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INSIGHT

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Data Value for Counties and Their Service Providers

Big healthcare data and analytics open doors to precision treatment, population health, and the shift to preventative and value-based care. *Extracting "value" to achieve bottom line results, however, requires that counties and their healthcare organization networks have systems in place to ensure all clinical, operational, and financial data are captured and used for the ultimate purpose of providing better care and for quality metrics reporting tied to risk-based payments and reimbursement.* The reality is that many …

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Information Systems

Information "*systems*" are often a conglomeration of separate sets of data thrown together in various ways. A variety of spreadsheets, scanned documents, little personally developed desk-top databases sitting on a server, or folders and binders full of papers on a shelf. In reality they are not a "*system*" at all – lacking organization and coordination. Just like those drawers we all have somewhere, we know the thing we are looking for is in there, but we have to root around for a while to find it. It's easy to throw things in the drawer, but not so easy to find them when we need them.

Mapping the Impact of Social Determinants of Health

The use of predictive analytics has helped keep patients out of hospitals. Christus Trinity Mother Frances Health System uses an artificial intelligence program to flag patients with high risk. Their tool provides risk stratification platforms and analyzes data—**including claims data**—to try to optimize the cost and performance of healthcare. "Before we were making care decisions, but we didn't have the full picture of what was happening with a patient," said Andrea Anderson, administrative director of population health and primary care at Christus Trinity. "There's so much more information the payers had that helped us more effectively manage patients." Before sharing claims data, Christus Trinity couldn't know what care and prescriptions patients were receiving from providers not affiliated with them. Armed with that information now, the system has been able to cut average monthly spending on patients by 15% since 2016. Emergency room visits for targeted patients have fallen by 20%.

Excerpt from: Modern Healthcare; "Mapping the Impact of Social Determinants of Health"; by Virgil Dickson, March 31, 2018.

Data Value (continued)

…provider organizations within county provider networks are leaving money on the table because of how data is being managed. For more than a decade the healthcare industry has been trying to unlock data's value by advancing efforts to get systems to talk to each other via interoperability. New standards have emerged that present agreed-upon terms and definitions for how information is captured. Federal and state governments continue to produce regulations that must be followed by counties to mandate or strongly encourage more integrated healthcare which largely consists of mixed information technology systems. Interoperability strategies have been formed to create information systems that operate seamlessly across healthcare systems.[1] Yet the single biggest barrier to information sharing remains counties' and their service provider's IT systems and the data silos that exist across the systems.

Yet the single biggest barrier to information sharing remains counties' and their service provider's IT systems and the data silos that exist across the systems.

Counties and service providers struggle to manage information and get meaningful insights from data across departments and outside their walls. Data is "locked" within electronic health records (EHRs) and other health IT systems, which creates roadblocks to real-time aggregation of key clinical, patient, and performance data and the kind of proactive decision-making needed to move the needle on outcomes. It is vital that healthcare providers focus on their underlying data that fuels every aspect of how they detect, diagnose, and treat conditions, interact with patients, and measure and report their outcomes. Many "health information systems" maintained by counties and their service providers lack the ability to overcome their limitations because they maintain a mosaic of data "systems" within their enterprise – like all the various elements thrown into a drawer – "it's all in there," but it's not easy to find… nor is it coordinated in any meaningful way.

Data must be organized to provide a "single source of truth" that ensures that data coming from disparate systems drive one clear and consistent story about the healthcare consumer. Counties and service providers must first clean clinical, financial, and administrative data and appropriately map that information to a single source of truth to achieve the true promise of information sharing across the healthcare ecosystem and to base all decisions on the "right" data.[2]

We should be optimistic that as we move forward, reference data will help to build the foundation of reliable analytics within a healthcare enterprise such as a county government, and between themselves and other enterprise systems (other counties, service providers, hospitals,

[1] Wolters Kluwer Health 2018; Health Language; Rethinking Data Strategies for Bottom Line Impact, The Power of Reference Data; http://info.healthlanguage.com/referencedatamanagementproviders

[2] Ibid.

Categories of Data

Understanding the types of data that comprise efficient information systems is very beneficial as you consider information system innovation. Here is a short primer…

Transactional Data – the information that describes business events, and usually the largest volume of data within a data warehouse. E*xample: a medical claim based upon a delivered service, on a date and time.*

Master Data – the key business information that supports the transactions: places, parties, and things. *Example: the member who received the service; where it was received, and who provided it.* Master data represents the business objects which are agreed on and shared across the whole organization, and is often viewed as the coordination and core of all other data types.

