



Verras Ltd

Transforming Healthcare

Physicians' Self-Directed Outcome Improvements

Maximize Bundle Payments Benefits

Bundle payments provide the optimal strategy to improve hospitals and physicians' clinical quality and cost efficiencies because the incentives are in place to produce net savings for sharing. Achieving these financial savings is dependent in large measure, on the hospital's ability to provide clinical information that motivates physician's self-directed outcome improvements. To realize these benefits, four healthcare delivery fundamentals are of prime importance, particularly to physicians:

- 1. Policy issues** that incentivize physicians to improve outcomes
- 2. Hospital and physician collaboration** that improves clinical and financial outcomes
- 3. Reliable clinical information** ensures physicians' abilities to achieve net savings
- 4. Technology to distribute net savings** to the physicians of each clinical service

It is axiomatic that physicians must take the lead in quality and efficiency improvements. Axiomatic stems from the fact that the vast majority of medical resources are consumed when clinicians order patients' diagnostic tests and treatments for both ambulatory and hospitalized patients. Inpatient expenditures is the venue where the largest portion of resources are consumed; so providing reliable hospital data to physicians is essential to clinical and financial improvements.



DISCUSSION – FOUR HEALTHCARE DELIVERY FUNDAMENTALS:

- 1. Policy issues** that incentivize physicians to successfully improve outcomes are addressed by the easing of prohibitions to the sharing of financial net-savings. These policy changes are incorporated in bundle payments, such as CJR and through hospital and physician risk-sharing arrangements (ACOs).
- 2. Hospital and physician collaboration** that improves clinical and financial outcomes through continuous quality improvements is the ideal in healthcare.¹ Moreover, significant financial savings are most readily and effectively accomplished through the incentives inherent in the implementation of hospital and physician bundled payments.² This is true whether hospitals institute a CMS model or by physicians engaging with an insurer or self-funded employer to develop risk-sharing models. CMS, implemented the Comprehensive Care for Joint Replacement (CJR), which is now being extended to other orthopedic and cardiac procedures. Both CMS and third party insurers are aggressively extending the use of bundle payments.
- 3. Reliable Clinical information** ensures physicians' ability to achieve net savings, which is an imperative. Financial risks are minimized when physicians have the information with which to reduce clinical variation and resource consumption, improve outcomes and thereby achieve net savings.

Since hospital data is readily available and more clinically robust than ambulatory data, quality improvements and net saving are more easily achieved for inpatient care, which is where consumption of clinical resources is most intense. Three specific data deliverables for each physician are critical to practice pattern improvements.

- a. All-Patient data (not MedPar), risk-adjusted to account for patients' severity of illness*
- b. Documentation of patient-level, and physician-level clinical variations*
- c. Demonstration of each physician's best-demonstrated resource consumption by DRG*

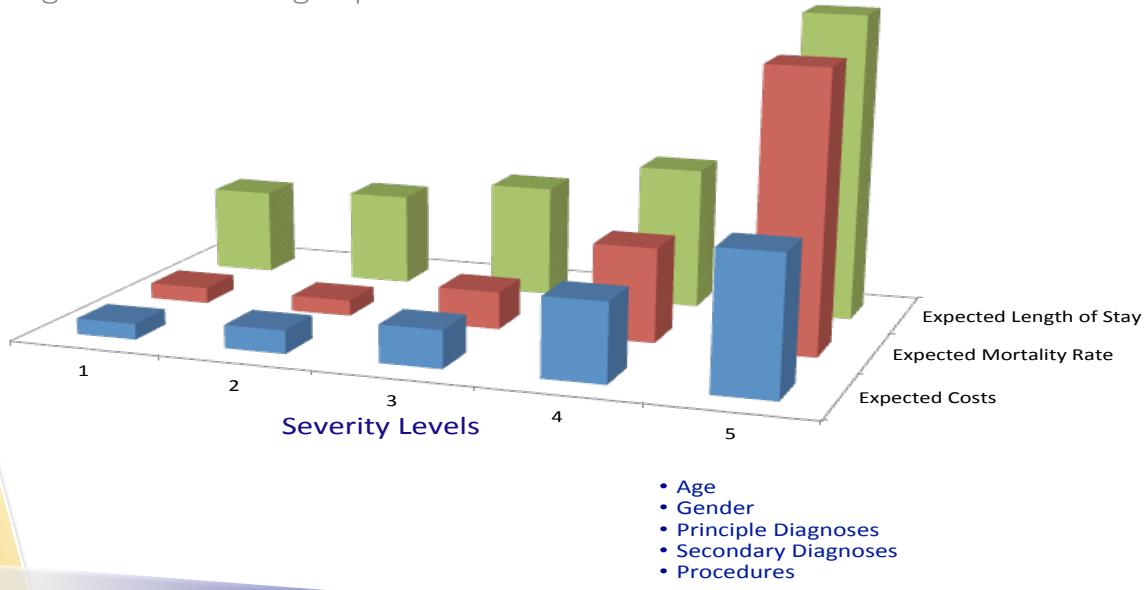
DISCUSSION – THREE CRITICAL DATA DELIVERABLES:

