7 Innovations that Deliver Strategic Value in Healthcare

Abstract

There are many challenges plaguing the healthcare industry today, including resource inefficiency, poor organizational financial health and most critically, avoidable harm to patients. Fortunately, more time and resources are being invested in performance improvement than ever before, and with strategic tools in place, healthcare executives can identify opportunities and implement initiatives that effect real change within the industry.

This white paper provides an in-depth look at the qualities an effective performance improvement tool must possess in order to produce a high-functioning, efficient healthcare environment, with positive clinical and financial outcomes. This holistic approach is presented through the exploration of seven strategic innovations we have found to be integral in fostering the insight required to enact lasting performance improvement:

1. Multidimensional integration centered on optimized Performance Improvement
2. Role-appropriate participation at each level of the clinical realm
3. UI/UX/EX that matters to utilization, productivity, workload and results
4. Moving beyond reporting to collaborative management facilitation
5. Efficiency at all levels, including providers and users of IT systems
6. Leveraged effort in vendor-user partnership
7. Design that delivers, with a focus on added value and actionable insight

When developed and implemented with these points in mind, healthcare quality and performance improvement tools can have a significant impact on hospital performance, including better overall patient care and enhanced financial performance in a system and cultural environment of Pay for Performance.

This white paper provides an in-depth look at the strategic innovations that must be in place to achieve a high-functioning, efficient healthcare environment, with respect to improving clinical and financial outcomes. When developed and implemented with the below points in mind, we believe healthcare quality and performance improvement tools can have a significant impact on hospital performance, overall patient care and, with the various Pay for Performance aspects, the financial health of the hospital or system.

1 Multidimensional integration: functions, tools, pertinent information, processes and insights

We all know healthcare has two enormous problems. First, hospital-acquired complications are among the leading causes of death. Second, costs continue to rise at an unsustainable, precipitous rate. At the intersection of these problems is providers' efforts to manage and improve quality of patient care, which has become a principal driver of reimbursement and financial health. The current reality, as most healthcare leaders see it, is that those efforts are largely ineffective, inefficient or both, and are too costly and time consuming. However, it can be difficult to develop a meaningful solution or even articulate the fundamental issues from which the lack of proficiency arises.

Across the industry, the operational landscape for quality improvement is disturbingly fractured across multiple departments, leaders, tools, information silos, regulatory programs, metrics, reports, methodologies, process segments, intermediate goals and, in some cases, competing perspectives. The result is an enormous variety of customized solutions as unwieldy as the problem they are trying to solve. Clinical professionals struggle to make everything work together, and executives either detach from this critical core operation or drown in the mess of it. Vendors offer incremental product improvements but little fundamental innovation to address these entrenched inefficiencies.

The historical basis for this inefficient fracturing is very important. For a very long time, healthcare management's perspective was that the objectives of quality and safety efforts were to produce specific reports and informational artifacts to be sent to a large assortment of regulators, researchers and other external organizations. Thus, there was little or no requirement on the design of those reports to fit together with any holism or consistency or to efficiently serve the next logical step in analysis and improvement. For various reasons, organizations have held firmly to producing those historical artifacts, in their original form, as the industry has moved to demanding that healthcare organizations undertake an aggressive internal improvement process for quality and safety. Bridging that gap between those many original artifacts and a strategic, goal-oriented operational improvement process is a huge undertaking of tedious paperwork and inefficient cognitive effort that, tragically, many managers and executives have come to accept as normal.

By using a collaborative working platform that connects all people, processes, information, data and insights, healthcare organizations can offload a great deal of manual work from clinical professionals and give the organization a facilitated management communication process, unprecedented insight into clinical issues and improvement efforts, and real-dollar ROI. Successful tools integrate the functions of quality metrics, safety event reports and investigation, and performance improvement activities, thus enabling a consolidated view of the aggregate clinical performance stance of the entire organization. The entire hospital staff must be aware of progress toward clinical goals in order to be driven to contribute to it in every sense and through every task. To ensure this promise to staff and patients is sustainable and desirable in the long run, providers must focus on efficiency in the way they operate and deliver such tools and platforms.

