Increasing the Quality, Efficiency and Accountability of Care

*BPM for Health Care Organizations*
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Introduction: An Industry in Transition

The U.S. health care industry is in a period of rapid transition as both public and private organizations respond to the far-reaching implications of the 2010 Patient Protection and Affordable Care Act (PPACA). This progressive legislation brings sweeping changes to payers and providers at the federal, state, and municipal levels, with a consequent impact on the fundamental business processes that these organizations depend on to provide services to patients. Among other things, the legislation requires each state in the U.S. to build or adopt a health insurance exchange (HIX) to broker and manage insurance plans, measure eligibility, automate enrollment, and transfer health care information electronically among participating organizations. Each HIX must integrate with a number of existing social services systems and handle myriad details related to billing, collections, reconciliation, taxation, reporting, and customer service.

Coordinating all of these processes and information is an ongoing challenge—and there are significant monetary incentives associated with doing it properly. Providers earn incentive payments from the Center for Medicare and Medicaid Services (CMS) for using Electronic Health Record (EHR) technology as well as for submitting Clinical Quality Metrics to CMS, to cite two prominent examples. The objective of these quality-control initiatives is to identify areas that require improvement and facilitate progress by analyzing clinical and administrative benchmarks. Meeting stated performance objectives not only improves the quality of care delivered to patients; it also positively impacts reimbursement rates from insurance carriers.

BPM helps health plans, health care providers, and accountable care organizations (ACOs) to manage this pervasive transition by structuring interactions among people, mediums, infrastructure, and information systems—new and old. It also helps them comply with a raft of regulations and to create sustainable business processes related to intake, assessment, referrals, appeals management, investigations, eligibility determination, and case management. In many cases these business processes are implemented as a series of discrete steps that can be identified, orchestrated, and automated with BPM technology.

BPM also improves all types of organizational activities, from structuring simple business processes like patient enrollment to automating more complex business processes that require domain expertise such as claims appeals. These processes are generally not confined to one set of data or one discrete information system. They are often multifaceted implementations of real-world activities, logically organized into steps that span multiple IT systems, departments, channels, and touch-points.

To create new business processes that preserve organizational knowledge and accommodate these complex, multi-faceted implementations, astute organizations rely on Oracle Business
BPM Technology for Health Care

Use Case #1: Health Care Claims Processing

In technology circles, modernization refers to the ongoing quest to update outdated information systems to decrease costs and improve performance. Many modernization projects entail integration of information to facilitate interaction, both internally and with patients. BPM technology is quickly becoming the preferred way to create business processes that simplify complex tasks, improve the flow of information, and streamline reporting and compliance activities.

For example, consider a routine business process such as Claims Appeals. If a health insurance claim is rejected because it includes non-covered services, the patient might disagree with the ruling and file an appeal. Many payers still have highly manual, discontinuous processes in place for dealing with these processes. There are lots of steps making it difficult to track, investigate, prioritize, escalate and document claims. Some of the primary steps in the Claims Appeals process are illustrated below:

Health plans can reduce costs by simplifying these Claims Appeal processes with automated workflows. BPM structures these processes, accommodating many activities, inputs and outputs—all in compliance with HIPAA privacy policies that govern the sharing of clinical and personally identifiable information. This approach not only improves patient quality by eliminating processing delays, it also helps these organizations to meet service-level agreements from governing bodies such as CMS. Health plans can service appeals faster and monitor the appeal status at every step of the process, enabling customer service reps to prioritize critical appeals and escalate longer running appeals.

This is just one example of how BPM-enabled workflows help people on both the clinical and administrative sides of the business to document, analyze, collaborate and share information, both internally among departments as well as externally with other providers and insurance carriers. This level of automation makes it easier to respond to citizens, to meet federal requirements, and to adhere to standards such as HL7 and data models such as the National Information Exchange Model (NIEM). The
objective is to fulfill government mandates while decreasing fraud, minimizing erroneous claims, accelerating payments, and improving error detection.

To meet this objective, Oracle BPM Suite has been designed to securely exchange HL7 and HIPAA standard documents. It works with Oracle SOA Suite to design, create and manage these documents, as well as to streamline every phase of the benefit-delivery life cycle—from initiation, eligibility and enrollment to service delivery, program analysis and reporting.

There are no complete, packaged software solutions that encompass these multi-faceted administrative processes. Thus it is imperative that health care organizations can bring the disparate components of these solutions together in a consistent way that doesn’t constrain flexibility. Oracle BPM Suite standardizes and streamlines system integration projects and minimizes risk. This software suite removes complexity from process design, development, deployment, monitoring, and execution with a unified process engine and pre-integration of process subsystems. These capabilities are especially important when developing applications that extend outside of application boundaries. BPM makes it easy to structure a workflow, route a request to an alternate channel, or trigger a sub-process to engage an agent or caseworker.