- 3a. All-Patient data (not MedPar) risk-adjusted to account for patients' severity of illness.** Verras' Acuity Index Method (AIM) for risk adjustment takes into account the health disparities and multiple co-morbidities with which to assess each patient's risks of morbidities, mortalities and resource consumption. AIM uses patient-level clinical inputs that are derived from the hospital's medical records and IT Departments. (Other SOI systems may be used in lieu of AIM.)

Based upon each patient's age, gender and co-morbidities (other diseases or complications), patients are subdivided into 5 levels of severity. Within each DRG category, level 1 patients are "less severe" because they are younger ages and have fewer co-morbidities. Severely ill, Acuity level 5 patients are generally older with multiple other medical conditions. Within each patient cohort (DRG or specific diagnosis or procedure) the higher the Acuity Index the greater the expected mortalities, the longer the LOS and the greater the expected resource utilizations. (Exhibit 1)

Exhibit 1:
Example DRG: Risk-Adjusted DRG and Expected Outcomes

Verras Takes AIM™
 Validating Data and Setting Expectations



To implement physicians' practice pattern improvements, all dollars must be expressed as hospital costs. Charges are adequate for hospital comparisons only.

3b. Documentation of patient-level, and physician-level variations

Patient Level Variations (Exhibit 2) Black numbers are each patient's Acuity Index level, graphed at their actual Charge and LOS outcomes positions. This hospital's MedPAR (Medicare) data is typical and demonstrates significant variations in Charges and LOS. (Charges are roughly twice costs.). Each number represents a patient and his/her acuity level. Each oval encompasses 2 standard deviations (95%) of all charges by year, which in this case, indicates there has been no improvement in variation over the past 3 years. The horizontal line is the norm for each patient's acuity level. Patients above the line were managed more efficiently than the norm. The Vertical line is the LOS norms for each severity level and patients to the right had fewer inpatient days than the norms. (Patients in the green [Right Upper Quadrant -RUQ] had fewer charges/costs and shorter LOS, which is optimal.)

Reading the charges from the left, vertical axis indicates that patients in the upper right portion of the ovals had about \$18,000 fewer charges and shorter LOS by about 2 days of the two norms. Those in left lower quadrant had excess resource consumptions of about \$30,000 and longer LOS by 3 days. Therefore, this equates to a per patient charge variation of \$48,000 and LOS variation of 5 days, within 2 St. Dev.

Physician's Individual Variations (Exhibit 2) The White Letters are four (4) Physicians' Mean Charges and LOS). Dr. M's mean resource consumption is about \$8,000 less than charge norms and LOS is slightly shorter than the norm. Dr. G overused resources by about \$12,000 and 1 day longer LOS than norms. This amounts to a physician variation of \$20,000. (Because of attestation issues, he/she may not have been responsible for the over utilization, which is the reason Verras typically accounts for all resources by ordering physician).

3c. Demonstration of physicians' best-demonstrated resource consumption by DRG

ray etc. were used in his/her best-demonstrated outcomes (Green [RUQ] area patients), and less efficient patients (Red area) expressed as a percent difference. Each doctor's Personal Variance is then compared to the average of the other physicians' acuity level patients (Group Variance). Self-comparisons are important to engaging doctors in voluntary, self-directed outcomes improvements.