Significant focus should be applied to routinely building on the platform's key functional architecture to increase the elements of clinical performance management and the financial analytics available. The result is a complete, balanced focus for executives on exactly where their clinical performance issues and derivative financial issues are, which issues are most impactful, and what is being done to improve them. To those healthcare executives and the teams of healthcare professionals struggling to wrangle so many moving parts and meet their corporate goal of linked success in patient care quality and financial results, providers must find a way to unify both tasks and goals in a comprehensive "big picture", and address them through a single, easy-to-use solution. Certainly, the most important and impactful aspect of this platform integration is the inclusion of the Performance Improvement functionality and the value for customers in that is threefold.

The first value is time savings. A Performance Improvement Action Plan (PIAP) immediately and automatically provides to the Performance Improvement (PI) team, in one place, several pieces of information they would otherwise need to gather from various physical locations or systems in the course of their PI project. This should include: current data for the performance measure in question; a current run chart of the measure with several internal and national benchmarks plotted; the make-up, goal and findings of the PI team; event reports related to the measure targeted for improvement for research; uploaded documents accumulated by the PI team in the course of the project; educational material related to the measured targeted for improvement and best practices gathered from many sources by the software team; and annotations showing the times changes/action steps were completed, overlaid on the plotted run chart to truly show what is working or not working. When this PIAP is both the working platform for the team and the presentation vehicle for review and presentation, no extra work is required to prepare for presentations in various quality and management review meetings, saving even more time for clinical managers and leaders.

The second value is in the shifting of individuals and activity toward improvement. When users are engaged with the application via a presentation of clinical performance

measures, a safety event report or an executive dashboard, they should be only a click or two away from participating in improvement. Whenever members of the staff see an underperforming performance measure, an adverse incident, or an intriguing pattern of information on a dashboard, they instinctively think, "Let's fix that." The tool must capitalize on this instinct by making it very simple, at each of those places, to review the current improvement effort, contribute a resource, suggest a change or even create a new performance improvement team and action plan if one does not yet exist. Typical manual/offline efforts involve organizing the team and its charter, gathering the baseline data and information, researching the corrective actions and producing communication and tracking mechanisms. Why is this so important? Because improving clinical performance, in terms of quality, safety and outcomes, is where the organizational pay-off, or ROI, occurs—not in filling up a number grid, knowing the value of a measure, compiling a report, or checking off any other intermediate task or step in the quality-safety effort.

The third value is behavioral and cultural influence on the clinical staff while they work, often called a "Culture of Quality", an objective that can be quite difficult to accomplish. Historically, hospitals' greatest efforts to advance the quality and safety improvement processes have been through inspirational and procedural education. When there is turnover, which is a frequent occurrence in healthcare today, all of that training has to be repeated because it does not necessarily have any transferable presence in the environment. Unfortunately, the most lasting effects of those classes and consulting contacts is the incremental work the clinical staff takes on, in further classes, meetings, and documentation, which is largely done to give evidence to the organization's adherence to a methodology or program. When there is a direct, painless and positive change in the actual work being done within an organization, that is consistently and widely experienced and associated with personal and organizational benefits, then the cultural theme sinks in and solidifies as the staff hears that small voice inside their heads saying "THIS is how we work and improve."

2 Role-appropriate participation for everyone in the clinical realm

Most healthcare IT applications have user administration based on profiles, roles and permissions, and many also associate the user's roles with specific parts of the organization. These roles should be straightforward and easy to administer, in order to eliminate the frequently seen dependence on billable services from a vendor or additional analysts and specialists within the organization. By tying in to the advanced UI/UX design of the tool, the user can experience the "clean desk" principle advocated by both leading software designers and personal productivity experts relative to the physical world. This means users see only the things relevant to, and used by, themselves and mostly only at the time those functions are likely to be of interest. This makes it much easier to get to and act on exactly what they need, simplifies or shortens everyone's learning curve, and significantly helps users stay focused on what they engaged with the application to do.

Probably no one benefits from this aspect more than the CEO and other C-level executives. Because of the typical complexity and numerous moving parts of the quality-safety efforts as described above, those at the top of the organization with enterprise-wide responsibilities very often have to choose between detaching themselves from the workings of quality-safety improvement or drowning in the details, because information is too often not presented in a way that lends itself to a reasonable manner and degree of executive oversight. A common compromise is to add data analysts who work on a constant stream of ad hoc research and reporting requests. Not only is that "solution" expensive, but it also adds cycle time and disrupts the evolving pursuit from one answer to the next question as the skilled executive chases insights in a complex, dynamic environment.

