an initial step in the assessment, the table above should be scanned to determine which outcomes are important for a decision. Of course, this raises a question: how is importance determined? It’s possible that a decision could have at least some impact on a great many outcomes, but it often isn’t practical to perform an exhaustive analysis at that level. Factors that help determine the importance of an impact include the extent of resources that would have to be mobilized to respond to an impact,
urgency, information available, consequences for organizational viability, or others. There is no hard-and-fast rule, and other criteria could be considered. The principal lesson is to be conscious of what criteria are chosen and how they are applied.

The set of outcomes provided by the IAF for each dimension are not intended to be exhaustive. There may well be additional outcomes that are relevant to the organization or a decision-maker’s perspective. However, the set of outcomes listed in the Figure 3 does capture a minimum set of outcomes that should be scanned when performing an impact assessment.

Finally, for each outcome, there are a number of questions to consider that can further flesh out the impact a decision may have on the organization. The IAF supplies a set of considerations to use as a starting point for determining the potential impact of a decision affecting that outcome. The considerations represent the third level of the IAF model; they are phrased as a series of questions that help to evaluate impact, as well as the information needed to perform that evaluation. In most cases, a consideration asks whether a decision alternative will change an important aspect of that outcome. In the example supplied below, there are three aspects to an individual’s experience of being empowered as an active and knowledgeable participant in decisions about their care represented as considerations:

- **Outcome A4: Empowerment**
  - Will individual access to information and/or tools to assist them in becoming active partners in health decision-making processes change?
  - What will the impact be on convenience and individual preference in making informed decision to select health services best suited to that individual?
  - Will the ability of patients to share information and exchange knowledge of their condition with caregivers and/or others similarly situated patients change?

**Figure 3: Consideration examples**

In the interests of simplicity and brevity, often the supplied considerations simply ask whether an aspect of the outcome will change. However, in most cases it will be important to determine the probability of change, how change will occur, and the potential magnitude of the impact on the organization and its stakeholders. Of course, no one has a crystal ball; it is therefore important to document any assumptions that underlie the analysis as well as the sources of information being relied upon.

The IAF supplies considerations for each outcome as a starting point, but they can be changed as needed if it benefits the analysis process. The IAF is intended to be a flexible model for assisting in decision-making, not a rigid set of rules.

The content for the current version of the Impact Assessment Framework is contained in Appendix A.
Section 3: Methodology for Applying the Impact Assessment Framework

The Impact Assessment Framework provides a model for thinking about the impact of decision alternatives, described in the previous section, as well as a methodology for applying that model to individual decisions, described below. The IAF methodology is designed to encourage the qualities of effective leaders described at the beginning of this document: making evidence-based decisions based on a holistic analysis of the decision’s impact on the organization and its stakeholders.

The methodology emphasizes performing a broad review of potential decision impacts before “zeroing in” on the impacts that are likely to be of greatest importance. Furthermore, the methodology uses a structured and repeatable process for performing analysis that can serve as the basis for documenting decisions and recommendations. The process includes the following three steps:

1. **Scan** the dimensions and outcomes table (above in Figure 2):
   a. Ensure outcomes for all eight dimensions are reviewed; this process will ensure that important impacts are not overlooked by focusing on the one or two dimensions that may be most immediately obvious.
   b. Select which existing outcomes from the table are most likely to be significantly impacted by the decision. Refer to the discussion of outcomes in the previous section regarding approaches to assigning outcome importance for a given decision. Selected outcomes will serve as the basis for the analysis performed in step 2 below.
   c. If needed, add further outcomes as measures of performance for a given dimension.

2. **Analyze** the considerations as needed for each selected outcome:
   a. Review the considerations supplied by the IAF, and determine which are relevant; modify or add other considerations as appropriate.
   b. Identify the information necessary to evaluate each selected consideration, and determine the most appropriate source for the information. In some cases it may be at hand, but in other instances it may require consultation and/or research.
   c. Document the impact of the decision alternative based on the analysis of the consideration with the information available. Where appropriate, document the probability of impact, how change will occur, and how that will affect the organization.
and stakeholders. Documentation should include the sources of information being relied upon as well as any assumptions that are being made.

3. **Summarize** the analysis at the appropriate level of detail for the scope of the decision to be made and the stakeholders who will be affected. Typically, a summary is not simply a recitation of each individual analysis finding, but rather a synthesis appropriate for the audience and purpose of the assessment. The IAF does not prescribe the format in which the summary should be provided.

Not all decisions will have the same scope or importance for an organization. The extent of analysis performed (such as additional research and consultation) and the level of detail of documentation can vary according to available time and resources, and the scope and strategic importance of the decision.
Section 4: Examples of the Impact Assessment Framework in Practice

Note: Please read the content of the Impact Assessment Framework in Appendix A before reviewing the examples below.

To illustrate the Impact Assessment Framework in practice, two examples are provided, at differing levels of complexity and organizational scope. One example is more tactical in nature, focused on deploying a mobile app. The other is more strategic, focused on an acquisition decision. Both examples are based on fictitious organizations.

The critical lesson to be learned from each example is not the analysis results themselves – it’s the process by which analysis was performed using the IAF as a structured tool to assist in evaluating alternatives. A different review of the same facts might well result in a different analysis, based on different assumptions, available data and organizational priorities. Different outcomes and/or considerations may be of greater importance in the examples as well. The second example also provides an example of customizing the IAF through the addition of a new outcome and two new considerations.

Example A: Implementing a mobile application for depression management

Like many health systems, Southern Indiana Health (SIH) is faced with a growing population of patients showing up in the emergency rooms and doctor’s offices complaining of severe depression, which sometimes leads to life-threatening behavior. This often overwhelms the system, as there are few psychiatric beds available, and existing medications are only partly effective. Many of the patients have disproportionately limited or no income compared to some other diagnoses, resulting in either Medicaid reimbursement, or no reimbursement as uncompensated care. A network of specialized mental health clinics has sprung up in the area in response, some run by the county and some for-profit. SIH has focused on marketing its cardiac and diabetes management services, where there are fewer competitors.

A software publisher has approached SIH about purchasing and deploying MoodMeasure, a mobile app for the IOS and Android platforms that patients can use to assess their current level of depression using a standardized inventory. The app enables users to see changes in their depression levels over time, send the data to their doctor, and email it to friends and family members who may be caregivers. The idea is that if patients can see how their moods change over time, they can better manage their condition by understanding contributing factors like stress level, diet, social isolation, and other concerns so they can potentially make positive changes. There is some evidence from apps for other conditions that the frequency of hospital admissions may decline by 5-10% as a result. No other health systems within the region have deployed anything similar to date. The business model for purchasing the app remains to be negotiated with the publisher.
MoodMeasure can securely transmit the patient’s self-assessment data, and in some cases integrate it directly into existing electronic health record systems so clinicians have access to the patient’s depression levels over time. However, the app has not been previously integrated with Epic, SIH’s electronic health record system. The app can be protected by a password, but it is not required. SIH is evaluating the benefits versus the costs and risks of purchasing MoodMeasure as a tool they can make available to their patient population.