Exhibit 2:

Identifying Clinical Variation: Cases and Severity Total Joints – Via Christi Regional Medical Center

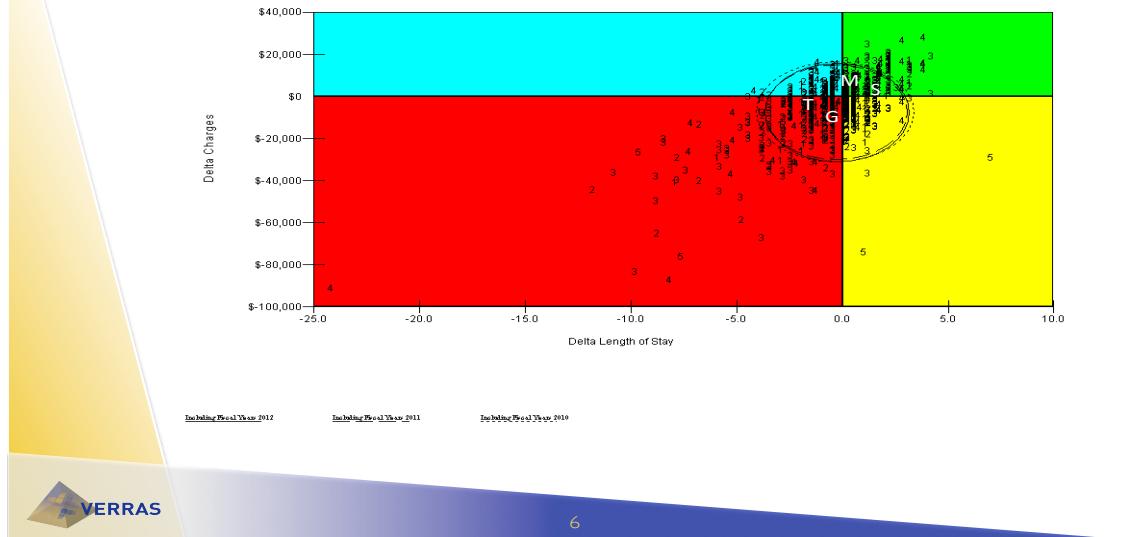


Exhibit 3:

Identifying Clinical Variation: Cases and Severity Total Joints – Via Christi Regional Medical Center

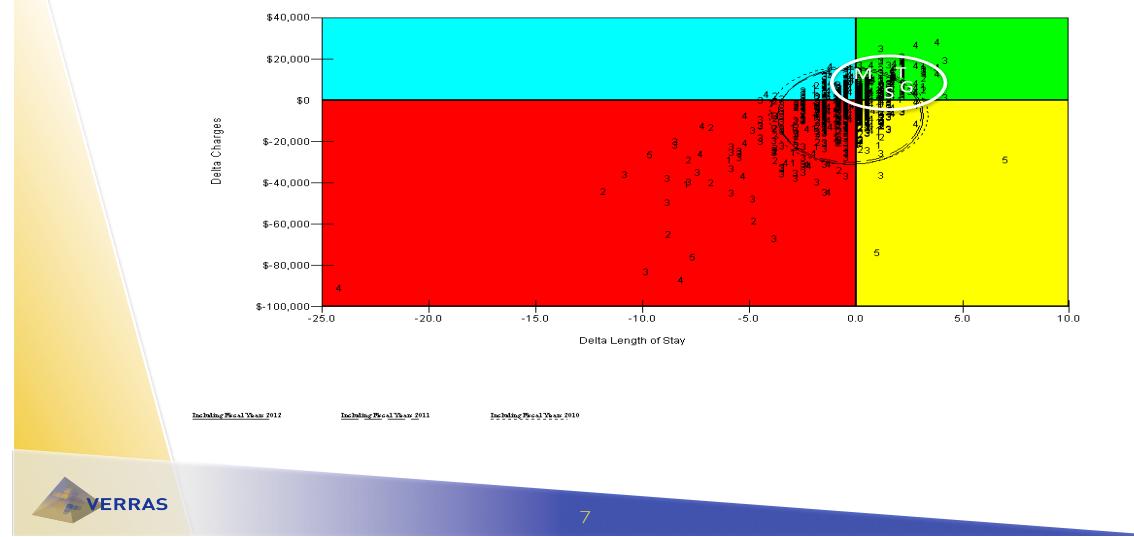


Exhibit 3 graphically demonstrates Reductions In Variation and both resource consumption and LOS improvements. By identifying each resource i.e. labs, implants, X-rays etc. used by all four doctors for patients in the RUQ, it is then possible to construct a bi-level, risk-adjusted order set

Even small Reductions in Variation yield thousands of dollars in cost savings for each patient cohort. Much of the cost reduction results from not subjecting low-risk patients to the magnitude of tests and treatments necessary for high-risk patients.

