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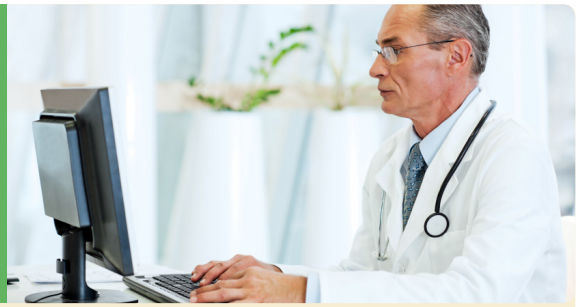
HSR Agenda Setting: Lessons from Three Health IT-Enabled Health Systems



The Health IT for Actionable Knowledge project examines the experiences of six large health care systems that have used data from electronic health records and other information technology to conduct research and analysis related to health care delivery. This document is one of five reporting the results of this AcademyHealth initiative. Each report draws on examples from these early-adopting health systems to explore a range of issues relevant to the conduct of health services and other research using electronic clinical data. The six health system partners in this effort are Denver Health, Geisinger Health System, Kaiser Permanente, the New York City Department of Health and Mental Hygiene's Primary Care Information Project, the Palo Alto Medical Foundation Research Institute, and the Veterans Health Administration. AcademyHealth gratefully acknowledges the generous support of the California HealthCare Foundation in funding this project, and the U.S. Agency for Healthcare Research and Quality (AHRQ) for providing seed funding.

Summary

As the electronic data generated by health systems improves, health care executives are beginning to ask whether they should build an internal research function in their organization, and if they do, how they can ensure both academic excellence and that the research is relevant to the strategic interests of their organization. This report documents the experience of three health systems that have been successful in building health services research (HSR) programs: Palo Alto Medical Foundation (PAMF), Geisinger Health System, and Denver Health. Specifically, it explores their rationales for creating an internal HSR unit, the levels of resources dedicated to it, and the research priority setting process used to decide what topics to address.

Introduction

At a recent Summit on the Future of Health Services Research, researchers suggested that the massive investments the federal government has currently allocated to electronic health records (EHRs) would radically alter the way HSR is conducted, including an increase in the overall quantity and timeliness of research being produced, a shift in the location of some researchers from academic centers to clinical settings, and ultimately, an expansion of the sources of funding available for HSR.[1]

Most health care organizations that are busy acquiring and adopting health information technology (health IT), especially EHRs, have yet to think about the value of their data for HSR. However, there are a subset of organizations that invested significantly in EHRs in the last decade, and have already incorporated electronic data systems into their administrative and clinical decision-making flows. For these organizations, research to improve quality and efficiency of their care delivery processes has indeed become the logical next step in the application of electronic data.

This paper examines three such organizations: Palo Alto Medical Foundation, Geisinger Health System, and Denver Health. Their examples suggest some of the ways HSR in health care delivery organizations may differ from traditional HSR undertaken in universities. In addition, they offer potentially useful insights for other health systems contemplating the use of EHR data for HSR at their organizations. And finally, the experiences of these three health systems may be useful for university-based health services researchers interested in engaging health care organizations as research.[2]

Undertaken as part of Health IT for Actionable Knowledge project, this report explores the rationales for creating an internal HSR unit, the levels of resources dedicated to it, and the research priority setting process each organization uses to decide what HSR topics to pursue.

How Do Researchers and Funders Decide What to Study?

The research agenda-setting process has been identified by many authors as a critical determinant of the degree of relevance, and ultimately the impact, of HSR. [3] During the 1990s, research prioritization methods became a focus of research itself. The interest was driven by public and private research funders' concerns about the return on their investment. Historically, of course, researchers have set their own agendas. But ideas about social accountability were creeping into the public discourse, and increasingly foundations and government funders were considering engaging the end users of research in the research agenda setting process as a means to increase the relevance and acceptability of HSR. Moreover, proposals for assessing the cost effectiveness of research investments also began to spread.[4]