**Step 1: Scan**

Because MoodMeasure is an instance of information technology designed to help individual patients, it is immediately apparent that the *Information Technology* and *Individual* dimensions will be significantly impacted by the decision, although it’s not likely to change where care is delivered or existing clinical practices to any significant degree. It’s also clear that MoodMeasure will generate additional information about a patient’s current level of depression that can be shared with providers at SIH, which poses both an opportunity for giving more information to providers at the point of care, as well as a challenge for modifying internal processes to disseminate and securely manage that information, especially since SIH has no prior experience deploying mobile apps. This will have at least some important impacts on the *Health Services, Operations, Organization and Workforce* and *Risk Management* dimensions.

Finally, making the app publicly available could potentially provide useful data on the levels of depression within the overall patient population and serve to differentiate SIH against other systems in region, which would impact both the *Community and Business Strategy* dimensions. Obviously, there will be some cost to deploying the app, but it’s not immediately clear whether the app will pay for itself in reducing Medicaid or uncompensated care so the overall financial impact is murky.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outcome</th>
<th>Potential Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Individual</td>
<td>A1: Experience of health</td>
<td>Will individuals perceive the app as helping them, and the organization being more responsive to their needs?</td>
</tr>
<tr>
<td></td>
<td>A3: Privacy</td>
<td>This is sensitive data, so how will it be protected?</td>
</tr>
<tr>
<td></td>
<td>A4: Empowerment</td>
<td>Will this help individuals make better decisions about the kind of care they receive and where they should get it?</td>
</tr>
<tr>
<td></td>
<td>A5: Behavior</td>
<td>Will entering their depression self-assessment data help patients connect their moods to the choices they make and the environment around them?</td>
</tr>
<tr>
<td>B: Health Services</td>
<td>B4: Provider experience of care</td>
<td>If we integrate the patient self-assessment into the EHR, will that improve their care?</td>
</tr>
</tbody>
</table>
Can this help us identify severe depression risks in the population and provide interventions sooner?

What kind of deal can we strike with the app publisher?

Will we need new processes to receive and disseminate the data from the individual self-assessment?

Will we need to change data management responsibilities for IT?

Can we market this app as a way to differentiate ourselves against the other local health systems?

How will the mental health clinics in the area respond to us playing a more aggressive role in depression treatment?

How hard will it be to deploy mobile apps for the very first time?

How do we integrate the mobile app data into our existing EHR database?

The Analysis phase provides an opportunity to consider the impact of adopting MoodMeasure on the outcomes identified in the Scan step. Note that some of the information required is readily available, but other data requires consultation and at least some research. In some cases the impact relies on a degree of speculation, but the assumptions underlying the impact can be documented.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outcome</th>
<th>Considerations</th>
<th>Data Needed</th>
<th>Assumptions / Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Individual</td>
<td>A1: Experience of health</td>
<td>Will it change the degree to which the individual perceives their care to be more centered on their needs?</td>
<td>Examples from other organizations that have deployed similar apps.</td>
<td>Generally positive outcomes from other health systems. Surveys show varying levels of improvement in user satisfaction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Will this impact the experience of caregivers (such as family members or others) for the individual?</td>
<td>Same as above.</td>
<td>Depends on how easy it is to share the information.</td>
</tr>
<tr>
<td></td>
<td>A3: Privacy</td>
<td>Will the ease of use change for individuals to decide when to consent to the sharing of their health information, and with whom?</td>
<td>Ask app publisher – can users specify a doctor, or is the information available system-wide?</td>
<td>Will be system-wide; too hard to customize for each provider and keep it updated. Users will need to understand this limitation.</td>
</tr>
<tr>
<td>Column</td>
<td>Question</td>
<td>Ask Question</td>
<td>Publisher Response</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>A4:</td>
<td>Will the protection of personal health information against unauthorized disclosures change?</td>
<td>Ask app publisher – what protections do they have to secure data on the device and when it is transmitted?</td>
<td>Publisher indicates that users can set up a password to secure app but don’t have to. Data is securely transmitted. Publisher must modify app to require passwords to limit liability issues for organization.</td>
<td></td>
</tr>
<tr>
<td>A4:</td>
<td>Will individual access to information and/or tools to assist them in becoming active partners in health decision-making processes change?</td>
<td>Ask app publisher – does/can app provide links to mental health resources inside/outside organization?</td>
<td>No present integration with other resources. This is an important feature so we will pay publisher to add this, and cost has not been determined yet.</td>
<td></td>
</tr>
<tr>
<td>A5: Behavior</td>
<td>Will the ability of individuals to share information and exchange knowledge of their condition with caregivers and/or other similarly situated individuals change?</td>
<td>Ask app publisher – can users email or print their self-assessments, or do they have to pass their mobile device around?</td>
<td>Users can email but not print; probably good enough in most cases although it is not inherently secure.</td>
<td></td>
</tr>
<tr>
<td>B: Health Services</td>
<td>B4: Provider experience of care</td>
<td>See MoodMeasure User Guide.</td>
<td>This is one of the primary purposes of the app.</td>
<td></td>
</tr>
<tr>
<td>C: Community</td>
<td>C3: Population health management</td>
<td>Check with clinical leadership on how they would use patient self-assessments over time when delivering care.</td>
<td>Positive feedback – clinicians like seeing trends in patient mood over time, not just how they feel that day. Will need to train staff on how to access and interpret data.</td>
<td></td>
</tr>
<tr>
<td>D: Operations</td>
<td>D3: Logistics and supply chain</td>
<td>Ask app publisher re licensing model – is it per user, per facility, a subscription fee or something else?</td>
<td>Need to create a business agreement with publisher and pay licensing based on overall annual patient population, which requires collecting data.</td>
<td></td>
</tr>
<tr>
<td>D4: Productivity and optimization</td>
<td>Will new processes need to be introduced, or will existing processes need to be redesigned?</td>
<td>Ask IT staff whether collecting data from user mobile devices is different than collecting it from traditional health organization sources.</td>
<td>IT staff indicate the app uses standardized interfaces that our apps already support, but the frequency of data will change.</td>
<td></td>
</tr>
<tr>
<td><strong>E: Organization and Workforce</strong></td>
<td><strong>E3: Personnel</strong></td>
<td>Will new roles need to be created and/or existing ones redefined?</td>
<td>Ask IT staff whether additional personnel are required to manage the incoming mobile data and update the EHR app.</td>
<td>Managing the incoming data will not add a lot of work, but updating the EHR could be a lot of work since we are using an off-the-shelf product. May need to display the mental health data to the provider outside of EHR system, at least to begin with.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>F: Strategy and Finance</strong></td>
<td><strong>F2: Operating costs</strong></td>
<td>Will the level and cost of uncompensated care change?</td>
<td>Get data on percentage of depression-related ER visits and hospital admissions that are uncompensated versus other diagnoses.</td>
<td>Unknown impact. In theory it should reduce costs because depression diagnoses presently make up a higher percentage of uncompensated care, but conclusions will have to wait for deployment of the app.</td>
</tr>
<tr>
<td><strong>F5: Business strategy</strong></td>
<td>Will the marketing strategy need to change?</td>
<td>Current PR campaign does not focus on user empowerment or mental health. Ask Communications team if campaign can be updated.</td>
<td>Advertising budget and campaign locked in until end of year. Can be considered for next year.</td>
<td></td>
</tr>
<tr>
<td><strong>F6: Innovation strategy</strong></td>
<td>Who are likely to be the friends or foes of any innovation that may be introduced, and how will this impact the ability to execute the decision?</td>
<td>Which organizations stand to benefit from the widespread deployment of the app, and who will be threatened?</td>
<td>County officials will likely welcome reduced burden for their public clinics. For-profit providers may feel threatened by potential loss of revenue to a competitor.</td>
<td></td>
</tr>
<tr>
<td><strong>G: Risk Management</strong></td>
<td><strong>G4: Operational</strong></td>
<td>Would changes to technical risk (such as the adoption of complex and/or unproven technologies) occur?</td>
<td>Has our organization previously implemented mobile apps? How well have we done at integrating with other health information systems?</td>
<td>Have not previously deployed mobile apps before, but have a successful track record with complex data integration projects.</td>
</tr>
<tr>
<td><strong>H: Information Technology</strong></td>
<td><strong>H1: Information</strong></td>
<td>Will information collection and/or dissemination requirements and/or abilities change?</td>
<td>Ask publisher what format will the self-assessment data be provided in, and what will the volume and frequency of the data likely be.</td>
<td>Data is published using an industry standard for clinical data that is well documented. App has not been deployed widely enough yet to get a sense of data volume, but each individual assessment is less than 10K of data.</td>
</tr>
</tbody>
</table>
### Step 3: Summarize

