



TRIPLE TREE

# Healthcare Compliance

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MOBILE HEALTH



UNCOMMON CLARITY

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*TripleTree's research agenda and strategic advisory assignments across healthcare's technology and outsourced services segments over the past twelve years have made TripleTree acutely aware of the broad, deep reaches and mounting financial, clinical and legal implications of healthcare compliance.*

## EXECUTIVE SUMMARY

TripleTree's research agenda and strategic advisory assignments across healthcare's technology and outsourced services segments over the past twelve years have made us acutely aware of the broad, deep reaches and mounting financial, clinical and legal implications of healthcare compliance. While historically viewed as a regulatory function across the provider, payer, and life sciences sectors, compliance extends beyond government oversight and is tightly woven through most aspects of the healthcare system; a reality which consistently adds new layers of complexity and cost across the industry.

Our advisory work affords the opportunity to collaborate with many of the industry's next generation compliance solution providers – a dynamic that has impacted our appreciation for the complexities of healthcare compliance which has, in turn, helped us build an analytical framework for benchmarking the many relevant touch points that comprise the healthcare compliance space.

This report defines the many sides of healthcare compliance by identifying and discussing the trends, solutions, and businesses emerging to solve the large unmet needs brought on by regulatory, legislative, financial, and industry-wide 'calls to action' for safer, cheaper, and higher quality healthcare delivery.

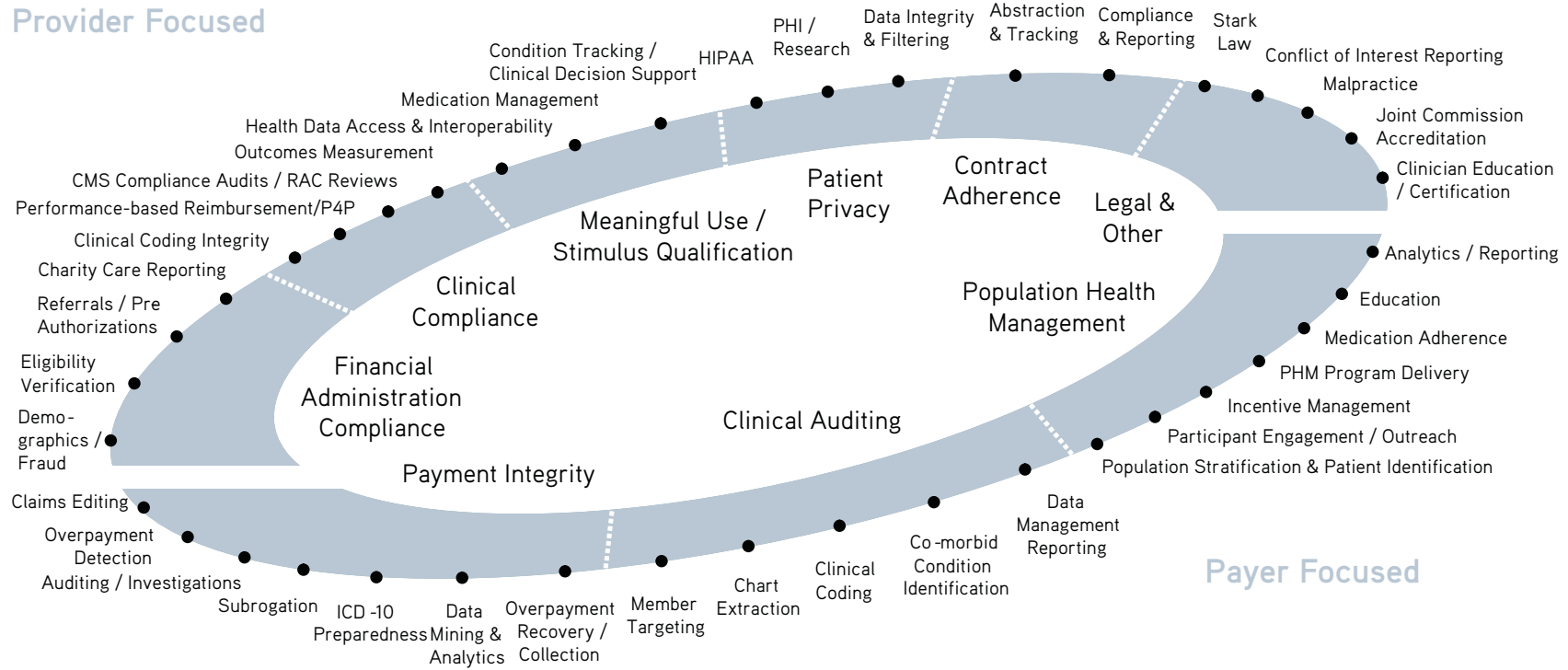
**Figure 1** is TripleTree's proprietary Healthcare Compliance Q-Diagram which provides a high level segmentation of the vast array of different categories and concepts shaping the compliance landscape.

As shown, healthcare compliance must be viewed with an expansive lens to appreciate the depth and breadth of its impact on the healthcare system. Compliance is not just about government regulations, it is an evolving concept that incorporates a multitude of regulatory, contractual, incentive, and other mechanisms designed to align patient, provider, payer, and other stakeholders around the central goal of improving outcomes while controlling healthcare delivery costs. Although we will not endeavor to cover all of the potential topics related to compliance in this report, we expect future reports will pick up on many of the themes set forth ahead.

Most of the analysis in this report focuses on compliance topics that drive reimbursement and related facets of the provider-payer relationship. For simplicity, we frame our discussion by providing separate analyses of compliance in the provider versus the payer sectors. This approach enables us to focus more extensively on a few key topics that are more germane for those customer sets. We should note, however, that most of the over-arching themes we cover have ramifications for both providers and payers such that both constituencies are frequently managing opposite sides of the same coin.

FIGURE 1: HEALTHCARE COMPLIANCE Q-DIAGRAM®

Provider Focused



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## SECTION 1: COMPLIANCE IN THE PROVIDER MARKET

The healthcare industry has entered a new era of accountability in which the role of government is increasing, focus on oversight and regulation is expanding, and the topic of **compliance** is top of mind for hospital executives. While the recent legislative debate regarding health reform has focused on **access** and **affordability**, there is an equally important movement to align reimbursement with the **appropriateness** of care being delivered. In order to monitor the appropriateness of care, government, and commercial payers have deployed a myriad of permanent audit programs, on a national scale, to examine whether they are paying for medically necessary health services. The over-arching goal of these new oversight initiatives is to examine hospitals that have never before been required to defend the medical appropriateness of the care they provide, and transition them into “accountable care organizations” that can document and defend the level of services being delivered to patients while also aligning costs with outcomes. While these goals are admirable, they represent a huge paradigm shift that hospitals are ill-equipped to handle.

This broad-based effort to apply a regulatory framework that correlates provider reimbursement with clinical outcomes is being marched in against a backdrop of concerns regarding fraud, abuse, and erroneous payments out of federal and state trust funds. The result: providers are stuck in the cross hairs of an overwhelming wave of new mandates, audits, and regulations frequently without the resources or knowledge to respond.

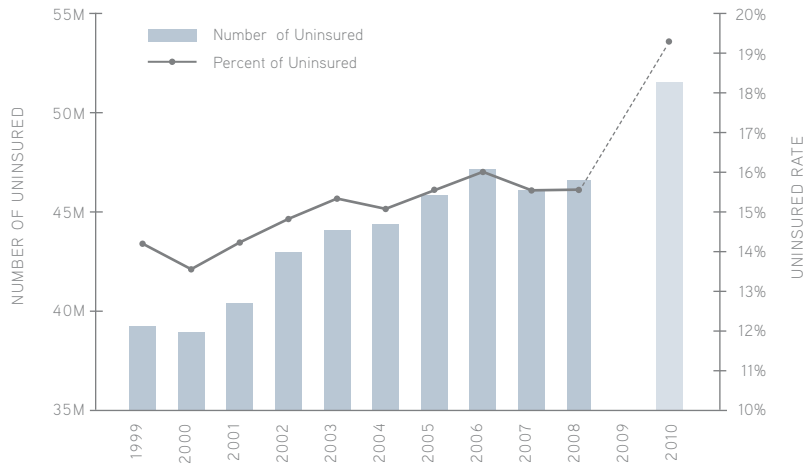
### THE REASON PROVIDERS OUTSOURCE COMPLIANCE

Given the potentially sizeable penalties, and even criminal sanctions, associated with non-compliance, one wonders why provider organizations wouldn’t dedicate large numbers of specialized staff to manage these issues. While some organizations do dedicate meaningful resources to compliance, the vast majority of provider organizations find themselves overwhelmed, financially tapped, and in most respects ill-equipped to get their arms around the data and processes required to appropriately address the topic.

Complicating matters further is the financial instability of the U.S. hospital market. While the pace of regulatory oversight has accelerated over the last few years, the financial strength of health systems has continued to deteriorate, thereby limiting the availability of internal resources to address these requirements. A number of external market dynamics are contributing to this financial strain:

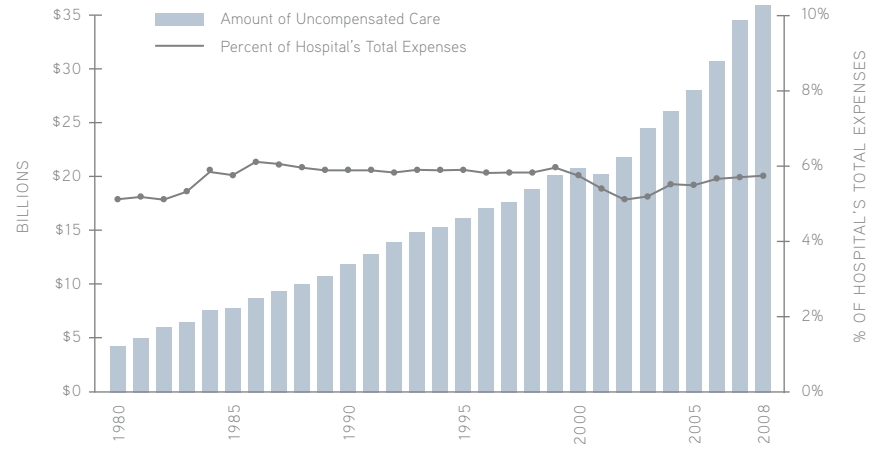
- High numbers of uninsured
- Dramatic growth in patient out-of-pocket payments
- Dramatic increases in bad debt and uncompensated care
- Dramatic increase in the number of hospitals with negative profit margins
- Dramatic decrease in hospital cash reserves

**FIGURE 2.1 - HIGH NUMBERS OF UNINSURED**



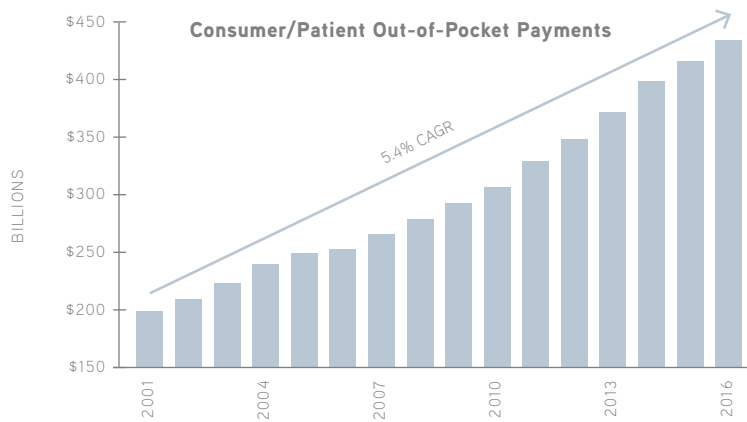
1999-2008 Data Source: U.S. Census Bureau, 2009.  
 2010 Projection Source: Study conducted by Todd Gilmer and Richard Kronick of the University of California, San Diego, published May 2009 by Health Affairs.

**FIGURE 2.3 - DRAMATIC INCREASES IN BAD DEBT & UNCOMPENSATED CARE**



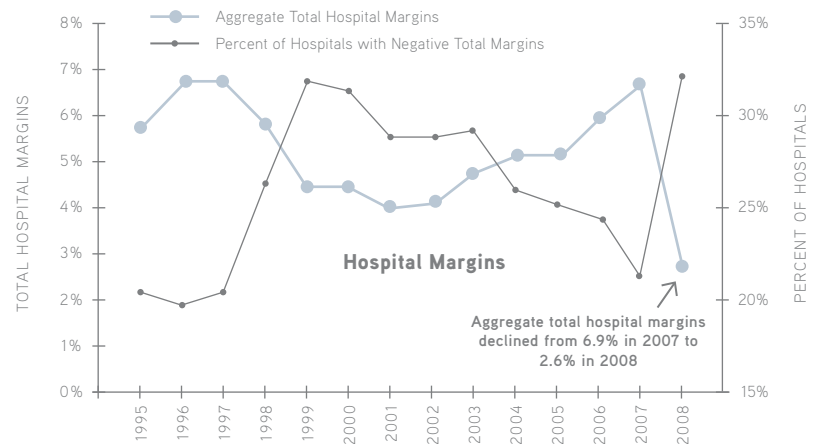
Source: Health Forum, AHA Annual Survey Data.

**FIGURE 2.2 - DRAMATIC GROWTH IN PATIENT OUT OF POCKET PAYMENTS**



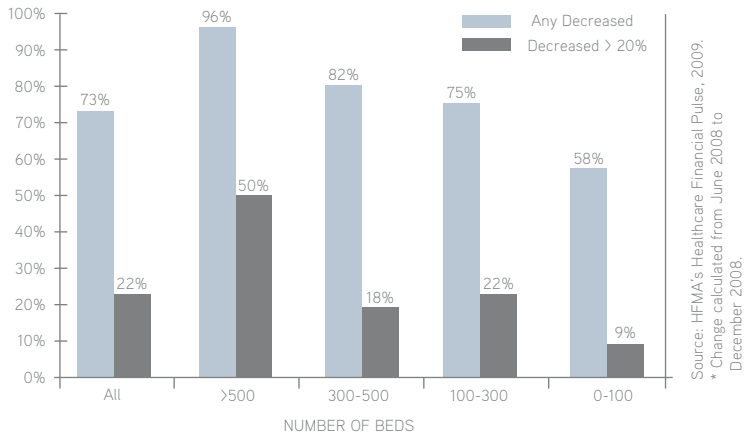
Source: Centers for Medicare & Medicaid Services, Office of the Actuary.

