



IT Department Demand Governance in Health Care: Reflections on a Case Series

Michael G. Leu^{1,2,3,4} Diego Ize-Ludlow⁵ Adam B. Landman^{6,7} Hamed Abbaszadegan^{8,9}
Craig B. Monsen¹⁰

¹Information Technology Services, UW Medicine, Seattle, Washington, United States

²Department of Biomedical Informatics and Medical Education, University of Washington, Seattle, Washington, United States

³Department of Pediatrics, University of Washington, Seattle, Washington, United States

⁴Seattle Children's Hospital, Seattle, Washington, United States

⁵Care Transformation Information Systems, Intermountain Healthcare, Salt Lake City, Utah, United States

⁶Department of Emergency Medicine, Brigham and Women's Hospital, Boston, Massachusetts, United States

⁷Department of Emergency Medicine, Harvard Medical School, Boston, Massachusetts, United States

⁸University of Arizona–Phoenix, College of Medicine, Phoenix, Arizona, United States

⁹Phoenix VA Health Care System, Phoenix, Arizona, United States

¹⁰Center for Informatics, Atrius Health, Uuburndale, Massachusetts, United States

Address for correspondence Michael G. Leu, MD, MS, MHS, Department of Biomedical Informatics and Medical Education, University of Washington, Seattle, WA 98195, United States (e-mail: mgl27@uw.edu).

ACI Open 2022;6:e39–e43.

Abstract

Background Little is written on how best to structure IT governance in health care organizations. Governance is challenging because these groups may contain administrators, clinicians, and staff in addition to IT employees; projects may be complex and have significant impact on the teams that provide patient care.

Methods Peer organizations in health care were purposefully selected and C-suite executives were interviewed about their IT governance. Notes taken from these conversations were analyzed for guiding principles.

Results We interviewed leaders from five peer organizations. Consensus principles included: (1) minimize unwarranted variation; (2) evolve governance with the organization but independently of projects; (3) govern all clinical applications; (4) be flexible with intake, yet clear on decision-making; (5) have a tiered approach to governance; and (6) be multidisciplinary. Emerging principles included: (1) assign an IT business relationship manager to each high priority initiative, (2) have a clear escalation path to a small number of decision-makers, (3) include analytics to inform governance, (4) leverage Informatics expertise, and (5) use structured tools to streamline the process.

Conclusion While IT governance is very different across distinct health care organizations, there are some general principles that many share.

Keywords

- ▶ governance
- ▶ health information technology
- ▶ case series

received
April 14, 2020
accepted
February 3, 2022

DOI <https://doi.org/10.1055/s-0042-1749194>.
ISSN 2566-9346.

© 2022. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited. (<https://creativecommons.org/licenses/by/4.0/>)
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Introduction

Per the Gartner IT Glossary,¹ IT governance is defined as the processes that ensure the effective and efficient use of IT in enabling an organization to achieve its goals. IT demand governance (ITDG—what IT should work on) is the process by which organizations ensure the effective evaluation, selection, prioritization, and funding of competing IT investments; oversee their implementation; and extract (measurable) business benefits. ITDG is a business investment decision-making and oversight process, and it is a business management responsibility. This is in contrast with IT supply-side governance (how IT should do what it does), which is concerned with ensuring that the IT organization operates in an effective, efficient, and compliant fashion, and it is primarily a Chief Information Officer (CIO) responsibility.

UW Medicine consists of a medical center with academic and community campuses (UW-Montlake and UW-Northwest), a level 1 trauma center (Harborview Medical Center), another community hospital (Valley Medical Center), the UW Neighborhood Clinics, the UW Physicians practice group, the UW School of Medicine, and Airlift Northwest. UW Medicine IT Services (UW ITS) is the IT department that supports all of these clinically related endeavors.

We sought to understand how we might redesign UW ITS ITDG to function more efficiently, by interviewing leaders at peer organizations.

