Value Based Care and Balanced Analytics

The New Generation of Healthcare Analytics – Preparing for Constant Change

The US healthcare industry has been in a constant state of transformation since the 1970s. In 2001, the Institute of Medicine released *Crossing the Quality Chasm* and the Triple Aim that sought to improve the health of populations, improve the patient experience and quality outcomes, as well as reduce the per capita cost of healthcare. Since that time, the healthcare industry has participated in a seismic shift. This shift has moved away from volume-driven activities that reward more visits, more procedures, and more admissions. It has moved toward a value system of integrated care, which recognizes patient-centered activities, optimize resources, and improve outcomes for both the patient's health and the organization's financial position.

Participation in this new generation of quality-measured, integrated care requires a more sophisticated level of decision making. One that is complete with integrated data across the entire patient ecosystem. One that also provides decision-makers with quantifiable, reliable, and actionable analytics that support care transformation for payer contract negotiations, federal quality reporting mandates, and   financial performance and operating efficiencies. Value and quality based reimbursement is a current conversation that requires both quality measurement reporting and internal cost and care team effectiveness to evaluate patient outcomes (quality) and resource utilization (cost).

» **Value Based Contracting** – The healthcare market is transforming from units of care delivered to number of covered lives. In this transition to value based care, organizations need to be the provider of choice, engage and retain patients and provider networks, improve coding practices, and have real-time quality and costing information available for payer negotiations and risk contracting.

» **Quality Performance** – Heterogeneous payers and quality measures (such as chronic conditions, patient satisfaction) will create huge challenges for ongoing reporting and performance management. Organizations will need to report on multiple, similar measures concurrently to support most shared savings and performance contracts.

» **Internal Cost/Care Team Effectiveness** – Cost savings vs. revenue generation will expand the paradigm in Value Based Care (mandatory Medicare bundle payment program). Before the care is provided to the covered lives, healthcare operations will need to restructure for clinical effectiveness and internal cost savings. Organizations will need to optimize resource utilization and forecast changing reallocation resource utilization demands. As margins remain thin, wise stewardship will be required to ensure ongoing operations that meet patient needs and expectations.
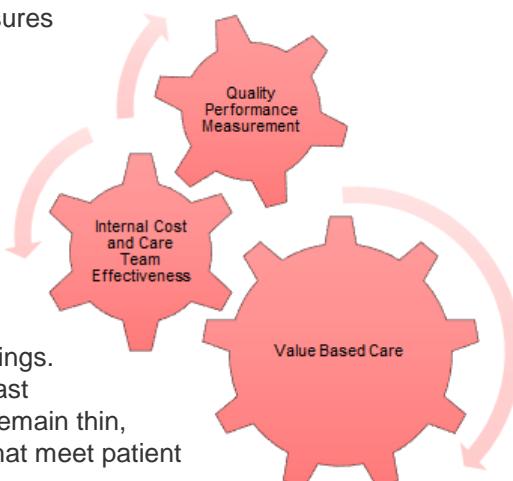
Organizations that adopt an agnostic, analytic strategy with enterprise level data aggregation will be best prepared to meet the changing analytics and reporting environment for current regulatory initiatives and evolving legislative proposals, commercial payer negotiations, provider network agreements, and accreditation compliance.

Value Based Contracting

Traditionally, health care providers have been paid based on the volume and types of services provided. Unit driven and known as *fee for service or FFS* measures, these models could lead to overutilization of care. Gradually, FFS payment models are being retired and replaced by "fee for value" The Value in fee for value services can be described as:

$$Value = \frac{Quality\ Improvement}{Reduction\ in\ the\ Cost\ of\ Care}$$

The shift to value based care (Value) focuses on managing the key drivers of unnecessary costs in the US health care system. These drivers include issues in the area of Quality Improvement (enhancing coordination of care, reducing of waste, and decreases in medical errors) and in the area of Cost of Care Reduction (incenting care redesign and process improvements to improve overall quality of health and health outcomes).

Entire research and academic interests are devoted to preparing healthcare delivery organizations, their suppliers, and their support organizations for this monumental shift from volume to value. Providers, administrators, board members, and front line teams are being challenged by public and private payers, and, by new buzz words (such as accountable care, bundled payments, patient centered care, and population health). As of January 2016, the Centers of Medicare and Medicaid Innovation reported that 30 percent (30%) of all Medicare FFS patients are aligned with an alternative payment model [1](APM).