**FIGURE 2.4 - DRAMATIC INCREASE IN NUMBER OF HOSPITALS WITH NEGATIVE PROFIT MARGINS**



Source: Avalere Health analysis of American Hospital Association Annual Survey data, 2008, for community hospitals.

**FIGURE 2.5 - DRAMATIC DECREASES IN HOSPITAL CASH RESERVES**



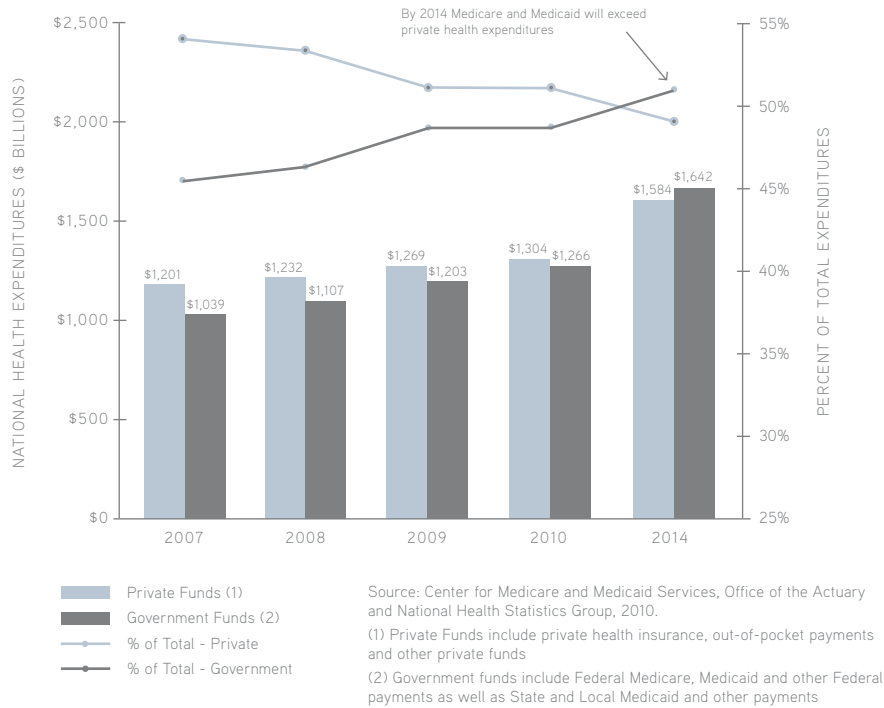
- Large (>500 bed) hospitals suffered the greatest – 96% of which indicated a decrease; 50% of which experienced a decrease of more than 20%
- 73% of all respondents reported a decrease in days cash on hand

Making matters even worse, many hospitals have seen a dramatic decrease in their “non-operating” revenue. In most instances “non-operating” revenue reflects the performance of a hospital’s investment portfolio. Quite frequently hospitals rely on the interest and capital gains received through these investments to offset negative operating margins. Not surprisingly, dramatic dips in hospital “non-operating” revenue have exacerbated the financial strain and fragility experienced by many large health systems.

## THE ROLE OF GOVERNMENT IN HEALTHCARE IS EXPANDING

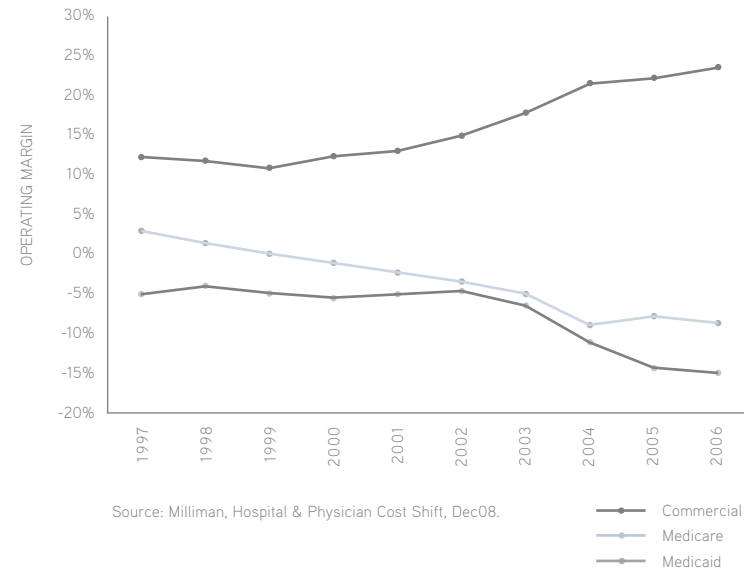
Even before the passage of health insurance reform in Washington, the role of government in healthcare was already expanding rapidly. The rising unemployment rate experienced during the current recession, in combination with changing demographics and baby boomers aging into Medicare, are widening the number of patients with some form of government payer coverage.

**FIGURE 3: MEDICAID/MEDICARE AS % OF OVERALL NATIONAL HEALTH EXPENDITURES (BEFORE IMPACT OF HEALTH REFORM)**



The trends shown in **Figure 3** are bad news for hospitals because of the negative implications that large numbers of Medicare and Medicaid patients have on hospital profitability, see **Figure 4**.

**FIGURE 4: HOSPITAL OPERATING MARGINS ARE NEGATIVE AND TRENDING DOWNWARD DUE TO MEDICARE & MEDICAID**



One would expect that at some point our economy will rebound and that hospitals will benefit from an increase in the volume of elective procedures and patients with private commercial coverage necessary to offset the losses incurred with Medicare and Medicaid beneficiaries. For the time being, however, hospitals are in for some tough sledding, making it increasingly challenging to respond to many of the mandates and initiatives the government is seeking to implement.

## GOVERNMENT FRAUD DETECTION & COST RECOVERY INITIATIVES

Given the bleak financial outlook described above, one might assume the government would have mercy on providers. Instead, the notion of reducing Medicare reimbursement rates continues to be a staple of health reform discussions while federal and state agencies, including the Center for Medicare & Medicaid Services (“CMS”), the HHS Office of Inspector General (“OIG”), and the Internal Revenue Service (“IRS”), have launched a series of oversight programs in response to concerns that federal and state healthcare trust funds are “not adequately protected against fraud and erroneous payments by the current set of administrative procedures” (CMS RAC Status Document, November 2006). While the financial perspectives described above would seem to support a sector-wide belief that hospitals are the victims of chronic under-reimbursement from government payers, authorities have doubled down their efforts to uncover erroneous payments and fraud.

**Figure 5** below outlines a number of the recently created government payment review entities, along with the primary focus of their review.

**FIGURE 5 – ROLES OF VARIOUS MEDICARE IMPROPER PAYMENT REVIEW ENTITIES**

| PROGRAM   | TYPES OF CLAIMS     | PURPOSE OF REVIEW                                 |
|---|---------------------|---|
| Recovery Audit Contractors (“RAC”)  | All                 | To detect and correct past improper payments      |
| Office of Inspector General (“OIG”)   | All                 | To identify fraud                                 |
| Quality Improvement Organization (“QIO”)  | Inpatient hospitals | To prevent improper payments through DRG upcoding |
| Comprehensive Error Rate Testing Program (“CERT”)                                   | All                 | To measure improper payments                      |
| Medicare Administrative Contractors (“MAC”)   | All                 | To prevent future improper payments               |
| Program Safeguard Contractors (“PSC”) / Zone Program Integrity Contractors (“ZPIC”) | All                 | To identify potential fraud                       |

Source: CMS Program Integrity Group, 2009.

Most notably, the Recovery Audit Contractor (“RAC”) initiative has gained significant traction over the last few years, forcing providers to take immediate action to preserve their Medicare reimbursements. RACs are independent auditing groups commissioned by CMS to identify erroneous payments in the Medicare program which, not surprisingly, tend to be “overpayments” for services that fail to qualify as medically necessary. RACs are compensated on a 100% “contingency fee” basis, guaranteeing that audits will be conducted as aggressively as possible to maximize their economic gain.

An initial three-year RAC pilot program was conducted from 2006-2008 and deemed a success after identifying and correcting more than \$1.03 billion of erroneous payments to hospitals (96% of which were identified as “overpayments”).

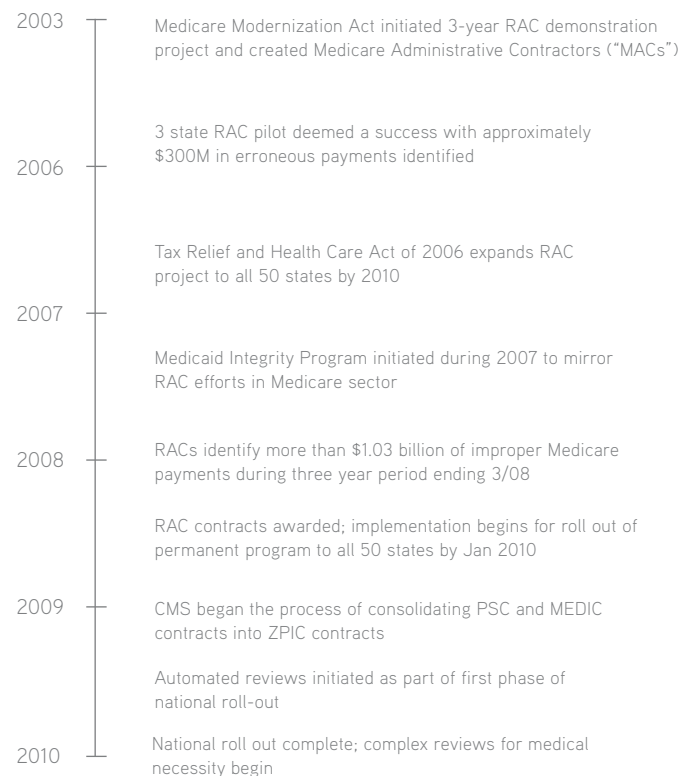
**FIGURE 6: RAC IMPACT**

| RAC IMPACT: MARCH 2006 TO MARCH 2008 (amounts in \$ millions) |                |
|---|----------------|
| <b>Total Erroneous Payments</b>                               | <b>\$1,030</b> |
| Overpayments Collected (96% of Total Erroneous Payments):     | \$993          |
| Less Underpayments Repaid (4% of Total Erroneous Payments):   | (\$38)         |
| Less \$ Overturned on Appeals                                 | (\$46)         |
| Less Re-review  | (\$14)         |
| Less Cost to Run Program                                      | (\$201)        |
| <b>Total Amount Returned to Medicare Trust Funds</b>          | <b>\$694</b>   |

After a temporary suspension of the RAC program to resolve contractual issues, the implementation process resumed in February 2009 with the objective of having a permanent program in place across all 50 states by 2010. In addition, all of the other Medicare focused cost recovery initiatives have been initiated as well as a similar program for Medicaid.

The impact of the CMS cost recovery initiatives is potentially extraordinary for hospitals because the combined force of these entities represent a new and permanent enforcement apparatus. Moreover, these entities are targeting the departmental areas of providers with the least institutional control and biggest holes in their internal systems and databases.

**FIGURE 7: GENERAL TIMELINE OF RELEVANT LEGISLATION AND CMS REGULATORY INITIATIVES**



## EXPLODING COMPLEXITY — MS-DRGS, ICD-10 & MEDICAL NECESSITY

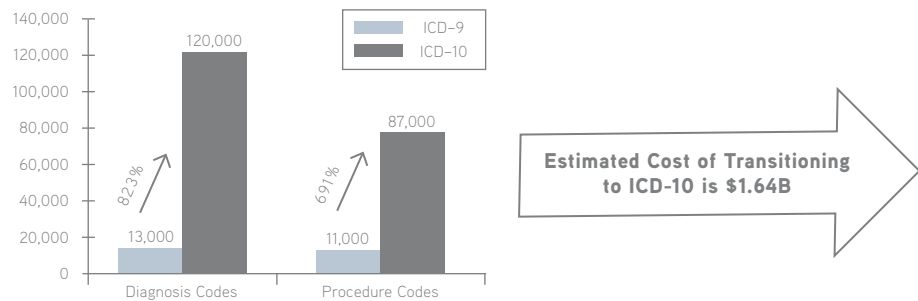
While the number of regulatory bodies continues to expand, the underlying reimbursement and clinical documentation rules continue to get more complex and cumbersome. Although more granular rules and codes will enable more precise reimbursement and analysis, it is also true that additional levels of complexity will provide the government with more opportunities to save money.

For example, the recent transition to Medicare severity-based Diagnosis Related Groups (“MS-DRGs”) replaces the previous schedule of 538 DRGs with 745 new “severity adjusted” DRGs. These new severity adjusted DRGs are designed to take into account a patient’s co-morbidities in an effort to align payment levels appropriately with the level of care, and likelihood of complications, such that hospitals will receive higher levels of reimbursement for patients who consume more resources. Previously there was a perverse incentive for providers to potentially “cherry-pick” patients who

would generate high levels of revenue while consuming comparatively little service and similarly under-treat patients with complex symptoms due to an inability to fully recoup the cost of care. While it is debatable whether most hospitals are sophisticated enough to actually purposefully engage in this sort of behavior, the government marches forward with further refinement and deeper granularity. MS-DRGs are an example of a broader trend to implement acuity-based coding and reimbursement mechanisms to align quality of care with financial incentives.

As a follow-up to MS-DRGs, in 2008 CMS issued a notice replacing ICD-9 code sets with expanded ICD-10 framework effective October 1, 2013. The shift will take the industry from approximately 17,000 codes to more than 155,000 to accommodate new diagnoses and procedures.