In this example, the only deliverable required is an analysis of the pros and cons of purchasing MoodMeasure, rather than a final recommendation or an action plan for implementation. This decision would not fundamentally change the strategic direction or priorities of SIH; it is more tactical in nature. As such, a simple text write-up that describes important insights gained from the analysis may be most appropriate.

Mental health admissions and outpatient care are our largest and growing costs, especially for Medicaid and uncompensated patients. We often see patients only at the point of crisis and do not have enough resources to adequately treat them. Any tool that can reduce admissions and help patients self-manage their depression could be of significant help, and evidence from other health systems indicates it can make a difference, especially if it helps patients to enlist their family members and other caregivers.

Our clinicians are also excited about using the data to identify depression trends and at-risk individuals. The app could potentially be a differentiator for us against our competitors, but we won’t have the resources to market it widely until next year. It is possible costs for uncompensated care will diminish based on examples for other health conditions, but we don’t have enough data yet to make a prediction.

On the other side, we will have to modify some of our business processes and IT systems, and it’s not completely clear what our costs will be to customize the app and our EHR system for our specific needs. We will also need to be careful about data security requirements so as not to introduce potential liability re HIPAA or other regulations.
Example B: Evaluating the acquisition of another health system

Sequoia Health is the largest provider of hospital health services in the Northern California and Southern Oregon region. Sequoia began as a series of academic teaching hospitals, and is considered a pioneer in the adoption of evidence-based medicine and has an excellent reputation for patient safety. However, Sequoia has been conservative in expanding beyond its core base of hospitals and has not experienced the revenue growth that competitors have seen through providing specialty care and wellness services, among others. Sequoia still primarily operates on a fee-for-service model of reimbursement. Sequoia does provide a number of community clinics in disadvantaged economic areas that offer low-cost treatment and free preventative care.

An opportunity has arisen to acquire NevadaMed, a health system in Western Nevada, which would expand the catchment area for Sequoia. The combined system would be the dominant provider of clinical health services throughout the region, although neither organization is a major player in mental health. Sequoia has acquired small local health systems in the past, but not a regional system of this size. Both firms are privately held.

NevadaMed has a reputation as an innovator. It began as an entrepreneurial chain of retail health clinics before acquiring acute care facilities. NevadaMed was one of the first systems to become an Accountable Care Organization, and establish a network of linked home health services, assisted living facilities and dental clinics, many of which earn higher margins than traditional clinical services. However, NevadaMed has had some problems as well. Their CEO has expanded aggressively, but as a result the organization has significant debt. There have also been some well-publicized lawsuits against NevadaMed for negligence causing death due to preventable medical errors, and NevadaMed lacks systematic quality improvement programs or widespread adoption of evidence-based medicine. Overall, however, both organizations have scored similarly on standardized measures of patient satisfaction.

There are some overlaps and incompatibilities. Some of the systems between the two organizations (such as accounting and human resources) are compatible. However, Sequoia uses the Cerner EHR and NevadaMed uses GE Centricity for its EHR. Sequoia has invested significantly in radiology diagnostic facilities and specialized labs, unlike NevadaMed, who contract these services out.

The Sequoia Board of Directors is currently evaluating the acquisition. The board wishes to identify potential impacts of combining the two organizations and to develop a strategy (with action items) to address them if the acquisition takes place, including the extent to which the business models and practices of one organization could be adopted by the other.
Step 1: Scan

It is almost self-evident that a major acquisition of another health system will be a strategic decision that is far-teaching in its scope and organizational impacts. As such, it would be surprising if any of the IAF dimensions were not impacted in important ways. This is particularly true since the Board is not looking at simply imposing the Sequoia practices and business model on NevadaMed, but rather combining elements of both organizations to create a “best of breed” health system.

