The Intellix Approach to Optimization

Executive Summary

At Intellix, we strongly believe that optimization is an integral part of implementing an electronic health record, and that it should be a carefully planned, multi-disciplinary, strategically managed Program. Our optimization methodology is driven by the guiding principle that optimization should be performance-guided, user-oriented, and data-driven. In other words, we believe that goal of optimization is to determine what clinicians and staff need to increase their performance, provide these tools, and evaluate the results whenever possible with objective metrics. This methodology has helped our clients achieve objective, measurable success in key performance indicators, including operational efficiency, clinical quality, user happiness, and patient satisfaction.

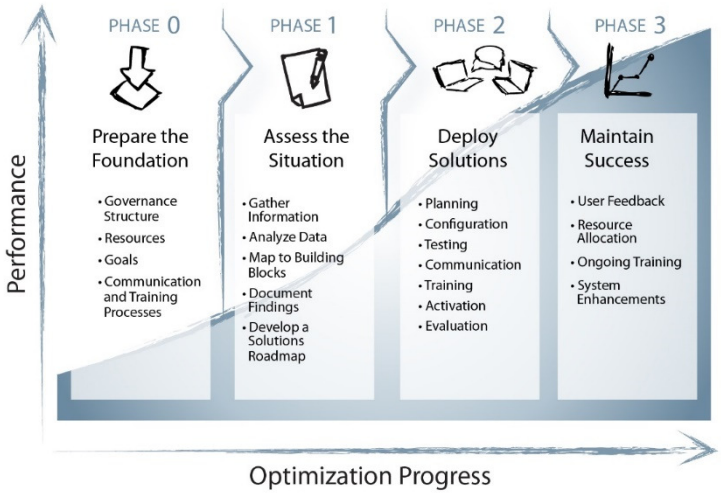
Methodology

The heart of Intellix's proven, data-driven optimization methodology is the concept of Optimization Building Blocks. These Building Blocks are categories of optimization targets that allow our Optimization Analysts to analyze a seemingly complex problem and break it down into simpler, manageable issues, thereby making it easier to identify the root cause(s). These root causes are mapped to specific Building Blocks, as are proposed remediation actions. Groups of remediation actions in turn rollup into overall recommendations that give a custom-tailored roadmap to optimize the deficient situation. At a high level, these Building Blocks fall into six broad categories:

- Behavior: How people interact with technology
- Process: How people interact with each other
- Systems: EMR system functionality including ancillary systems, hardware, network etc.
- Content: EMR data, including orders, notes, formularies, etc.
- Training: Continuous improvement training program and methodology
- Analytics: Collecting, analyzing, and reporting aggregate EMR data

The exact Building Blocks that are used will depend on the details of each situation. More information about these Building Blocks can be found in our full "Approach to Optimization" White Paper.

The first step in our Optimization Methodology is to validate that certain key elements needed for an effective Optimization Program are in place at your organization. If these have not yet been established, we can help your staff develop them in a preparatory "Phase 0" stage. Intellix's experienced Optimization Analysts will then use our Optimization Building Blocks methodology to Assess the target for optimization and develop recommendations for improvement (Phase 1). Depending on the goals defined in the Preparation phase, the Assessment phase can be conducted as a rapid



"snapshot" of a specific area of the organization, a more detailed evaluation of a single area, or a comprehensive assessment of multiple areas. The goal is to identify the critical targets for optimization by objectively assessing the current situation using first-hand observations, data analytics, and well-crafted user surveys, and then map these targets back to the Optimization Building Blocks to develop a clear, efficient action plan to remediate.

The Assessment findings will be presented in a ranked list, prioritized by an overall "Likelihood of Quick Success" score shown in a "traffic light" style dashboard with Green indicating a high likelihood of quick success and Red a low immediate likelihood (although the change still may have a high likelihood of success in the long run). This allows leadership to easily see which recommendations will yield "quick wins" and help them prioritize which ones should be deployed first, as shown in the following example:

Recommendation	Comments	Optimization Building Block	Potential Benefits	Build Effort	Workflow Impact	Training Effort	Governance Effort	Scope of Change	Dependencies		Likelihood of Quick Success
Add InBasket Speed Button functionality	Adding these buttons will offer more information right on the InBasket screen	System	◔	◑	◔	◔	○	●	○		🟢
Add more Flowsheet views	Build new flowsheet views or refine the current flowsheet views to only include pertinent data.	Content	◑	◑	○	○	◑	◑	◔		🟢
Telephone Note Workflow	Users are unclear on how to use the different types of Phone Notes. Train users on the difference between telephone notes and refill requests, and how to use flags and quick notes. Provide policies and procedures for using each of the documentation types.	Behavior, Process	○	○	◕	◕	◑	●	○		🟡
Deploy Anticoagulation module	Currently clinicians are using general EMR tools to track Anticoagulation patients. Installing specialized tools for this will increase efficiency and quality, especialy when combined with a Coumadin registry or therapeutic anticoagulation (Coumadin) registry; use Cardiology as a pilot site	Process, System	○	◑	◕	◑	◑	◑	◑		🟡
Allow providers to run reports on their patients	Top Requests were reports for Key Lab Results, Open Orders, Last Visit, Next Appointment, Demographics. Recommend this be a longterm project or a gradual rollout with pilot reports and users	Analytics, System	◑	●	◔	◕	●	●	◑		🔴

Example of an Optimization Assessment Dashboard. *Open circles represent the most favorable conditions (e.g.: greatest benefit or least effort), and closed or partially filled circles represent less favorable conditions.*

The recommendations will describe what needs to be done to fill the gap between current and desired/future state, and make sure these activities are in compliance with your organization's regulations. Deliverables from the Optimization Assessment deliverables will also include a high-level plan to execute, deploy, and activate the recommendations. This allows the Assessment team to provide a roadmap for future improvement and reduces the chances of information being lost between assessment and implementation.