Reference Data – is data that can be referenced and shared by a number of systems, and is frequently considered a sub-set of Master Data. *Example: Procedure Codes, Diagnosis Codes, Zip Codes, Vendor Numbers, Accounting Codes.*

Metadata – data that describes other data as an underlying definition or description of data. *Example: File sizes, dates, type of data, when transmitted or received, by whom; audit logs.*

Reporting Data – data organized for the purpose of reporting and business intelligence. Reporting data is created from the transactional data, master data, and master reference data.

Unstructured Data – text files, spreadsheets and pdf data documents.

and health information exchanges). Counties hold a significant portion of reference data within county master data management (MDM) systems (i.e. with their various governmental departments). Within county human services departments, common forms of healthcare reference data can include:

- HIPAA transaction code sets for member enrollment (ASC X12 834), capitation (ASC X12 820), and medical claims (ASC X12 837).
- Claims standards used to codify with diagnoses and procedures for billing purposes, which include CPT®, HCPCS, ICD-10-CM, ICD-10-PCS, and ICD-9-CM.
- Geographic standards used to identify geographic locations around including zip and country codes.

Client information is stored in a variety of locations— clinical notes, insurance claims, problem lists, and free text from many lists and tables maintained throughout the enterprise. Reference data ensures it can all be accurately aggregated and shared across disparate systems in a meaningful way, providing the critical support for optimizing revenue / controlling cost, and improving access and clinical quality performance.

Data interoperability is not impossible… but it does require commitment and work – coupled with an abundance of persistence and optimism.

Counties are well underway with strategic development to align their information systems around a single source of truth – governing how data is defined, the intended use, versioning, and implementation throughout the county, and their service provider networks. Reference data, lists of codes used as building blocks for business rules are being incorporated into the information system infrastructure. And human services functional managers are working with their information technology leaders to describe the business uses of data, and defining a common information model and toolset for creation and customization of interoperable healthcare data.

Data interoperability is not impossible… but it does require commitment and work – coupled with an abundance of persistence and optimism. Like any enterprise asset, a MDM system must be designed efficiently, managed well, and maintained meticulously – otherwise county managers will spend time and resources correcting costly deficiencies, or missing greater value opportunities.

The Golden Record – a single, well defined version of all the data entities in an organizational ecosystem… more easily understood: *"the single version of the truth"* – confidence that you have the single correct version of a piece of information.

Hospital Margins – Key Profitability Indicators

For hospitals, like many other large business enterprises, the ***operating margin*** is a metric that shows how much profit a hospital makes, after paying for all other operating expenses. For example, an operating margin of 5.0 percent means that each dollar of operating revenues generates 5 cents of profits by core hospital operations (by removing the influence of non-operating, non-patient service revenues). The operating margin typically is a better measure of the sustainable profitability of a hospital because it focuses on hospital business income as opposed to income from other sources.

U.S. non-profit hospitals' median operating margin fell in 2016 as expenses grew, according to preliminary financial data compiled by Moody's Investors Service (Moody's) based on the audited financial statements for 150 hospitals and health systems. Overall, the analysis found hospitals' median operating margin decreased from 3.4 percent in fiscal year 2015 to 2.7 percent in 2016. Operating margins for the previous three years are shown in Table 1[3]

Table 1
Moody's Median Operating Margin

Year	2014	2015	2016
Operating Margin	2.2%	3.4%	2.7%

Pennsylvania hospitals have performed better based upon the Pennsylvania Health Care Cost Containment Council (PHC4)[4] Financial Analysis 2017 for General Acute Care (GAC) Hospitals (an annual report on the financial health of Pennsylvania Hospitals); May 2018. There were 169 licensed GAC hospitals in Pennsylvania that operated during at least some portion of 2017 (FY17) whose financial information has been analyzed in the PHC4 report.

The PHC4 reported operating margin for FY17 was 5.15 percent (down from 6.02 percent in FY16). Though Pennsylvania GAC hospitals' operating margin has dropped, it is significantly above those reported by Moody's in Table 1.