In 1998, the Institute of Medicine (IOM) issued a report on how research priorities are set by the National Institutes of Health (NIH). The committee recommended that NIH develop a more explicit (accountable) research agenda setting process, and urged them to engage consumers in defining priorities.[5] In Canada, the work of Jonathan Lomas and John Lavis pioneered the idea that governments should conduct formal "listening" exercises as input into research priority setting. [6] England followed suit with its own "listening" programs.[7] International organizations such as the council on Health Research for Development (COHRED), the World Health Organization and, more recently, the Alliance for Health Policy and Systems Research, also produced their own research prioritization methodologies, emphasizing "hard" criteria for ranking topics, such as burden of disease, as well as the inclusion of stakeholders in the process of deciding research priorities. [8]

While most of the literature on research prioritization has focused on public funders, private funders, whether implicitly or explicitly, also have to prioritize research. Private funders include foundations (both independent and company-sponsored), and health care companies (manufacturers, payers, and providers). In 1990, another IOM committee examined the behaviors of a range of science funders and noted that foundations are particularly opaque in the manner in which they establish priorities.[9] They suggested that one reason that they were not transparent in setting research priorities is that boards of directors generally establish their strategic priorities behind closed doors. In the best cases, foundations establish outside advisory committees to oversee programs and to provide scientific review of individual projects.

There has been very little work on how private health care organizations prioritize research. However, such organizations, particularly managed care organizations (MCOs) do conduct considerable amounts of research. A 1997 survey of 20 MCOs with their own research units (six of which are part Kaiser Permanente) reported a collective internal and external budget of $93 million and more than 158 career researchers.[10] The research included health services, epidemiology, health economics, and clinical trials. Authors Nelson *et al.* report that the first MCOs to set up research units were the not-for-profit, staff, or group model organizations with large defined populations. These included Kaiser Permanente in the 1960s, the Henry Ford Health System in the 1970s and Group Health Cooperative of Puget Sound in the 1980s. In 1997, Nelson found that these three groups still accounted for 85 percent of the externally funded research identified in their survey. Based on document reviews and interviews, the authors suggest several motivations for the research investment, including:

- commitment to the growth of medical knowledge,
- stimulation and retention of clinicians,
- improvement in care delivery and care evaluation,
- leadership in affecting health care policy, and
- managing requests from outsiders for access to data.

More recently, Dubois and Graff conducted nine case studies of research prioritization approaches to comparative effectiveness research, one of which was a private company: the BlueCross BlueShield Association Technology Evaluation Center. [11] They looked at whether these programs and organizations engage stakeholders, establish prioritization criteria, examined evidence, and generated consensus around research priorities. They also looked at the transparency of the process, the frequency of updates, and whether the process was evaluated. They found that while the eight public and quasi-public entities had explicit prioritization processes and criteria and engaged all stakeholders in the identification of priorities, BlueCross BlueShield did neither.

Denver Health, Geisinger and PAMF

The three systems examined in this report are not intended to be representative of health care organizations in the United States. They were selected because they are leaders in the adoption of EHRs, have strong research capacity, and may offer insights into the potential of HSR to benefit other health systems as they adopt EHRs.

Like most of the early adopters of EHRs, the three systems are not-for-profit: Denver Health is a quasi-public authority, and the other two have non-profit status. As not-for-profit organizations, these three systems may have elements of both the for-profit research and development, or "R&D" model, which conducts research in order to develop new products and increase revenues,[12] and the public research model, which in addition to some internal

use of research, supports research that expands knowledge in the public domain.

Denver Health, Geisinger, and PAMF vary in the types of populations they serve. Geisinger is largely rural, and sees approximately 700,000 patients in 31 counties in southwestern Pennsylvania. The other two systems are urban/suburban. Denver Health serves about 150,000 patients in the Denver metropolitan area, most of whom are Medicaid or safety net patients. PAMF serves close to 600,000 patients in four counties in northern California. Many of its beneficiaries are employees of the health IT industry.