**FIGURE 8: INCREASE IN NUMBER OF CODES & ESTIMATED COST OF ICD-10 TRANSITION**



| ESTIMATED COST OF ICD-10 TRANSITION (AMOUNTS IN \$ MILLIONS) |                       |
|--|-----------------------|
| Training   | \$356                 |
| Lost Productivity  | \$572                 |
| System Changes   | \$713                 |
| <b>Estimated Cost of IDC-10 Transition</b>                   | <b>\$1.64 Billion</b> |

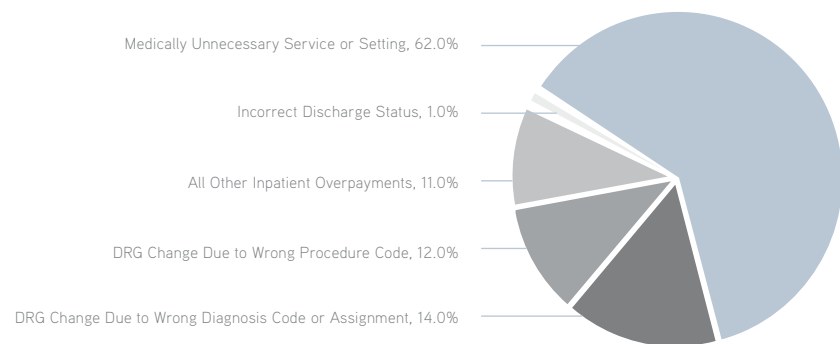
Source: US Department of Health & Human Services

Despite numerous benefits, the cost of this transition will be significant. The U.S. Department of Health & Human Services has estimated total cost of the transition between \$849 million and \$3.05 billion, with a primary estimate of \$1.64 billion. This is an enormous number given it only represents the incremental cost associated with the transition and excludes the on-going cost providers incur in managing these activities.

From a reimbursement perspective, the ICD-10 conversion is expected to cause serious cash flow problems for providers in the short term due to the increased risk of payment slowdowns triggered by the code changes. Claim error rates are expected initially to rise from 6% to 10% at the ICD-10 implementation date, compared with a typical 3% error rate that occurs after the current annual ICD-9 updates. At the same time, CMS and commercial payers are expected to leverage broader code sets to run pay-for-performance (“P4P”) programs and fight medical billing fraud with a deeper layer of granularity.

While the transition to ICD-10 is still out in front of us, we have already started to see an increase in the number of medical necessity determinations that fall into potential gray areas where RAC auditors seek to discover non-compliance. In making a medical necessity determination, hospital case managers examine (a) whether care is

**FIGURE 9: RAC PILOT RESULTS: TOP ERROR TYPES FOR INPATIENT HOSPITALS (% OF OVERPAYMENT AMOUNT)**



Source: Centers for Medicare & Medicaid Services, Medicare RAC Demonstration Review. Note: Claim RACs, net of Appeals through 3/27/08

necessary and (b) whether the care is delivered in the proper setting. In addition, staff members are asked to exercise judgment-based on the severity of illness and intensity of the medical services received. Although these seem like simple questions, the clinical screening tools that case managers utilize do not capture all of the factors, both subjective and objective, that Medicare and Medicaid use in defining medical necessity and “in-patient” status.

Interestingly, the majority of “overpayments” identified by CMS auditors (see **Figure 9**) as well as commercial payers are related to medical necessity and the documentation practices of treating physicians. The financial ramifications of appropriate clinical documentation and patient classification at the point of care are substantial. Consider, for example, a typical encounter in which the attending physician may classify the patient as either “in-patient” or “observation” status. This determination has no impact on clinical care yet has tremendous financial implications for provider reimbursement. A hospital might see a 10x difference in reimbursement for the exact same set of services depending on how a patient is classified. The table below illustrates that just one misclassification per day regarding “observation” versus “inpatient” status can cost a hospital upwards of \$1.7M+ in profits over the course of a single year. While this is an interesting statistic, our industry contacts have suggested that most hospitals make far more than one mistake per day and that even modest size hospitals have millions of dollars that could be subjected to revenue integrity inquiry every year.

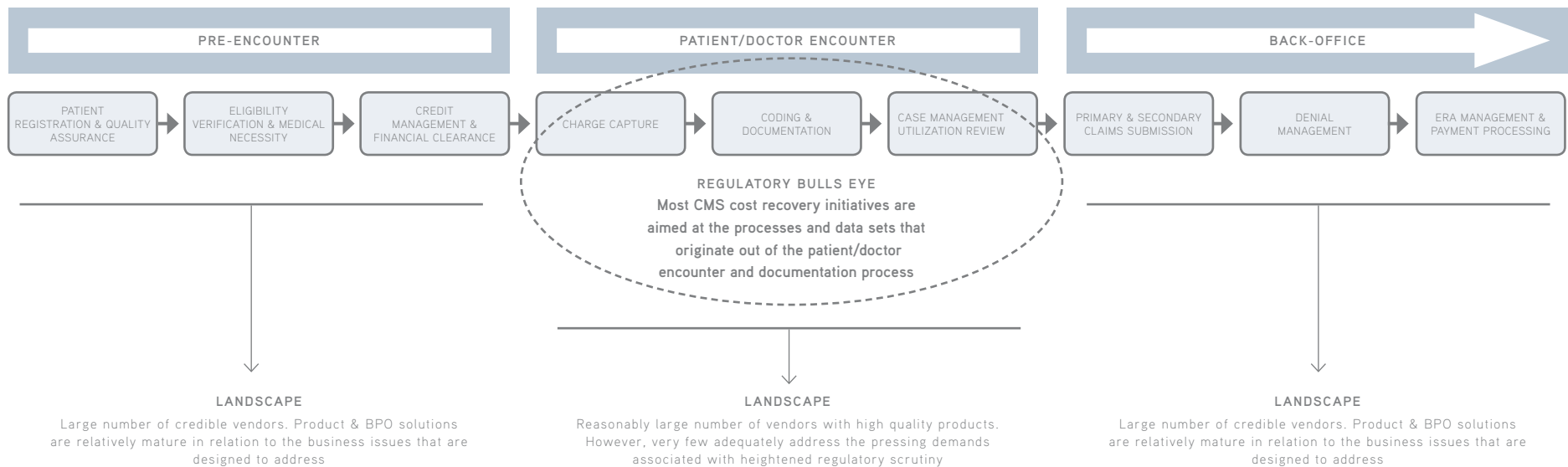
| REVENUE INTEGRITY ISSUE (STAND-ALONE HOSPITAL)           |                |
|--|----------------|
| Average Inpatient DRG                                    | \$5,100        |
| Average Operation APC                                    | - \$400        |
| Difference between DRG and APC Payment                   | \$4,700        |
|  | x 365          |
| <b>Lost Revenue Per Year (one misclassification/day)</b> | <b>\$1.72M</b> |

## COMPETITIVE LANDSCAPE & GROWTH OPPORTUNITIES

Business opportunities abound for those who can play a meaningful role in assisting providers with compliance. In fact, although there are quite a number of companies with relevant products and services, TripleTree believes heightened levels of regulatory scrutiny will spur the creation of entirely new businesses, de novo business models, and potentially a few new market leaders that will rival the traditional HIS incumbents in terms of scale and relevance. Consider the following simple illustration of the current competitive landscape.

Over the last several years we have seen a large number of very promising companies scale significant businesses focused on activities that primarily revolve around the “pre-encounter” and “back-office” functional silos that together constitute the bulk of revenue cycle continuum. These companies – including **MedAssets, CareMedic/ Ingenix, Emdeon, Passport Health Communications, MedAnalytics, AthenaHealth,** and many others – have made significant strides in creating and deploying next generation RCM capabilities that significantly improve reimbursement levels and administrative efficiencies for their customers. While there is still a lot of work to be done in these areas – with significant market share still up for grabs – the longer term competitive landscape for these firms has started to crystallize. While many of these businesses have significant growth ahead of them, very few offer products or services that directly address the regulatory pressures described in this report.

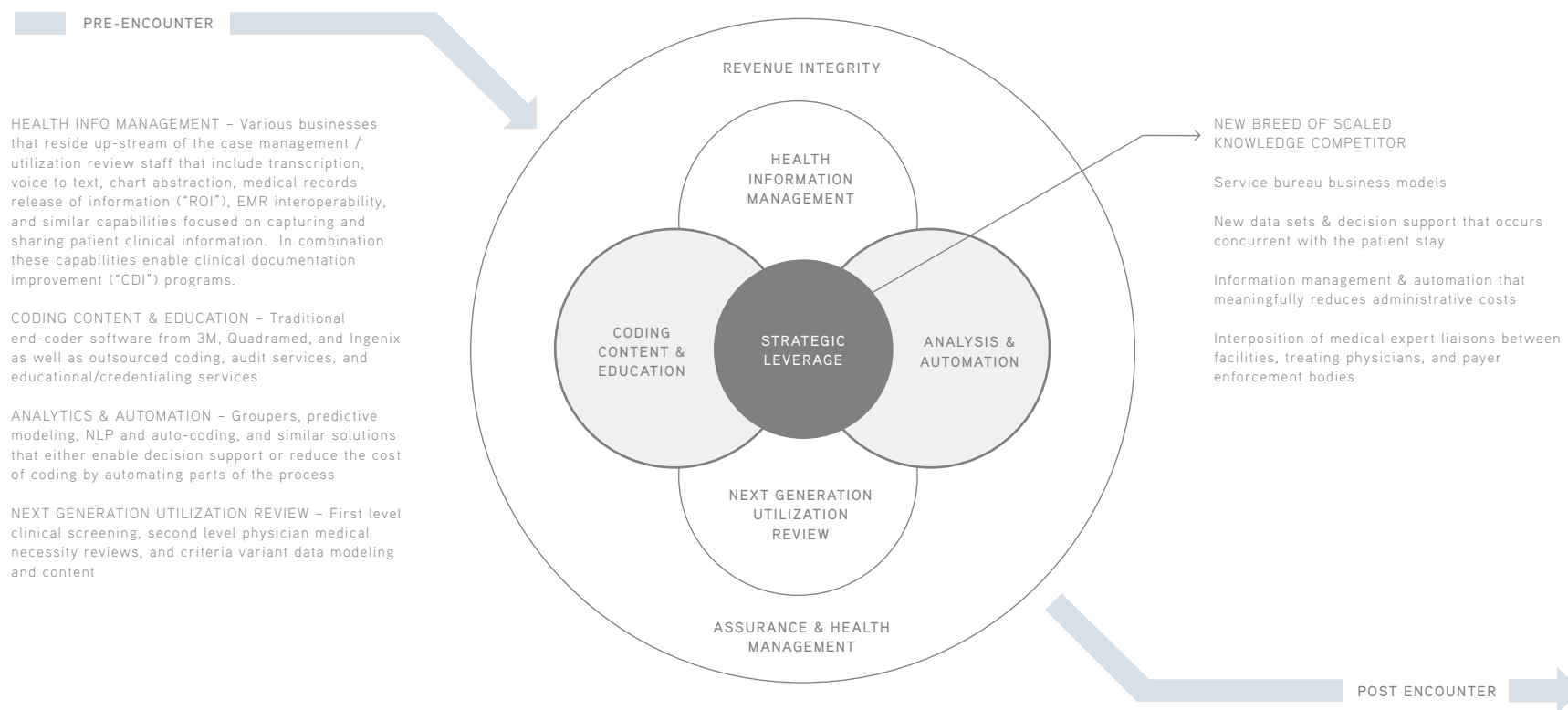
FIGURE 10: REVENUE CYCLE WORKFLOW CONTINUUM & FUNCTIONAL NICHES



At the point of care, where the revenue cycle overlaps with clinical care, a different set of challenges exist. As a result, a new competitive playing field may emerge as regulatory authorities are focused on the components of the revenue cycle continuum that originate directly out of the doctor / patient encounter – an area where unstructured clinical content and qualitative clinical decision making intersects with complex financial and regulatory concepts. While we acknowledge there are quite a

few companies that have been successful in addressing parts of the problem, most of the existing solutions are still relatively immature in comparison to the scope and complexity of compliance problems faced by providers. Over time we expect new companies will be created and several will look to assemble the component parts that already exist in the market to coalesce a new breed of company. **Figure 11** depicts in simplistic fashion how we think the market may evolve over the next few years.

**FIGURE 11: NEW BREED OF SCALED KNOWLEDGE COMPETITOR**



While it is difficult to predict exactly how the component parts of this sector will evolve in response to the dramatic increase in regulatory scrutiny and complexity, there are a few themes we believe will shape the eventual outcomes. First, the focus on point-of-admission / point-of-care data that is at the heart of the medical necessity audits and acuity-based coding will require a much more granular view of all of the facts and conditions surrounding patient treatment decisions. This type of data doesn't exist in traditional claims data, and most hospitals would score an "incomplete" as it relates to capturing all that they should in the patient chart. Innovative companies will assist providers in deploying clinical documentation improvement ("CDI") programs through the adoption of new health information management ("HIM") techniques and tools that reside up-stream from the utilization review process. In addition, we believe newly created databases and decision support capabilities will emerge to support the clinical documentation process and enable physicians to better understand the key aspects of the patient encounter relevant for reimbursement classification decisions. Furthermore, this data capture and decision support process will occur concurrently with the patient visit, such that potential clinical denials will be rectified prior to patient discharge.

Second, a majority of the audit activities are focused on reimbursement classifications that fall into a gray area where software falls short. While the government is constantly looking to curb abuse and wring cost out of the system, they will not interfere directly with physician judgment as it relates to the proper level of care. As a result, medical necessity determinations will remain subject to a myriad of qualitative factors and judgments that cannot be codified in a sophisticated software tool such as **McKesson's InterQual** or **Milliman's Care Guidelines**. That said, medically trained experts armed with a searchable database of clinical medical necessity determinations can consult with treating physicians in order to assist hospitals in understanding how to properly classify patients.

**Executive Health Resources** (EHR), based outside of Philadelphia, has jumped the market by capitalizing on this trend. The company was the first to build a scalable operation that introduces into the equation a trusted and medically trained advocate – a "physician advisor" – armed with sophisticated workflow and an extensive database of medical necessity clinical outcomes. EHR is a new breed of "scaled knowledge" business in that they have created the largest compliance service bureau business in existence. The company's "on-demand" service offering interposes physician advisors between industry administrative regulations (i.e. medical necessity) and applicable

industry clinical standards (i.e. clinical screening tools) to ensure revenue integrity for hospitals and insulate them from Medicare and Medicaid policies that have traditionally created a divide between them and the treating physicians. The company's business model, database, and unique blend of clinical and regulatory domain knowledge have enabled it to enjoy substantial growth over a 4-5 year period during which it has widely become recognized as the medical necessity authority.