Use Case #2: Big Data

Health plans, health care providers, and ACOs are gathering an escalating volume of information from systems handling eligibility, enrollment, billing, and claims to improve business processes such as intake, assessment, referrals, appeals management, investigations, eligibility determination, and case management. New types and sources of health care data have become available in overwhelming quantity. The federal government is investing $20 billion in electronic health records and a handful of companies have sprung up to people generate and share their own medical data.

The increasing volume, variety, and velocity of this information—commonly referred to as big data—is an issue in just about every industry. BPM technology helps health care organizations to synchronize and improve their big data processes. For example, public health officials can study trends in flu vaccinations by monitoring citizen compliance on a national scale, and combine that insight with aggregate claims data to monitor the impact of various vaccines on that year’s most troublesome strains of influenza. This knowledge can help officials predict future needs for additional vaccines based on population health statistics.

Big data analytics can also help individual patients who have agreed to let disease management companies closely monitor their chronic conditions on a constant, real time basis. This type of monitoring can include collecting data from home devices such as glucometers, weight scales, pedometers and others. As data is collected, BPM technology correlates it and triggers time-critical events. For example, patients suffering from diabetes or congestive heart failure can be remotely monitored to track weight, blood sugar levels, heart rate, exercise schedules, and other biometrics. At an aggregate level, BPM can also correlate the information from millions of patients and dozens of diseases to enable better preventive medicine and to avoid adverse side effects that can occur when the wrong medications are prescribed. Big data analytics presents huge opportunities not only to improve patient outcomes but also to monitor trends in health care diagnoses, treatments, and claims to make better clinical and administrative decisions. BPM technology can trigger targeted interventions so that health care professionals can take corrective or preemptive action.

BPM can also forge links with social networks so that people can discuss treatments and share insights about their health conditions. For example, a social network can keep patients engaged in important
treatment regimens and encourage compliance with diet, exercise, and medication needs. Employers and health plans have created closed-loop wellness programs to funnel people into targeted interventions based on their risk profiles, personal history, exercise patterns, and lab results. If the wellness provider can track these interactions, analyze trends, and immediate react based on a vast storehouse of knowledge then it can bring down costs. BPM helps to “connect the people to the data” as health plans evaluate the member population to make these connections and inferences.

Oracle uniquely provides multiple interrelated technologies to achieve these health care objectives. Oracle BPM Suite is part of a comprehensive middleware environment that includes SOA and event processing to correlate data points, link applications, cache information in memory, and contend with the myriad challenges of a data-intensive industry.

Fast Data

Fast data refers to big data that ages quickly and requires contextual processing in real-time. BPM systems make it easier to integrate fast data with human-interaction and process-improvement scenarios so that business processes become more dynamic and more meaningful. For example, a synchronized workflow can monitor vaccination trends and usage from multiple regions and automatically trigger a restocking order where those vaccinations are administered. Adding BPM to fast data also enables business process improvements such as issuing medical alerts and deploying health resources in response to a disease outbreak.

Use Case #3: BPM for Apps

In order to do stay abreast of new industry developments related to electronic medical records, health insurance exchanges, and fee-for-performance care models, health care companies need to build, buy and integrate many types of software applications. Each of these applications helps the organization and its employees perform essential activities. Purchasing commercial off-the-shelf (COTS) applications can be a quick way to obtain new business functionality. But as health care organizations respond to the many changes confronting today’s health care industry, they must establish a loosely coupled infrastructure among these applications so that they can flex with the day-to-day realities of running the business.

Most employees have to access multiple applications to perform end-to-end functions and business processes. Without the “connective tissue” of BPM it is difficult to gain insight into information that spans application boundaries. BPM can orchestrate multi-channel interactions and deliver insight into key performance metrics by automating processes across applications. For example, in order to enroll an existing patient in a new health plan you need to access his or her personal information, medical history, pharmaceutical records, recent test results, and a raft of other data—some of which “falls between the cracks” of standard CRM and Practice Management systems. These gaps are called process “whitespaces” since the functions are not automated by any particular application.

Other gaps stem from manual processes, especially when patient interactions are conducted via phone, email, or chat, with logs maintained in disconnected memos and private spreadsheets. Commonly called “shadow processes,” these functions are difficult to audit, exposing the organization to compliance risks for not having traceability of all required activities. Using manual procedures not only means that your compliance and audit costs may be too high, but if their is a HIPAA violation it can expose your company to severe fines or penalties.