They also differ in the degree to which they span both health plan (i.e., insurer) and health care delivery functions, though each may have its own incentives to experiment with the way care is organized and paid for. In addition to its hospitals and networks of independent providers, Geisinger runs a capitated health plan. Unlike many integrated health systems, Geisinger's health plan members can use any provider; only about 50 percent use Geisinger primary care clinics. Nevertheless, Geisinger's dual role as both a provider and payer might be expected to increase the value of research to them, and to influence the kinds of research they support. Denver Health also has a health plan that is available to employees and to all municipal workers. Neither PAMF, nor its parent organization, Sutter Health, have their own health plan. However, they do work with some of the insurers who pay for their services to participate in experiments with novel forms of care delivery and financing.

With these similarities and differences in mind, this report examines two sets of questions:

1. Rationale and Resources: Why do these systems conduct HSR, and what level and type of resources are available?
2. Agenda Setting Environment: How are decisions about research agendas made, and who or what influences them?

Data was gathered through site visits conducted during the spring and summer of 2010, followed by extensive phone interviews and a face-to-face meeting in December 2011. Informants included leadership and staff in the research departments, physician and nurse clinical leaders, the quality improvement teams, and the Chief Executive Officer in each case.

Rationale and Resources Matter

The Rationale for Creating an HSR Division

Investments in research units at Geisinger, PAMF, and Denver Health began at different times, but the shift from bench and clinical research to HSR appears to have occurred for similar reasons. Like many academic and non-profit organizations, all three traditionally engaged some externally-funded, physician-led laboratory and clinical research. As the infrastructure required to undertake such research became more complex, however, these organizations began to have difficulty in attracting the best and brightest researchers; the most prestigious researchers increasingly preferred a large university setting that had larger and better equipped labs.

The interest in HSR for all three organizations grew in the mid 2000s, and interviews suggest that the rationale was at least threefold. First, research units were searching for new ways to attract top researchers that would elevate the prestige of the organization. HSR, which does not require a laboratory setting, offered that possibility. Second, HSR offered the opportunity to conduct research that would influence health policy and set these organizations apart as leaders in delivery system innovation. Lastly, and perhaps most importantly, they were receiving more and more requests from outside researchers wanting access to their data. This led them to the realization that that their most important competitive advantage in grant seeking was having their own electronic data.

At Geisinger, a basic science research program had been established in the 1980s with private funding. However, difficulties in attracting top researchers grew over time. In 2003, CEO Glenn Steel established the Center for Health Research. He hired Walter Stewart, a professor of health services research from Johns Hopkins University, to lead the new unit. Stewart and Steel conceptualized HSR as the R&D function of the organization. Projects would be fundamentally oriented toward system change, and would aim to improve the company's competitive performance.

Steel and Stewart distinguished the research center from the innovations center in terms of the time required to perform rigorous research. Today, the innovations team conducts quick turn around studies that do not allow for the same level of rigor as the studies conducted by Stewart's team, which takes from three to seven years to complete. Despite the longer research timelines, Steel and Stewart say they are committed to assessing the return on investment (ROI) on research, and have included such an assessment in the company's 10-year strategic plan.

At PAMF, the Research Institute has been in existence for almost 50 years, in part as a result of a requirement under California law that medical foundations must conduct research and education. The shift to HSR occurred at PAMF around 2007 when Hal Luft, then at the University of California in San Francisco, began to consult with them on how they might strengthen this type of research. As one of the most prominent health services researchers in the nation, his 2008 hiring as the Research Institute's Director marked a major commitment to HSR.

Table 1: **HSR Resources at PAMF, Geisinger and Denver Health**

Organization	Total budget for research 2010	Total budget for HSR in 2010	Total research staff working on HSR	Principal investigators focused on HSR	% HSR budget internally funded	Trends in internal funding (absolute)
PAMF	$11.2 million	$9.6 million	60	9 PhD/MDs	31%	50% increase since 2007
GEISINGER	$30 million	$5.5 million	60	9 PIs	40%	Anticipate 25% maximum of internal funding by 2014.
DENVER HEALTH	$30 million	$414,000	2.5	3 Masters-level analysts .75 FTE of a Phd PI	15%	Anticipate dollar amount staying the same and percent of internal funding going down

Denver Health historically had no organized research unit, although clinicians, all of whom also have a University of Colorado faculty appointment, engaged to some degree in clinical research. In 1997, CEO Patricia Gabow convinced the Denver City Government to allow the various health services under its control to be merged together as one autonomous "authority." Immediately thereafter she created a health services research unit. Gabow reports that initially the unit's purpose was to document the successes of the organization and disseminate them publicly. Others in the organization recall that, similar to Geisinger and PAMF, it was also viewed as a way to increase the academic standing of the institution.