Methods

We developed an interview guide (→ **Supplementary Appendix A**, available in the online version,) with assistance from ITS leadership and knowledgeable contributors including the UW CIO and adjunct faculty in the Department of Biomedical Informatics and Medical Education. We purposefully selected sites that had academic affiliations and, where possible, community hospitals, community clinics, and county hospitals. We invited participation from IT leaders of these peer organizations by e-mail. Informational interviews were conducted by one investigator with each leader for approximately 1 hour, and handwritten notes were taken with each

interview, which were subsequently entered electronically. Sites also sent additional internal documents for review. Two investigators (M.G.L. and C.B.M.) reviewed the notes and internal documents to identify guiding principles for IT governance and continued to refine these principles until there was consensus. These principles were organized into what we have termed consensus principles (identified by the majority of organizations) versus emerging principles (best practices mostly unique to specific health care organizations). We sent summaries of our notes and our findings back to participants for verification, to verify correctness of the principles and of the examples provided. Three leaders (H.A., D.I.-L., A.B.L.) helped us to sharpen the identified principles, which were then finalized by consensus.

Results

We were unable to find a health care organization that met all of our criteria. While organizations selected had some ties to academia and covered multiple facilities, none of the organizations included a county hospital that was a level 1 trauma center. We interviewed one executive per organization. Interviewed organizations (and roles) included the Cleveland Clinic (Enterprise Chief Medical Information Officer), Intermountain Healthcare (Associate Chief Health Information Officer), Vanderbilt University (System CIO), Brigham and Women's Hospital (CIO), and Banner Health/Phoenix Veterans Affairs (VA) (Chief Health Innovation & Informatics Officer). For more information about the sites, see → **Table 1**. Participants at three sites reviewed selected site-specific comments for inclusion in the article. This information is in the → **Supplementary Appendices B–D**, available in the online version).

Decision-making Independent of Organizational Chart

Although the clinical informatics literature does describe the organizational chart,² effective ITDG appears to be most affected by governance committees and their composition ensuring appropriate representation for decision-making similar to that of other businesses.³ This emphasis on decision-making was so profound that some of the organizations interviewed did not have a readily available organizational

Table 1 Site summary and characteristics

Site	EHR	Description of enterprise
Cleveland Clinic	Epic	Around 9–10 regional hospitals in NE Ohio; hospitals in Florida, Toronto, London, Abu Dhabi, Las Vegas; many clinics + primary care network/ACO
Intermountain Healthcare	Cerner	223 hospitals + 1 virtual hospital, providers services in 7 states; 180+ clinics, and a health plan
Vanderbilt University	Epic	Adult/children's hospital, 126 clinics, partner and affiliate sites, V-CIN, rehabilitation, and behavioral health hospitals
Brigham and Women's Hospital/Partners HealthCare	Epic	Two academic medical centers and five community hospitals in Massachusetts; four rehabilitation hospitals, two skilled nursing facilities; home health agency; psychiatric hospital; three physician organizations
Phoenix VA	CPRS	Single hospital, 212 beds, 8 clinics; under central VA

Abbreviations: ACO, Accountable Care Organization; CPRS, computerized patient record system; EHR, electronic health record; NE, northeast.

chart. As a result, the consensus and emerging recommendations that follow relate more to decision-making entities with representation from groups in charge of functional capabilities, implementation, and clinical/technical and financial approvals. They did not focus greatly on specific title, role, or reporting structure of individuals in the organizations.

Consensus Principles

Principle 1. Minimize unwarranted variation. In complex organizations, system variation among entities^a was allowed primarily only in situations dictated by regulatory circumstances or when related to different clinical audiences.

Most of these organizations did not allow variation of electronic clinical content among entities. Given the need for potential variation, these organizations had feature request processes, which could include system/content variation; however, it seems that at the prioritization stage, this variation was not approved unless it was needed to accommodate regulatory requirements. This enabled the IT group to minimize the additional work done related to variation prior to the onset of the projects.

For example, the Cleveland Clinic did allow variation for their international sites due to regulatory issues. Intermountain Healthcare felt that transplant decision support would be unnecessary in a community hospital where transplants were not performed, and supported having subsets of a shared decision support library filtered by entity.

Principle 2. Evolve governance with the organization but independently of projects. Nearly all of the organizations interviewed were actively reconfiguring their governance structures at the time of interview, either to better reflect additional complexities in the business or to reflect the realities of new operational objectives after recent go-lives of clinical/technical initiatives.