An efficient platform must apply technology advances to directly facilitate the engagement of all users—even busy executives—with the insights and work being accomplished by the entire staff within the platform. While some in the clinical team and supervisory staff may cognitively engage quickly with certain sets of metrics, a collection of related safety events or a PI project on which they spend time on a regular basis, those who have to do more frequent and significant context shifting can benefit from some additional explanation and illustration, and often ask for the "big picture." The tool's performance dashboard must present that big picture, with easy-to-follow links to additional presentations of related data, information and insight. These data hierarchies are designed to match the cognitive pathways of a healthcare leader, providing easily accessible, real-time insight. Whether it is the insights sought, the contribution of content, the user skill level or the cognitive pathway the user undertakes, a successful platform adapts to the user to deliver a productive and enjoyable experience.

3 UI/UX/EX that matters to utilization, productivity, workload and results

Most software vendors claim their application has an intuitive, easy-to-use user interface (UI) and an effective, non-frustrating user experience (UX), but have difficulty describing what that means or how it was accomplished. Achieving high quality UI/UX requires "design thinking," which is the intentional practice of specific principles involving learning, perception, logic, neuroscience and organizing principles—such as hierarchies, normalization and workflow—that are optimized for the digital form of information. One of the most important aspects of this is picking the user persona or model of the targeted users relative to these principles. If there is a lack of or weakness of participation by a skilled UI/UX designer throughout the planning, design and development cycle, applications may reflect in their UI/UX the perspectives of the software developer who produced each of the particular parts of the system. Needless to say, developers have a different language and grasp of what is going on in the application than healthcare professionals. Even though hospital users can eventually learn some of the jargon, think in terms of database "gets and puts," and maybe write SQL queries, they will usually remain, at least subconsciously, uncomfortable and frustrated in participating too deeply in technology. Those effects build up throughout the course of a workday and particularly amplify the user's discomfort with more macroscopic problems such as difficulty in navigating to the desired point in the application, in defining and generating a report, or in deriving compound insights from dispersed raw data in separate modules or programs.

Two very common, poor UI/UX practices run into trouble with the brain's processing of visual information. Many executive dashboards present a handful of metrics in a variety of charts, line graphs, 3D area plots, and more, that seem borrowed from the instrument panel of a car. When glancing around such a dashboard, the brain must adjust its interpretation and processing of the colors, shapes and numbers presented in very different ways. It may not seem difficult after getting used to the display, but it is actually forcing the brain to do a lot of mental gyrations. Perhaps the worst and most popular offender is the number grid or spreadsheet with red, green and yellow backgrounds within the cells. From the start, it is rather taxing for the brain to read a series of numbers in a row or column, keep track of what distinguishes one cell from its adjacent cells, and imagine the relative number values and trends over 12 or even 24 data values. This involves several different areas of the brain. To make things worse, the perception of colors and an association of a color with a meaning involves two additional parts of the brain. Is it any wonder why so many people leave Quality Council or Governing Board meetings, after dozens of such data presentations, with a headache? It is not just the stress of a negative subject matter being reviewed, but really the visual and mental challenges of the presentation itself.

Some reduction in the neurological effort begins before the design decision about appearance and data visualization and lie in the engineering of the information being managed and communicated. Imagine trying to assimilate an understanding of an overall performance condition, represented by dozens or even hundreds of performance measures, when the current values of those different measures are 3.2, 46%, 1280, 0.006, and so forth. A fair amount of neurological gymnastics are required to put together a "big picture" of status, an assimilated assessment and a comprehensive responsive action. When the performance against benchmark, as a percentage score, is calculated for each measure, those numbers become "normalized" in a way that allows very different measures to be compared in terms of relative performance and visualized as aggregates or distributions.

This is quite different from relative ranking as a method of normalizing measures that are numerically different. While it is easier to comprehend that an organization ranked in the first quartile in some measures and in the third quartile in others, such relative ranking can change over time – up or down – without any real change in performance, only because the performance of others has changed. While relative ranking is used in some external reporting forums, it should not be used for meaningfully managing quality-safety performance within a provider organization.

Beyond the conservation of brain effort in obtaining information and insight from the application, here are a few of the more important UI rules that must be adhered to within a platform's design.

Keep simultaneous navigation choices to a minimum

Rather than presenting 40 different locations the user can navigate to from a certain point, UI/UC experts design for behavioral normalization. This means categorizing user actions into fundamental types (entries, reports, administration) which then unfold through progressive, simple selections, to guide the user intuitively to a specific task or function they need to accomplish.