Following the Assessment will be Phase 2, Deployment. In this phase, the Optimization Analyst(s) will build, test, train, and activate the Assessment recommendations, including managing the overall optimization project. Our unique, data-driven, user-focused Optimization Methodology will enable Intellix to partner with your team to solve your most difficult optimization issues. In addition, our industry-leading experts will leave your team with the tools necessary to maintain ongoing optimization into the future (Phase 3, On-going Improvement).

Experience

Our Optimization Methodology has helped our clients achieve objective, measurable success in key performance indicators, including operational efficiency, clinical quality, user happiness, and patient satisfaction. Below are brief descriptions of just some of the ways we have used our Optimization Methodology to help our clients succeed. More information and additional examples can be found in our full "Approach to Optimization" White Paper.

Long-term, Quantifiable Success

- We helped create and lead a dedicated Optimization Team for two years for a large Virginia-based IDN. The team consisted of 8 dedicated optimization analysts along with support from 20 inpatient and ambulatory analysts from other teams. This team had several quantifiable successes:
    - Helped increase certain Core Measures scores from 80 to 99%,
    - Increased Admission Orders compliance from 85 to 98%
    - Increased Medicaid Admission Certification compliance from 67% to 100%.Reduced the time to implement software optimizations by 25%
    - Average number of open optimization requests was reduced by 50%.
    - Decreased the time to build new ordersets by 33% by developing a new Orderset Management Process
    - Increased User Satisfaction with the EMR from 67% to 93%.

Improved Quality

- We worked with a premier West Coast academic medical center to optimize their sepsis practice by integrating and automating paper screening tools with the EMR.
    - Extensive system design changes to workflow, decision support alerts, and false positive reduction were introduced to the production system and monitored.
        - Preliminary Results showed significant improvements in sepsis prediction, with detection rates of 87% (ICU) to 100% (Cardiac ICU, General Med/Surg) and positive predictive value of 72% (ICU) to 83% (Cardiac ICU)
        - As a result of the increased sensitivity of the EMR-based approach, the screening population is expected to be reduced to 10-15% of the total inpatient population (from 100% pre-optimization) with an overall sepsis mortality result of less than 10%

Increased Efficiency

- We led a multidisciplinary team through a rapid optimization of the Inpatient Admission workflow for an 8 hospital system in the Midwest. This optimization was accomplished in 6 weeks with significant results, as measured by objective metrics. For example:
    - Admission documentation time was reduced by 50%
    - Overall door to bed admission time was reduced by 33%
    - Patient Satisfaction with the new process was 95%, versus 80% for the old process.

Rapidly Enhanced EMR:

- We helped a large West Coast IDN address a number of inpatient and ambulatory post go-live issues.
    - The client had already established a 10-person optimization team, but this team was not successful due to ambiguous priorities, weak governance, low clinician engagement, and lack of knowledge of advanced EMR functionality.
    - The Engagement Objective was to use an experienced project manager and subject matter experts to conduct a rapid optimization assessment of key hospitals and clinics. This assessment consisted of four parallel tracks:
        - Assess current physician proficiency with the EMR and recommend an “at the elbow” training curriculum and plan

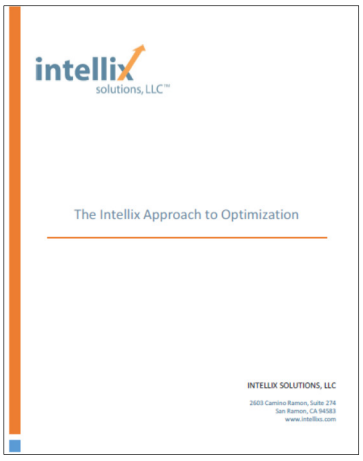
- Review the current system build state and recommend build updates as necessary to support optimization activities
- Recommend an organizational structure and process to provide ongoing governance of optimization activities and establish a physician Super-Users program throughout Sutter Health
- Recommend tools and a process to regularly communicate optimization activities to physicians across the organization and receive feedback on an ongoing basis.

  - The assessment was completed in 6 weeks and led to immediate remediation in all four tracks. We were retained to enhance the system build and we provided sufficient knowledge transfer for the client to complete the remediation activities for the other 3 tracks.

Develop an Optimization Program

- We were engaged by a large pediatric hospital on the West Coast to help establish the infrastructure, policies and procedures for an Optimization Program, including:
  - Developing processes for end-users to request optimizations through the hospital's IT help desk
  - Creating a strong governance committee that allowed the Optimization Team to set and pursue the most beneficial and achievable objectives, while insuring the interest of the Users, Clinicians, Patients, and other Stakeholders were kept in mind
  - Establishing a transparent, standardized, numeric system for evaluating and prioritizing the optimization requests, including reporting capability to allow users to see the status of their requests on demand.
  - Defining metrics for determining ongoing optimization resource needs, based on the work effort of actual requests, to maintain a consistent, level work effort even if optimization demands increase in the future.

Since our inception, Intellix Solutions has been helping our clients maximize the benefits of their EMRs. We are now ready to take this support to a new level by focusing on optimization as its own service line. We have accumulated a wealth of experience on optimization and understand that it is bigger than just the EMR, it is about fitting a combination of great technology and best practices to a dynamic clinician environment. Our talent and methodology will help your organization bridge this gap using a clinically, operationally, and technically balanced approach that will greatly increase the likelihood of achieving your desired optimization results.



Our full, 24-page "Approach to Optimization" document has many more details about our innovative, effective methodology. To request this document or get additional information, please contact Tim Hearing, Practice Leader: Healthcare (email: thearing@intellixs.com / phone: 916.837.6858).