In most models, IT governance was independent of projects that would be completed. This appears to have the benefit of ensuring continuity of decision-making after project completion, reducing administrative burden of re-establishing steering committee composition and dynamics, and ensuring that, even if projects are distinct and siloed, the organizational standards can be applied across projects to ensure consistency.

It was noted that IT resources are in extremely high demand. It was felt that to retain talented analysts governance and work structures should support high level of analyst engagement (and continuity) by conserving project teams through serial projects when possible.

Principle 3. Govern all clinical applications. Governance was over inpatient and ambulatory systems, and potentially over all IT-managed clinical systems.

While there were projects that occurred in these different domains that might involve different analyst teams, all health care organizations interviewed had one governance

structure with authority over both inpatient and ambulatory domains. Some organizations also had medical devices and ancillary systems (e.g., laboratory, pharmacy, radiology systems) under the same governance, whereas others had a separate governance structure still under the IT department.

Principle 4. Be flexible with intake, yet clear on decision-making. Systems might have more than one way to solicit projects, yet only one way to triage/approve projects.

Most of these systems had a means by which projects could be identified. Some projects were identified by clinical/financial considerations (e.g., new program necessary to expand business for heart center). They could also arise spontaneously from clinical areas through divisional initiatives, strategic planning, executive meetings, or business units (e.g., heart center) or from provider subspecialty workgroups.

Most systems had a means whereby projects could be submitted and tracked. Regardless of the origin of the project, the triage and approval process appeared similar. Most systems strongly recommended that organizations should enforce consistent usage of the standard project intake process (as opposed to allowing projects to be worked on outside of the standard processes).

Principle 5. Have a tiered approach to governance. There should be an appropriate level of governance to match different-sized projects.

Committee hierarchy is such that the highest ranking committees are involved in making decisions about major systems, whereas lower level committees have some autonomy when there are not budgetary considerations.

Lower level IT governance over projects could approve small changes (“just do it”s; e.g., new order set) or sufficiently small projects already reflected in the budget. Higher level IT governance would be involved for anything requiring additional expenditure or prioritization where resources require reallocation.

It seemed that for health care organizations where higher level committees were involved for small changes, the small changes tended to take prolonged amounts of time and/or get lost in the system. In the systems where there was the ability to automatically approve “just do it”s, mature quality standards for how the work was to occur was a necessary prerequisite (e.g., style guides for how order sets should be built or consistent order set review processes).

Principle 6. Be multidisciplinary. IT does not work in isolation. Working together helps ensure that the project requests are well specified and can be prioritized appropriately.

A general principle was for the project intake process to have IT participate as part of a multidisciplinary team, including the original requestor/owner as well as appropriate other stakeholders, to specify business requirements, to specify project scope, and to choose technologies and/or alternatives most appropriate for implementation. This pre-work would be done before projects would be approved and staffed. Most of the organizations reported that, for large projects requiring clinician participation, providing/funding dedicated time for that activity helped ensure clinician involvement. Another strategy for ensuring clinician involvement (when appropriate) is a trend toward greater

^a Meaning: allowing different electronic health record (EHR) configuration among different clinics/hospitals in the same health care organization.

participation from nursing/operational leadership with shared accountability.

Emerging Principles

Emerging Principle 1: Assign an IT business relationship manager to each high-priority initiative.

Two of the leading-edge organizations have been very focused on patient satisfaction ratings and appear to have taken one of these principles to improve internal IT service. Priority groups, divisions, and initiatives are assigned an internal IT business relationship manager to ensure timely follow-up and resolution of both intake requests and delivery of appropriate solutions. This new approach has not yet been studied as to efficacy; however, it appears to generate customer goodwill.

Business relationship managers often manage multiple relationships. At the organizations that offer this service, the role seems to be filled by clinical informaticians or by managers. The ideal liaison would have both a strong understanding of the clinical/business side of what is to be built and technical understanding of how it would best be built given what is possible.

Emerging Principle 2: Have a clear escalation path to a small number of decision-makers.