While EHR stands out as one of the companies that has enjoyed rapid growth, we think the same dynamics bode well for several other interesting companies that intersect with these trends:

- Transition to ICD-10
- Scope of the CMS cost recovery initiatives
- Overarching trend towards acuity-based coding
- Continued signals from Washington that reimbursement frameworks will continue to evolve to align reimbursement with resource consumption and health outcomes

Furthermore, the key to avoiding compliance penalties is demonstrating consistent, repeatable, and auditable processes. Each of these business levers creates a strong opportunity for outsourced services providers that can perfect and scale to meet these challenges much more effectively than providers can on their own. It is still too early to predict exactly how all of the competitive pieces will shake out, but we believe there will be substantial strategic value in assembling core competencies across each of the categories set forth in **Figure 11** on previous page. Although we haven't gone through an exhaustive market sizing exercise for purposes of this report, the multitude of business lines implied in **Figure 11** suggest that the overall size of the market opportunity, as we have framed it, reaches into the billions of dollars.

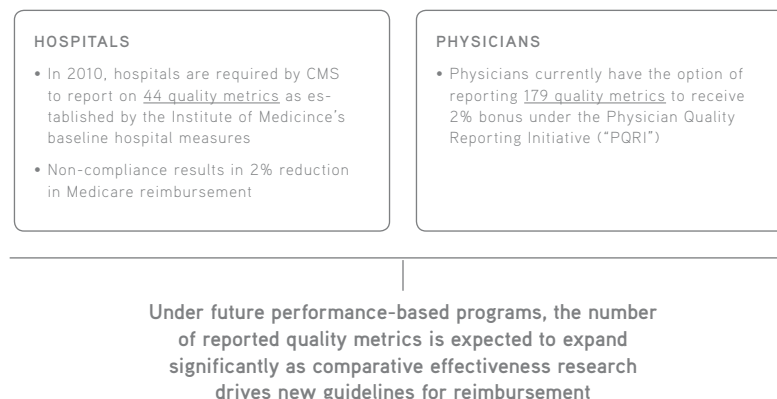
Additionally, outsourced businesses that scale in this sector will be growing unique databases that will eventually create substantial new commercialization opportunities. Although the healthcare world is full of companies that have built massive databases of retrospective claims data, the businesses that scale in this field have an opportunity to assemble new and powerful point-of-care databases that combine more granular clinical content with the associated administrative outcomes data relevant for medical necessity determinations, application of MS-DRGs, and other reimbursement and regulatory guidelines. This dynamic could potentially turn the world of claims

analytics and predictive modeling on its head as the content in these databases will be much richer and, in many instances, will be created through direct interactions with treating physicians concurrent with the patient stay. A service bureau business that can aggregate sufficient market share across the provider landscape will have an opportunity to amass clinical content and compliance outcomes data that would rival even the largest payer databases. Once constructed, these databases can be licensed and sold to government and commercial payers who may see considerable value in evaluating utilization and medical necessity review data. However, before this can be achieved, companies need to continue to scale and assess how to best commercialize the data assets they are building. We see an enormous opportunity to create a new category of health analytics that should propel the growth and creation of some very interesting businesses.

## CLINICAL COMPLIANCE

While the CMS cost recovery initiatives described above have captured most of the headlines, CMS and commercial payers are deploying a complementary set of measurements, incentives, and penalties that are more specifically targeted at clinical outcomes and quality. Ongoing concern regarding the quality of care has led to a sustained effort by both commercial and government payers to tie provider reimbursement to **quality and performance** as opposed to volume of services. As a result, we have seen a dramatic increase in performance-based reimbursement initiatives arising out of payer organizations. The National Committee for Quality Healthcare has identified more than 100 pay-for-performance programs within the commercial payer market alone, CMS and state Medicaid programs have followed suit with similar initiatives. With this expanding array of performance-based programs, CMS and other payer entities have created a complementary framework on the clinical side for regulating reimbursement according to clinical protocol and best practices.

**FIGURE 12: CURRENT CMS REPORTING REQUIREMENTS**



Performance-based reimbursement initiatives were launched by CMS in 2000 as voluntary reporting requirements for hospitals. Within the framework set forth in 2003 by the *CMS Reporting Hospital Quality Data for Annual Payment Update* ("RHQDAPU") program, hospitals report "core measures," a variety of evidence-based standards that have been shown to result in improved clinical outcomes for patients. A similar initiative, the *Physician Quality Reporting Initiative* ("PQRI"), was launched by CMS in the physician sector in 2006 as "a first step toward linking Medicare health professionals' payments to quality, which is expected to evolve over time into a value-based purchasing or pay-for-performance program." PQRI is a voluntary program, whereby providers have the option of reporting on 179 quality metrics in exchange for a 2% incentive payment on Medicare reimbursement. On the hospital side, CMS uses similar incentive payments to encourage reporting on a set number of performance measures; however, they are now penalizing hospitals with potential hold backs on DRG reimbursement for hospitals that do not comply with these reporting requirements. In fact, 2010 is an important marker as hospitals that do not comply with core measure reporting will have their Medicare reimbursements subject to a 2% reduction. While these reporting programs were initially designed as a means for collecting data, this is changing and the next generation of pay-for-performance will undoubtedly include more meaningful penalties and incentives designed to leverage this data to more directly tie reimbursement to quality of care.

## MEANINGFUL USE

One of the most significant initiatives impacting clinical reporting requirements is the introduction of “Meaningful Use.” As part of the American Recovery and Reinvestment Act of 2009, Congress included up to \$34 billion in incentives for eligible hospitals and physicians to implement and use certified electronic health record (“EHR”) solutions. Known as HITECH, the provision requires that providers achieve meaningful use through a staged roll-out of the program through 2015. While the exact parameters of the program have not been established, the following broadly outlines the objective of each stage:

- **Stage 1** criteria focus on electronically capturing health information in a coded format, using that information to track key clinical conditions, communicating that information for care coordination purposes, and initiating the reporting of clinical quality measures and public health information (for more on the proposed Stage 1 meaningful use criteria see the Appendix).
- **Stage 2** expands on Stage 1 criteria in the areas of disease management, clinical decision support, medication management, support for patient access to their health information, transitions in care, quality measurement & research, and bi-directional communication with public health agencies.
- **Stage 3** will focus on achieving improvements in quality, safety and efficiency, focusing on decision support for national high priority conditions, patient access to self management tools, access to comprehensive patient data, and improving population health outcomes.

The roll-out of meaningful use requirement sets varies depending on the provider’s initial payment year. For example, providers can satisfy Stage 1 meaningful use standards as late as 2014, but must adhere to Stage 3 requirements in 2015 to receive the incentive payment (see **Figure 13** for the Medicare Incentive Program roll-out based on initial payment year)

**FIGURE 13: MEANINGFUL USE REQUIREMENT SETS BY PAYMENT YEAR**

| First Payment Year | Payment Year & Requirement Set |         |         |         |         |         |
|--------------------|--------------------------------|---------|---------|---------|---------|---------|
|                    | 2011                           | 2012    | 2013    | 2014    | 2015    | 2016    |
| 2011               | Stage 1                        | Stage 1 | Stage 2 | Stage 2 | Stage 3 | Stage 3 |
| 2012               |                                | Stage 1 | Stage 1 | Stage 2 | Stage 3 | Stage 3 |
| 2013               |                                |         | Stage 1 | Stage 2 | Stage 3 | Stage 3 |
| 2014               |                                |         |         | Stage 1 | Stage 3 | Stage 3 |
| 2015*              |                                |         |         |         | Stage 3 | Stage 3 |

\* Compliance required by 2015 to avoid penalties under Medicare EHR Incentive Program

**FIGURE 14: POTENTIAL WINNERS IN ARRA / HITECH LEGISLATION**

| Group   | Rationale  | Examples   |
|---|--|--|
| Established EMR / EHR Vendors   | These firms are well positioned with significant internal development capabilities, capital resources to make necessary acquisitions, and an ability to influence Meaningful Use standards through political connections | Allscripts, Cerner, Eclipsys, Epic, GE, McKesson, NextGen, Siemens                                     |
| Health Information Exchange ("HIE") Vendors                                   | Ability to pull data from different sources (clinical, lab, Rx, etc.) and across communities will be critical  | Medicity, Axolotl, Carefx, Quadramed   |
| Clinical Decision Support Vendors   | Solutions that can apply evidence based standards across populations and data sets will become increasingly important with the roll-out of Stages 2 and 3  | Shared Health, MEDai, Anvita Health, DiagnosisOne, ActiveHealth Management, Thomson Reuters Healthcare |
| Outsourced Compliance   | Expert advisor services to leverage application of clinical data to assist in reimbursement classifications and compliance with quality measures   | Executive Health Resources   |
| Medication Error Prevention / Checking & Electronic Prescription Applications | eRx and drug-drug, drug-allergy, and drug-formulary checking as critical   | SureScripts / RxHub, TheraDoc (owned by Hospira), Pharmacy OneSource                                   |
| Revenue Cycle Management Vendors  | Meaningful Use requirements for electronic eligibility checking and e-claims submission drive demand   | Ingenix / CareMedic, MedAssets, Emdeon, McKesson / RelayHealth   |
| Consultants   | Complex and evolving lists of Meaningful Use standards coupled with short time frames will create demand for experienced healthcare consultants  | Beacon Partners, Huron Consulting, CTG HealthCare Solutions  |
| Other Innovative Software Vendors   | Other innovative vendors that can fill functionality gaps for Stages 1-3 will find interest from providers and acquirers alike   |  |

Reporting requirements are expected to expand significantly under these future guidelines, forcing providers to develop or acquire proper tools and internal processes to ensure reimbursement. While the program's effect and standards are still uncertain, the ARRA / HITECH legislation potentially benefits several healthcare IT & outsourcing vendors.

Aside from being a boon for HIT vendors, we believe meaningful use is a critical piece of the compliance landscape because it incents providers to deploy the systems and infrastructure required to collect, analyze, and distribute the data needed to support clinical, financial, and administrative compliance programs. Moreover, although the definition of "meaningful use" is likely to be debated heavily and evolve over time, it is clear to us that providers will need to do more than just deploy systems; providers will be forced to demonstrate how the adoption of systems is improving health outcomes

## COMPARATIVE EFFECTIVENESS

The need to effectively monitor and track key clinical quality metrics is further underscored by one of the more controversial elements of the HITECH legislation – approximately \$1.1B in federal funds earmarked for “comparative effectiveness” research. The Congressional Budget Office has defined comparative effectiveness research as “rigorous evaluation of the impact of different options that are available for treating a given medical condition for a given set of patients.” While comparative effectiveness research has existed for many years in both public and private programs, this is the first effort to coordinate a centralized regulatory body to oversee its application at the national level.

It is not yet clear where the line of demarcation will be drawn between “*cost* effectiveness” and “*clinical* effectiveness.” On one side of the debate, introducing cost considerations as part of the national comparative effectiveness program creates public discomfort and political mistrust. Cost effectiveness should therefore be conducted by separate entities to maintain the integrity of the program. On the other hand, proponents argue that costs are a necessary component to determining appropriateness, and therefore should be included for a transparent discussion regarding coverage and reimbursement

Regardless of how this plays out politically, TripleTree believes the eventual link to reimbursement is inevitable whether this occurs within a national panel, CMS, or other commercial payer organizations. Similar to past clinical reporting initiatives, this creates a framework which providers will be forced to comply with in order to maintain financial viability.

## RELATED PROVIDER COMPLIANCE PERSPECTIVES

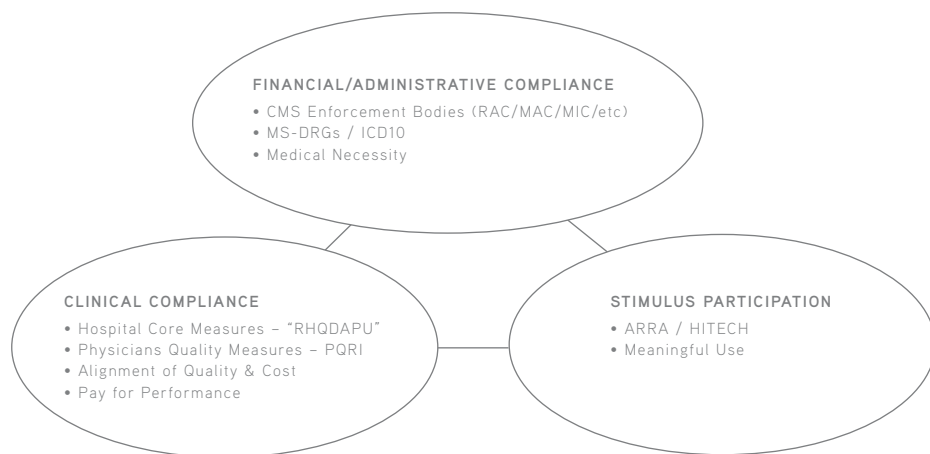
Beyond CMS’ RACs, MACs and MICs, and other government regulations and regulatory bodies such as OSHA, JCAHO, HIPAA, and the FDA, there is a broader level of compliance that exists in simply attempting to operate under the terms of each contract. The sheer magnitude of compliance ‘touch points’ in a hospital setting pertain to each and every contract that the provider has in place with its own

- physicians,
- suppliers (medical/surgical supplies and equipment, linens, waste management, dietary),
- third-party payers (Medicare, Medicaid and commercial health insurers),
- technology and services vendors and beyond.

