**Module 8: Portfolio Project**

**Option #2: Business Analytics Culture Assessment**

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**Module 5 Portfolio Milestone Option 2**

For my portfolio project I have selected option 2 and will be evaluating the business analytics culture of my employer: Uchealth Emergency Medical Services. I will begin with a brief discussion of the organization. I will then present my assessment of the organization’s culture. My assessment is broken down into assessments of Nelson’s (2018) five dimensions of culture: Data-Centrism, Innovation, Learning, Service, and Team engagement. Following my assessment, I will provide a plan of action that my organization could use to improve our business analytics culture.

**Business Description**

Uchealth EMS is the prehospital division of Uchealth. Uchealth is a large healthcare organization that provides comprehensive healthcare services throughout Colorado, but mostly on the Front Range. Uchealth EMS provides 911 emergency services throughout the majority of two counties in Northern Colorado. Uchealth EMS provides contracted patient transport services to multiple fire departments in northern Colorado.

Uchealth EMS is organized into five “pillars:” operations, logistics, fleet, quality assurance, and education. The operations pillar is responsible for patient care and transport. The logistics pillar is responsible for providing support services to the ambulance crews. The fleet pillar is responsible for maintenance, purchasing, and sales of ambulances. Quality assurance is primarily responsible for ensuring ambulance crews are performing patient care in compliance with our protocols. Education is responsible for providing continuing education for our crews and many of our partner agencies.

Several pillars contain multiple functional areas. For example, the operations pillar includes multiple 911 regions and an interfacility transfer (IFT) component. The management structure of the organization is not aligned with the pillar concept. Rather, there is a manager for each functional area (east 911, IFT, IT, Logistics, etc.). Each manager works with one or more supervisors who then supervise our line staff. Our managers answer directly to our director. The director reports to the senior director who then reports directly to the Chief Operations Officer of Uchealth.

Most of the people in our organization are line staff who work on ambulances. Each ambulance crew member is either a Paramedic or an EMT. Paramedics have more training and a more advanced scope of practice than EMTs. The Paramedics are ultimately responsible for patient care. However, EMTs can independently care for patients prior to the arrival of a paramedic or after a Paramedic has evaluated the patient and determined no paramedic-level interventions are necessary. All our full-time 911 ambulances are staffed with one Paramedic and one EMT.

**Business Analytics Cultural Assessment**

The driving question behind my assessment of Uchealth EMS is: “is the culture at Uchealth EMS favorable to business analytics?” The justification for asking this question is that it allows for the identification of those qualities of the organization that are favorable to business analytics while exposing the qualities that are not. Importantly, this is not simply an assessment of how data-driven the organization is. Rather, it is an assessment of the organization’s potential from a cultural perspective. To that end, the question being asked may be rephrased as “could the culture at Uchealth EMS support a robust business analytics program?”

**Data-Centrism**

According to Nelson (2018), an organization that is data centric “uses fact-based processes and data-derived insights for both decision-making and business solutions. Analytics maturity is recognized to mean placing data products in the hands of frontline staff and business partners to drive decisions.” Leary’s (2015) Organizational Data Culture (ODC) Assessment examines data collection, management, analysis, sharing, and use across the general functional areas of a business.

Data collection at Uchealth EMS is convoluted. The organization uses a variety of systems that form the operational sources of data. Many of those systems have overlapping capabilities. Additionally, Uchealth EMS independently uses some systems that duplicate the capabilities of systems used by the greater organization. For example, scheduling is required by the greater organization to be performed in an application called *Kronos*. However, a handful of individuals at Uchealth EMS prefer the functionality of another scheduling application called *Aladtec*. Therefore, scheduling is performed initially in *Aladtec* and then a person duplicates the *Aladtec* data in *Kronos*. The greater health system maintains a human resources database. However, EMS has human resources data spread across multiple locations and platforms in a variety of forms with questionable security.

