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Leading Change – A National Survey of Chief Innovation Officers in Health Systems

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Abstract

What is the message?

Chief innovation officer roles have been established in many health systems to guide innovation efforts. Respondents to our survey were enthusiastic, informed, and satisfied with the progress they have been able to make to date. However, whether organizational support and structure around this effort is yet sufficient for transformative innovation of delivery systems towards new models of care is an open question.

What is the evidence?

Structured survey of leaders at the 40 largest healthcare systems by revenue in the United States.

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Introduction

Healthcare policy is increasingly designed to incentivize the transformation of healthcare delivery.[1,2] Payment model reform requires health systems to develop the capacity to innovate so that they may successfully navigate clinical and organizational transitions to new models of care.[3-9] This shift in focus has led to the rise of an "innovation agenda" in health care.[10-12] One of the most visible responses to this agenda has been the rise of "chief innovation officers" in the highest ranks of executive leadership in health systems. The term *chief innovation officer* was described in 1998 as part of a growing recognition that innovation within organizations needed to include continuous and discontinuous, or disruptive, strategies.[13] Individuals in the chief innovation officer roles were to identify new ideas, concepts, and business opportunities, and then to develop the capabilities to support and implement this agenda.[13]

A PubMed search found that, in 2016, 646 articles had been published on the topic of organizational innovation. However, only 2 articles pertained to the position or mission of chief innovation officers in health care.[14,15] Both reports were single-institution descriptions of innovation efforts. While more systems are adopting a chief innovation officer as a member of their senior leadership team, little is known about the charge, evaluation, and support of the individuals in these roles.

We sought to better understand the organizational framework, reporting structure, resource allocation, and metrics of success for chief innovation officers. Based on these findings, we can better understand how these roles are structured within health care systems. These data can also allow us use concepts from organizational innovation theory to analyze whether health systems are adequately supporting their chief innovation officers for success of the innovation agenda in health care.

The summary results are striking. Of the 40 largest healthcare systems in the United States, 32 had a senior innovation officer. Half of respondents (52%) characterized their role as strategic, 24% as operational, and 24% as financial. Structurally, 80% resided within established organizational structures, and 36% reported directly to the chief executive officer. Overall, 44% had short-term metrics of success, 68% medium-term, and 24% long-term (nonexclusive responses). The median budget for the role was $3.5 million, but some organizations invested significantly more, usually in a venture capital function. In terms of barriers to innovation, 64% of respondents reported that the biggest barrier is culture or organizational structure, while 16% of respondents reported budget, talent, and process as the largest hindrances to innovation.

Methods

Survey Development

We developed a survey based on the conceptualized role of the chief innovation officer in health systems using teachings from organizational innovation theory.[10-13,16,17] We advanced and tailored these concepts using a set of position specifications available to Russell Reynolds Associates, an executive search firm. Finally, we refined the survey through qualitative interviews with three chief innovation officers who volunteered to both respond to the survey and to provide feedback on the survey instrument. The final instrument was designed to be interviewer-administered, prompted by a set of open-ended discussion questions and recorded on a data collection form that included 23 structured questions: eight questions about organizational charge and structure, four about outcomes/metrics, two about barriers, three about resources, and four about career preparation and background. Finally, we developed two summary assessment questions, each using a 7-point Likert scale to better characterize the role of the chief innovation officer. The questions were anchored as internally focused vs. commercially focused, and as tactical vs strategic. The survey was considered exempt research by the institutional review board of Harvard University.

Survey Sample

We identified the 40 largest health systems by revenue in the United States using the Definitive Healthcare data set as candidates for our sample. We then used LinkedIn, organization websites, publically available press-releases, and Russell Reynolds Associates' proprietary database to

identify the chief innovation officer or most senior innovation-responsible executive at each organization. For organizations where we could not identify a chief innovation through the above methodology, or in the case that the identified chief innovation officer was the wrong executive, we conducted sourcing interviews with industry experts to identify the chief innovation officer or to confirm that the organization had such as position.