In this example, it is especially important not to become overwhelmed by every potential impact no matter how small, as this would result in an unwieldy analysis that would not allow the Board to see the “forest for the trees.” Therefore, it is vital to identify which dimensions and outcomes would be significantly impacted. A good rule of thumb is to look at the final deliverable that is expected as a result of the assessment activity; in this case, it is a strategic plan with action items that would assist the board in making a final determination about the acquisition. Therefore, only outcomes that would have an important influence as to whether the acquisition should take place and impacts that would require significant resources to implement are appropriate to evaluate.

Of course, any acquisition is likely to have a major financial impact to Sequoia, especially since NevadaMed is carrying significant debt at present, and thus the Strategy and Finance dimension will be important. The two organizations use different models of reimbursement and have different philosophies concerning evidence-based medicine, so there will be a number of impacts to Health Services. The IAF does not fully address issues around integrating diagnostic services, so a new outcome will need to be added here. Differences in patient safety outcomes will be a particular concern, which affects Risk Management.

Combining two organizations potentially offers an opportunity for efficiency improvements and cost savings as redundant capabilities are reduced as much as possible, which will affect the Operations and Organization and Workforce dimensions. It’s already clear that there will be incompatibilities between clinical systems and a need for extensive sharing of data, so Information Management challenges will need to be a strategic priority.