Data is mostly collected in the form of reports from these individual systems. There are a few cases where data is transferred from one system to another via an API. However, there is no data warehouse containing data from multiple operational sources. There effectively is no data management. Data exists, mostly as is, in whatever database is supplied with the operational product. Fortunately, most of our relevant operational data is captured in our EHR system. The EHR system provides Ad-Hoc reporting capabilities as well as embedded visualization tools.

There is little to no subjective data collected from patients (yet). There is some subjective data collected from employees. However, most of it is collected from supervisor interviews and is stored as free text so it has limited analytics value.

Due to the limits on data collection and management, analytics are also limited from the start. That is, conflicting data sets lead to questionable analytics that lead to questionable decisions. Even when a decision is based on sound reasoning and analytics, oftentimes crews will not believe in its validity. Additionally, many analytics-based decisions do not incorporate subjective information from the people it affects. This supports the notion that leadership only cares about data and doesn’t care about humans. Finally, the analytics capabilities themselves are limited. Uchealth EMS is leveraging some analytics tools for predicting EMS demand and prescribing resource allocation. However, none of those analytics are performed in-house.

With all that being said, there is potential. Every person in the organization believes in evidence-based practice. Additionally, while the collection, management, and analytics capabilities of the organization are limited, leadership tries to incorporate as much objective information as possible in every decision they can. There is no standard framework for decision making or problem solving. However, there does exist the notion that decisions should be made based on facts rather than feelings. Additionally, information is shared as freely as possible. That is, there are limitations on how much and with whom information is shared. However, those limitations are not the result of anyone hoarding information. Rather, those limitations exist due to limitations in the collection and management of information. While line crews have very limited access to data relevant to their positions, leadership provides what they can and would provide more if they knew how.

**Innovation**

According to Weintraub and Rao (2013), “an innovative culture rests on a foundation of six building blocks: resources, processes, values, behavior, climate, and success” (p. 29). Uchealth EMS has a change committee and a process for submitting proposals. In theory, all the resources of Uchealth are available to employees in the EMS division. Uchealth EMS has demonstrated innovative success in the past. So, in terms of the “more easily measured, tools-oriented innovation building blocks” (Weintraub and Rao, 2013, p. 30) Uchealth EMS seems to have the pieces in place. Leadership is driven by a desire to be innovative. Unfortunately, there is a disconnect between the values and behaviors of management and frontline staff. Supervisors and above are encouraged to be innovative. Managers are approachable and open to new ideas. However, there is some breakdown between leadership and frontline staff. Frontline staff generally does not feel as though they are a part of innovation. Oftentimes staff complain that things happen to them rather than with them. Staff complain that they don’t feel comfortable discussing ideas with management. They also frequently express beliefs that management is going to do what’s best for the company regardless of how it affects frontline workers. In other words, the innovative climate at Uchealth EMS ends at the supervisor level.

**Learning**

As previously mentioned, Uchealth EMS is built around the five-pillar model. Of those five pillars, two are dedicated to learning. QA reviews healthcare records for quality and compliance. QA focuses much of their effort on high-risk, low frequency events. Case reviews are performed with crews in certain cases. In some cases, a case review will be performed because of the nature of the encounter. In other cases, if a crew is significantly out of compliance, a case review will be performed. In either scenario, the QA team has gone to great lengths to ensure that case reviews are not punitive. Case reviews are an opportunity for crews to review the data associated with a difficult call and learn from it.

The education pillar conducts mandatory quarterly training with every one of our crews. While some of our training is mandated by regulation (driver’s training), most of the training is based on low-frequency, high-risk encounters. For example, pediatric calls are rare, so Uchealth EMS typically covers pediatric training during the year.

Importantly, it is well recognized that “continuous investment in staff competency development” (Nelson, 2018, p. 77) is a priority. However, there is very little development in the way of career mentorship. Education and QA are both primarily oriented at ensuring frontline staff can perform their core functions. However, there is no training available to prepare for advancement. There isn’t a pipeline to prepare employees for promotion. In other words, education is a high priority. However, education is directed more at maintenance than progression. Unfortunately, this means that there isn’t a clear path for employees to transition roles to something that suits their strengths. State differently, there isn’t a way for someone interested in a certain area to become more competitive to interview for a role in that area.