This might be best appreciated in simply acknowledging that a typical 250 bed hospital has numerous medical supply and equipment suppliers as well as multiple arrangements with third-party payers at any given time, wherein medical supplier/ equipment contracts are added at an exponential rate per annum, while most third-party commercial payer contracts have some level of modification no less than quarterly. Vendors like **TractManager** and the **Advisory Board** (following its acquisition of **Concuity**), which provide technology-based contract management services, are fully aware of the major challenges contract compliance represents for the hospital community as they help their clients through what can be an unmanageable process. As varying departments within a hospital seek to optimize the financial performance of its business through a 12-month cycle of constant re-negotiation and supplier additions and terminations, complex contracts continue to be in a constant state of modification.

Compliance goes far beyond the scope of regulatory mandates. It focuses also on the need to articulate governance principals and policies and putting in place systems to help automate the adherence to these internal policies. In the example above, a hospital is not only tasked with regulatory compliance, but also must put in place systems to enforce agreements across its entire network, including external trading partners. This task is made even more difficult when regulatory requirements are laid on top of internal policies and third party agreements. There are systems in place to help with the procurement and management of these contracts, but with the additional complexity of federal, state, and local regulatory requirements, general procurement and services/spend management systems fall short. As a matter of good governance, organizations must put in place processes and systems that help manage the ever increasing landscape of internal and external compliance requirements and do so at an enterprise level rather than at a departmental or individual level.

FIGURE 15: CURRENT CMS REPORTING REQUIREMENTS



## SUMMARY

In our view, we are still in the very early stages of what will be a steady and permanent deployment of enforcement bodies and mechanisms to assist government and commercial payers in aligning reimbursement with quality and cost. The topics we have covered above, while frequently covered in isolation, are highly interrelated. For example, it is not a coincidence that the more granular data models embodied in the new MS-DRG / ICD-10 coding paradigm will likely inform the evolution of core measures, PQRI quality measures, and other yet to be introduced P4P constructs. The analytical frameworks embodied in these initiatives examine the same core issues – albeit through a different lens – and as a result the databases that are built around these topics will feed each other on an iterative basis. As the deployment of these initiatives evolves over the coming few years, we fully expect the government will “up the ante” with bigger financial incentives and penalties as the pressure to eliminate payment errors while reducing the cost of health delivery continues to mount. Simple inertia suggests that we will likely witness the introduction of additional complexity and mandates as time passes.

At the epicenter of all of this activity will be a continued comingling of clinical data with financial and administrative regulations. This is important to understand because the combination of clinical complexity with regulatory complexity will create a pervasive level of uncertainty that is not likely to be solved by software alone. Instead, there will be a large number of patient visits that will fall into clinical and regulatory “gray areas” where trained human intervention will be needed to apply judgment and qualitative reasoning to achieve proper outcomes. This is why new outsourced businesses, such as **Executive Health Resources**, which have created a type of scaled knowledge offering that will continue to experience substantial growth in this new environment. It is also why companies in the coding space are building out more robust service offerings and are seeking to move upstream to impart advice at the point of care, thereby impacting documentation practices that have downstream consequences. Furthermore, entirely new data analytics businesses will evolve out of this sector. Providers are going to be so overwhelmed by this activity that they will look to outsourcers and new automation technologies they believe will lower the cost of keeping pace with the new mandates. The good news for innovative companies is that this process has only just begun and the opportunity to build meaningful businesses that exploit these trends is enormous.

According to estimates by the Federal Bureau of Investigation, fraud-related losses account for as much as 10% of all healthcare spending, or roughly \$250 billion – a staggering amount that could provide coverage for the nation’s 44 million uninsured.

## SECTION 2: COMPLIANCE IN THE PAYER MARKET

### PAYMENT INTEGRITY

As healthcare spending swells to unprecedented levels, payment integrity has been increasingly targeted as a means of stemming the amount of fraud, waste, and abuse in the U.S. healthcare system. Broadly defined, payment integrity relates to the accuracy of all billing and payment related activities carried out on behalf of both providers and payers. By and large, payment integrity issues are the result of:

- A highly complex framework of payers and providers in the U.S.
- Ever-changing clinical and financial code sets with minimal levels of standardization
- Varying payer-specific billing methodologies
- Stringent compliance requirements
- Constant regulatory change

This level of complexity leads to an environment rife with errors, misuse, and fraud and creates a \$400-500 billion problem for the healthcare industry.

Payers are susceptible to two broad types of payment integrity issues related to provider negligence and outright fraud. The former is the result of negligent errors related to coverage / eligibility, billing, third party liability, medical necessity, and utilization. Provider errors are increasingly problematic for payers. For instance, error rates for Medicare fee-for-service doubled in 2009 to 7.8% while the Department of Health and Human Services (“HHS”) reported an even higher error rate estimate of 10.5% for Medicaid. These error rates lead to nearly \$60 billion of improper payments for the two public programs in fiscal 2009. This problem, however, is not isolated to the public sector as commercial payers have disclosed payment error rates as high as 11% in recent years. We believe the incidence of improper and erroneous payments will continue to rise with the introduction of more sophisticated coding methodologies (e.g., ICD-10), ever-changing payer-specific rule sets, and more stringent quality and regulatory reporting requirements.

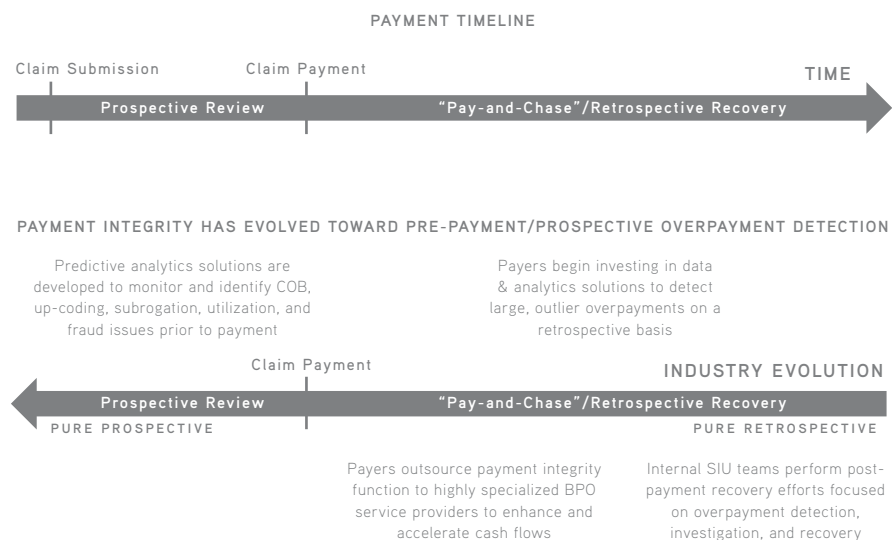
Separate from payments made in error, the incidence of fraud – which is defined as having intent to deceive – has also increased along with the system’s level of complexity. Criminals – whether billing for services or products that were never rendered, up-coding, scheduling unnecessary tests / office visits, etc. – find it relatively easy to manipulate and defraud the system. For instance, with possession of four simple data points (name, address, SSN, and DOB) criminals can bill payers for millions of dollars of services and equipment. For this reason, payers are perhaps more directly affected as their provider counterparts are estimated to commit the majority (80%) of all healthcare fraud. This, in addition to improper payments, leads directly to high levels of waste and abuse prevalent in the U.S. healthcare system and creates a \$250-350 billion per year payment integrity problem for payers.

### EVOLUTION FROM RETROSPECTIVE TO PROSPECTIVE OVERPAYMENT RECOVERY

Historically, Medicare, Medicaid, and commercial payers have employed retrospective, labor-intensive audits and investigations to detect fraud and recoup excess and unnecessary payments. This approach – known across the industry as “pay and chase” – can take as much as a year to several years to complete and has been traditionally carried out by the payers’ internal Special Investigative Units (“SIUs”), comprised of professionals from the clinical coding, compliance, and law enforcement communities. To this day, despite significant technological advances, this methodology is still widely employed. According to the National Health Care Anti-Fraud Association, of the 70% of payers that utilize some form of anti-fraud and abuse system, the vast majority still follow a “pay and chase” approach. Given the time- and labor- intensive nature of retroactively identifying and tracking down suspected fraud and abuse perpetrators, the system allows for only a small percentage of claims to be investigated.

Over time, however, payers have made investments in data and analytics capabilities that have increased the yield and effectiveness of the SIU teams as it relates to finding the “needle in the haystack” (see **Figure 16** below on payment integrity evolution toward prospective overpayment detection). However, despite recouping billions of dollars over the years, payers are still heavily out-matched as the size and scope of the payment integrity problem has increased exponentially to unprecedented levels.

**FIGURE 16: EVOLUTION TOWARD PROSPECTIVE REVIEW**



In an effort to fill this void and drive higher levels of cash flow, payers began to outsource their payment integrity function to technology-enabled business process outsourcing providers (“BPOs”) that are highly specialized in overpayment / fraud detection and collection. Payers have formed relationships with companies like **AIM Healthcare Services** (acquired by **Ingenix**), **HealthDataInsights**, and **CGI** for enterprise-wide overpayment collection services, including:

- **Retrospective data mining and analytics** to detect overpayments and target suspicious providers and claims for review / audit
- **Outsourced fraud investigation and review services** (including financial, clinical, and compliance audits) performed by clinicians, certified coding professionals, reimbursement specialists, and auditors
- **Recovery solutions** for coordinating and carrying out the overpayment collection process
- **Audit workflow, tracking, and reporting tools**
- **Process improvement and SIU training / compliance services** to improve payer education and reduce future overpayments

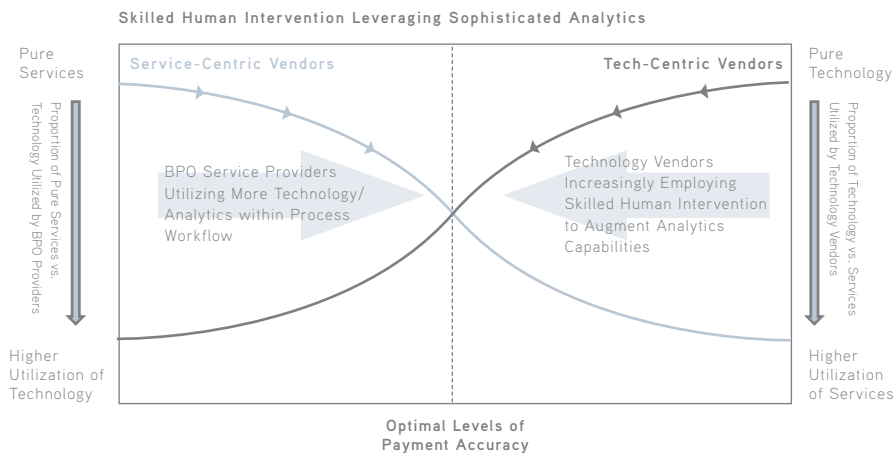
It should be noted that the approach to identifying and recovering subrogation opportunities is very similar to the overpayment processes described above. The primary difference with subrogation is the addition of a complex data mining procedure that is used to identify accident-related claims that are recoverable through a 3rd party. In addition to its overpayment solutions, **Trover Solutions’** Healthcare Recoveries division is dedicated solely to subrogation and is a good example of how vertical specialization can provide differentiation and an extended value proposition to payer customers.

The federal government has been particularly active in outsourcing its overpayment collection efforts over the past several years following the success of the Recovery Audit Contractor (“RAC”) pilot program – which returned nearly \$700 million in overpayments to the Medicare Trust Fund between 2005 and 2008 (see **Figure 6**). It was out of this success that the government launched its permanent RAC and Medicaid Integrity Contractor (“MIC”) programs (see **Figure 7** for more detail). Several vendors have since been awarded RAC and MIC contracts – including **HealthDataInsights** (RAC auditor) and **HMS Holdings** (MIC auditor) – by the government to provide payment / program integrity services. Given the momentum these programs have gained, competition among specialized, technology-enabled BPO services providers will intensify and drive the industry further toward prospective overpayment detection.

In fact, several software / analytics vendors have developed solutions for prospectively identifying erroneous and fraudulent claims prior to payment. **Bloodhound Technologies**, for example, is one of several emerging vendors that runs predictive algorithms against large data warehouses to uncover suspicious billing practices. The company’s solutions identify aberrant behavior patterns related to billed procedures, tests, visit levels, location of service, and other determinants by comparing the output against established norms to identify variances. Other predictive analytics vendors, similar to the BPO service providers above, employ teams of experienced investigators to supplement their sophisticated modeling and claims profiling solutions. Companies such as **HealthCare Insight** (a **Verisk Health** company) and **TC3 Health** staff registered nurses, physicians, and other coding and reimbursement specialists to review all suspect claims and billing patterns identified by the software.

Over time the lines between pure BPO services providers and technology / analytics vendors have blurred as each model has borrowed from the other's strengths. Outsourcers are utilizing higher levels of technology throughout the workflow process, while technology vendors are increasingly using clinicians and reimbursement experts to augment their analytical capabilities. Skilled human intervention in conjunction with sophisticated technology / analytics capabilities provide additional layers of review and result in improved payment accuracy (see **Figure 17** below).

**FIGURE 17: EVOLUTION TOWARD THE MIDDLE**



As the next generation of payment integrity evolves, payers will increasingly rely on emerging software and services providers to deal with new payment methodologies (e.g., MS-DRG) and code sets that will present heightened levels of complexity. Arguably, none of these new initiatives is more pressing for payers than the industry transition to ICD-10.

## ICD-10 AND ITS IMPACT ON PAYMENT INTEGRITY

As the compliance date for ICD-10 approaches, payers are working hard to improve readiness levels to capitalize on the benefits of the new coding methodology while avoiding potential payment integrity issues. As identified in a report published by the RAND Corporation, there are several direct financial benefits with the expanded code set – which includes over 155,000 codes compared to 17,000 for ICD-9 (see **Figure 8**) including:

- Improved payment accuracy for new procedures
- Fewer miscoded, rejected, and improper reimbursements
- Fewer fraudulent claims
- Better understanding of new procedures
- Improved disease management

However, the introduction of ICD-10 does not come without its own set of challenges. As payer systems and operational processes rely heavily on diagnosis and procedure data, there are inherent problems in modifying data fields, logic, and business rules to the new code set. Adding to this complexity, payers will need to be able to process both code sets simultaneously as providers transition from ICD-9 to ICD-10 over their own defined timeframe. Accordingly, we are seeing a re-emphasis on middleware applications to perform much of the translation services required to enable payers, providers, and other healthcare constituents to manage this massive expansion in medical code sets and clinical documentation. Leading vendors, such as **Health Language**, are helping the industry “cross the chasm” by deploying clinical middleware applications and content services to *medically map* and integrate these disparate data sets through the company’s Language Engine™. The transition to ICD-10 will assuredly lead to errors and delays in the payment process, but it also serves as a good example of how payment integrity will be a perpetual problem across the industry.