Successfully Managing Value Based Care

APMs have been constructed to encourage provider organizations to engage in process improvement and care redesign efforts to provide higher quality and more cost efficient care.The table below lists a few of the APMs currently in development and use. With each legislative cycle, new APMs are described and named.

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1 https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-01-26-3.html

Spectrum of Alternative Payment Models

APM	Description	Example
Pay for Coordination	Incents healthcare providers to enhance care coordination efforts for higher risk, multiple, co-morbid patients by improving the management of the patients' chronic conditions.	Patient Centered Medical Homes (PCMH)
Pay for Performance	Incents providers for better health outcomes associated with wellness/preventative care, the management of chronic conditions, and decreases in unnecessary utilization.	Medicare Access & CHIP Reauthorization Act (MACRA) Merit-Based Incentive Payment System (MIIPS) Blue Cross Blue Shield of Massachusetts Alternative Quality Contracts
Bundled Payment	Reimbursement to healthcare providers based on the expected costs for clinically- defined episodes of care. Intent is to incent providers and care delivery organizations to adopt care pathway redesign and waste reduction.	Bundled Payment for Care Improvement (BPCI)
Shared Savings Programs	Incents healthcare providers to reduce total costs of care beyond what a payer would expect via traditional efforts. The payer then shares a portion of that savings with the healthcare provider.	Accountable Care Organizations (ACO) Medicare Shared Savings Programs (MSSP).
Capitation	A system of medical reimbursement in which the provider is paid a contracted rate for each, attributed patient/member by an insurer or other financial source. This is referred to as "per-member-per month" (PMPM).	Health Maintenance Organization (HMO)

Spectrum of Value Based Reimbursement
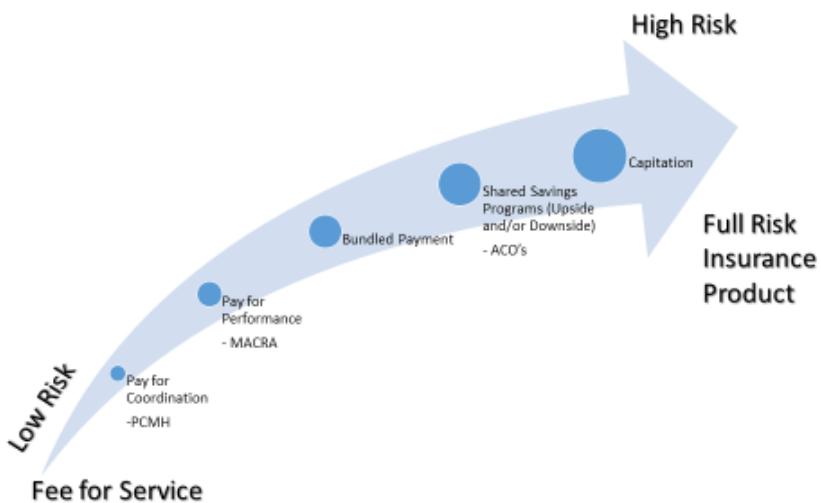
RULE OF THUMB – THE HIGHER THE LEVEL OF ORGANIZATIONAL RISK, THE HIGHER THE POTENTIAL FOR UPSIDE GAIN AND THE GREATER THE NEED FOR DATA AGGREGATION.

Participation in one or more of the APMs described above requires healthcare delivery organizations or provider groups to:

» Contract with payers to establish target populations, performance and reporting timing, performance and payment methodologies, and other payer expectations about the provider organizations.

» Measure, monitor, and manage quality and cost performance to ensure success in their Value Based Care programs.