In 2000, Gabow received a grant from the Agency for Healthcare Research and Quality (AHRQ) that allowed her to convene a panel of industry leaders from outside health care. Through these colleagues she learned about and became intrigued with the Lean approach used in manufacturing. For nine years, the HSR unit reported directly to her. It originally focused on implementing and assessing Lean related reforms, but later carried out AHRQ-funded research. In 2009, the HSR unit became independent of the CEO's office, and in 2010 Edward P. Havranek, a cardiologist and outcomes researcher within Denver Health, became the part-time director of the department.

When asked why they preferred to create an internal HSR function rather than form partnerships with external academic researchers, the leaders of these organizations responded that outside researchers simply want access to data, and have little or no interest in sharing results with the delivery system. In contrast, researchers that work *within* health care organizations have a strong relationship with the organization, even if their work is externally funded. Luft also points out that while data by itself is useful, "data with access to the people who created it, who can explain its nuances, and who can provide additional information is extraordinarily valuable and offers the researcher a competitive edge in external funding." He believes that while having researchers "embedded" in a delivery system is costly at the outset, there are important returns to the organizations that result from such collaborations. He likens the two arrangements as the difference between "one night stands" and "long-term relationships."

Resources Allocated to HSR

At Geisinger and PAMF, the internal resources allocated to these endeavors were modest in the beginning and grew over time as the leadership gained confidence in the value added by health services research. In each case, internal funding appears to be primarily viewed as an investment in stimulating external funding. Indeed, over the years, as the research units gained visibility and prestige among funders such as NIH and AHRQ, external support has grown as a proportion of the overall research budget. For PAMF, an added incentive is that both internal and external research funding count towards the community benefit expenditures required of not-for-profit health care organizations in California.

The funding allowed the organizations to hire new researchers, and as the units were strengthened, they were able to leverage HSR to answer questions that were useful to management. This led to the CEOs, in turn, becoming more interested in investing company funds, even as they encourage research units to seek more external funding.

PAMF has the largest research unit with almost 60 staff and 10 FTE PhD/MDs, nine of whom focus on HSR. In addition to these 10 researchers there are fellows, post doctoral students, and collaborating investigators, with an $11.2 million budget, $9.6 million of which is HSR related. Over two-thirds of the HSR budget ($6.6 million) is externally funded. The remainder is funded through the Research Institute's operating income, space rental, gifts, and endowment. PAMF also provides approximately $1.6 million for HSR on PAMF-specific research questions, with the understanding that the research results are publishable. The overall budget has increased by 50 percent in the last four years, as a result both of PAMF's growing internal contribution and the growth of external HSR funding.

Geisinger's Center for Health Research has 60 research staff and 16 investigators. Of these, 42 staff and nine investigators focus on HSR, including comparative effectiveness research, prospective studies, evaluations, and research on patient adherence. While both internal and external funding has grown, currently 40 percent of the center's research budget comes from internal support,

and their goal is to reduce internal support to 25 percent. Stewart believes the 25/75 split is the maximum external funding necessary to cover non-research activities of the center's staff, including training and development requirements. External funding comes from NIH, AHRQ, industry, and foundations, such the Commonwealth Fund and Robert Wood Johnson Foundation. Industry research funding, primarily from pharmaceutical and laboratory diagnostic companies, has diminished as the center has become more successful with federal funding.

Denver Health is the smallest of the three research groups in terms of staff. With just three master's level researchers and 75 percent of one Ph.D., the unit has relied mostly on external funding. It had an annual budget of $414,000 in 2010, with eight projects funded by AHRQ – including a long-standing participation in the AHRQ ACTION network and additional projects funded by the CDC and the Office of Population Affairs.