Survey Administration

Between January and May 2017, chief innovation officers received an email, consent form, and interview agenda detailing the content of the interview. Interviewers were cross-trained during the month of January to ensure standardization of interview delivery, and interviews were recorded to ensure quality control. Phone interviews were conducted over WebEx, and recordings were stored securely. Each call was attended by two interviewers—one who conducted the interview and the other who took notes during the call.

Nonrespondents received two follow-up emails sent one week apart, followed by a phone call one week later. Nonrespondents were contacted once more at one month after the initial four attempts at outreach. No financial incentive was included to encourage participation, and participants were informed that all data would be deidentified in reporting.

Data Analysis

We developed descriptive statistics for the 23 structured questions derived from the open-ended interview questions. We further categorized these roles using our own categorization of the chief innovation officer role from the qualitative interviews. Data from the structured interviews, the qualitative interviews, and the summary assessment questions are shown graphically in a 2-by-2 figure.

Results

We were unable to identify a chief innovation officer or equivalent position for eight of the 40 health systems in the sample. This resulted in a sample of 32 organizations with a chief innovation officer or other senior innovation-responsible executive. We were able to complete 25 interviews from this sample, for a response rate of 78%. Of the 25 individuals interviewed, 22

had “innovation” in their title, such as “chief innovation officer” or “senior vice president of strategy and innovation.” Nine of these 22 participants had “chief innovation officer” specifically in their title. Three participants did not have “innovation” in their job title but did have the term in their job description, such as “senior vice president of ventures” or “vice president of market development and incubations,” and were identified as the senior-most executive charged with the innovation agenda at their health system.

When asked to select whether the primary focus of their role was strategic, operational, or financial, we found that the majority (52%) of participants reported having a strategic focus, 24% operational, and 24% financial (**Table 1**). In qualitative analysis, we were able to characterize participants’ roles into 1 of 4 patterns: (1) an “internal consulting group” that educated, advised, and partnered around continuous process improvement (36%); (2) an incubator that worked to grow and scale projects (28%); (3) a group that imported and scaled established technology (12%); and (4) a venture fund that invested externally and sometimes internally (24%) (**Table 2**).

Table 1. **Characteristics of Chief Innovation Officers by Primary Function**

Characteristic	Strategic (n = 13)	Operational (n = 6)	Financial (n = 6)	Total (N =25)
Reporting directly to chief executive officer, %	54	0	33	36
Business unit outside existing structures, %	8	0	67	20
Budget (in millions), median, $[a]	3.0	2.0	35.0	3.5
Headcount, median, No.[b]	17.0	6.5	30.0	9.5

[a] *Budget data were provided by 9 of 13 chief innovations officers in the strategic function, 5 of 6 in the operational function, and 6 of 6 in the financial function.*

[b] *Headcount data were provided by 13 of 13 chief innovation officers in the strategic function, 6 of 6 in the operational function, and 5 of 6 in the financial function.*

Table 2. **Primary Stated Focus vs. Functional Categorization of Chief Innovation Officers**

Focus	Strategic (n = 13)	Operational (n = 6)	Financial (n = 6)	Total (N =25)
Internal consultants	7/13 (54%)	2/6 (33%)	0	9/25 (36%)
Incubator	5/13 (38%)	2/6 (33%)	0	7/25 (28%)
Import and scale	1/13 (8%)	0	0	3/25 (12%)
Venture	0	0	6/6 (100%)	6/25 (24%)

In terms of reporting structure, only 36% of participants reported that they reported to the chief executive officer, with 8% reporting to the chief operating office and the rest to other senior leaders of the organization. Table 1 shows the organizational structure by primary focus.

Overall, 72% of participants reported that the organizational board is involved with the innovation efforts of the chief innovation officer. Most often, the board was noted to play an instrumental role in setting up the position or innovation centers in the health system. Subsequently, chief innovation officers often provided the board with quarterly or annual updates, but the board did not play an active role in setting the innovation agenda.

The majority of respondents reported that the innovation function resided within the traditional organizational structure, with 52% reporting that the innovation group is a new business unit within the existing structure, and 28% reporting that the innovation group is an existing business unit within an existing structure. Twelve percent of respondents reported that the innovation group was a new business unit outside of the existing organizational structure, and 8% of respondents reported that the innovation group is a new initiative outside of the traditional structure entirely, such as an external venture capital fund.