Examples of where provider organizations will often need to focus their performance improvement and change management efforts include:

People	Process	Technology
» Human capital - Care team demographic » Organizational cultural changes - Seeing patients as consumers » Providers' compensation models - Shifting to emphasize documentation, coding, care coordination, prevention, and customer/consumer centric patient care.	» Patient flow changes- Moving care to ambulatory and community based settings » Process- More efficient workflows » Clinical practice - Increased engagement with non-billable activities (telephone visits, consultations, and referrals to care management); focus on in-network care pathways	» Systems: Data capture/Documentation, Communication (internal/external outreach) » IT/ Analytics: Data Aggregation, Normalization, Data Governance, Reporting Tool, Performance Monitoring, and Data Analysis

Technology Impact on Value Based Care

Given the complexity and challenges in understanding Value Based Care models, senior healthcare leaders need technology that supports data aggregation and analytic platforms to navigate the clinical, operational, and financial impacts that these new payment and care delivery models have on their organizations' future viability. Technology solutions are critical to providing solutions. They support C-suite questions like the following:

» What are our leverage points with payers? (For which performance metrics should we be contracting? Which of these are disadvantageous for us?)

» Where are we performing well from a cost and quality perspective? Where do we have opportunity to improve and what is the magnitude of the opportunity? (Can we improve enough to be successful in a risk based contract with a payer?)

» Do we need a platform solution that can ingest flat claims files and combine with other clinical and financial data to get a holistic view on the population level and individual Medical Record Number level?

» How do we model various attribution methodologies proactively to optimize our Provider Networks?

» How can we prospectively estimate/model value (quality outcomes, reduction in total medical expense) at the program level, the population level, and the enterprise level?

Below are several examples of where technology, data, and analytics support success in key Value Based Care areas:

Business Need	Technology Impact
Contract Management	Analytics available to understand baseline performance, cost drivers/levers, and the internal mechanisms.
Ability to ingest claims and other data sources	Analytics available to integrate the healthcare delivery organization, the health plan/payer partners, and the other providers in the community. The need to identify a risk population, to understand previous costs, and to help predict future costs, requires that, historical claims be shared between payers and providers in APM risk contracts.
Attribution	Analytics available for prospective identification of an ideal network of patients and providers in order for organizations to optimize performance with their Value Based Care programs.
Performance Monitoring	Enterprise wide, aggregated data with minimal latency is essential for internal, performance monitoring.
Provider practice management behavior	Facile technology platforms are needed to aid in internal reporting and management of non-traditional patient care activities. These include phone and group visits, new documentation/reporting systems, and changes in coding practices.
Interoperability / Aggregation & Integration of data	Agile data aggregation and integration platforms to support the growth of provider networks, multiple EHRs, and disparate data sources.

Measuring Regulatory Mandates and Operational Incentives

Performance measurement is not specific to the healthcare industry. But the nuances of a clinically "sparse" dataset coupled with disparate and compartmentalized data exponentially increase in complexity when the audience of payers, regulatory boards, governing agencies, and peer benchmarking groups do not recognize the same, consolidated set of "measures" to manage within the same time window. Even within the healthcare industry, financial measures are generally recognized as highly repeatable. Generally Accepted Accounting Principles and the Financial Accounting Standards Board establish criteria to measure assets, liabilities, short term assets, and other standard financial metrics. Financial measures have been standardized so that like to like comparisons can occur.

Unfortunately for clinical and quality measurement, very few measures are comparable across the payers, boards, agencies and benchmarking groups. Rather, there are *families* of measures, (such as diabetes management) – But, one payer may set the criteria to measure diabetic type II patients with A1c greater than 8.0, and the next payer may set the criteria at 6.5. Yet a third payer or reporting group could set a denominator control that the patient must be enrolled continuously for twelve months prior to the reporting period**.**

The activity of "keeping current" about *which measure,* at *which time period,* for *which population is very time consuming for* too many organizations. Numerators and denominators are referenced to the single payer, regulatory board, governing agency, and peer benchmarking group. The larger perspective for the organization is to manage its populations across all chronic conditions, to improve access for wellness, prevention, and primary care, and to improve health outcomes for patients, while optimizing resource utilization. Organizations need to have systems and analytic tools that provide measures for conditions, programs, and populations. These measures must provide a 360 degree view of the patient, the provider's activity, clinical care gaps, and organizational efficiencies in response to route operational activities and the evolving regulatory landscape.

