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Rapid Communication

Quality Metrics: Date Transparency and User-Customized Design Drive Frontline Engagement

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Abstract

Valid quality metrics, and more importantly, improvement in healthcare delivery, depend on frontline provider engagement. We explore a pilot for using a familiar technology model, customized to the needs of frontline users, to foster a culture of teamwork, accountability, and improve patient care. Pre-intervention surveys measured awareness of quality indicators and their importance among frontline staff of a Mayo Clinic cardiovascular unit. Post-intervention surveys indicated substantial to significant increases in awareness of three critical metrics and two related best practices. We conclude with qualitative remarks on attitudinal changes that resulted from participation in the pilot.

Introduction

Background and current climate

A worldwide economic crisis has intensified scrutiny of the effectiveness, availability, and sustainability of current modes of healthcare delivery. New legislation calls for systems of accountability in health spending: in particular, for a shift from the traditional fee-for-service model to an outcomes-based, metric-driven model of financing care. In the US, the Affordable Care Act establishes Value-Based Purchasing (VBP) as the main pay-for-performance quality-improvement mechanism [1]. VBP involves actions of stakeholders in care delivery, purchasing and health-care consumers in making decisions that reflect access, price, quality, efficiency, and alignment of incentives. High performing providers are rewarded with recognition via public reporting, differential reimbursement and the resultant increased market share. Since October 2012, Medicare has reduced Diagnosis-Related Group (DRG) payments for all hospitals in order to financially incentivize hospital improvement by redistributing DRG funding as VBP payments based on hospital performance. Governmental action aside, similar cost containment and accountability pressures from the private sector will ensure that metrics will drive reimbursement, and thus institutional and professional viability, for the foreseeable future—a trend described as "inevitable" for a decade and more [2].

Challenges

Historically, Frontline Care Providers (FCPs) have not had access to "live" data on measures of quality and the practices that drive them. Real-time response with practical expertise to trending data has not been possible. "Engagement" was limited to responding after the fact to top-down analysis and/or directives [3,4]. Already burdened FCPs would inherit responsibility from leadership for data-gathering systems and improvement programs that increased their workload without necessarily increasing their sense of ownership, commitment, or engagement [5].

Conscientious providers have a drive to know more about performance and how to improve it; however, even an interdisciplinary care team often does not know where all relevant performance data can be found. Though outcomes data is available from many sources, those aware of data sources still might not know how to access it, understand it, relate it to other data, or make it actionable.

Surveying the landscape of performance measurement, healthcare economics, and clinical care, Conroy and Clancy note: "Frontline clinicians are exposed to disparate pay-for-performance programs that are often uncoordinated and not clearly aligned with producing better outcomes for patients. Evidence is produced at an astonishing rate, but its incorporation into clinical practice is difficult [6].

Opportunities

Optimizing clinical value requires broadening conversations around clinical outcomes creating institution-wide awareness of metrics, deficits, and goals. Such broadened conversations require

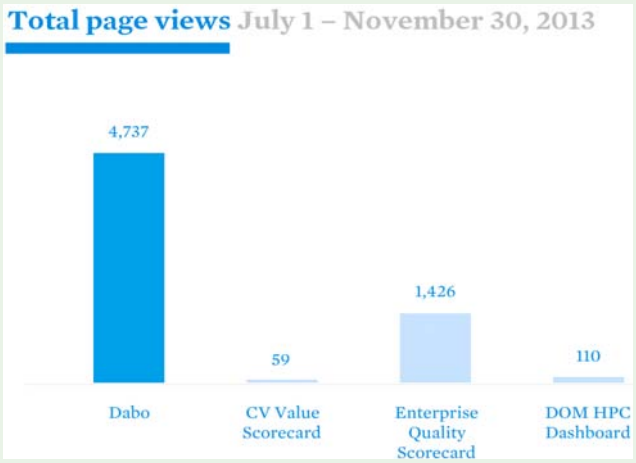

Figure 1: Text Here

systems design and data analysis that provides bundling and tailoring of both metrics and best practices to FCPs in ways that are accessible, minimally burdensome, and both accurate and actionable.