Get inside the user's head

Rather than focusing on data constructs or isolated functions of the application and offering them all like channels in a TV guide, the platform should be designed to match user scenarios that start outside the application and represent the user's broad need, intended result, and state of mind when first engaging the application. Similarly, at each step in a task chain, an application designer must anticipate what additional information or action the user is most likely to seek next, and make that the default or most prominent option, as well as

the other possible next steps based on the user's role and responsibilities, the nature of the last information or insight presented, or other conditions throughout the application that may be related to what the user is now doing.

"Clean Desk" principle

This was first mentioned above regarding role distinctions across users. By reducing the action-related options on the screen to those that are permitted and meaningful to the current user, generally or at a given time, we reduce the learning curve experienced in training or self-discovery, as well as any distractions.

While there are too many important platform design principles to detail here, there is an overarching approach used that is the core of Steve Krug's book, Don't Make Me Think. By minimizing the deep mental activity needed just to use the application, the platform can conserve the brain power of healthcare leaders and executives for the more important professional, intellectual work of improving care and operations.

To the traditional mention of UI/UX, providers should add "EX," for "enterprise experience." Many applications, especially in healthcare, seem to present numerous separate tasks for individual users, on a transactional basis. As much as possible, users should participate in natural workflows that parallel their responsibilities and objectives in real life, outside the application. Often, these workflows connect from one user to another as work product is shared, escalated and managed through collaborative efforts. This directly supports managing the flow of work, not only to accomplish collaborative goals that may not be completely clear when users are working their task in isolation, but it allows for processes to be instrumented and reported so managers can be alerted to overdue tasks or general bottlenecks in the flow of work, and can thoroughly understand how the application is being used in case re-assignments or re-configurations are needed.

4 Beyond reporting to collaborative management facilitation

With more than 30 years of application design experience and an educational background in learning psychology, we have listened intently to hundreds of healthcare leaders describe their experiences with numerous healthcare IT products. This research led us to identify several common weaknesses in the design of many such products and understand them in the perspective of the evolution of systems design over
the past several decades.

Several challenges contribute to the fundamental issue of "too many moving parts" described above. Examples of applications contributing to this problem include:

- Applications that are little more than databases, with forms for entry and reports, which only select and re-arrange the data, exactly as it was entered, without any real processing, transformation or added value
- Applications that inappropriately mimic the steps in processes devised in a non-digital "paper" environment and artifacts (forms, diagrams, voluminous reports, and documents) that perpetuate the paper process' characteristics. Such deliberately stagnation prevents labor-reducing changes drains resources and impedes innovation.
- Applications that, in total, produce a deliverable that is only an unnecessary intermediate step toward a real goal, creating a call for attention and a false sense of accomplishment
- Applications that fail to do the very things for which technology should be applied—to drastically reduce repetition, manage the vastness of raw data/information, leverage human decisions, help focus attention on important things, appropriately divide responsibilities between machine and human, and enable an increase in productivity

These inefficiencies hinder an organization's ability to achieve its goals, fulfill its mission and purpose, and work effectively and efficiently. One of the most impactful ways to address these issues is to enable active and appropriately-informed C-suite participation, as mentioned in point two above.

By focusing on and uniting the three essential questions of executive oversight—where are we, how did we get here, and what is being done to improve—such a platform can be the hub of management communication. All the meaningful information for both frontline staff and management is seen and acted upon in unison and is easy to access and understand so analysts and assistants do not have to intermediate. This delivers the spirit of Hoshin Kanri , in a facilitated workflow that ensures the strategic goals of a company are

communicated through the organization to drive progress and action at every level within the organization, without dependence on complicated and time-consuming diagrams and other artifacts.

5 Efficiency at all levels and for providers and users of IT systems

Everyone knows time is money, and healthcare consumes too much money. Therefore, it stands to reason that a major objective should be to save time at all levels of the organization and throughout the supply chain. For individual users, this typically means making workflows more efficient through intuitive design, as illustrated in point three above. For organizations, there are several additional facets to the drive for efficiency.

One way to pass time savings onto organizations is to operate the SaaS model of delivery, eliminating the need for incremental infrastructure—or the maintenance of it—in order to obtain additional benefits. There are several supplementary benefits in operational cost by not offering the "package and deliver" approach as an option for the customer, as some companies do. A commitment to operating at high levels of efficiency means providers are able to make the acquisition and continued use of the platform remarkably inexpensive.