Finally, there will be some impacts to individuals receiving health services and their surrounding communities, although not as many as one might initially imagine for such a strategic decision. From the perspective of the Individual dimension, the larger catchment area may provide more choices for where care is delivered, particularly if Sequoia can adopt NevadaMed’s better capabilities concerning transitions of care. Conversely, the Community in Nevada may benefit if NevadaMed implements the low-cost community clinic model already established by Sequoia.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outcome</th>
<th>Potential Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Individual</td>
<td>A2: Care across settings</td>
<td>How can we use NevadaMed’s experience to provide an integrated care experience across multiple kinds of care settings?</td>
</tr>
<tr>
<td></td>
<td>A4: Empowerment</td>
<td>Will the combined network offer patients more choice in where they receive their care?</td>
</tr>
<tr>
<td>B: Health Services</td>
<td>B1: Patient safety and quality of care</td>
<td>How do we improve the culture of safety at NevadaMed?</td>
</tr>
<tr>
<td></td>
<td>B2: Advancing the standard of care</td>
<td>How can we get NevadaMed docs to deliver care in consistent ways based on available medical evidence?</td>
</tr>
<tr>
<td></td>
<td>B3: Care efficiency</td>
<td>Can we extend NevadaMed ‘s model of moving care out of hospitals into clinics and home care into Sequoia?</td>
</tr>
<tr>
<td></td>
<td>B5: Health services model</td>
<td>Can we leverage the home health service across both orgs?</td>
</tr>
<tr>
<td></td>
<td>(New) Diagnostic services</td>
<td>Can NevadaMed take advantage of Sequoia’s diagnostics infrastructure for radiology and specialized labs?</td>
</tr>
<tr>
<td>C: Community</td>
<td>C1: Access to health services</td>
<td>Can we replicate Sequoia’s low-cost clinics across the combined organization?</td>
</tr>
<tr>
<td>D: Operations</td>
<td>D1: Capacity and utilization</td>
<td>Will our services be optimally located for the combined patient populations?</td>
</tr>
<tr>
<td></td>
<td>D2: Facilities and fixed assets</td>
<td>Should we close some potentially redundant clinics and administrative offices?</td>
</tr>
<tr>
<td>E: Organization</td>
<td>E1: Leadership and culture</td>
<td>What will the new blended governance structure look like?</td>
</tr>
<tr>
<td>and Workforce</td>
<td>E2: Organization structure</td>
<td>How can we use the acquisition to create better multidisciplinary care teams?</td>
</tr>
<tr>
<td></td>
<td>E3: Personnel</td>
<td>How will we consolidate staffs? Where can we reposition resources and where will reductions in force be required?</td>
</tr>
<tr>
<td>F: Strategy</td>
<td>F1: Revenue</td>
<td>How will ACO at NevadaMed impact revenue?</td>
</tr>
<tr>
<td>and Finance</td>
<td>F2: Operating costs</td>
<td>What kind of efficiency savings can we get through consolidation?</td>
</tr>
<tr>
<td></td>
<td>F3: Investment and debt</td>
<td>Which financing method for acquisition is best?</td>
</tr>
<tr>
<td></td>
<td>F4: Financial performance</td>
<td>Changes to margins and operating income?</td>
</tr>
<tr>
<td></td>
<td>F5: Business strategy</td>
<td>Anti-trust implications?</td>
</tr>
<tr>
<td>G: Risk Management</td>
<td>G1: Clinical</td>
<td>How do we minimize raised likelihood of Serious Reportable Events at NevadaMed and liability associated with them?</td>
</tr>
<tr>
<td>H: Information</td>
<td>H2: Systems</td>
<td>How will we deal with incompatible EHR systems?</td>
</tr>
<tr>
<td>Management</td>
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</tbody>
</table>
The strategic nature of this decision dictates that a greater number of considerations will need to be analyzed, and in many cases at a greater level of depth, because the decision is so important. This will require more research in many cases and in some cases working groups will need to be established to perform the analysis, as it is beyond the capabilities of any single individual. Forming cross-agency groups also enables the exchange of ideas, which supports the Board’s goal of blending best practices from each organization. Per the Board’s instructions, the analysis should also identify action items that would need to be completed both pre- and post-acquisition for successfully combining the organizations. This is a daunting list of analysis requirements, but typically in cases like this analysts have considerably more time and resources to assess impacts than they would have for tactical decisions such as the one provided in Example A.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Outcome</th>
<th>Considerations</th>
<th>Data Needed</th>
<th>Assumptions / Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Individual</td>
<td>A2: Care across settings</td>
<td>Will the ability to support individuals as they transition across multiple care settings (including acute, ambulatory, home, workplace, and other) change?</td>
<td>Review NevadaMed processes for transitions of care and determine if they can be applied at Sequoia.</td>
<td>Promising. Most of the processes for transitioning care between acute, ambulatory and home settings do not require a lot of new technology and training.</td>
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<td>A4: Empowerment</td>
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<td></td>
<td></td>
<td>What will the impact be on convenience and individual preference in making informed decisions to select health services best suited to that individual?</td>
<td>Evaluate ability to implement NevadaMed specialty care offerings in Sequoia’s catchment area</td>
<td>Can be done, but would require additional state provider licensures and certifications as well as facility upgrades. Better left till at least a couple of years after acquisition.</td>
</tr>
<tr>
<td>B: Health Services</td>
<td>B1: Patient safety and quality of care</td>
<td>Will the achievement of objectively measured patient safety goals (e.g., Joint Commission National Patient Safety Goals), including preventable medical errors, change?</td>
<td>Look at NevadaMed rate of Serious Reportable Events and compare to Sequoia.</td>
<td>SRE rate at NevadaMed is 15% higher. Need strategy to improve culture of safety and reliability or risk of acquisition may be unacceptable.</td>
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<tr>
<td></td>
<td></td>
<td>Will the adoption of safe practices (e.g., as described by the National Quality Foundation Safe Practices for Better Healthcare) change?</td>
<td>Ask clinical leaders - can safe practices from Sequoia be adopted at NevadaMed?</td>
<td>Clinical staff opinion is that it can and must be done. Would require at least a year of intensive training of clinical and non-clinical staff and changes to operating procedures.</td>
</tr>
<tr>
<td>B2: Advancing the standard of care</td>
<td>Will the use of evidence-based medicine and standardized care pathways change?</td>
<td>Review typical cost/effort for organizations of similar size to adopt?</td>
<td>Looked at past history from Sequoia as well as other industry leaders like Geisinger and Intermountain. Some reduction in clinical productivity during adoption but significant improvements in productivity and quality thereafter.</td>
<td></td>
</tr>
<tr>
<td>B3: Care efficiency</td>
<td>Will the types of provider roles (such as a physician, nurse, etc.) able to perform a given care provision task change?</td>
<td>Evaluate NevadaMed’s treatment protocols for Type II diabetes as an example.</td>
<td>NevadaMed has been successful in transferring many basic care tasks from physicians and nurses to nurse practitioners and physician assistants.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can the type of setting of care (e.g., inpatient, ambulatory, home, etc.) for a given care provision task change?</td>
<td>As above</td>
<td>NevadaMed has moved most diabetes care into home settings with occasional clinic visits. Promising model for Sequoia to adopt.</td>
<td></td>
</tr>
<tr>
<td>B5: Health services model</td>
<td>Will the organization’s ability to offer care in multiple settings (including acute, ambulatory, home, and others) change?</td>
<td>Review NevadaMed business plan.</td>
<td>NevadaMed is already a leader in multi-setting care. Investigate how this could be applied at Sequoia facilities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Will the ability and/or need to adopt value and performance-based business models change?</td>
<td>Understand how ACO model changes reimbursement if Sequoia elects to adopt, and expertise required to transition away from fee for service care. Evaluate NevadaMed experience and changes to financials.</td>
<td>This would be a major strategic effort that would take at least two years to complete. It would harmonize the Sequoia and NevadaMed business models, but it is too early to determine whether the opportunity for revenue growth and margin improvement under a shared savings model outweighs the risk. Engage consultants to advise us.</td>
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<td></td>
<td>Will the ability and/or need of the organization to assume health payer responsibilities change?</td>
<td>Research financial risk adjustment models for shared savings at NevadaMed to determine potential applicability for Sequoia</td>
<td>Possible but complex. Sequoia would need better data analytic capabilities for population health management and obtains specialized teams and systems for claims management.</td>
<td></td>
</tr>
<tr>
<td>(New) Diagnostic services</td>
<td>(New) Will the organization’s integration of clinical and diagnostic services change?</td>
<td>Research requirements for NevadaMed to transition from existing diagnostic service contracts to Sequoia services.</td>
<td>Would appear to be relatively low level of effort; Sequoia diagnostic systems support electronic interfaces already used by NevadaMed clinical systems.</td>
<td></td>
</tr>
<tr>
<td>C: Public Health</td>
<td>C1: Access to health services</td>
<td>Will disparities in access to health services between specific populations (such as ethnicity, age, gender, income, location, other) change?</td>
<td>Investigate adoption of Sequoia community clinics by NevadaMed.</td>
<td>Could potentially purchase some existing retail clinics in Western Nevada and adapt them for community model of care.</td>
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<tr>
<td>D: Operations</td>
<td>D1: Capacity and utilization</td>
<td>Will the overall patient capacity of the organization change, and where?</td>
<td>Overall capacity will clearly increase. Look at facilities map to determine overlaps and gaps.</td>
<td>A few facilities overlap in Eastern California with NevadaMed’s nearby sites and could be consolidated. No care sites currently in Malheur County in Eastern Oregon, which sits between Sequoia and NevadaMed’s existing facilities.</td>
</tr>
<tr>
<td></td>
<td>D2: Facilities and fixed assets</td>
<td>Will facilities need to be added, removed, consolidated or redesigned?</td>
<td>Get data from facilities on current space usage.</td>
<td>Low utilization rates for each org’s radiology and claims coding facilities. Could be consolidated.</td>
</tr>
<tr>
<td>E: Organization and Workforce</td>
<td>E1: Leadership and culture</td>
<td>Will changes to the organization’s governance structure and/or leadership be required?</td>
<td>Look at past Sequoia acquisitions to see how acquired leadership team was integrated into overall governance.</td>
<td>General practice has been to make acquired CEO a Senior VP with responsibility for acquired company business unit for first two years. However, NevadaMed is much larger and this will take time to negotiate.</td>
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<td></td>
<td></td>
<td>Will the organization’s culture of innovation change?</td>
<td>Investigate how NevadaMed’s corporate innovation R&amp;D model to determine applicability for Sequoia.</td>
<td>Promising. NevadaMed dedicates 1% of operating income to innovation labs and research projects, and provides compensation incentives for introducing innovations. Could be replicated at Sequoia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(New) What are the risks associated with merging two different business cultures?</td>
<td>Create a joint advisory group to evaluate differences in culture of ethics and incentives</td>
<td>NevadaMed provides more direct incentives to employees for identifying cost-cutting measures; Sequoia emphasizes safety improvements.</td>
</tr>
<tr>
<td></td>
<td>E2: Organizational structure</td>
<td>Will collaboration between organizational units and the establishment of multidisciplinary teams need to change?</td>
<td>Look at current clinical org charts for both organizations to determine if there are opportunities to form multidisciplinary team for specific conditions.</td>
<td>Cardiac care seems promising. Both organizations have national leaders that could collaborate on creating specialty teams to be deployed in both organizations.</td>
</tr>
</tbody>
</table>
### E3: Personnel

**Will the quantity of positions for roles change?**

- Have HR and Operations investigate which positions are redundant across the two organizations. Attempt to quantify based on evidence from previous Sequoia acquisitions.

- Past Sequoia acquisitions show about a 35% reduction in force for administrative staff, 5% for clinical.

### F: Strategy and Finance

#### F1: Revenue

**Will the basis for reimbursement (e.g., shared savings, bundled payments, capitation or other models) change?**

- Research cost/effort for Sequoia to adopt ACO model, industry experience to date on profitability impact from a Medicare shared savings reimbursement model.