The relative allocation of internal and external funding among the three organizations examined here is similar to the allocation found by Nelson and colleagues. Twenty-four percent of research dollars were provided internally, primarily as general support for research infrastructure. Similar to the three HCOs reviewed in this report, among the twenty surveyed MCOs Nelson found that federal agencies accounted for two-thirds of external funding through grants for specific research projects, and most of the balance came from industry or foundations (Nelson et. al. 1998).

The Research Agenda-Setting Environment

Unlike many public funders, none of the three organizations in this study use explicit criteria to establish a research agenda or rank priorities. They do not have a mechanism in place to engage patients or employers in defining research priorities, nor do they restrict their agendas to a predefined list of themes, as some funders do (e.g., AHRQ,[13] New York State Health Foundation, [14] and Robert Wood Johnson Foundation.[15])

So how are priorities established? What influences the research agenda? This section explores six themes related to the research agenda setting environment that emerged from AcademyHealth's interviews :

1. The degree of internal engagement of the researchers, versus full investigator autonomy;
2. The prestige and interests of the HSR director;
3. The systems established to manage internal access to data;
4. Researchers' technical assistance to clinicians within the organization;
5. Researchers' interaction with outside organizations; and
6. Promotion incentives for researchers.

Internal Engagement. In the university setting, investigators have full autonomy in defining their research priorities. In for-profit settings, on the other hand, most researchers have far less autonomy; their purpose is primarily to generate knowledge that can be used internally to advance the company's business interests. The three organizations considered in this study have a blended model, with varying degrees of autonomy and internal engagement in each. Of the three, Geisinger appears to be most explicitly committed to internal engagement, while Denver Health is the most investigator and external funder-driven.

Geisinger's Stewart sums up their commitment to internal engagement by describing their primary function as R&D. He notes that for his research group the dominant question is "what have you done for the organization lately?" The recent hiring of Earl Steinberg, another well-known health services researcher, to serve in a management position that will "take research to market" is another strong indicator of the organization's commitment to produce HSR that supports development (i.e., re-engineering of the delivery system). At the same time, Stewart reports that CEO Steele, himself a former researcher, understands academic incentives, and recognizes the value of researchers having some autonomy in defining their research interests. As a result, academic affiliations are encouraged, as are peer review publications.

Luft and CEO Richard Slavin established a slightly different take on the HSR function; they agreed that the research institute would have full autonomy in defining its research agenda and that maintaining academic credentials through peer-reviewed publications would be central to its mission. Unlike Geisinger, at PAMF it is the innovation unit that conducts the R&D, while the Research Institute's primary goal is to advance public knowledge. Nevertheless, Luft says that he is keenly interested in contributing to system change at PAMF and that, while not a requirement, he pushes his team to actively engage with the clinical and business side of the organization as a means to generate good research ideas.

While small, Denver Health's research unit has had considerable academic autonomy. In fact, Havranek notes that as director he would like more internal engagement and would favorably view a research agenda more aligned with institutional needs. Others within the organization, however, argue that it is important to maintain their "academic freedom." The fact that Denver Health's research group is almost entirely externally funded has likely contributed to this greater level of autonomy, as has its affiliation with the University of Colorado.

The Role of the HSR Director. HSR directors play a critical role in defining agendas, particularly in PAMF and Geisinger. Not surprisingly, this role appears to be a function of the status and power of the HSR directors within the organization, which in

turn is reflected in their relationship with the CEO. In both of these cases, HSR directors report directly to the top management, and their relationships have been strengthened as the research they produce feeds into the CEO's understanding of, and interest in, delivery system problems and innovations.

It is also important to note that both Stewart and Luft were highly regarded academic health services researchers before being recruited to these organizations. The prestige and funding opportunities they brought with them undoubtedly contributed to their special status. In effect, they have built on that initial 'capital' to become indispensable to their CEOs as together they identify strategic directions for improving quality and reducing costs. And in that process, both Steele and Slavin report that HSR itself has become core to the organizations' mission. Stewart and Luft describe this relationship as a collaboration that allows them to influence the organization.