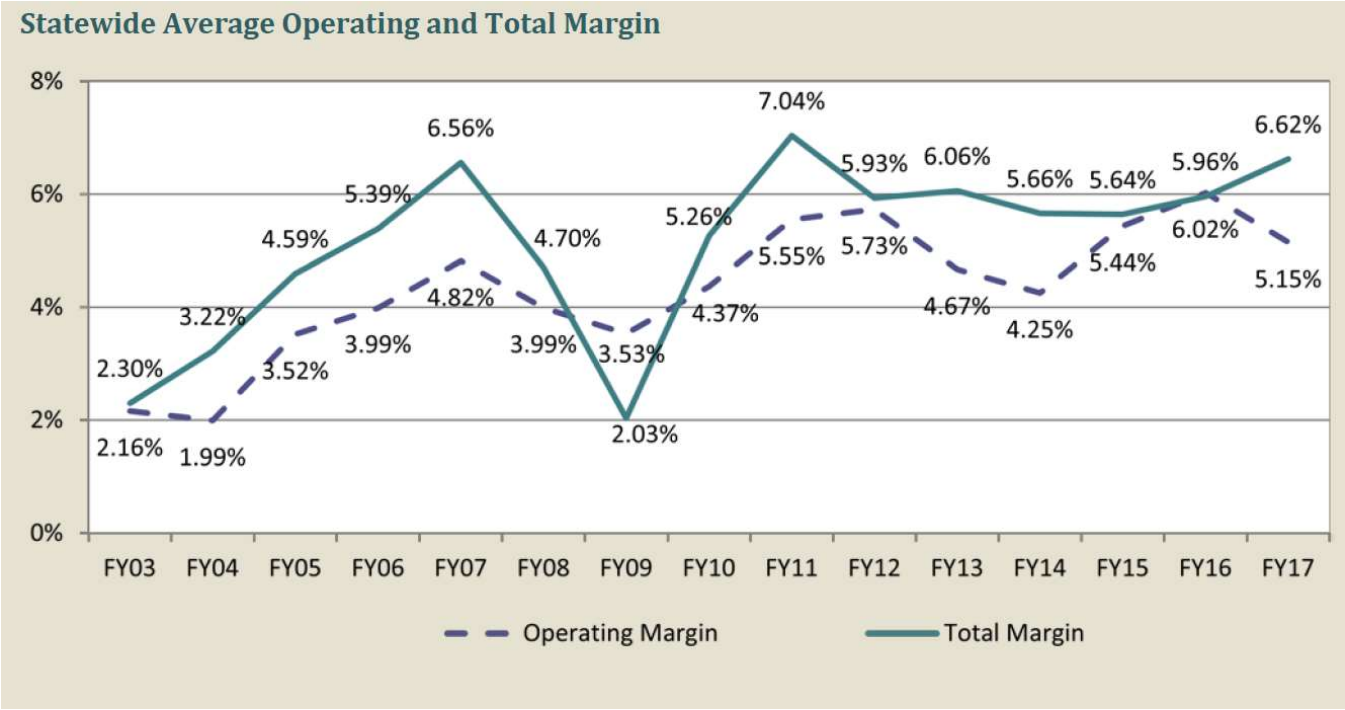
A second related measure, ***total margin***, is very similar to operating margin, however it includes both operating and non-operating income from all other sources. Examples of non-operating income include investment gains, trust income and contributions. Total margin reveals the composite financial health of a hospital during the year. If total margin is negative, the hospital is losing money after all sources of revenue and income have been considered. Chart 1 on the next page shows a 15-year trend (FY03 – FY17) of both operating margin and total margin for all Pennsylvania GAC hospitals.

Sixty-two (37%) of the 169 GAC hospitals included in this analysis posted a negative operating margin in FY17. In FY16, 51 (30%) hospitals reported a negative operating margin. For these hospitals with negative operating margins, revenue from patient care and other operations was not sufficient to cover operating expenses. Fifty-seven (34%) hospitals posted a negative total margin in FY17. In FY16, 49 (29%) hospitals reported a negative total margin.

[3] Not-for-profit Healthcare and Public Hospitals – Preliminary 2016 Medians Skew Lower as Revenue and Expense Pressures Hinder Profitability; Moody's Investors Service, May 16, 2017.

[4] The Pennsylvania Health Care Cost Containment Council (PHC4) is an independent state agency charged with collecting, analyzing, and reporting information that can be used to improve the quality and restrain the cost of health care in the state. It was created in the mid-1980s when Pennsylvania businesses and labor unions, in collaboration with other key stakeholders, joined forces to enact market-oriented health care reforms. As a result of their efforts, the General Assembly passed legislation (Act 89 of 1986) creating PHC4. PHC4's primary goal is to empower purchasers of health care benefits, such as businesses and labor unions, as well as other stakeholders, with information they can use to improve quality and restrain costs. More than 840 thousand public reports on patient treatment results are downloaded from the PHC4 website each year. Additionally, nearly 100 organizations and individuals annually utilize PHC4's special requests process to access and use data. Today, PHC4 is a recognized national leader in public health care reporting. PHC4 is governed by a 25-member board of directors representing business, labor, consumers, health care providers, insurers, and state government.