- Initial CMS findings on shared savings ACOs indicates only 25% achieved shared savings (NevadaMed was one). Significant risk associated with transition.

#### F2: Operating costs

**How will labor costs to the organization (e.g., in the number and/or cost of personnel) change?**

- Identify cost savings / productivity gains through workforce right-sizing. Also determine differences in labor rates across affected states.

- High-level analysis completed. However, this needs to be analyzed in detail across both teams and presented to Board for approval.

#### F3: Investment and debt

**Will the organization need access to additional capital, such as additional debt financing or issue equity offerings, and under what terms?**

- Talk to investment banks to discuss potential terms for a bond issue. No intention to go public and issue equity at present time.

- Several banks interested in offering; lead bank would need to be selected and terms negotiated.

- Is the organization’s creditworthiness likely to be affected?

- Meet with corporate credit rating agencies to discuss implications of assuming NevadaMed debt.

- Credit rating will impact interest rate required on bonds. Investigate other health organizations of similar size and debt levels that have issued debt for guidance.

#### F4: Financial performance

**How will operating margins, income and the balance sheet change?**

- Model how inclusion of NevadaMed’s higher-margin services will impact overall margins.

- Initial analysis indicates an overall 2% margin improvement across combined organization, assuming staff/facilities consolidation occurs.

#### F5: Business strategy

**What legal, policy or market barriers may exist to implementing the decision?**

- Combined entity will be largest player in regional market. Get Legal to review potential anti-trust implications.

- Legal analysis indicates acquisition may be considered a horizontal merger, lessening competition and increasing risk of anti-trust action. More research required, especially on status of other regional competitors.
<table>
<thead>
<tr>
<th>G: Risk Management</th>
<th>G1: Clinical</th>
<th>Should strategic partnerships and/or affiliations be considered?</th>
<th>Research potential partners for mental health services.</th>
<th>Two promising candidates, one a telehealth counselling service and the other a chain of psychology clinics.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Will the likelihood of a Serious Reportable Event change?</td>
<td>Look at NevadaMed rate of Serious Reportable Events and compare to Sequoia.</td>
<td>SRE rate at NevadaMed is 15% higher. Need strategy to improve culture of safety and reliability or risk of acquisition may be unacceptable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is there a changed risk of negligence/malpractice exposure, or deviation from accepted standards of care?</td>
<td>Perform root-cause analysis on NevadaMed SREs described above and determine common contributors to determine whether risk of negligence is greater than Sequoia.</td>
<td>Initial analysis appears to show some common factors – lack of standardized care pathways and understaffed NICU, for example. There is an increased risk until these causes can be addressed.</td>
</tr>
<tr>
<td>H: Information Management</td>
<td>H2: Systems</td>
<td>Will revisions to the organization’s technology roadmap be required?</td>
<td>Obtain the current technology roadmap / enterprise architecture documentation from both organizations to determine how much effort it is required to create a harmonized future roadmap.</td>
<td>Some points of commonality – both organizations moving towards a service-oriented architecture, for example. However, Sequoia has standardized on Windows as a server platform and NevadaMed uses Linux and open source software where possible to reduce costs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Will relocation, implementation, consolidation and/or modification of systems be required?</td>
<td>Use information from technology roadmaps above to identify changes required.</td>
<td>Easiest to focus initially on consolidating accounting and HR systems since they use the same platforms. Other systems will need to run separately at least for the first five years.</td>
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<td></td>
<td></td>
<td>Will information and/or systems interoperability requirements change?</td>
<td>Talk to IT team to determine how much effort will be required to exchange clinical data between Cerner and GE Centricity</td>
<td>Can use industry standards like eHealth Exchange to at least share discharge summaries between systems at first. More comprehensive data integration will require systems customization and at least three years.</td>
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<td></td>
<td>Will technology infrastructure (e.g., telecommunications, networking, systems, and data operating centers) need to change?</td>
<td>Data and voice communication requirements among combined sites need to be investigated. Also need to evaluate opportunities to combine IT operating centers.</td>
<td>Initial consultation with communications provider indicated that high-speed fiber optic cables between Sequoia and NevadaMed HQs required. Some opportunity to combine data centers but making security interoperable will be time-consuming.</td>
</tr>
</tbody>
</table>
Step 3: Summarize

Per the Board’s instructions, the result of the analysis should be an actionable strategy that can serve as guidance for the acquisition implementation. In some cases, that may require further investigation, which should be noted. In this case, a detailed and structured summary is appropriate since it will serve as the basis for organizing and prioritizing additional activities. The table below would clearly be expanded in actual decision-making to a greater level of detail, but it is sufficient for the purposes of this example.

<table>
<thead>
<tr>
<th>Acquisition Impact</th>
<th>Strategy and Action Items</th>
</tr>
</thead>
</table>
| Patient care           | • Investigate how to implement NevadaMed’s multi-settings care model in Sequoia facilities in first two years  
                        | • Look at adding NevadaMed specialty care offerings at Sequoia after first two years         |
| Clinical practice      | • Create a joint care safety and quality team to further investigate higher rate of SREs at NevadaMed and develop an action plan for implementing standardized care pathways using evidence-based medicine. If this cannot be done then acquisition represents a major financial and reputational risk for Sequoia. |
| Health services model  | • Engage consulting firm to advise on costs/benefits of Sequoia adopting ACO model.        |
| Community health       | • Develop strategy to extend Sequoia’s community clinic model to Nevada region, while taking advantage of NevadaMed’s better integration between different sites of care |
| Facilities             | • Create a combined facilities inventory between the two systems that lists services/functions provided by each, operating costs/rent, etc. to identify opportunities for consolidation / closure. |
| Leadership and culture | • Create a joint committee to identify workforce consolidation opportunities and report back to the Board.  
                        | • Cost out expanding the NevadaMed Innovation Lab to include Sequoia and changes to employee innovation incentives. |
| Financial management   | • Further meetings with investment banks to discuss possible debt issue and likely terms.     |
| Risk management        | • Further legal analysis of risk of anti-trust action and potential response                 |
| IT                     | • Develop a joint technology roadmap between the two organizations to ensure we are investing in the right IT solutions.  
                        | • Meet with EHR vendors to see if they have a plan for product interoperability for at least some data.  
                        | • Investigate infrastructure costs for linking data and voice services between sites in both organizations. |


Appendix A: The Impact Assessment Framework

Experience of Health

Dimension A: Individual

This dimension is concerned with the impact of a decision on those who receive health services from an organization. Note that this extends beyond the concept of a “patient.” While in many cases the individual may be receiving clinical care from a provider such a physician or a nurse, which may not always be the case; they could be receiving wellness coaching from a care coordinator, for example. Moreover, the individual may experience health services in a variety of clinical and non-clinical settings, including self-care in homes.