In the case of Denver Health, the HSR unit has a lesser degree of institutional prominence, perhaps because the CEO herself led the unit early on. In recent years, there has been turnover in the director role. Havranek was recruited from within the organization. He is a well-regarded researcher, in addition to clinician, although, unlike his two peers, he now reports to the head of the Quality Improvement (QI) unit, rather than directly to the CEO. Gabow argues that HSR is a core strategy for her organization, and that having the department fall under QI reflects its institutionalization.

Managing Access to Data. The experience of these three organizations indicates that, while there is no explicit prioritization of topics, managing the abundance of electronic data requires a system for prioritizing requests for access. As the data quality and quantity improved, staff from all corners of the organization, in addition to researchers from outside, became interested in using electronic data to answer a variety of types of questions. Denver Health staff described this growing demand for data as a "feeding frenzy."

All three groups have had to create triage systems, although each has done so in a slightly different way. The management of this triage system effectively becomes a research priority setting mechanism. Denver Health established a 12-member council made up of physicians, IT staff, and one epidemiologist who assess the relevance and viability of research projects before assigning IT staff to pull the data. In the case of PAMF, they have their own duplicated copy of data and their own internal IT staff. This means that the research director himself can set priorities, but access is subject to appropriate IRB and Privacy Officer review. At Geisinger, the data warehouse is managed by the research center. In principal, anyone inside the organization with funding can request access to the data. If they do not have funding, Stewart is the ultimate arbiter as to the value of the research question; if he sees it as an investment in work that is of interest to the center, access is permitted.

Interactions with Clinicians. In all three institutions, the HSR teams report providing support to clinical staff who wish to conduct research. As they do this, they learn about the needs of practitioners and gain their trust, which, in turn shapes their own research interests. This appears to be an explicit strategy at PAMF; researchers identify issues that are important to the organization, and this provides the rationale for internal funding of specific activities. At PAMF there is a distinction made between activities intended for eventual publication (i.e., research, which is also counted as community benefit) and activities supporting organization needs that are not expected to be published, which are not counted as community benefit.

The Role of Outsiders. Research priorities in these systems are also influenced by outside groups. All receive outside funding and aspire to increase that portion of their budget. As a result, research agendas of major funders, such as AHRQ and NIH, impact priority setting inside the health systems. Denver Health's early funding from AHRQ, for example, was an impetus to grow the HSR unit. Later, AHRQ projects such as the Action Network, which generates requests for proposal (RFPs) on specific topics, have also helped to define the portfolio of research. Groups like the Commonwealth Fund play a lesser role in funding, but to the extent that they become interested in a particular health system, they have the ability to provide platforms for the CEOs to showcases their organizations and engage in a dialogue with other national leaders about exemplary practices that could be replicated elsewhere. The CEOs of Denver Health and Geisinger sit on Commonwealth's Commission on a High Performing Health System, where they exchange lessons among top performers.[16] This national comparison serves as a reference in identifying cutting edge research topics.

All three organizations also collaborate with outside researchers, and this means introduction of ideas from outside. The PAMF Research Institute is a formal affiliate of the NIH Clinical and Translational Science Award programs of both Stanford and UCSF. It has investigators with adjunct faculty appointments at both institutions and grants courtesy appointments to faculty at both institutions. The Research Institute has recently joined the HMO Research Network (HMORN) and is working toward active collaboration within the HMORN.

Geisinger has working relationships with major regional universities, including Johns Hopkins and University of Pennsylvania. They form part of several research collaboratives among provider organizations, including the HMORN, which include special collaborations around cancer, cardiovascular disease, and diabetes, academic collaborations with the University of Pennsylvania and Johns Hopkins University, and regional collaborations with other organizations in central Pennsylvania that focus on particular

environmental and population health issues. Denver Health has working collaborations with Colorado Children's Hospital and University of Colorado School of Public Health. They are also part of the High Value Health Collaborative which is an emerging alliance of providers that share data and research questions including Mayo Clinic, Cleveland Clinic, Inter-Mountain, and Dartmouth. Denver Health also collaborates with Intermountain Health, Baylor Health Care System, Colorado Health Outcomes Program, Mayo Clinic, Providence Health and Services, VA Medical Center (Denver), and VA Medical Center (Salt Lake City) as a participant in AHRQ's Accelerating Change and Transformation in Organizations and Network (ACTION II). The ACTION II Network encourages and facilitates innovations in health care delivery and creates partnerships between collaborating organizations in an attempt to incorporate innovations into practice.