Most respondents (72%) reported that their organizations had developed an innovation center of some kind, and 89% of respondents in systems with innovation centers work directly with these centers. Thirty-six percent of respondents reported that they worked with the technology transfer function within their organization, and 72% work with external entrepreneurs, 56% with

external venture capital firms, and 32% with external consultants. Sixty-eight percent reported that they have introduced tech solutions as part of their innovation agenda.

We obtained organizational timelines for 24 of the 25 chief innovation officer positions. The median number of years the position has existed at these institutions is 4 years (mean, 5.3 years); 16 (67%) have existed for 5 years or less, 7 (29%) for 6 to 10 years, and 1 (4%) for longer than 10 years.

We asked respondents about metrics used to assess the success of the chief innovation officer function, and 44% reported that the metrics used are short-term, 68% medium-term (1 to 3 years), and 24% long-term (multiple responses were permitted). Metrics reported by participants included individual project measures, counts of outside company partnerships, counts of employees that were influenced or reached, quality metrics, and financial return on investment metrics.

In terms of barriers to innovation, 64% of respondents reported that the biggest barrier is culture or organizational structure, while 16% of respondents reported budget, talent, and process as the largest hindrances to innovation. More than one response was allowed for this question. Overall, 28% of respondents reported that they spend a disproportionate amount of time advancing the innovation agenda at the executive level of the organization, 36% with operational leadership, 24% with financial leadership, and 24% with clinical or university leadership. None of the respondents reported that they spent a disproportionate amount of time with their board of directors.

Of all respondents, 20 (80%) provided their total budget amount and 24 (96%) shared their headcount. Overall, the median budget under the control of the chief innovation officer in was $3.5 million. There was a strongly skewed distribution of responses; 60% of respondents have a budget of $5 million or less, 15% greater than $5 million but less than or equal to $20 million, and 25% greater than $20 million. The latter group consisted of organizations that have developed their own venture capital funds. The median headcount was 9.5 people; 54% have a headcount of 10 or less, 29% have a headcount less than or equal to 50, and 17% have a headcount greater than 50. Of groups with greater than 50 full-time employees, 75% were organizations with their own venture capital funds. Overall, 68% of respondents reported that they are funded through operational funds, 24% through executive discretionary funds, and the

rest through either investment or strategic funds.

We also asked about career trajectories and backgrounds. Among the respondents, 60% of respondents were internal candidates when appointed. Overall, 44% of respondents reported that they have an MD degree; among these, 45% are still practicing medicine. Four of 25 respondents were women.

The results of our summary questions sorted by the charge of the position are shown in the Figure. Overall, chief innovation officer roles that were characterized as strategic were most frequently identified as strategic and internally focused, roles that were characterized as operational were most frequently internally focused, and organizations with a financial charge were most frequently strategic.

Discussion

This study provides important data on the status of the innovation agenda across the largest healthcare systems. To our knowledge, it is the first study of innovation to look across multiple health systems and to specifically address the role of the chief innovation officer. In response to calls for organizational change, most of the largest health systems established a new leader in their organization to fill the role of a senior innovation officer. The structure and function of the role was remarkably diverse across systems, in mandate, structure, and budget.

We found a varied set of responses to the definition of innovation within an organization that often tracked with the definition of the chief innovation officer role. The responses reflected thoughtful approaches to the challenges of organizational innovation. As one respondent reflected, the role was created “in recognition that the tyranny of the daily trumps the pursuit of the remarkable…absent a countervailing force….there is a large amount of untapped creative energy in the organization; and it needs a beacon to light the way.” This supports findings from the innovation literature: “Most companies have plenty of creativity and plenty of technology. What they lack are the managerial skills to convert ideas into impact.”[16]

Innovation can be characterized on a spectrum that includes execution, improvement, and transformation.[17] Execution is focused on ensuring evidence-based practices (such as hand washing). Improvement (also known as sustaining innovation) is focused on incremental

betterment of existing processes, products, or services. Transformation (also known as disruptive innovation) is focused on development of novel processes, products, or services that represent a fundamental shift in an approach that will eventually overtake existing processes.[14,15] All of the participants we interviewed reported that they were focused on improvement or transformation as their core assignment.