- **Outcome A1: Experience of health**
  - Will the individual experience of care (measured through standardized assessments such as the CG-CAHPS survey) change, both overall and according to specific measures?
  - Will it change the degree to which the individual perceives their care to be more centered on their needs?
  - Will this decision impact the extent to which preventive care and wellness services are available for the individual?
  - Will this impact the experience of caregivers (such as family members or others) for the individual?
  - Will the collection of information on the individual experience of health within the organization change?

- **Outcome A2: Health across settings**
  - Will the role of primary care change?
  - Will the ability to interact with individuals remotely change?
  - Will the ability of ability to assist individuals in navigating health services within the organization change?
  - Will the ability to support individuals as they transition across multiple care settings (including acute, ambulatory, home, workplace, and other) change?
  - Will coordination of health for the individual with external healthcare entities change?

- **Outcome A3: Privacy**
  - Will physical privacy for individuals change within a care setting?
  - Will the ease of use change for individuals to decide when to consent to the sharing of their health information, and with whom?
  - Will the protection of personal health information against unauthorized disclosures change?

- **Outcome A4: Empowerment**
  - Will individual access to information and/or tools to assist them in becoming active partners in health decision-making processes change?
  - What will the impact be on convenience and individual preference in making informed decisions to select health services best suited to that individual?
  - Will the ability of individuals to share information and exchange knowledge of their condition with caregivers and/or other similarly situated individuals change?

- **Outcome A5: Behavior**
  - Will individual adherence to treatment plans (including medications) change?
  - Will individuals access to tools to assist them in measuring and managing their behaviors change?
  - Will the ability of patients to appropriately diagnose and treat themselves with provider support change?
Dimension B: Health Services

Health Services refers to the services (and goods) that are provided to individuals by an organization. In the past, “provider” has often been synonymous with clinicians such as doctors, nurses and others, but in modern integrated health systems it is helpful to think more broadly to roles like care coordinators, health coaches, and others. Health system models have also expanded to incorporate payer as well as provider capabilities, among others.

- **Outcome B1: Patient safety and quality of care**
  - Will the achievement of objectively measured patient safety goals (e.g., Joint Commission National Patient Safety Goals), including preventable medical errors, change?
  - Will the adoption of safe practices (e.g., as described by the National Quality Foundation Safe Practices for Better Healthcare) change?
  - Will the quality of care according to objective measures established by the organization potentially change?

- **Outcome B2: Advancing the standard of care**
  - Will the use of evidence-based medicine and standardized care pathways change?
  - Will the ability of the organization to incorporate and disseminate advances in the science of care change?
  - Will the ability of the organization to continuously learn and improve change?
  - Will the ability of the organization to benchmark itself against other similarly situated organization changes?
  - Will the ability for clinicians to evaluate their performance against their peer group change?

- **Outcome B3: Care efficiency**
  - Will patient flows through the organization change?
  - Will the time required by a provider to deliver care of equal quality as before change?
  - Will the types of provider roles (such as a physician, nurse, etc.) able to perform a given care provision task change?
  - Can the type of setting of care (e.g., inpatient, ambulatory, home, etc.) for a given care provision task change?

- **Outcome B4: Provider experience of care**
  - Will existing clinical workflows need to change?
  - Will the ability of the provider to focus on interaction with the individual during an encounter change?
  - Will the information and decision support provided at the point of care to support the provider’s decision-making capabilities change?
  - Will medical documentation requirements for the provider change?
  - Will training, certifications and/or licensure requirements for providers change?

- **Outcome B5: Health services model**
  - Will specialty health services offered by the organization change?
  - Will integration with related services such as pharmacy and diagnostic services change?
  - Will the organization’s ability to offer care in multiple settings (including acute, ambulatory, home and others) change?
  - Will the adoption of value and performance-based business models and/or payer responsibilities change?
  - Will the ability and/or need of the organization to integrate non-health services (such as transportation, housing or other) change?
Dimension C: Community

In this context, “community” refers to the impact of the organization on the health of the public. This could include questions about who has access to health services, support for combating threats to public health and improving the health of populations, and engaging community organizations as allies in health.

- **Outcome C1: Access to health services**
  - Will disparities in access to health services between specific populations (such as ethnicity, age, gender, income, location, other) change?
  - Will the affordability of health services change overall, and the number of individuals eligible for care through insurance coverage change?
  - Will proximity to health services change, and for whom?
  - Will linguistic and/or cultural barriers to seeking health services change?

- **Outcome C2: Public health**
  - Will the ability to identify and combat threats to public health in a timely manner change?
  - Will the ability to coordinate responses to public health threats with other entities change?
  - Will the organization’s preparedness for public health crises change?
  - Will the need for programs to promote healthy behaviors change?

- **Outcome C3: Population health management**
  - Will the ability to predict, identify and proactively treat populations at risk for specific health conditions change?
  - Will the incidence and severity of specific chronic diseases within the target population(s) potentially change?
  - Will the ability to identify and/or address social determinants of health change?

- **Outcome C4: Community engagement**
  - Will engagement and/or coalitions with community-run health resources change?
  - Will interaction change with community services not focused on care (e.g., housing, transportation, legal, other)?
  - Will the organization’s social responsibilities change?
Organizational Capability

Dimension D: Operations

Like businesses in other industries, healthcare systems have to be concerned with the day-to-day “nuts and bolts” required to support those who directly provide services to their clients. Although much of this may be largely invisible to the patient, optimizing the management of facilities, suppliers, logistics and available resources is crucial to the long-term viability of any organization.

- **Outcome D1: Capacity and utilization**
  - Will the overall patient capacity of the organization change, and where?
  - How will utilization of available resources (including beds, staff, other) change?
  - Will average patient length of stay / bed turnover rates change for acute care facilities, if any?

- **Outcome D2: Facilities and fixed assets**
  - Will facilities need to be added, removed, consolidated or redesigned?
  - Will changes to the quantity and composition of fixed assets of other types (e.g., medical equipment, vehicles, etc.) be required?
  - Will physical security requirements change?
  - Will facilities maintenance procedures change?

- **Outcome D3: Logistics and supply chain**
  - Will this impact logistics procedures, such as scheduling, receiving, distribution or others?
  - Will procurement of goods and services change?
  - Will supply processes and/or policies need to change?
  - Will required on-hand quantities and composition of the medical supplies requiring replenishment change?
  - Will inventory management processes and technology need to change?