Here is a sample of the audience for quality measure performance:

- » Healthcare Effectiveness Data and Information Set (HEDIS)
- » Physician Quality Reporting System (PQRS)
- » Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- » National Surgical Quality Improvement Program (NSQIP)
- » Quality Improvement Organization (QIO)
- » National Database of Nursing Quality Indicators (NDNQI)
- » Medicare Provider and Analysis Review (MEDPAR)
- » Internal Operating Performance
- » Patient Safety Incidents (PSI)
- » Meaningful Use (MU)
- » Accountable Care Organization   (ACO33)
- » Leapfrog
- » Premier
- » Vizient

Quality Measures Guide Value Based Care

Measure collections from the groups listed above have many overlaps or are very narrowly defined. Organizations that see across multiple measures sets to study patient care trends can leverage actionable insights to manage populations and optimize Value Based Care contracting. Having invested in semi-automatic reporting for one or more of these measure sets (data aggregation and data governance for a categorized nomenclature identifying patients and providers), organizations can be more agile and flexible when responding to new regulations on the horizon. Aggregated data can save time when a third, eighth, or twelfth reporting group requests the number of seen and treated patients in a specific cohort, or the outcome of a specific event.

Organizations preparing for Value Based Care need to answer the following questions:

- » How does our data aggregation and analytics platform help to forecast our quality performance (clinical, process, satisfaction) to build future budgets and make more real-time (monthly/quarterly) adjustments to value based revenues?

- » How can we effectively report quality and key performance indicator metrics in real-time (outside traditional claims cycle) to support ongoing performance improvement efforts?

- » How can we report quality and other performance metrics to payers in real-time to shorten the performance to payment cycle?

- » Can we report out of our data aggregation and analytics platform directly into the Group Practice Reporting Option (GPRO) and Quotation Management Admission Test (QMAT)? Can our technology vendor replace the other quality reporting platform that we currently use?

- » Does our data aggregation and analytics platform manage and integrate claims data files from all payers?

- » How do we match data across my enterprise in a consistent, reliable, and affordable manner to include enterprise master person indexing and normalization for data across our organization and data sharing relationships outside our native systems?

» Using technology to prepare for value based care, as well as improves overall, internal performance requires systems that integrate multiple data sets with different time periods and that are holistically organized around the patient. The examples provided below align the analytics audience with the functional area and demonstrate that quality measurement is a daily exercise. Quality measurement is a truly, integrated discipline that enforces the organization's data governance strategy and quantifies performance across the entire spectrum of patient care and operational efficiency.

Target Audience	Quality Measure Performance facilitates these areas of analytic need	Examples of Operational and Quality Measures
Performance Improvement (SVP Quality, SVP Population Health, CMO)	» Patient and Provider - Does the provider have a longitudinal view of the patient to evaluate and recommend treatment?	» Appointment Queuing – wait time, call abandonment » Treatment Plans – clinical care gaps » Streamline Evaluation with Provider – provider panel alignment
	» Quality Improvement - Does the provider and facility have complete data to assess, monitor, and perform root cause analysis?	» Near Misses » Falls Prevention » Hand Hygiene » Hospital Acquired Conditions
	» Close Gaps in Care - Do the provider and care team have visibility into treatment guidelines for chronic care and preventative wellness?	» Protocols & Guidelines » Transitions of Care (inter-building, intra-building, age transitions)
	» Quality Reporting - Do the provider and facility have complete data to fulfill federal, state, local, and benchmark regulatory filings?	» MACRA » MIPS » STEEP » NCQA/HEDIS » MU (Meaningful Use) » PQRS » ACO (Accountable Care Organization) » QIO » Leapfrog » Vizient

Internal Cost and Care Team Effectiveness (CFO, CMO, CNO, CIO)	» Payer Analytics - Do the provider and facility have visibility to measure and track cost of care with details to calculate variances to target? How can the organization shorten the performance to payment cycle? Does the organization have a way of consuming claims files? Does the organization have a master person index to ensure the correct 360 view of the patient and provider?	» Per Member Per Month » Utilization Management » Cost of Care – activity based costing » Payer Contracting & Reimbursement Rates » Claims File Analysis » Master Person Indexing
	» Service Line Efficiency - Does the facility have visibility into the care providers, service capacity, and patient health status to initiate, support, and maintain patient-centric programs? Does the facility have visibility into quality performance to build future budgets and make more, near real time adjustments to value based revenues?	» Patient Engagement » Patient Safety » Wellness & Prevention » Disease Management » Acute Care / Episodic Events » ACO » MACRA » BPCI