**Service**

This dimension is the most straightforward of all of Nelson’s (2018) dimensions in the case of Uchealth EMS. Staff in organizations with favorable business analytics cultures have “an intrinsic desire to proactively address customer problems and ‘delight’ them through the delivery of data products. Service and ‘doing the right thing’ are valued over policy and organizational charts” (Nelson, 2018, p. 77). Uchealth EMS believes in evidence-based practice. While many disagree as to which evidence is most compelling, it is culturally unacceptable to do things “because that’s how we’ve always done it.” Additionally, leadership fully supports putting patients first. The leadership mantra is when in doubt, do what’s right for the patient. The culture also supports critical thinking over compliance. That is, following a reasonable thought process is far more important to the organization than policy compliance or outcomes.

**Team Engagement**

According to Nelson (2018) in a positive analytics culture “individuals within the analytics teams engaged in solving problems, strive to improve, and have a shared sense of purpose, trust, and commitment to the mission” (p. 77). The analytics team involved in solving problems consists of managers. The component of Nelson’s (2018) team engagement criteria that is questionable is trust. While managers certainly trust one another and trust crews, for reasons previously mentioned, there is a lack of trust in management’s decisions from frontline staff.

**Improvement Plan**

Overall, the culture at Uchealth EMS has most of the right components. There are just a few missing pieces. In every corner of the organization people want to provide high quality, evidence-based care. The entire organization wants to be innovative in how they do so. The entire organization is committed to learning and service. Uchealth should focus on two primary areas to improve their business analytics culture: data management and collaborative inquiry.

Data management, in this case, refers to managing how data is collected, stored, and analyzed. Establishing a central plan for how and what data is collected, how it’s stored, and how’s it’s accessed for analysis forms the foundation for business analytics. That is, Business Analytics doesn’t happen without data. Business analytics cannot be trusted without good data. Uchealth EMS has all the resources of Uchealth at its disposal. Uchealth employs all manner of IT professionals, analysts, project managers, developers, etc. All the key players exist within Uchealth to make a project like this happen. The first steps in creating a data management plan would be to inquire within the greater organization as to what resources are available. From the available resources Uchealth would need to identify project management experts and technical experts. Specifically, the technical experts should be able to provide expertise in data management with the tools that Uchealth is already using. Using the tools of the larger organization is more likely to ensure continued technical support and integration with the larger organization.

The next overarching step would be to implement collaborative inquiry at all levels of the organization as well as with partner, neighboring, and peer organizations. Love (2008) presents collaborative inquiry in the context of education, but the principles apply universally. The process is guided by a series of questions. A generalized adaptation of those questions is as follows:

* How are we doing?
* What are we doing well? How can we amplify our successes?
* What aren’t we doing well?
* What in our practice could be causing that? How can we be sure?
* What can we do to improve?
* How do we know if it worked?
* What do we do if it doesn’t work?

Importantly, the process is not just about asking those questions, it’s about asking those questions throughout the organization and to peer organizations. Love (2008) states “when teachers ask these kinds of questions, engage in dialogue, and make sense of data together, they develop a much deeper understanding of what is going on relative to student learning” (p. 3). The same would apply at Uchealth EMS. The organization wants to improve, and all staff want to be involved. Many of the issues related to Uchealth EMS’s culture are related to a disconnect between line staff and leadership. Collaborative inquiry has the potential to help close that gap. Collaborative inquiry would have a side effect of gathering data related to what different groups see as the problems in the organization. Collaborative inquiry also promotes innovation at all levels because all levels are involved in the process. Collaborative inquiry improves learning and understanding because it requires people from different positions to work together and understand one another’s perspectives.

**Conclusion**

Uchealth EMS has the potential to support a robust business analytics program. The organization wants to be innovative and data centric. The organization prioritizes learning and service. Two overarching steps that Uchealth EMS should take to move towards creating a robust business analytics program are leveraging available resources to create a data management program and to implement collaborative inquiry.

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