- **Outcome D4: Productivity and optimization**
  - Will new processes need to be introduced, or will existing processes need to be redesigned?
  - How will this decision impact the overall productivity of specific units or the organization as a whole?
  - Will this decision impact the implementation or effectiveness of performance and quality improvement methodologies (e.g., Lean Six Sigma, IHI Model for Improvement, others)?
Dimension E: Organization and Workforce

Most important decisions will introduce change of one kind or another into the organization. Ultimately, these changes need to be implemented by individuals and teams. Effective leaders utilize organization change management processes to understand how decisions will affect the culture and structure of the organization, as well as the expectations and responsibilities of individual employees.

- **Outcome E1: Leadership and culture**
  - Will changes to the organization’s governance structure and/or leadership be required?
  - How will organizational change management processes be affected?
  - Will the degree of health provider participation in decision-making change?
  - Will the organization’s culture of innovation change?
  - Will organizational transparency and accountability change?

- **Outcome E2: Organizational structure**
  - Will the ability of individuals to work and decide effectively in teams change?
  - Will existing reporting/accountability hierarchies need to change?
  - Will collaboration between organizational units and the establishment of multidisciplinary teams change?
  - Will the number and composition of organizational units change?

- **Outcome E3: Personnel**
  - Will new roles need to be created and/or existing ones redefined?
  - Will the quantity of positions for roles change?
  - Will existing labor agreements be impacted?
  - Will training requirements for specific roles change?

- **Outcome E4: Human resources**
  - Will this decision change the cost of employee benefits?
  - Will this require updates to HR policies?
  - Will this change the location of work for any employees?

- **Outcome E5: Performance**
  - Will employee performance measurement change?
  - Is employee satisfaction and retention likely to change?
  - Will changes to compensation and incentives be needed?
Dimension F: Strategy and Finance

Whether an organization is for-profit or non-profit, leaders still have a responsibility to ensure financial viability and competitive positioning. Although healthcare has unique models of revenue and costs based on insurance reimbursement and significant uncompensated care, most of the other aspects of financial management are common to all industries. Many financial stakeholders may be external, such as banks, creditors, shareholders, and others. Business and innovation strategy are important tools to differentiate an organization from competitors and pursue new opportunities for growth.

- **Outcome F1: Revenue**
  - Will the services or goods offered by the organization change?
  - How will pricing and demand for goods and/or services change?
  - Will the basis for reimbursement (e.g., shared savings, bundled payments, capitation or other models) change?
  - Will billing and debt collection procedures need to change?

- **Outcome F2: Operating costs**
  - How will labor costs to the organization (e.g., in the number and/or cost of personnel) change?
  - How will current asset costs (e.g., replenished supplies, etc.) change?
  - Will the level and cost of uncompensated care change?
  - Will the ability of the organization to measure the cost of care by episode change?
  - What impact will there be on the “cost curve” – the projected future rate of cost change?

- **Outcome F3: Investment and debt**
  - What capital expenditures in fixed assets are required?
  - Will the organization need access to additional capital, such as additional debt financing or issue equity offerings, and under what terms?
  - Will the organization’s investment portfolio and strategy need to change?
  - Is the organization’s creditworthiness likely to be affected?

- **Outcome F4: Financial performance**
  - How will operating margins, income, and the balance sheet change?
  - How will liquidity and cash flow change?
  - What impacts will this have on the projected compound annual growth rate?
  - What is the likely impact to measures of equity performance?

- **Outcome F5: Business strategy**
  - What legal, policy or market barriers may exist to implementing the decision?
  - Should mergers and/or acquisitions be considered?
  - Should strategic partnerships and/or affiliations be considered?
  - Will the marketing strategy need to change?

- **Outcome F6: Innovation strategy**
  - Will the required level of organizational investment in innovation change?
  - Who are likely to be the friends or foes of any innovation that may be introduced, and how will this impact the ability to execute the decision?
  - Will this result in access to new or underserved health markets that the organization could not have successfully competed for previously?
  - How will the organization’s ability to differentiate against other health providers within the same area change?
Dimension G: Risk Management

Successful organizations don’t simply overtake competitors by implementing innovative strategies; they also avoid falling victim to foreseeable risks that can devastate an organization’s finances, culture of safety, compliance liability, and reputation. These organizations have defined processes in place to recognize risks, evaluate their potential impact, and develop effective mitigation strategies. In many cases external stakeholders may include legal and regulatory bodies as well as the media.

- **Outcome G1: Clinical**
  - Will the likelihood of a Serious Reportable Event change?
  - Is there a changed risk of negligence/malpractice exposure, or deviation from accepted standards of care?

- **Outcome G2: Regulatory**
  - Will compliance with health-related policy and regulations change?
  - Will impact with the non-health regulations change?
  - Will the decision impact accreditation for facilities?

- **Outcome G3: Financial**
  - Will the organization’s ability to model financial risks change?
  - Will the ability to detect and prevent fraudulent practices change?
  - Would the decision violate the terms of any existing contracts?
  - Would this decision change the risk of shareholder litigation?
  - Are there other possible implications for risk of financial loss?

- **Outcome G4: Operational**
  - Will risk management processes need to change?
  - Is employee turnover or talent availability likely to change?
  - Would the risk of closure/non-availability of all or part of a facility change?
  - Would the projected schedules for key projects change?
  - Would changes to technical risk (such as the adoption of complex and/or unproven technologies) occur?

- **Outcome G5: Ethical**
  - Would this decision risk violation of established medical ethics?
  - Would this decision risk contravene the organization’s core values?
  - Would the reputational risk to the organization change?
Dimension H: Information Management

Information management is often assumed to be synonymous with technology, but its scope is actually much broader. Information is the lifeblood of any modern enterprise, and it can take many forms. Increasingly, health organizations rely on data not just to manage their day-to-day operations but to get broader insights into the health of their patient populations, the effectiveness of treatments, and more. External stakeholders often include those who both supply and consume information used by an organization.

- **Outcome H1: Information**
  - Will information collection and/or dissemination requirements and/or abilities change?
  - Will changes occur to the quality and completeness of available information?
  - Will the need and/or ability to exchange health information with other entities change?
  - Will the need and/or ability to organize and analyze information change?
  - Will the continuity and timely availability of information across care settings change?

- **Outcome H2: Systems**
  - Will revisions to the organization’s technology roadmap be required?
  - Will relocation, implementation, consolidation, and/or modification of systems be required?
  - Will information and/or systems interoperability requirements change?
  - Will information and systems security requirements change?
  - Will technology infrastructure (e.g., telecommunications, networking, systems, and data operating centers) need to change?