The innovation literature has a growing focus on the role of organizational structure as a key enabling approach for organizations to consider, particularly for business transformation.[4] This focus follows from the description of a classic organizational design at Hewlett-Packard's printer division,[12] through the restructuring of Google into Alphabet.[18] Yet, in our study, only 20% of respondents reported that innovation included a novel organizational form. This result stands in contrast to an aspiration for transformative innovation in organizations, such as a shift to value-based payment models in health care. This result may limit the impact of these innovation efforts: "When innovators stop short of business model innovation, hoping that a new technology will achieve transformative results without a corresponding disruptive business model and without embedding it in a new disruptive value network or ecosystem, fundamental change rarely occurs."[12]

For most organizations, the chief innovation officer role was characterized as a strategic one. Yet, in only a minority of organizations did the chief innovation officer report to the chief executive. As stated by 1 respondent, **"**The reporting relationship is critical. [When asked], 'Who owns innovation?,' [our CEO] immediately said, without skipping a beat, 'the CEO does,' even with me sitting next to him. He is absolutely right. If the CEO doesn't own innovation, the organization will eat it alive. It's just not a fair fight. The CEO has to own it, drive it, and value it."

Organizational culture and structure was the category respondents described as the biggest obstacle to success. The most important role of any leader is to establish and communicate a clear vision for the organization. In an organization as complex as a health care system, this is a difficult challenge, even when the market and policy environment is stable. While conceptually there is an understanding of the transition to value as a payment model in health care, in most markets and policy discussions this remains an aspiration rather than a market imperative. Thus, leaders discuss and address innovation often in the context of supporting existing fee-for-

service business models. This lack of clarity at an organizational level can lead to confusion at an operational level in terms of the innovation agenda. As one of our respondents said, “Decide if you want to really innovate or not. Don’t pretend. Because that has implications across staffing, funding, organizational commitment.”

Most large healthcare organizations have finely tuned budget models with clear metrics to guide investment decisions. The innovation agenda can be challenging in this type of environment, as by definition innovation is not designed to be predicable and is inherently risky. In addition to investment in new organizational forms, innovation can replace existing legacy business models, such as facilities and clinical or administrative structures. Addressing these legacy issues requires political capital and close-out funding that can be equally difficult to manage from a resource allocation perspective.[11] For most of the organizations in our survey, the chief innovation officer has a modest budget and headcount, given the strategic nature of the role.

The study has several limtations. Our study is based on self-report by survey respondents. We did not audit the data. When respondent organizations identified a senior leader who was the head of innovation, only 9 had the explicit title of chief innovation officer, and the research team had to determine whether the role was really a senior innovation role.

Chief innovation officer roles have been established in many health systems to guide innovation efforts in response to policy changes in health care. Respondents to our survey were enthusiastic, informed, and satisfied with the progress they have been able to make to date. However, whether organizational support and structure around this effort is yet sufficient for transformative innovation of delivery systems toward new models of care is an open question.