In summary, while payment integrity evolves and matures, the trend toward pure prospective payment review will continue to drive innovation within the private sector. Additional layers of complexity stemming from new payment methodologies, expanded code sets, and other regulatory mandates will create a perpetual problem for the industry as it relates to overpayment detection, prevention, and collection. Vendors that can adapt to this complex, rapidly changing environment – while moving toward the “holy grail” of prospective payment review – will be well positioned to meet the needs of commercial and government payers.

Estimates suggest that even small Medicare Advantage plans are incurring more than \$10 million per year in lost reimbursement revenue due to poor data, documentation, coding, and reporting errors.

## CLINICAL AUDITING

### *NEW CLINICAL AUDITING SECTOR BORN OUT OF HEDIS AND MEDICARE RISK ADJUSTMENT*

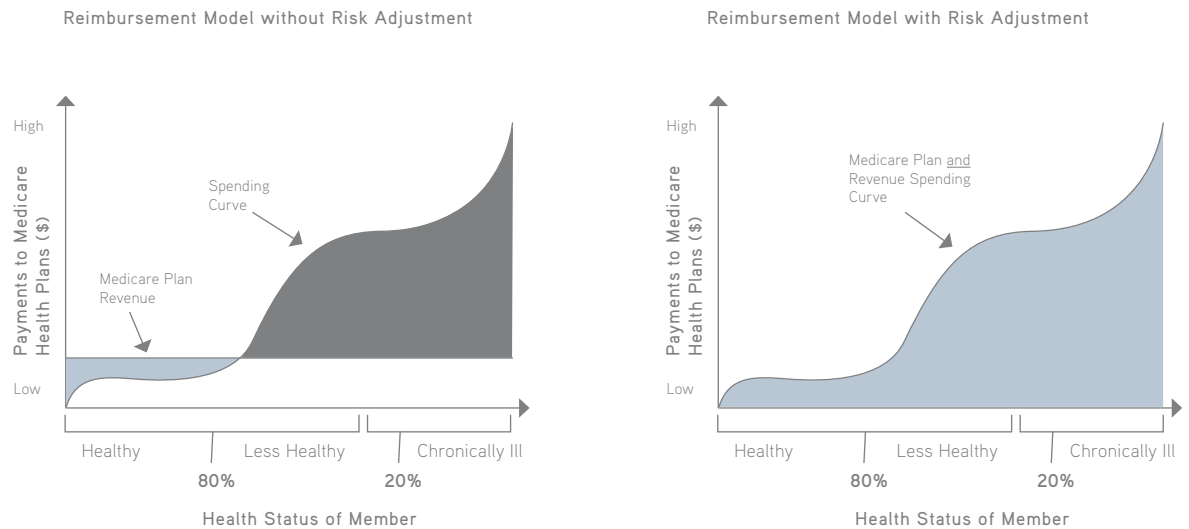
The integrity of clinical documentation has increasingly become an area of important focus. The healthcare industry continues to rely on a code-based payment system where coding compliance, accuracy, and completeness are crucial to maximizing reimbursement. Since the early days of revenue cycle management, the parity between clinical documentation and the revenue cycle has seen significant levels of investment and automation in both the acute and ambulatory care settings. Concurrent with this wave of activity, the National Committee for Quality Assurance (“NCQA”) has forced the payer community to heighten its focus on clinical outcomes as a means of measuring the quality of its provider networks.

As a result, the NCQA created Healthcare Effectiveness Data and Information Set (“HEDIS”) to provide a set of standardized performance measures for managed care organizations. HEDIS reporting data is collected on an annual basis and is largely based on clinical outcomes and reimbursement data extracted from submitted insurance claims and audits of patient medical records. Consequently, HEDIS has accelerated outcomes measurement as it applies to capturing critical cost and quality elements related to care delivery. Subsequently, industry stakeholders are seeking a “channel to the chart” which allows them to efficiently acquire, audit, analyze, mobilize, and aggregate clinical data to improve claims data. Estimates suggest that even small Medicare Advantage plans are incurring more than \$10 million per year in lost reimbursement revenue due to poor data, documentation, coding, and reporting errors. Clinical auditing is becoming one of the most relevant resources in driving revenue cycle, quality, and care management initiatives across the industry.

In order to gain access to the clinical documentation now mandated by the NCQA, payer-driven clinical auditing began expanding over the past decade. This dynamic continued through 2003 with the passing of the Medicare Modernization Act (“MMA”) in which clinical auditing would play a much broader and more relevant role in payer-based outsourcing. As a result, Medicare risk-adjusted reimbursement, a Medicare Advantage plan reimbursement methodology based on the patient’s health acuity, was established. As part of the MMA legislation, member premiums are paid based on diagnostic information documented and reported by healthcare providers. Because risk adjustment significantly impacts member premiums, payers were forced to audit patient medical records and review coding quality on behalf of the provider to ensure proper reimbursement.

Similar to the growth paradigm triggered by NCQA with HEDIS, risk adjustment is now a central operating driver for Medicare Advantage plans that will advance the next wave of growth across clinical auditing outsourcing. In 2004, CMS implemented the Hierarchical Condition Category (“HCC”) as standard for risk-adjusted reimbursement where payment is based 70% on demographic data and 30% on risk adjustment. Of note, the prior reimbursement methodology was based 100% on demographic information. In the next iteration – from 2004 to 2007 – Medicare transitioned to 100% risk-adjusted payments. This new model bases payment on 3,100 diagnoses and 70 chronic disease categories to determine the following year’s payment. These market developments have significantly increased demand for coding and clinical auditing solutions as healthcare organizations look for effective tools to analyze clinical outcomes and ensure payment integrity.

**FIGURE 18:** REIMBURSEMENT MODEL SHIFTING TO RISK ADJUSTMENT

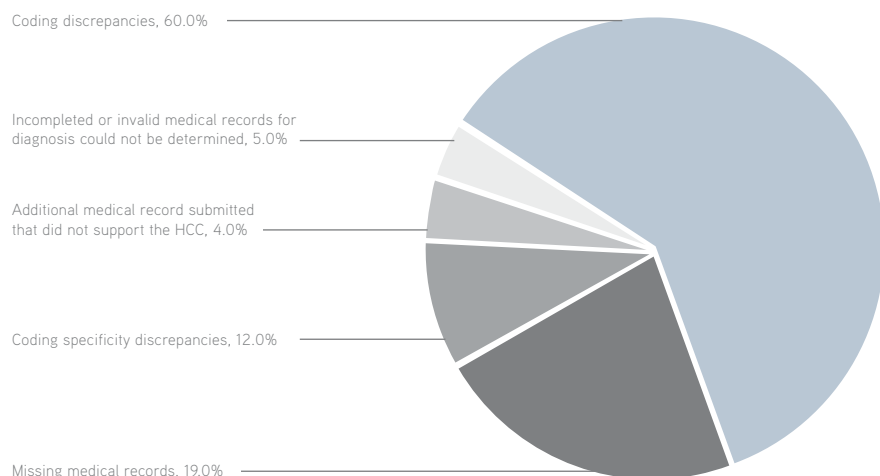


**Figure 18** above demonstrates the paradigm shift associated with the way risk adjustment has impacted Medicare reimbursement. The improved alignment between reimbursement and spending has created a structure in which health plans no longer find it necessary to target healthy beneficiaries to drive financial success.

### **PAYER-FOCUSED RADV AUDITS MIRROR RAC PROGRAM INITIATIVES FOR PROVIDERS**

CMS announced its Risk Adjustment Data Validation (“RADV”) pilot program in July 2008 to audit Medicare Advantage health plans more extensively. This increased the focus on practitioner coding accuracy, quality controls around risk adjustment submissions, and oversight in the growing Medicare Advantage program. The audits required health plans to retrieve medical records for patients whom HCC’s have been submitted and verify appropriate documentation to confirm the HCC submittal. The pilots resulted in an average discrepancy rate of 35% in which the two primary error drivers were coding discrepancies and missing medical records (see **Figure 19** for more detail, below). The pilot program’s high error rate led to another round of RADV audits wherein selected health plans must adhere to a short, three month timeframe to substantiate reported severity levels and by extension, CMS reimbursement. This dynamic puts pressure on health plans to go after every reimbursable dollar in a highly compliant manner.

**FIGURE 19: HCC DISCREPANCY RATE BREAK-DOWN**



Similar to the RAC program, RADV audits have shifted focus from a ROI perspective to an approach centered on payment integrity and compliance. It is critical that plans ensure the HCC data they receive from hospitals and physicians is accurate in order to minimize negative financial implications resulting from a RADV audit. Medicare Advantage plans may be subject to downward adjustments to the risk scores across their entire patient population if audit results show discrepancies. As an example, a plan with \$10 million in HCC reimbursement could potentially owe CMS a \$2 million penalty if 20% of its records are found to be inaccurate.

While investments are needed to prepare for risk-adjustment and RADV audits, data accuracy is a key determinant to maximizing reimbursement, minimizing compliance risk, and improving patient-level intelligence. Furthermore, we are seeing a massive shift in the maturity of this new clinical auditing space to the point where plans are seeking to pull charts on 100% of their populations. This is a dramatic increase from the 20% or 30% initially targeted by payers and points to the importance of finding every co-morbid condition for purposes of collecting the proper reimbursement while maintaining payment integrity.

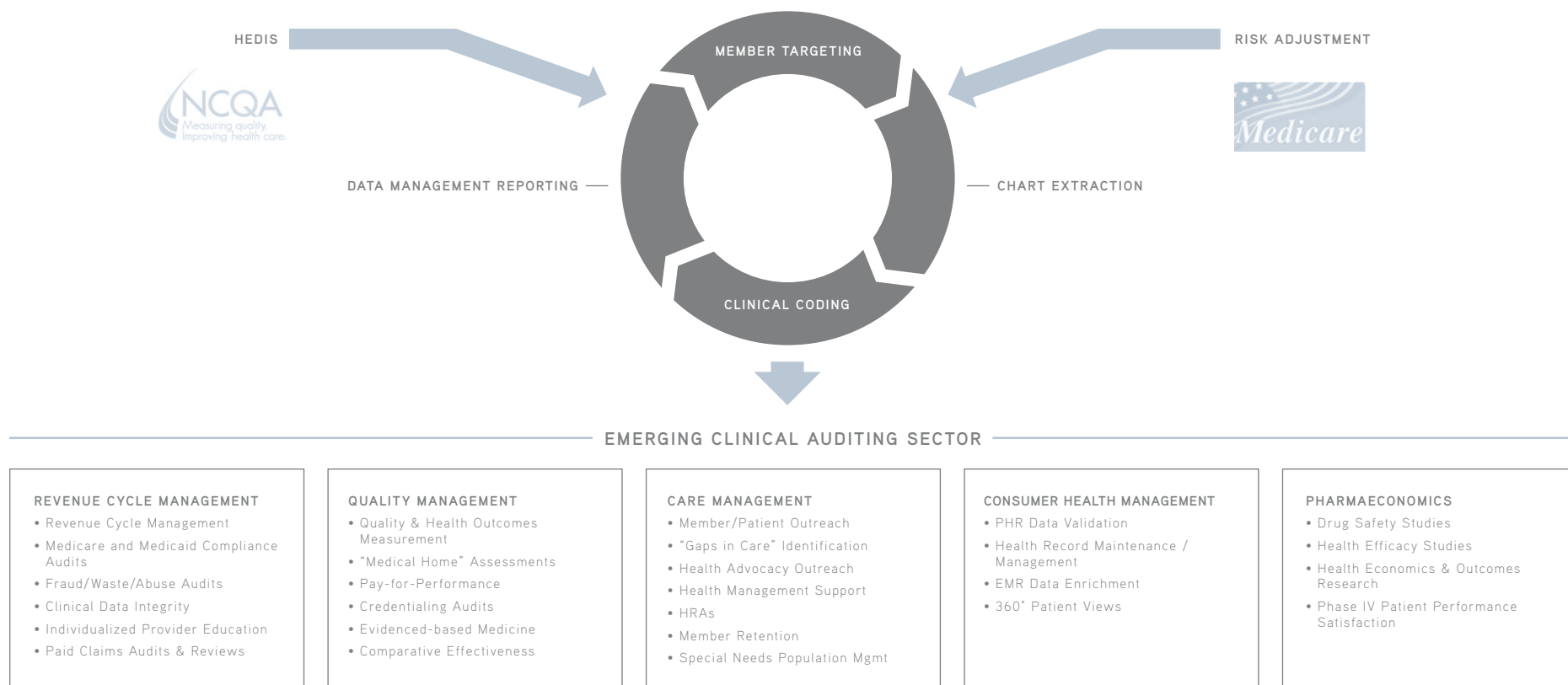
### **COMPLEXITIES OF CLINICAL AUDITING DRIVING DEMAND FOR TECH-ENABLED OUTSOURCING**

Accelerated market demand for end-to-end platform solutions is driving high degrees of convergence among the sector’s technology and service-driven vendors. Payers and providers are struggling to keep pace with a dizzying array of regulatory issues, medical codes, and constant reimbursement changes. Barriers to entry in the space are high and recruiting, retaining, and developing the right talent has historically been a challenge. Coding accuracy is critical to maximizing reimbursement and with many payers lacking the expertise in-house, they have turned to experienced outsourcing vendors who leverage high value analytical capabilities.