The Role of Professional Incentives. Finally, the research agenda in these organizations is influenced by the professional aspirations of the researchers themselves. At all three organizations, researchers are held to traditional academic promotion standards.[17] The emphasis is on peer review publications and generation of external grants. Other valued dimensions of performance are classroom teaching and internal and external mentoring. In addition, all three groups encourage the development of ties with clinicians and leaders at the organization, even when not linked to the internal funding of those investigators. They view this as the service component of the promotion criteria.

To the extent that the performance expectations of these health system-based researchers are almost identical to the metrics of success for academic health services researchers, one might ask whether they are facing an impossible challenge. How can they conduct context specific evaluative research that is valued by physician staff and CEOs, while at the same time qualify for NIH funding and publish in peer review journals? All three HSR directors believe that it is possible, and indeed the explicit goal is to achieve both publication and positive impacts on the internal needs of the organization. They say they need to adhere to academic promotion criteria in order to attract and retain the best and the brightest, who will want to know that they can go back to an academic setting later if that is what they want.

Part of why they have been able to conduct research that is both internally applied and publishable may be that, unlike academic researchers, at least at Geisinger and PAMF, they have significant internal funding. This allows them to maintain a high level of research productivity even when external funding may lag. Moreover, to the extent that their research reflects organizational priorities, they may be even more attractive to outside funders.

The CEO's Focus. As with many organizations, the culture and priorities of these three health systems can be traced to their CEOs.[18] All three CEOs are physicians with a strong commitment to the social mission of health care. They each view their mission as finding ways to squeeze out waste, while improving population health outcomes, and increasing patient engagement. Their goals are consistent with what former CMS Administrator Don Berwick has called the "triple aim" of health care – better care experiences, population health, and cost control.[19] All three CEOs spoke extensively about the importance of having a relatively stable patient "demography" that allows them to tailor their research to specific communities, with specific needs, and to be able to track improvements over time.

The focus on improving efficiency by being innovators and squeezing waste out of the system was explicit. At Denver Health, this has taken the form of a 'Lean' initiative. Through an AHRQ-funded project, Gabow brought in experts from other industries to discuss ways to increase efficiency. This led to a research and development approach to building Lean into the fabric of the institution. Since the end of that project, the HSR unit has focused on investigator and funder-initiated work. Coming full swing, the current director of HSR would like the HSR unit to return to the evaluation of internal projects. He describes this as "getting people to buy into having a more rigorous data-gathering and analytic approach to business decisions and to having the medical staff see internal QI [quality improvement] projects as substrate for academic work."

Like Gabow, Steele has imbued the organization with the imperative to eliminate unnecessary services, a mandate he calls his "religion." For Steele, the emphasis is on learning which products have no value in terms of population-based outcomes. Steele expressed a strong interest in research relating to payment incentives that will lead to the identification and elimination of overuse of services, which he estimates at 40 percent. He also suggests that organizations like his, that are integrated with an at-risk health plan, may have an even greater interest in HSR since their incentives to cut waste are aligned throughout the organization.

Similarly, Slavin has become interested in Lean. In recent years, he reported that he has been supportive of Luft's interest in the physician patient interface and patient responsibility. He talks about improving quality through consumer activation, and learning how to manage chronic illnesses as two important areas of research they are pursuing.

Discussion

The history of these three organizations reveals that the growth of HSR may have had multiple drivers, including the desire to maintain the inflow of grant dollars, the importance of building academic stature, and the recognition that the investments they had already made in health IT were a competitive advantage in the grant

seeking process. In effect, the difficulties in attracting clinical and bench researchers to these institutions led them to turn to HSR.