Internal Cost and Care Team Effectiveness

Measuring Internal Operations to Prepare for the Market

Today's healthcare Chief Financial Officer (CFO) is focused on developing innovative reimbursement models and identifying new business models to generate new revenue growth amidst shrinking revenues, a fluid patient population, and evolving legislative landscape. He or she needs a new generation of data aggregation and decision support tools. These tools must work in concert with clinical and operational systems to provide insights in discovering the optimal care paths for both cost and quality across the enterprise in a rapid and repeatable fashion. The hard questions the CFO must answer require insights across the continuum of care bringing together the clinical, operational, and financial perspectives that drive care delivery decisions.

The "hard" questions the CFO must answer include:

» What are my true costs by service line and by procedure (supplies, staffing, time, and overhead)?

» Can I have 'one source of truth' – for data aggregation, reporting, analytics, and cost modeling?

» Other than clinical, what are the other cost drivers in my risk population?

» How do I evaluate current and future interventions/programs for impact on quality and financial outcomes?

» How do I measure cost and effectiveness of care outside my hospital (post-acute care, ambulatory care, and pharmacy)?

» How do I predict performance and outcomes to determine ROI at the intervention and department level?

» How do I measure and monitor the effectiveness of each care provider of the inter-disciplinary team?

Organizations preparing for value based care have a unique set of business needs to stay financially viable and be competitive in the fluid, reimbursement market. Internal Cost and Care Team Effectiveness focuses organizational analytics on appropriate and optimal resources to deliver quality measured outcomes of care.

» Cost savings vs revenue generation - This is a paradigm shift in Value Based Care. The Mandatory Medicare bundle payment program is an example of this.

» Operational Efficiency – Businesses are restructuring. Clinical effectiveness can lead to internal cost savings before ever touching the target patient and target population.

» Margin Constraints - These are present even in FFS markets and understanding/reducing internal costs to optimize resource utilization equals better margins.

» Care Management Support - As providers/systems support more non-billable (revenue based) interventions/programs, they need to know what the internal costs and resource utilizations are to attribute savings/ROI for patient outcomes.

» Direct to Employer Bundles – Integrated delivery networks are negotiating episode/intervention specific discounted bundles directly with employers without the commercial payer overhead. Knowing true cost and volume by employer can drive optimization for the healthcare organization. Knee replacement and spine surgery are examples of direct to employer bundling.

With the Centers for Medicare and Medicaid Services' (CMS) Medicare Access and CHIP Reauthorization Act (MACRA) having begun January 1, 2017, health systems, physicians and clinicians are seeking more integrated financial and clinical analytics. These analytics combine information across the enterprise, as well as support analytics and decisions that evaluate the cost and quality collaboratively in one continuous process. Specific Value Based Care best practices (in programs including CMS's Quality Payment Program (QPP) Merit-based Incentive Payment System (MIPS), Alternative Payment Model (APM). quality measures, resource use, advanced care information and clinical practice improvement activity)will drive decisions in pricing, contracting, strategic planning, and optimal care delivery to preserve revenue, while achieving the best patient outcomes.

Solving Internal Cost and Care Team Effectiveness

Advances in technology have provided healthcare organizations with a myriad of disparate systems from which to get information. While the volume of data has grown exponentially in recent years, the availability and access to that data has been limited. Consolidation within the healthcare industry has only exacerbated the problem by creating organizations that have multiple clinical, financial, and operational systems, and as many reporting and analytic tools. MACRA has contributed to make this healthcare industry perfect storm for care and quality analytics.

Using technology to prepare for Value Based Care requires a data aggregation and analytics platform. The technology can also improve support decisions affecting service line reorganization, market evaluation, hiring, staffing, and facility modification.