4. Technology to distribute net savings to the physicians of each clinical service is an important incentive for physicians. The ability to objectively and transparently distribute net savings to physicians is perhaps the most challenging yet most important issue for the long-term success of bundled payments.

In order to show specific quality improvement data in a straightforward and transparent manner, Verras has developed the Medical Value Index (MVI). The MVI consists of six, clinically reliable, industry-standard measures of the base data, which are available from hospitals' medical records and IT data.

The hospital's MVI Score (outcomes) is documented by summing the scores for each of the six quality and efficiency metrics. Clinical services can be individually displayed in a similar manner, as can individual, high volume physicians. This is a critical issue for ACOs, Bundled Payments or Value-based initiatives that differentially reward doctors, the payment models need the ability to objectively determine which clinical services (cardiology, ORS etc.) have achieved the greatest improvements in their quality and efficiency outcomes. Accuracy and specificity at this level obviates internecine financial conflicts.

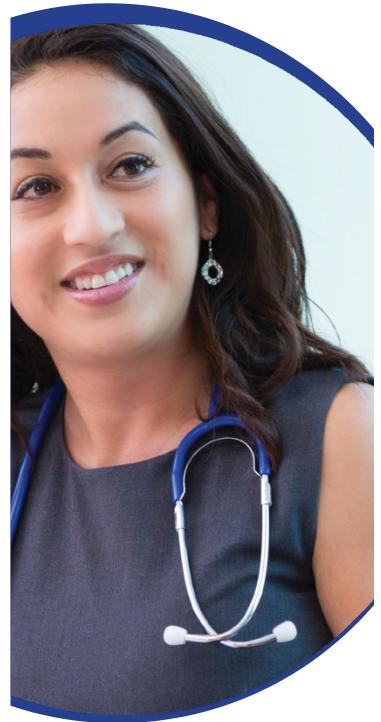
Verras' technologies aggregate the hospital measures and trends multiple clinical quality and efficiency outcomes to statistically determine if there have been improvements, degradations or static outcomes over a 3-year period. Each outcome's metric is compared to the maximum score to compute the Recorded number. The measures are then totaled to determine the MVI for a hospital, or for the individual clinical services.

The MVI utilizes an 800-point scoring method. The component measures have different weighting factors (Max. Score: 46 points for QMPS and 230 points for Resource Consumption, etc.). These factors are based on experiential evidence as to which metrics are the most predictive of actual clinical quality and cost efficiency improvements.

Inpatient Metrics of Quality that Constitute the Medical Value Index (MVI):

1. *Quality Measures and Patient Satisfaction (QMPS) - NHQM and CAHPS*
2. *Hospital Readmission Rate (RADM) – 30-day rates*
3. *Mortality Rates (MORT) – Nine (9) different hospital mortality metrics*
4. *Morbidity Rates (MORB) - Top five MS-DRGs of the top five clinical services*
5. *Reductions in Variation (RIV) – Charges of Top 5 MS-DRGs*
6. *Resource Consumption (RESC) – Inflation Rate of Top five clinical services*

The six metrics are clinically reliable, time-tested quality indicators that are readily available from all hospital medical records departments. Hospital personnel manually abstract three of the measures from patients' charts, as they are federally mandated by CMS: National Hospital Quality Measures (NHQM), HCAHPS (patient satisfaction) data and Readmission rates. The clinical and financial outcomes of MVI data are calculated by Verras and trended for three-year periods.



DISTRIBUTING NET SAVING USING THE MEDICAL VALUE INDEX (MVI)

One of the unique functions of MVI is its ability to objectively distribute net savings between the medical staff and hospital and more specifically, between physicians within the different clinical services, all on the basis of quality. Because MVI data are developed at the individual physicians' levels, each clinical service can be independently rewarded based on the doctors' quality and cost efficiency performances.