The three systems invested heavily in building their own internal HSR capacity, which they viewed as a means to ensure that the research fed back into the organization's efforts to improve quality and diminish waste. The CEOs of PAMF and Geisinger report that the more HSR conducted, the greater the value proposition of HSR became in their eyes. The hiring of nationally recognized health services researchers to head up the internal research function in two of these organizations appears to have been key to a virtuous cycle of growth that consolidated the place of HSR in these health systems. At Denver Health, the current director is redirecting the unit to become more engaged internally, which may, in coming years, heighten the value of the unit in the eyes of leadership.

Whether the fact that Geisinger and PAMF are not-for-profit health care organizations contributes to their interest in and support for HSR is a question that merits further exploration. Certainly at PAMF the ability to draw on community benefit funds reduces the imperative to demonstrate a return on investment for HSR. Geisinger stands out among the three as the only organization that see HSR as research and development and is committed to actually assessing its ROI to the company.

This examination of the research agenda-setting process found that none of the three organizations use formal criteria to rank potential studies or engage outside stakeholders in the identification of research topics. There are at least two possible interpretations of why this is the case. The first, of course, is simply that as private companies they are less accountable to the public with regard to the internal allocation of funds than with public institutions. In other words, there is no external pressure for them to do so. A second possible explanation is that electronic data reduces the need for research prioritization because it is cheaper. In contrast to foundations and public funders that often have to invest in creating data (e.g., through surveys, focus groups or other mechanisms), health care organizations with EHRs generate data as a by-product of care. Once the investment in de-identifying the data are made, the costs of research are far lower than research funded by government or foundations and carried out by academics.

This project identified a range of factors that are likely playing a role in determining what research is conducted in these systems. A key theme is the degree to which the institutions have made internal engagement of the research unit a priority. The role of the HSR director and the type of relationship with the CEO are also important. Perhaps less obvious are the systems for triaging who gets access to the data, which create a de facto filter on the research, often controlled by mid-level staff. The commitment of researchers to provide technical assistance to clinicians who are interested in conducting their own research also leads to new research ideas. Outside funders and peers influence research topics, and lastly, the promotion criteria for researchers used in each setting matter.

In summary, this preliminary exploration of the role of HSR in three not-for-profit health care organizations systems suggests there is growing recognition of the value HSR can play inside health care organizations, and that while there are no explicit research priority setting mechanisms, the confluence of multiple informal influences on the research seem to ensure the relevance of the work to both the internal and external audiences.

The story of HSR in these three organizations provides a number of lessons for HSR educators and for health care leaders. As previous work by AcademyHealth has highlighted, a first lesson is that it is important for health services research graduate programs to expose students to the research being conducted inside health systems.[20] These organizations are both potential employers and partners in research. Curricula must examine the types of data being produced in these settings, the complexities of managing access to it, and evolving statistical methods for answering key internal and external research questions, including simulation methods.

Other lessons are relevant to the group of health care executives who are currently investing in health IT, and at some point in the future may want to use it for HSR. They will need to consider whether to build an internal HSR capacity, or to establish partnerships with universities or research companies outside. They will want to know what the right level of internal resources should be, and how much autonomy researchers should have in defining their research topics. They will wonder how their organizational goals can be taken into account, while still maintaining external academic standards.

The lessons from these three systems are not prescriptive, but their experiences may be useful to others as they consider such questions. For Geisinger, PAMF, and Denver Health, the investment in HSR has paid off. Research units were able to generate outside funds, which, in turn, increased their capacity to hire high quality researchers. As the research programs expanded, their strategic support of management also increased. Moreover, finding the right balance between internally and externally oriented research agendas happened differently in each setting. For all three, however, they were ultimately able to achieve both.

About the Authors

Patricia Pittman, Ph.D., is an Associate Professor in the Department of Health Policy at the George Washington University School of Public Health and Health Services. Bryan Kelley, Research Assistant at AcademyHealth, provided research assistance for this report.

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Endnotes

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