Institutional transparency can be achieved through dissemination of knowledge, data, and strategies broadly, rapidly, and accurately-resulting in action ability. To achieve transparency, FCPs must be willing to impartially consider input from the entire patient care team, as well as from outside it, and from affiliated or even comparable institutions, regardless of geographic location. One often overlooked or misunderstood resource for this transformation in communications is the kind of instant, global communication possible through the cluster of technologies and conventions known as "social media."

Eysenbach explains social media's essential dynamics and potential for use in clinical practice: "Social networking approaches revolutionize the way people collaborate, identify potential collaborators or friends, communicate with each other, and identify information that is relevant for them. Social networking [in medicine explicitly models people's] complex network of relations, which in turn enables and facilitates collaboration and collaborative filtering processes. For example, it enables users to see what their peers or others with a predefined relationship ("friends", "colleagues", "fellow patients" etc.) are doing…enables reputation and trust management, accountability and quality control, and fosters viral dissemination of information and applications [7]. Social media provides an untapped opportunity to increase transparency and ultimately improve quality metrics and quality of care. In turn, FCPs can thrive in our VBP payment system.

Methods

The Mayo Clinic IRB indicated that this study did not warrant IRB review, in accordance with the Code of Federal Regulations, 45 CFR 46. In this setting, written consent was not obtained. Verbal consent was obtained during on boarding and platform education. Consent was not recorded.

From June to November 2013, Mayo Clinic piloted the Dabo Health platform within its cardiovascular nursing care unit in Rochester, Minnesota (4-Domitilla) as a quality improvement project. Participants included all 254 staff working at 4-Domitilla. Mayo Clinic's research department developed a pre- and post-pilot survey using a 5-point Likert scale. The survey assessed the pilot's charter success criteria: awareness of data and metrics and of the link between government reimbursement and hospital performance, along with related attitudes; dissemination of knowledge; customer satisfaction with the platform and with the use of social media. Surveys were distributed to all study participants including nurses, mid-level staff and physicians. Surveys were administered, collected and analyzed by the research department. There was a 52% survey response rate. Direct user feedback drove weekly feature releases. Integrated user experience testing addressed "pain" at the point of system use to help seamlessly integrate use into the daily workflow.

Results I: Participation and Engagement

Active engagement with platform:

The 254 participants generated 4,737 performance metric views of the pilot platform far exceeding the current CV Value Scorecard, Department of Medicine Dashboard and the Enterprise Quality Scorecard (the latter available to in excess of 60,000 enterprise employees) by 332% Figure 1.

Figure 2a: The Dabo platform increased Mayo staff familiarity with national quality improvement initiatives. Re value based purchasing, the staff showed a 43% increase in familiarity with the initiative; and now most staff is familiar with Readmit and HAC initiatives.

Figure 2b: The Dabo platform clearly helped familiarize Mayo staff with heart failure readmission reduction best practices. The platform also decreased the percent of staff unfamiliar with the four Domitilla quality and safety initiatives

Throughout the study, the ground floor adoption-feedback loop revealed participants garnered a number of specific benefits, linked to data visualization and provider interaction and communication.

Embracing a culture of data transparency

Participants asked for the ability to quickly identify underperforming areas, shared information with individuals and groups, and exhibited a granular level of accountability at the unit, hospital and physician level.

Engaging with one another to increase accountability and improvement metrics

Users requested the ability to set and disseminate metric targets instantaneously, and to create quality improvement projects. Penetration and platform use was high, with 92% of users initiating or actively engaging in discussion and best practice sharing. Users originated requests for pain management metrics, physician-level cost and length-of-stay data, and physician-level patient satisfaction scores. New ideas for performance improvement initiatives gained traction, and providers began to ask to compare their performance against other units within the hospital.

Disseminating knowledge and improving communication

Users requested the ability to easily disseminate best practices and to improve communication between multidisciplinary teams. Sharing best practices made isolated quality improvement projects more widely available, and centralized information from disparate efforts.