Example: The example hospital (below) and medical staff implemented physicians' self-directed outcomes improvements. At the end of the year they accumulated a \$1.9M net-savings. At the beginning of the year, they had decided to allocate 14% of the doctor's portion of the net saving to their referring, primary care physicians. A hospital-physician agreed upon sliding scale determines the overall physician component with the philosophy that the greater the net saving, the greater the doctors' portion. (In this case, the physicians share 55% of the \$1.9M savings.)

Clinical services, MVI Reimbursement are based on their MVI performance and patient volumes. In this particular example, after one year of risk-participation, the Cardiology and Pulmonary groups each divide \$100,000 among their doctors, GI Med. \$95,000 and Primary Care \$260,000 etc. The hospital retains 45% of the \$1.9M or \$855,000.

The clinical service's financial distributions may be divided equally among the physicians of each of the services since most doctors' cover call for one another and often write orders on their colleagues' cases. However, each service may choose to allocate dollars by assessing and individually rewarding their high-volume physicians. These distribution methods are at the discretion of the physicians and are only possible when reliable and transparent data such as these, are made available to them.

Exhibit 4: PHYSICIAN AND HOSPITAL DISTRIBUTIONS OF NET SAVINGS:

MVI algorithm uses standard quality and cost metrics to calculate reimbursements.

Total Net Saving 2013 = \$1,900,000.

Based on Sliding Scale, Physicians receive 55% (\$1,050,000) to be divided among the physician groups

Year	Clinical Service	REIMBURSEMENTS	MVI								Service
			PATIENTS	QMPS	RADM	MORT	MORB	RIV	RESC	MVI	
2013	CARDIOLOGY	\$100,000	280	41	64	23	68	73	174	443	
	PULMONARY	\$100,000	160	41	64	126	121	76	180	608	
	ORTHOPEDIC SURGERY	\$180,000	390	41	64	144	89	38	193	569	
	NEUROLOGY	\$60,000	102	41	64	144	115	56	131	551	
	NEURO SURGERY	\$110,000	120	41	64	115	98	53	174	545	
	GENERAL SURGERY	\$180,000	302	41	64	123	51	78	177	534	
	G.I. MEDICINE	\$95,000	222	41	64	116	101	32	152	551	
	PRIMARY CARE	\$260,000	1,125	-	-	-	-	-	-	-	
		MAX:	1125	41	64	144	121	78	193	608	
		AVG:	338	41	64	113	92	58	169	543	
		MIN:	102	41	64	23	51	32	131	443	

SUMMARY:

Now that technologies are available to risk-adjust and document improvements in individual physician's and clinical services' major metrics of quality and efficiencies, they should be deployed by the hospital-physician enterprise. When doctors understand their individual, risk-adjusted, patient-specific best practices, they are able to collaborate among themselves and with hospital

Viability of bundle payments, risk-bearing models (ACOs) and hospitals' fixed reimbursements (Medicare & Medicaid) requires conservation of hospitals' finite resources. Distributing net savings among the hospital and physician participants using an objective, quality-based method will virtually guarantee physicians' endorsement and success of any bundle payment or similar risk-based model. Shared savings among the hospital and physicians are powerful incentives for physicians to participate as a means of stemming the steady decline in their reimbursements. The ability to differentially reward each clinical service's physicians according to their ability to practice high quality, cost efficient medicine may be the single, most important factor for the long-term success of bundled payments.

To accomplish these quality improvements, hospital executives must equip doctors with technologies that produce reliable clinical information for individual physicians, including measuring their variations and best-demonstrated outcomes down to individual lab tests and x-rays. These data will insure physicians' and hospitals' ongoing successes as they transition from fee-for-service to value-based care delivery using bundled payment and similar strategies.

References:

1. Berwick, D. (1989). Continuous Improvement as an Ideal in Healthcare. *New Eng. J. of Medicine*, 320,53-56. "Reductions In Variation (of care processes) are a direct result of providers reasoning together to improve their consistency and the quality of their patient's outcomes."
2. M.E. Porter, R.S. Kaplan; *How to Pay for Health Care*, Harvard Business Review, July-August, 2016
3. American Hospital Association; W.C. Mohlenbrock; *The Role of Reducing Clinical Variation in Achieving the Triple Aim of Healthcare*, AHA Seminar June 14, 2015 and Webinar -<https://ahasolutions.adobeconnect.com/p2nehv851sq/>

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