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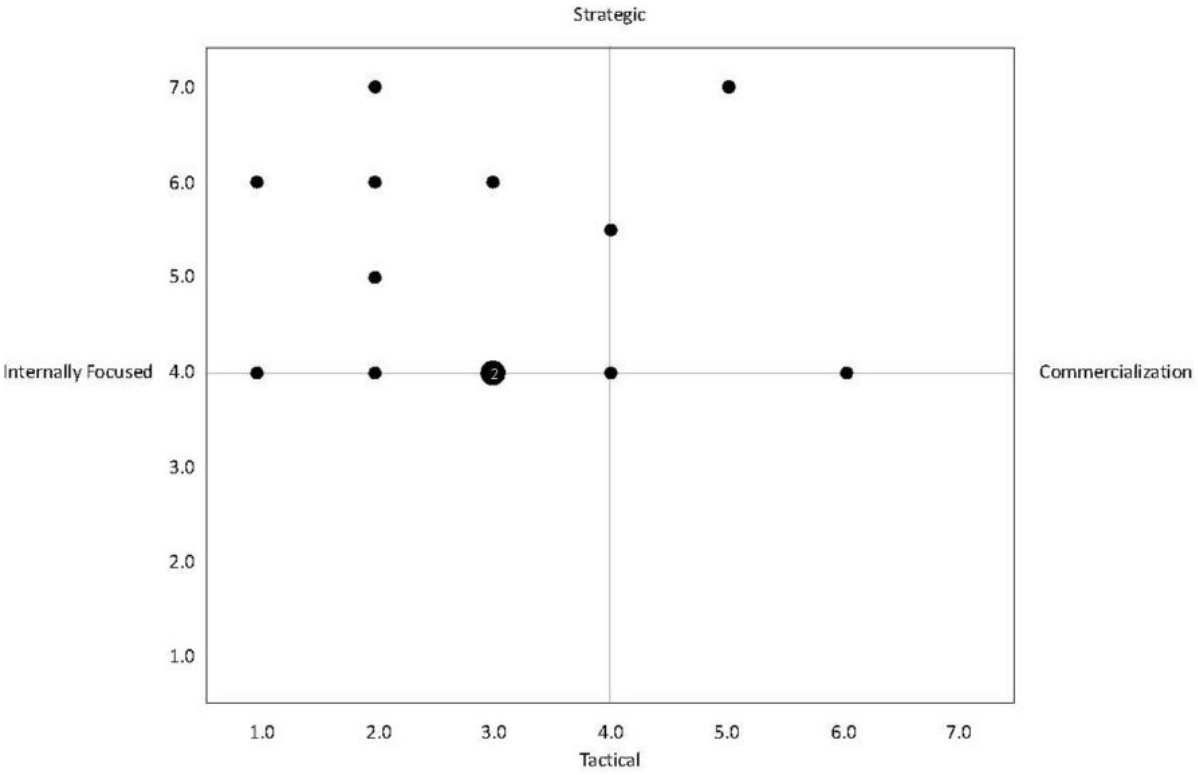
Figure Legend

Figure. **Summary Assessment Questions for Chief Innovation Officers With a Stated Primary Focus That Was Strategic (Panel A), Operational (Panel B), and Financial (Panel C).**

Chief innovation officer roles that were characterized as strategic were most frequently identified as strategic and internally focused; roles characterized as operational were most frequently internally focused; and roles with a financial charge were most frequently strategic.