Chart 1



Hospitals need positive income levels (total margin) to operate effectively. Those that have a negative total margin, or deficit, are not receiving sufficient revenue to pay all of their expenses. Hospitals operating at a deficit must find other sources of revenue, such as debt restructuring, charitable donations, or endowments, etc., or review spending patterns to find ways to save on costs. Hospitals need to receive sufficient income to be able to improve their facilities and equipment. Such improvements are necessary to replace worn out or obsolete equipment and buildings, keep pace with changes in medical technology, and meet a community's changing health care needs.

As Pennsylvania's healthcare system moves forward, financially stable hospital systems play a major role in the overall healthcare delivery system. The freedom and capability to seek innovating solutions for current and future healthcare challenges depends upon the strength and financial stability of our hospital systems and community outpatient provider networks.

Statistical Information Provided by: Pennsylvania Health Care Cost Containment Council; Financial Analysis 2017, General Acute Hospitals, An Annual Report on the Financial Health of Pennsylvania's Hospitals; May 2018; http://www.phc4.org/reports/fin/17/

Nurses Needed

Between 2014 and 2024, the health care sector is expected to undergo the fastest employment growth among all industries, according to the US Bureau of Labor Statistics. By 2025, estimates indicate that more than three million nurses might be needed to care for the population. However, the national supply of nurses is projected to only reach 2.8 million by 2025—leaving a gap of 250,000 nurses. This shortfall between supply and demand is expected to drive additional wage increases in future years.

Deloitte 2017 Survey of US Health System CEO's; The Uncertain Road Ahead: Could Technology Offer Hospitals Relieve from Increasing Margin Pressures?

Strategies About "Healthcare" Must Now Encompass Behavioral and Mental Health

Michael Dowling, President and CEO of Northwell Health released his opinion on four critical healthcare trends for 2018. He described that:

1. Inconsistent health care policy will continue to dominate headlines
2. Hospitals and health systems need to innovate to keep pace
3. Improve the customer experience

   and…

4. Health care strategies must now encompass behavioral and mental health.

On item 4 he explains, "As social stigmas surrounding mental health begin to break down and more people feel comfortable confronting behavioral health issues, it is the responsibility of providers to design their systems in a way that addresses the needs of these individuals. This is especially important at a time when opioid abuse has become one of this nation's most-challenging public health crises. The problem goes beyond drug and alcohol abuse. For instance, studies have shown that younger generations' increased use of technology, particularly mobile devices, can lead to increased rates of anxiety, depression or loneliness. We as providers must consider these trends and tailor services accordingly, as more and more patients turn to us seeking care for issues that are destroying lives and breaking up families. All of us need to do a better job developing and training staff to meet this demand, especially when it comes to screening those who are trying to hide their addictions to opioids. It entails not only psychiatrists but nurses, social workers, case managers and other clinicians. Regardless of the issues we face in this ever-evolving industry, we as providers must not resist change. We must continually adapt — those that don't will get left behind."

Northwell Health; Michael J. Dowling; https://www.northwell.edu/about/news/publications/four-critical-health-care-trends-2018

Final Thoughts…

Servant leadership empowers the team.

The practice of leading through service to the team, by focusing on understanding and addressing the needs and development of team members in order to enable the highest possible team performance. Servant leaders approach project work in this order:

- Purpose – work with the team to define the "why" or purpose so they can engage and coalesce around the goal for the project. The entire team optimizes at the project level, not the person level.
- People – once the purpose is established, encourage the team to create an environment where everyone can succeed. Ask each team member to contribute across the project work.
- Process – do not plan on the perfect agile process, but instead look for results. When a cross-functional team delivers finished value often and reflects on the product and process, the team is "agile".

Servant leaders manage relationships to build communication and coordination within the team and across the organization. These relationships help the leaders navigate the organization to support the team. This kind of support helps to remove impediments and facilitates the team to streamline its processes.

They emphasize "facilitating collaboration" to help everyone do their best work through interactive meetings, informal dialog, and knowledge sharing. Servant leaders do this by becoming impartial bridge-builders and coaches, rather than making decisions for which others will be responsible.

Source: Agile Practice Guide, Project Management Institute ®

INSIGHT is published monthly by COMCARE, a program of the County Commissioner's Association of Pennsylvania (CCAP). If you wish to provide comments or feedback, please forward your comments to Lucy Kitner or Michele Denk at COMCARE at the following email addresses: lkitner@pacounties.org; mdenk@pacounties.org. *Thank You.*