Gaps can also cause delays in critical care. If a physician logs in to verify a lab result, look up a patient record, or check the Operating Room schedule, will she be able to access the systems that contain this
information and obtain coordinated answers in an expedient fashion? Will she be able to modify these records easily and reference collaborative processes and tasks? Will other hospital workers be able to immediately see these records and updates? Will claims administrators be able to trace these activities and generate an audit trail if a billing dispute arises?

One of the key values of BPM is to forge links among critical information systems, fill process whitespaces and make the entire business more efficient. The idea is not to replace existing systems or applications but to leverage those systems to define end-to-end processes that fill the gaps between applications. Any activity that is performed in a BPM application is auditable, efficient and enhances visibility across the continuum of care.

Having a consistent BPM layer underlying all of your applications helps health care organizations to leverage essential business processes so that people can interact with those applications in a consistent way. BPM software streamlines the flow of information among new and old systems while delivering insight, closing accountability gaps, and connecting fundamental business processes both inside and outside of the organization in a secure fashion.

**Applying Oracle BPM Suite**

Payers, providers, ACOs and other health care organizations are discovering Oracle BPM Suite as a powerful way to model, simulate, execute, and optimize, business processes across agencies, systems, and applications. The suite includes the technology these organizations need to create, document, and modify business processes quickly as well as to instigate process changes in a nontechnical, business-friendly manner. BPM also includes technology for implementing, executing, and monitoring end-to-end processes.

Oracle’s comprehensive BPM Suite enables complete introspection into business processes so that business analysts can predict, architect, and enable interactions through multiple channels and touchpoints. They can model processes by defining a logical structure and sequence of events without any knowledge of service oriented architecture (SOA), Web services, or XML.

Oracle developed a unified process foundation that simplifies and removes complexity from process development, deployment, monitoring, and execution. In addition, Social BPM interaction simplifies collaboration among people and applications by incorporating the latest in social computing technologies and enabling a wide choice of communications channels, as shown below.
Finally, Oracle’s unique BPM toolset enables health care providers to lower the risk of process “gaps” within common business processes including case management, claims reporting, and many aspects of today’s new health information exchanges and ACOs. Over time, BPM developers learn to shift their focus from managing individual functions to integrating activities into interconnected processes. In addition, BPM helps organizations to share information and optimize visibility as stakeholders create, manage, and audit new types of end-to-end business processes.

Integration with SOA

SOA has become a popular method for linking legacy applications across many different departments, thereby creating a single end-to-end process and improving efficiency. SOA interoperates with all parts of the IT architecture to integrate business applications, moving them on to a common service bus and a common workflow engine. It brings reusability to the IT infrastructure, but how can you leverage this IT infrastructure efficiently while accommodating human intervention and introspection at key junctures within the business process? This is where BPM technology comes in. It is the vehicle that business analysts use to optimize a process, improve visibility, check statistics, perform activity monitoring, combine elements of social collaboration, and a host of other tasks.

Oracle BPM Studio works with Oracle SOA Suite to create end-to-end business processes that can be triggered, executed, and monitored from browser-based Web interfaces. Another browser-based application, called BPM Composer, offers insight into BPM process definitions and enables business analysts to document and edit these definitions online.

Analyzing and modeling business processes with these Oracle tools can lead to a seamless implementation of process activities through services and human tasks. Execution of process instances is centrally coordinated and monitored—allowing for real-time insight into exceptions and bottlenecks as well as on-the-fly intervention and improvements within the process flow.

The combination of Oracle Business Process Management Suite and Oracle SOA Suite provides everything you need to implement, execute, and monitor end-to-end business processes as well as individual sub-processes and tasks. As part of the Oracle Fusion Middleware family, these products are based on industry standards and provide “design time at runtime” support to allow for dynamic, business-driven, on-the-fly reconfiguration and restructuring of business processes.
Conclusion

Today’s rapidly evolving health care sector needs flexible tools for creating, deploying, and managing complex business processes and related information systems. Business processes handling customer onboarding, eligibility, enrollment, claims management, and all types of clinical information systems must be able to securely exchange, manage, and audit vital data and activities in a HIPAA-compliant fashion. BPM technology fulfills these requirements while equipping health care organizations to respond quickly to changing government policies.

Oracle BPM Suite and related tools in the Oracle Fusion Middleware family make it easier to modernize and transform fundamental processes:

- A unified process foundation reduces complexity while pre-integration of process subsystems brings together existing applications, enabling you to react quickly to new business requirements.
- A user-centric design simplifies process modeling, execution, and participant interaction among patients, payers, and providers, while providing useable technology tools for both business and IT.
- Social BPM interaction encourages collaboration in the context of BPM and adds the richness of modern social communication tools to engage patients in closed-loop wellness and disease management initiatives.