In the largest organizations, the best structures appear to have a small number of trusted decision-makers (even as few as three to five) to make large decisions on behalf of the enterprise.

Emerging Principle 3: Include analytics to inform governance.

Analytics should be included as stakeholders in projects and be responsible for meaningful measures/visual systems (dashboards) to understand predefined indicators of performance and drive improvement.

While some organizations had separate governance for analytics, it appears that consistent with improvement science,⁴ organizations are increasingly creating dashboards, run charts, and reports to support improvement aims. As a result, implementation projects are starting to incorporate more analytics stakeholders/resources into projects to allow the instrumentation to be created as part of the deliverables of initiatives. Therefore, while analytics might not necessarily be integrated in the organizational chart, resources from that group would be assigned to projects and be subject to IT governance as is often seen with project management resources.

Emerging Principle 4: Leverage informatics expertise.

Informatics faculty with strength in applied clinical informatics can improve informatics operations.

Primarily at Vanderbilt, the interviewee described how clinical faculty could help blend valuable theoretical expertise with practical knowledge toward the achievement of business objectives. However, being a strong academic informatician was not necessarily a guarantee of operational competence. Therefore, these individuals should be purposefully selected and appropriately matched to challenges where the operational contribution of diverse faculty is most impactful.

Emerging Principle 5: Use structured tools to streamline the process.

In many organizations, decision-making is time-limited by requiring approval from various governing bodies where stakeholders may not always be present (especially if the committees are large). Sometimes committees can then use ad hoc means of voting such as e-mail voting buttons. However, this does not work as well for multistage/multilevel approvals. At the Cleveland Clinic, there is a sign-off process for decisions that is very similar to that of getting travel approvals supported by software. The decision is routed to an appropriate set of stakeholders, and when all the approvals are obtained, the project can move forward.

Limitations

This study has some limitations. Nearly all of the organizations that we interviewed had very different organizational charts and governance structures, suggesting that there may not be one optimal governance structure. The governance discussed by the organizations solved some issues well and others not as well. This was addressed by the organizations in a state of continuous evaluation and improvement of their governance structures.

We chose a convenience sample of health care executives willing to be interviewed; we did approach other organizations that did not agree to be interviewed. In an ideal circumstance, with ready participation of numerous, purposefully sampled organizations interviewed until theoretical saturation of ideas, a more complete picture might result.

More studies may be helpful in identifying the best governance structures to reinforce the principles identified in this paper.

Conclusion

While IT governance is very different across distinct health care organizations, there are some general principles that many share. Soliciting input from peer organizations has resulted in some observations from their experiences with continually improving their governance structures. More rigorous evaluation in this area may lead to stronger evidence, although it is challenging to have access to the organizational leaders that can provide the big picture when thinking about IT governance; and organizations may not desire to engage in controlled trials to rigorously study governance.

Clinical Relevance Statement

This article describes principles IT organizations in health care are following that other organizations may consider when defining and refining their governance.

Note

Copies of the notes from our interviews and organizational charts/other materials supplied to the authors are available upon request, pending permission from the participating organizations. Supplementary Appendixes B-D (available in the online version) include information that three organizations have allowed to be released.

Protection of Human and Animal Subjects

We are advised that the study does not meet the regulatory definition of research, as its initial intention was a quality improvement project, and the data obtained were not intended to be broadly generalizable.

Conflict of Interest

None declared.

Acknowledgments

We would like to acknowledge the individuals and organizations that we interviewed for their assistance, the UW Medicine leaders and faculty that helped us to develop our interview script, and Joy Grosser for her support of this project.

References

- 1 Gartner. Information Technology Gartner Glossary. Accessed April 14, 2020 at: <https://www.gartner.com/en/information-technology/glossary/it-governance>
- 2 Rydell RL, Landa HM. The CMIO Survival Guide: A Handbook for Chief Medical Information Officers and Those Who Hire Them. Boca Raton, FL: CRC Press; 2018
- 3 Rogers P, Blenko M. Who has the D? How clear decision roles enhance organizational performance. *Harv Bus Rev* 2006;84(01): 52–61
- 4 Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance. 2nd ed. San Francisco, CA: Jossey-Bass Publishers; 2009