A Data and analytics platform can support:

» Clinical data sets concurrent with financial and research data sets, activity based costing detail at the encounter level, based on a myriad of code sets (Logical Observation Identifiers Names and Codes (LOINC), Systematized Nomenclature of Medicine (SNOMED), International Classification of Diseases (ICDx), and Current Procedural Terminology, 4th Edition (CPT4))

» Sub-ledger detail for inventory and supply

» Agnostic integration with EMRs available today and for the future

» Ingestion of third party data from benchmark and peer reporting organizations

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The Data Aggregation Engine for an Agnostic, Analytic Strategy

Oracle Healthcare Foundation (OHF) offers a fit-for-purpose, analytics platform that provides a data acquisition, data integration, data warehousing, and data analytics solution. OHF meets and exceeds current market conditions for organizations evaluating Value Based Care, Quality Measurement Performance, and Internal Cost and Care Team Effectiveness. The solution evaluates an organization's information, turning data-driven insight into action.

OHF eliminates the silo analytics of the past by integrating data from disparate source systems. It then aggregates the clinical, financial, administrative, and omics data from all care settings into a single source of truth for decision making at all organizational levels, from departmental to enterprise, from clinical operations to financial operations, and for provider and payer contracting. OHF accelerates the ability to visualize integrated data through its Self-Service Analytics module. These analytics assist caregivers and administrators in making informed decisions that can improve patient outcomes and reduce cost of care for both financial and total resource demands.

Data Integration and Reliability

Healthcare providers, integrated delivery networks, clinical integrated networks, academic medical centers, and other public/private healthcare systems have implemented transactional information systems (electronic medical records (EMR), billing, and enterprise resource planning (ERP)). They now want to leverage their system-wide data for integrated analytics targeting performance improvement, population health management, and precision medicine initiatives.

These analytics can support their participation in Medicaid delivery reform organizations, ACOs, and can improve their contracting position with payer organizations.

OHF is comprised of existing components. This includes all data integration and data warehousing of various healthcare data types, ranging from clinical episodes of care, claims, third party benchmark data, and genomics. The solution brings together and normalizes data from a variety of source systems and includes pre-built functions that allow for ease of data mapping from these systems. This approach shortens client implementation timing and provides more value from the client's current system investments.

Built-in data mapping tools supporting a robust healthcare data model allowing for aggregation and standardization of a variety of data sources and types across the enterprise. This approach provides an environment for data access and visualization tools that can be used for insight discovery, prioritization, and action for change and improvement. In light of accelerating reimbursement changes, this type of data model can ensure better financial and clinical decision making to optimize treatment planning. The ability to be nimble and responsive, as well as to deliver optimal care, is dependent on data availability, actionable insight, and effective prioritization.

Achieving Balanced Analytics across the Enterprise

Value Based Care, Quality Measurement and Internal Cost and Care Team Effectiveness are not three independent activities. Rather, they are co-dependent and tightly integrated. In order for an organization to be successful at Value Based Care, it will first have to be able to meet additional quality measure reporting on top of existing demands, as well as concurrently reconcile and defend its cost utilization patterns for payer contracting. Doing one without the others leads to misaligned patient care. Too much focus on cost and care utilization leads to the failings of the earlier health management organization. Draconian utilization management can reappear with declines in patient satisfaction, longer waits, and delayed or denied procedures that do not improve a patient's outcome and quality of life. Too much focus on quality measure reporting for the exhaustive list of agencies can lead to *teaching to the test*. Too much focus on one reimbursement model can lead to a poor payer mix, loss of market, and decline in the ability to attract and retain top staff.

Organizations with an agnostic analytic strategy will continue to succeed in the evolving legislative healthcare market. This strategy must enable them to see across the entire enterprise and perform balanced analytics that weigh and adjust for reimbursement models, quality measurement, outcome evaluation, and cost and resource utilization

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About Morgan-Solomon Consulting

Morgan-Solomon Consulting is a leading, population health and healthcare improvement consulting group. Headed by Dominique Morgan-Solomon, MPH, Morgan-Solomon Consulting offers experience in strategic planning. operational design, quality performance, clinical integration care management, and population health initatives. The group works with healthcare provider and technology organizations in enterprise level value based care solutions. Ms. Morgan-Solomon earned Bachelor of Arts degrees from Cornell University in Biology and Political Science. She also received a Master of Public Health in Health Policy from the University of Michigan.

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Integrated Cloud Applications & Platform Services

Title: Value Based Care and Balanced Analytics

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