Next comes the specific design of the application, as mentioned above, which saves time among key users throughout the organization. By ensuring the routine and administrative functions of the application are easy to use and understand, organizations almost never have to hire data analysts or additional clerical staff to assist with workload or technical tasks.

One of the most impactful ways a healthcare IT vendor can pass efficiency onto its users is by reducing the amount of application customization carried out within its business model.

In contrast to the popular customization-oriented model, successful providers should focus on delivering a turnkey application that is extremely configurable rather than a toolkit or raw material that takes six to nine months before the "go live" date. When appropriate healthcare and clinical domain expertise, as well as advanced UI/UX design and technical and requirements for flexibility, are the dual bases for the design of the platform, workflow processes, terminology, content selection, and styling are already present and appropriate "out of the box." This way, organizational leaders don't need to spend time specifying what they need or expect in the application and then wait for a complex development, testing and review process. The saving of time and money from using configuration over customization is realized over and over again as the organization structure and workflow requirements evolve on an ongoing basis. It also should be said that a great deal of healthcare IT customization is based on relatively arbitrary personal preferences, rather than functional needs, especially those preferences aimed at imitating paper forms, previous processes, or outdated mandates. The fact is, customization can be a very lucrative business model for vendors and a very large, ongoing expense for customers. This is detailed in our blog article "Customization: The Gift That Keeps On Costing." Aside from the real-dollar costs of significant ongoing customization, there is the added investment of time for key hospital staff and management in creating detailed requirements, reviewing revised software, and testing functionality throughout the customization process, not to mention the learning curve of healthcare professionals on the language, disciplines and processes of the software business.

The vast majority of products procured by a hospital are not customized because of the clearly-recognized incremental cost. Breaking the habit of customization of IT applications can save healthcare organization a huge amount of time and money.

While that same benefit of configuration over customization accrues for the individual user organization, it also applies on a larger scale to the provider of the application or platform. Providers can efficiently address the variability of customer types, including short-term acute hospitals, ambulatory surgical centers, etc. and adapt to the evolution of the quality-safety efforts across healthcare over time. This makes for a more efficient vendor operation so that savings can be passed on to the customers.

6 Leveraged effort in vendor-user partnership

Sometimes the SaaS model is viewed simply as software running on web servers accessed via a browser and paid for in a subscription. An expanded view is that the product is also the vehicle whereby healthcare organizations share some work functions with the SaaS-model provider as an adjunct to the use of the application. Researching, implementing and maintaining performance measures defined by regulatory or academic authorities is something that is done by all healthcare organizations delivering certain services. Similarly, a great deal of publications from numerous organizations provide guidance on improvement of care, industry benchmarks for performance standards and best practices. That duplicative research, curation and infusion of educational and administrative content in the working processes

for quality-safety can be eliminated within the user organizations if the provider of the commercial working platform integrated it all within the delivered work platform. This becomes even more beneficial if, unlike the vast resources that can be eventually found on the Internet as a research project, specific content were made immediately available to users of the platform in the context of the subject matter and process juncture within which it is most applicable.

When a working platform has this important embedded content, in readily usable form, additional common issues can be systematically addressed and improved. Standardization and currency of supportive material for the quality-safety efforts are not diminished by variations in research skills, diligence, time allocation issues, or conformity among the staff across the organization or between organizations.

7 Design that delivers, with a focus on added value and actionable insight

All aspects of a platform should boil down to this. At Prista, our mission is to help healthcare leaders achieve optimal clinical and operational performance in the most effective, efficient and sustainable means possible. By addressing a wide variety of entrenched inefficiencies, particularly through the diligent application of technology, human behavior and design principles, our ActionCue Clinical Intelligence application helps those leaders find and prioritize their clinical and financial-related issues, focus on corrective and preventive actions, and build and sustain an improvement in quality-safety culture.

While we are incredibly proud of the business model, time saving capabilities and the integration of data into useful insight, we are even more delighted to be able to show that enabling staff at all levels of healthcare organizations to focus on quality and safety improvement creates enormous positive financial impact. Reductions in fall with injury, hospital acquired infections, re-admissions and many other measurable and actionable issues not only avoid punitive revenue reductions in the Pay for Performance model, but these quality of care and patient experience measures are also meaningful messages to drive engagement and goodwill within the communities served by healthcare organizations. By simplifying functions that have to be done, improving results across multiple goal sets, and delivering real-dollar ROI, managing clinical performance as described here, healthcare leaders can become less reactive and more proactive and step up their leadership in an environment in which it is direly needed.

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