Findings II: Pre- and Post-Survey Results

Increased awareness surrounding data & metrics:

Post-pilot, 93% of survey respondents said they were aware of a direct connection between governmental reimbursement and hospital performance.

More than 50% of respondents were more familiar with Value Based Purchasing after the pilot.

Customer satisfaction

Comfort with the Dabo platform was high, with 70% of users indicating that they found it "somewhat easy" to "very use to use". Moreover, metric localization was comparable with 73% of users indicating that finding metrics was "somewhat easy" to "very use to use". Moreover, 80% of users found the visualization of metrics on the platform to be "somewhat easy" or "very easy" to understand.

Understanding use of social media

100% of survey respondents use some form of social media in their personal or professional lives. In addition, 58.1% reported a belief that social media use could have a helpful impact for collaboration in a clinical setting. Moreover, 52.2% of physicians reported a belief that social media use could have a helpful impact for collaboration in a clinical setting.

Discussion and Key Lessons Learned

As qualitative observers, we believe we have seen the promised benefits of data transparency implemented in a clinical setting through social media. The Dabo Health Platform produced engagement and enthusiasm among providers given access to the technology.

Transparency as implemented through a social media interface allows providers to engage, take action, and collaborate across disciplines. Primary factors that were highlighted by users included the following:

- Trends appear in real time.
- FCPs can respond in real time and call for support as needed.
- FCPs can instantly share information about problems and receive best-practice responses from all users, breaking down previous barriers, logistical or perceived (shift, location, professional hierarchy).
- FCPs can collaboratively share information and responsibility to reduce duplicated effort, efforts that are at practical cross-purposes, and other inefficiencies.
- "Social media" interactions promote equal, instantaneous access to all users, which facilitates a quick and multi-disciplinary response, allowing for evaluation of suggestions on their merits, regardless of the source.

Transparency of data, including granularity down to the individual physician level, allowed RNs, NPs, and PAs to identify best practices among top performing MDs. A daily dashboard allowed for real time, public reporting of outcomes and monitoring of improvement measures. Staff could see if the changes being made were improving the quality of care, and could share feedback on Dabo's Platform. The end result was benefits to patients and providers, who ultimately have the capacity to improve performance-based hospital reimbursement rates Figure 2A and B.

The ability to quickly and easily access hospital, unit, and physician level performance data, make real time evidence-based decisions, share best practices, and initiate quality improvement projects significantly improved front-line engagement. Once RNs, NPs, and PAs understood that they could individually affect performance of quality measures, the pilot program cultivated a widely expressed desire to assess and qualify additional metrics. The financial correlation to Medicare payment through VBP reimbursement is an added benefit. Staff was excited at the opportunity to collaborate around common improvement goals; and they expressed frustration and a sense of futility with established, concurrent efforts that were more opaque and removed from their daily work experience.

Summary/Conclusion

This is the first study to examine the use of social media tools for front line provider engagement around real time quality metrics. Front line engagement and ownership of quality metric performance is vital to achieve clinical excellence. An agile design and development methodology empowers care providers to take action in creating a powerful resource that supports rather than interferes with workflow and patient care. As the improvement of clinical quality metric performance becomes increasingly mission-critical, consistent engagement at the point of care is key. Simplifying the acquisition and presentation of data, disseminating best practices, and connecting disparate quality improvement efforts into one centralized platform improves patient outcome metrics and provider

engagement and satisfaction. Improvement of performance metrics can only be achieved by engagement of FCPs. Doing so is challenging as a product of well-articulated barriers reflecting professional hierarchy, geographic location and asynchronous work schedules. The penetration of social media from a population perspective, as well as the intrinsic comfort with social media tools and communication that has evolved as a product thereof, creates a unique opportunity to take advantage of existing ease with social networks as a means of facilitating asynchronous engagement, around quality metrics. We believe that the capacity to engage FCPs and achieve both recognition and acceptance of quality metrics was enabled by their comfort via use of widely available social media platforms.

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