A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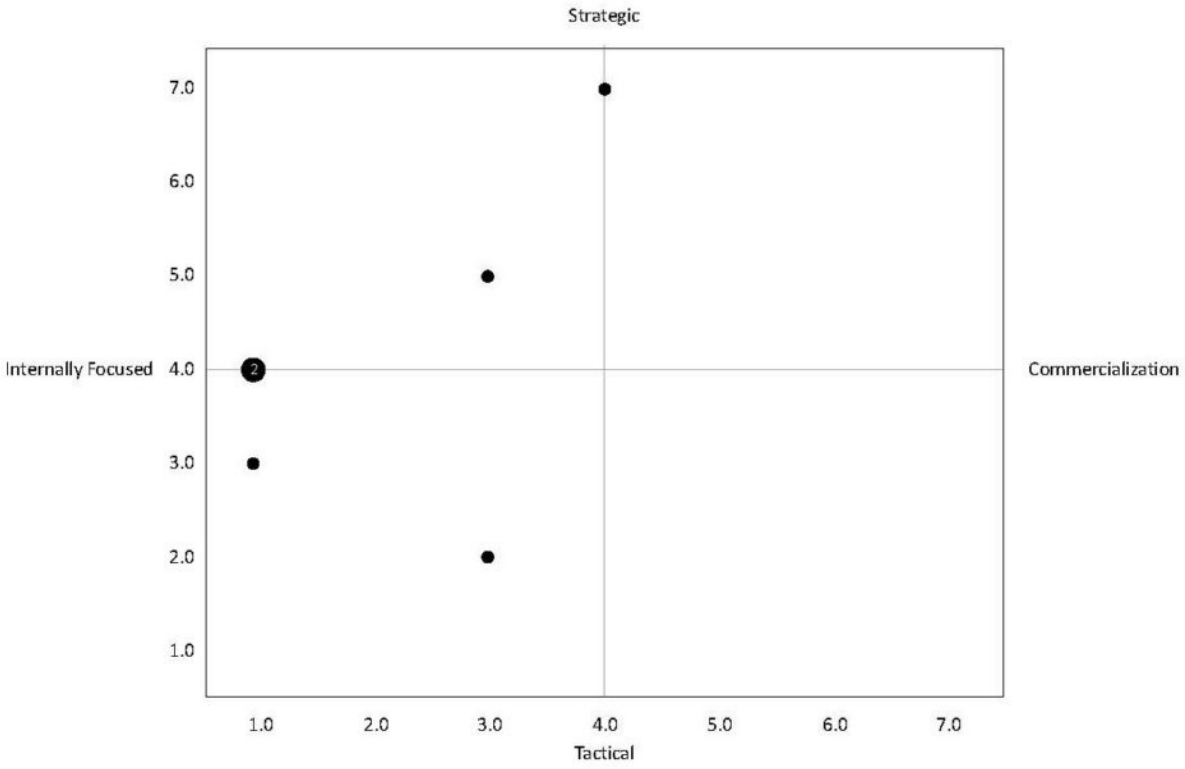
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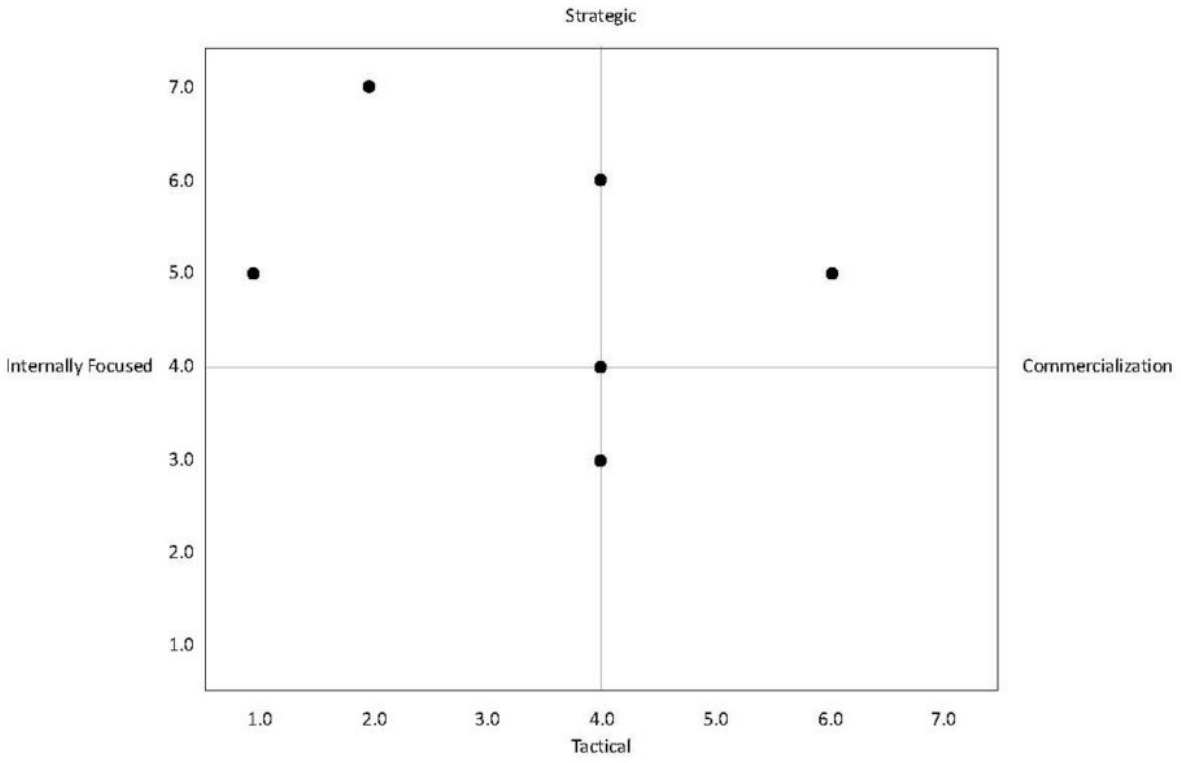
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