**Figure 20**, below, demonstrates how HEDIS and Medicare risk adjustment have led to a broader extensibility of clinical auditing and has created an opportunity for several emerging tech-enabled outsource vendors, including **The Coding Source**, **Outcomes Health Information Solutions**, and **MedAssurant**. As a result, clinical auditing is undergoing its third wave of change as the harvested clinical data are now creating new growth drivers across cost, care, and quality initiatives. Payers and providers must find an efficient, accurate, and scalable “channel to the chart” with a vendor who can effectively acquire, analyze, mobilize, and aggregate clinical data to improve

payment integrity. With over 80% of the data submitted on patients coming from the physician, the quality of diagnosis coding and supporting documentation is crucial in maintaining proper payment for each member of CMS. While member targeting, chart extraction, data management reporting, and clinical coding are all individually critical to reimbursement for healthcare, the merging of all four offerings into one suite provides an all-inclusive “one-stop-shop” for clinical auditing services. To this end, we are seeing an emergence of a new clinical auditing sub-segment within the payment integrity marketplace.

FIGURE 20: EMERGING CLINICAL AUDITING SECTOR



According to a study by Thomson Reuters, if all Medicare patients received the same level of care as the top 100 hospitals, the average patient stay would be cut by half a day.

#### **CLINICAL AUDITING SUB-SECTORS**

As is evident from **Figure 19**, several industry drivers have been combined to spur growth for clinical auditing solutions. Over the next several years, heightened levels of complexity and regulation will meaningfully expand the need for reliable and robust clinical data sets. This, in turn, would enable a 360 degree view of the patient's health and behavioral status thereby driving increased levels of care management, coordination, and cost containment. Additionally, with the looming demographic boom in the 65+ demographic, these demands will be compounded as the U.S. Medicare-eligible population expands by more than 25% by 2020 to over 50 million seniors.

#### **REVENUE CYCLE MANAGEMENT**

To date, accurate premiums from CMS are ensured primarily through Medicare Advantage risk adjustment and through the identification of co-morbid conditions of seniors. Risk adjustment will expand into Medicaid where it is currently being successfully piloted in multiple states. It is interesting to note both House and Senate health reform bills proposed using risk adjustment in the commercial healthcare exchanges. Given the logic behind acuity-based reimbursement, we predict risk adjustment will inevitably move into a commercial setting. The National Healthcare Antifraud Association Report (March 2008) suggests that the cost of fraudulent claims ranges between 3% to 10% with CMS preventing over \$450 million in improper payments over the past year. We expect to see significant growth in the use of broad-based clinical auditing to lower the cost of fraud currently in the system by identifying inaccurate and fraudulent bills.

#### **QUALITY MANAGEMENT**

Clinical auditing is at the center of all payer based quality initiatives and it continues to be driven across the HEDIS requirements. However, most plans are seeking to leverage similar clinical auditing capabilities to scale their respective pay for performance and comparative effectiveness initiatives. Accurate clinical coding combined with deeper data regarding co-morbid conditions gives providers a "full picture" of the patient and in turn allows for improved patient care.

## CARE MANAGEMENT

As a result of risk adjusted reimbursement across the marketplace, the payer community has been leveraging clinical auditing services to identify the un-coded, but existing co-morbid, conditions of their member base. For the first time, payers are gaining an understanding of the chronic conditions their members suffer. While the historical process relied on the finance division to set premium payments based on patient coding, Medicare Advantage plans are getting a more complete patient health view with increased depth on co-morbid conditions, which were not previously incorporated in the required premium payment for members. Health plans are striving to set premiums correctly and leveraging all the quality data available through clinical auditing to manage care effectively, accurately, and efficiently. Expanding use of already existing data helps payers manage health advocacy and the care of chronically ill patients.

Since providers only receive reimbursement based on the chief complaint of the patient, doctors have little incentive to record information on a patient beyond the principle reason for the appointment. CMS' continuation of this incomprehensive form of repayment places restrictions on comprehending the health acuity of a patient with the issue of partial patient intelligence compounding over time until CMS moves to change this reimbursement policy. As a result of this flawed payment method, CMS and payers do not have the full picture of a patient's health, including the co-morbid conditions in the Medicare population which have tallied to:

- More than 45% of seniors age 65 to 79 have 3 or more chronic conditions
- More than 54% of seniors older than 80 have 3 or more chronic conditions
- 20% of Medicare beneficiaries with five or more chronic conditions account for 70% of Medicare outlays (AGS Geriatrics Workforce Policy Studies Center)

As a result, multiple chronic conditions continue to be a major area of impact on a payer's medical loss ratio. Gaining greater insight into the multiple chronic conditions will be a very large area of expansion and priority in capital investment in the near term for payers.

## CONSUMER HEALTH MANAGEMENT

While the industry continues to struggle in producing a full data set inside a personal health record, clinical auditing services enrich the consumer-based data set by providing chart-based clinical data and marrying chart based clinical data with the typical data set of a payer. The key is all un-coded and unbilled chart based data does not exist in any data warehouse in the industry and only resides in a doctor's chart or their electronic medical record. Enriching data sets for different purposes and utilizing all data, including data not currently in a personal health record, provides greater insight into patient health, potential treatments, and most importantly for payers' total cost predictions.

## PHARMAECONOMICS

Intensifying pressures are accelerating the focus on patient safety and quality measurements for all healthcare stakeholders. Current rules and regulations are helping to establish these initiatives as new standards are affecting regulatory bodies, providers, payers, and consumers. As clinical trial Phase IV drug safety and outcomes studies become more mainstream, we expect the scale and scope of clinical auditing services to drive meaningful value in delivering and enriching both payers and pharmaceutical companies. Drug safety studies are looking to ensure drug safety post approval, extend service line capabilities, and evaluate the quality of treatments. Germane to the payer, biopharmaceutical, and medical device landscape, we expect clinical auditing services to evolve into the mainstream and to perform value-added services for Phase IV post approval studies.

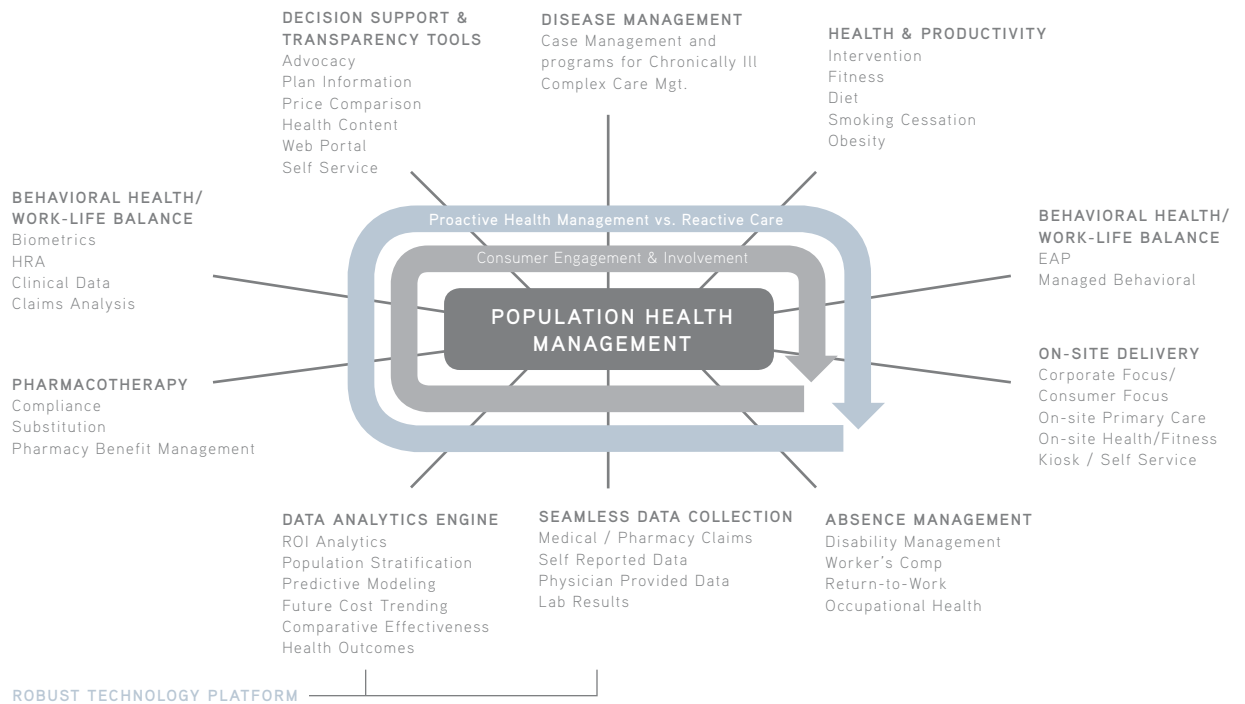
When individuals can quickly access the appropriate care for their given condition, as opposed to the condition getting worse due to inaction, the cost of care can be significantly be reduced.

### SECTION 3: COMPLIANCE IN POPULATION HEALTH MANAGEMENT

While healthcare compliance is traditionally aligned with revenue cycle management, administrative simplification, and regulatory management, compliance represents one of the central tenets of care management and coordination. Whether through a broad-based population health management or vertical chronic care management program, patient compliance represents the central success factor in “bending trend” on medical cost containment and care coordination. As TripleTree has followed the population health management (“PHM”) sector’s evolution, one theme stands out: participant engagement and compliance with programs and care plans is the main driver of success.

There are a variety of programs offered by a wide-range of vendors that fall under the PHM heading, as illustrated in **Figure 21** below. Whether the programs attempt to prevent participants from becoming ill (wellness) or improve or manage the health of participants already suffering from one or more health conditions (condition management), the ability to engage the participant and ensure compliance throughout the program is the key driver of success.

**FIGURE 21: TOTAL POPULATION HEALTH MANAGEMENT**



Participant motivation is a key obstacle to the success of any PHM program. While some individuals are self-motivated to lead healthy lifestyles or improve their health, the vast majority, the ones who are the biggest burners of healthcare dollars, are not. In order to drive compliance among these individuals, behavior change is necessary. Today, payers and PHM vendors are affecting behavior change through three primary methods:

- Incentives
- Technology
- Removing barriers to change

### **INCENTIVES**

The focus on participant engagement and compliance with PHM programs has led to new models for incentives. The use of incentives in PHM programs, which TripleTree first wrote about in a 2007 white paper entitled *Health & Wellness: Accelerating Trends and Emerging Themes*, has evolved significantly over the past few years as the form and value of these incentives have changed. The use of incentives to change behaviors related to individuals' health care will continue to evolve. Vendors who can identify which incentives are the most effective at inducing program compliance will be able to differentiate themselves through engagement rates and improved outcomes.

According to a 2009 survey by PricewaterhouseCoopers, 71% of employers offered some form of a wellness program and 64% of those employers offered incentives to employees to participate. PHM program sponsors have shifted from "carrot" incentives, such as fifty dollar gift cards, to "stick" incentives that basically force participation and compliance. "Stick" incentives have appeared in recent years in various forms. Employers have required participation in certain programs in order to qualify for health benefits or have made premiums unaffordable for employees who do not participate. These efforts, along with the spread of high-deductible health plans, are intended to more closely tie each individual's behavior with their cost of healthcare.

Some condition management vendors have embedded incentives into their programs as a way to maximize compliance. For example, some vendors have provided program participants with co-pay reimbursement for doctor visits related to the participant's chronic condition. The incentives are intended to encourage compliance with preventative care and avoid expensive visits to the emergency department.

The next evolution of incentives is to directly integrate underwriting and premium pricing to patient compliance. With the introduction of its Diabetes Health Plan in 2009, **UnitedHealthcare** has created a health plan that provides incentives to plan members for compliance activities ranging from regular blood sugar checks to participation in health coaching programs. According to UnitedHealthcare, benefits for compliance "include some diabetes supplies and diabetes-related prescription drugs at no charge, as well as lower co-payments for related doctor visits, at an estimated savings of up to \$500 a year."

**RedBrick Health**, a private company that in 2009 raised venture capital funding from Kleiner Perkins Caufield & Byers, is working with employers to more closely correlate an individual's healthcare costs with health engagement. The company's Health Earnings™ System tracks engagement and compliance activity across PHM programs to allow employers to design benefit plans that shift the cost of non-compliance to the individuals who choose not to comply.

### **TECHNOLOGY**

While the nurse call-center model and mailings of educational materials remain critical components of many successful PHM programs, additional models are being employed that take advantage of different forms of technology to drive program compliance. Condition management and wellness coaching programs often employ automated calls and remote patient monitoring solutions that can cost effectively distinguish between which participants are following the program and which participants need additional support. Companies like **Eliza** and **Silverlink Communications** have developed outreach systems and content that contact participants in condition management programs via the telephone and have interactive conversations to collect information on program compliance and the health status of the individual.

Remote patient monitoring (“RPM”) solutions, a topic covered in a past TripleTree report entitled *mHealth: Remote Patient Monitoring*, collect biometric and compliance-related information daily on program participants. Nurses in charge of the participants can use software to identify exceptions in the data collected to most efficiently reach out to participants in need. In addition, RPM can recognize patients who are not in compliance with their care programs and reach out to them expeditiously to get the patient back on track. This real-time follow up is incredibly effective, as the nurse coaches are able to speak with patients to identify the reasons they are not complying and prevent bad habits from forming.

Primary care physicians are also being drawn in to drive care compliance through the use of technology. While most successful PHM programs encourage participants to regularly interface with their primary care physician or appropriate specialists, innovative companies, with initiatives that are often sponsored by payers, are giving providers the information and tools necessary to efficiently track their patients.

**MEDecision’s Nexalign** platform is intended to enable information exchange between payers and providers including referrals, authorizations, extensions and clinical data.

**Phytel** has developed software for providers that combines clinical decision support with interfaces for patient outreach, office visit compliance, and notifications.

### REMOVING BARRIERS TO CHANGE

Through various methods, PHM vendors are attempting to remove barriers that have historically limited compliance with care management and coordination programs. Vendors have tried to make it as easy as possible for participants to engage, regardless of medium or location. Whether it is over the web, through e-mail, by phone, or face-to-face, there are PHM programs that can meet the preferences of the target individuals.

On-site PHM programs have continued to gain traction at employer sites. Through the establishment of on-site primary care clinics at employer campuses, employers have been able to leverage the clinics’ medical staff to not only improve compliance with preventative programs, but deploy sophisticated care programs for chronically ill employees or dependents. On-site pharmacies further improve convenience for employees, leading to increase adherence with prescription drug regimens. Of course, these on-site facilities also drastically reduce employees’ time away from work, a major benefit to employers. With employers’ interest in on-site clinics and pharmacies growing rapidly, leading healthcare companies such as **Walgreens** (through the acquisitions of **Whole Health Management** and **I-Trax**) and **Cerner** (through the acquisition of **IMC HealthCare**) have made investments in this sector. Leading private companies, such as **Comprehensive Health Services** and **Medcor**, have witnessed tremendous demand for their on-site offerings as employers seek new ways to lower their healthcare costs.

#### TRIPLE TREE ACTED AS THE EXCLUSIVE FINANCIAL ADVISOR:

|  |   |   |
|--|---|---|
|   |    | <p>STRATEGIC SALE <span style="float: right;">2008</span></p> <p><b>ACQUISITION</b></p> <p>Whole Health Management by Walgreens</p> |
| <p>Whole Health Management leveraged TripleTree’s expertise in healthcare services to articulate how an on-site presence could serve as an integrated health services “hub,” providing a single source solution for an employee’s health and well-being.</p> |   |   |
|   |  | <p>STRATEGIC SALE <span style="float: right;">2010</span></p> <p><b>ACQUISITION</b></p> <p>IMC HealthCare by Cerner</p>             |
| <p>IMC Health Care’s management team retained TripleTree as its financial advisor because of the firm’s in-depth knowledge of the population health management sector and prior transaction success in on-site employer healthcare.</p>                      |   |   |

#### CMS 2010 CALL LETTER REQUIREMENTS FOR PART D SPONSORS

(Source: Centers for Medicare & Medicaid Services)

- Enroll targeted beneficiaries using an opt-out method of enrollment only;
- Target beneficiaries for enrollment at least quarterly during each year;
- Target beneficiaries who:
  - Have multiple chronic diseases; and
  - Are taking multiple Part D drugs; and
  - Are likely to incur annual costs for covered Part D drugs that exceed \$3,000.
- Offer a minimum level of MTM services including interventions for both beneficiaries and prescribers, an annual comprehensive medication review for the beneficiary, which includes a review of medications, interactive, person-to-person consultation, and an individualized, written summary of interactive consultation, and quarterly targeted medication reviews; and
- Measure and report details on the number of comprehensive medication reviews, number of targeted medication reviews, number of prescriber interventions, and the change in therapy directly resulting from the interventions.

Outside the workplace, PHM vendors are finding other ways to improve compliance through face-to-face interaction. In 2009 **Alere** and **CVS Caremark** announced that participants in Alere's health management programs would have access to face-to-face counseling at **MinuteClinic** and CVS pharmacy locations across the U.S.

CMS and several other payers have also sought to use the pharmacy channel to improve compliance, especially with those individuals who produce high medical expenditures. Since the Medicare Part D program was introduced, CMS has been studying how to improve medication adherence and has continued to be a proponent of medication therapy management ("MTM") programs intended to take advantage of patients' regular interactions with their pharmacists. CMS, in its 2010 Call Letter, has fully embraced MTM as a means to improve drug adherence and ultimately lower overall healthcare costs for Medicare. The CMS 2010 Call Letter sets forth the latest requirements for Part D sponsors that are intended to increase the number of seniors who participate in a MTM program. Private companies such as **Outcomes Pharmaceutical Health Care** have established national networks of pharmacists who have been trained to provide MTM programs that comply with the CMS requirements. Private payers are also supporting MTM through solutions offered by firms such as **Pharm MD** and **Medication Management Systems**. Pharmacists have lobbied to be able to have more clinical interactions with patients over the years. Payers are beginning to realize that MTM programs can be cost effective ways to improve care compliance and take advantage of the patient-pharmacist relationship and their regular interactions.

Overall, patient compliance with care programs can be the most effective way to contain healthcare costs for payers. However, compliance is heavily reliant on participant behavior and willingness to embrace more healthy lifestyles. PHM vendors are attempting to improve the likelihood of compliance, but the onus remains on the individual to make a conscious decision to improve one's health.

APPENDIX: PROPOSED STAGE 1 MEANINGFUL USE CRITERIA FOR PROVIDERS

| Objective # | Objective  | Practices   | Hospitals   |
|-------------|--|---|---|
| 1           | CPOE   | 80% of all orders   | 10% of all orders   |
| 2           | Drug interactions and allergies  | All functionality is enabled  | All functionality is enabled  |
| 3           | Maintain problem list in ICD-9-CM or SNOMED-CT   | At least 80% of unique patients have at least one entry recorded as structured data   | At least 80% of unique patients have at least one entry recorded as structured data   |
| 4           | Transmit prescriptions electronically  | At least 75% of prescriptions must be transmitted electronically  | NA  |
| 5           | Maintain active medication list & allergy list   | At least 80% of unique patients have at least one entry recorded as structured data or indication of "none"   | At least 80% of unique patients have at least one entry recorded as structured data or indication of "none"   |
| 6           | Record demographics  | At least 80% of patients seen have gender, race, DOB, ethnicity, preferred language, insurance recorded   | At least 80% of patients admitted have gender, race, DOB, ethnicity, preferred language, insurance and cause of death recorded                          |
| 7           | Record vital signs=  | At least 80% of patients 2 years and older have BP and BMI; growth chart or ages 2 – 20   | At least 80% of patients 2 years and older have BP and BMI; growth chart or ages 2 – 20   |
| 8           | Record smoking status for patients 13 and over   | 80% of patients over 13 seen  | 80% of patients over 13 admitted  |
| 9           | Incorporate test results into EHR  | 50 percent of results expressed as a number or positive/negative  | 50 percent of results expressed as a number or positive/negative  |
| 10          | Generate list of patients with specific conditions                                       | Generate at least one report  | Generate at least one report  |
| 11          | Report quality measures to CMS or states   | For 2011 capture required data electronically and provide aggregate numerator and denominator by attestation, for 2012 and beyond submit electronically | For 2011 capture required data electronically and provide aggregate numerator and denominator by attestation, for 2012 and beyond submit electronically |
| 12          | Send reminders for preventive / follow up care   | Send reminders (per patient preference) for preventive/follow up care to 50% of patients age 50+  | NA  |
| 13          | Implement clinical decision support rules related to clinical priority, track compliance | Implement five rules and track compliance   | Implement five rules and track compliance   |

| Objective # | Objective  | Practices  | Hospitals   |
|-------------|--|--|---|
| 14          | Check insurance eligibility  | Check eligibility electronically for 80% of patients seen  | Check eligibility electronically for 80% of patients admitted   |
| 15          | Submit claims electronically   | File 80% of claims electronically  | File 80% of claims electronically   |
| 16          | Provide patients with an electronic copy of their information  | 80% of patients who make the request receive it within 48 hours: test results, problem list, med list, allergies | 80% of patients who make the request receive it within 48 hours: test results, problem list, med list, allergies, discharge summary, procedures |
| 17          | Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge | NA   | 80% of patients who request receive electronic copy of discharge instructions   |
| 18          | Provide patients with electronic access to their information within 96 hours of availability                 | At least 10% of all patients seen receive access to lab results, problem list, medication and allergy lists      | NA  |
| 19          | Provide a clinical summary for each visit  | Clinical summaries provided for 80% of office visits   | NA  |
| 20          | Exchange clinical information electronically with other providers  | Perform at least one test of capacity to exchange information  | Perform at least one test of capacity to exchange information   |
| 21          | Perform medication reconciliation  | At least 80% of encounters and care transitions  | At least 80% of encounters and care transitions   |
| 22          | Provide summary of care record   | At least 80% of transitions of care and referrals  | At least 80% of transitions of care and referrals   |
| 23          | Submit data to immunization registries   | Capability to submit data to immunization registries and submission where required and accepted                  | Capability to submit data to immunization registries and submission where required and accepted   |
| 24          | Submit reportable lab results to public health agencies  | NA   | Capability to electronically submit reportable lab results to public health agencies, submission where it can be received                       |
| 25          | Submit syndromic surveillance data to public health agencies   | Capability to submit electronic syndromic surveillance data, actual submission where possible                    | Capability to submit electronic syndromic surveillance data, actual submission where possible   |
| 26          | Protect health information   | Conduct or review a security analysis and implement security updates as necessary                                | Conduct or review a security analysis and implement security updates as necessary   |

## TripleTree Healthcare Team

### **KEVIN GREEN** Founding Managing Director

- Co-founded TripleTree, LLC
- 30+ years of operational, M&A and capital raising experience having advised over 100 companies
- Over 2 decades of healthcare operating experience in both public and private companies; two as CEO
- Active with numerous associations and boards, including BCBS-MN
- BA and MBA, University of San Diego

### **DAVID HENDERSON** Founding Managing Director

- Co-founded TripleTree, LLC
- Former COO of a \$90 million telecom company
- 30+ years in venture capital and operating expertise
- 7+ years in public accounting with Arthur Andersen
- Active Board of Director on several public and private companies
- BA, Moorhead State University; Certified Public Accountant

### **PETER ERICKSON** Managing Director

- Joined TripleTree in 1998
- Special emphasis on life sciences, consumer health, health and wellness, mobility, and human capital management
- Engaged in more than 30 engagements with leading companies such as HCSC, Fiserv and Microsoft; client representation across both technology and healthcare sectors
- BA, DePauw University; MBA, Carlson School of Management, University of Minnesota

## TripleTree Healthcare Team

### **JOSEPH SCHIESL** Managing Director

- Joined TripleTree in 2007
- 30+ years experience in software and technology services in the healthcare industry; senior executive roles in public and private companies
- Senior executive and operating roles at CyCare Systems, MCS at Diversified Pharmaceutical Systems, ValueRx Pharmacy Benefit Management Services, and UHS
- BA, Loras College

### **SCOTT TUDOR** Managing Director

- Joined TripleTree in 1998
- Specializes in IT outsourcing & managed services and healthcare IT
- Engaged in more than 40 transactions with leading and global companies such as Experian, HCSC, UnitedHealth Group, HP, Compaq Computer, Verizon, Cardinal Health, Avanade, and Ciber
- Served as TripleTree's research chairman
- Previously practiced law
- BA and JD, University of Illinois; MBA, Carlson School of Management, University of Minnesota

### **TAD O'DONNELL, III** Managing Director

- Co-Founding Managing Director, TT Private Equity
- 15+ years investment experience in healthcare services and healthcare information technology
- Previously General Partner at HLM Venture Partners, a healthcare focused venture capital partnership with over \$400 million in capital commitments
- Began career as an investment banking analyst in the Health Care Group at Smith Barney and moved on to Greylock and General Catalyst
- BA and MBA, Harvard University

## TripleTree Healthcare Team

### **CHRIS HOFFMANN** Director

- Joined TripleTree in 2005
- 20+ years of experience as an operating/sales executive, consultant, and analyst in the technology industry
- Former President of Tier 1 Research; executive positions at Gartner, GE Capital, and IBM Global Services
- 2006-Present SIIA Software Division Board member
- BA, University of Minnesota-Duluth; advanced studies through the University of Minnesota and Michigan State University

### **RYAN STEWART** Director

- Joined TripleTree in 2009
- 15+ years of healthcare industry experience
- Senior healthcare banker with Lazard; senior research analyst with Piper Jaffray; corporate strategy executive with UHG; corporate experience at Horizon Blue Cross Blue Shield of New Jersey
- Founder/CEO of a venture-backed pharmaceutical technology company
- BA, Lafayette College

### **DAVID BROWNLIE** Vice President

- Joined TripleTree in 2004
- Primary focus on the firm's healthcare IT and outsourcing engagements
- More than 20 transactions with leading global acquirers such as Microsoft, Walgreens, and UnitedHealth Group
- Previous experience advising IT companies at Accenture and Mobius Venture Capital
- Former attorney focused on corporate transactions
- BS in Finance, Indiana University; MBA and JD, University of Colorado

## TripleTree Healthcare Team

### **JASON GRAIS** Vice President

- Joined TripleTree in 2006
- Special emphasis on healthcare analytics, mobility, life sciences, and workers' compensation
- Previous experience at Fair Isaac, Arthur Andersen, and BearingPoint
- BBA in Finance, University of Wisconsin; MBA, Carlson School of Management, University of Minnesota

### **MICHAEL BOARDMAN** Associate

- Joined TripleTree in 2006
- Specializes in research and analysis of industry trends and investment opportunities within healthcare
- Previous experience at Merrill Lynch
- Held a Cisco Certified Networking Associate Degree (CCNA)
- BA, Carlson School of Management, University of Minnesota

### **SETH KNELLER** Associate

- Joined TripleTree in 2005
- Special focus on healthcare revenue cycle management, clinical systems, geriatric care, and healthcare analytics
- Prior experience includes Capital Institutional Services (CAPIS) and the Mayo Clinic
- BBA in Finance & Business Economics, University of Notre Dame
- CFA charterholder

## TripleTree Healthcare Team

### **JUDD STEVENS** Senior Analyst

- Joined TripleTree in 2008
- Primary focus on healthcare IT, outsourcing, and population health management
- Previous corporate experience at Honeywell International
- BA in Finance, Carlson School of Management, University of Minnesota

### **EMMA DAUGHERTY** Analyst

- Joined TripleTree in 2009
- Focuses on M&A and private placements within healthcare IT and outsourcing
- Previously worked as an auditor at Deloitte & Touche
- BA, University of Notre Dame; Certified Public Accountant

### **JOANNA ROTH** Analyst

- Joined TripleTree in 2008
- Focuses primarily on industry trends and investment opportunities within healthcare IT and outsourcing
- Previously interned at Protiviti
- BBA, Finance, Investments, and Banking and Accounting, University of Wisconsin – Madison.

TripleTree, LLC is an independent, merchant and investment bank focused on mergers and acquisitions, financial restructuring, principal investing, and strategic advisory services for healthcare and technology companies. The firm specializes in growth businesses, vertical industry specialization, and disruptive technology delivery models.



TRIPLE TREE

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