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Commentary

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Health research in academic health systems: time for a new model

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Abstract

Research, along with patient care and education, is a core element of the academic health system's tripartite mission; it is essential to the academic health system's societal commitment to advancing the public's health. Research at academic health systems in the United States is increasingly resource-constrained and, in important ways, the underlying financial model supporting it has reached a point of unsustainability. This commentary reviews the roles that health research at academic health systems plays in society, describes the ways in which the current model of health research is under strain, and proposes an evolved model and series of organizational and operational steps to consider in moving health research forward.

Key words: academic health center; research; funding.

Academic health systems (AHSs) sit atop a tripartite mission of patient care, education, and research. This mission of the modern AHS is a mid–20th century development, built on an implicit social contract between AHSs and the public to advance public health in return for societal investment in medical research and education.[1]

Robust research activity across biomedical, clinical, health services, population health, and health policy research—what we will call health research in this article—is an essential component of the modern AHS. However, changes in American health care financing over the last quarter century—including the shift to managed care, the reductions in Medicare fee-for-service reimbursements, and the move to value-based payment models of the Affordable Care Act—have led to substantial downward pressures on health research funding within AHSs. As noted by Jeffrey Balser, President and CEO at Vanderbilt University Medical Center, "Awareness is growing that the costs of . . . research programs—historically heavily subsidized through large transfers from clinical care margins—are not sustainable." We believe that most researchers are largely unaware of the significance of this pressure to the current health research paradigm.[2] Many AHS leaders, however, worry that a "margin meltdown" where overall costs exceed revenues is on the horizon. Victor Dzau, President of the National Academy of Medicine and former President and CEO of Duke University Medical Center, writes: "Academic health centers face an uncertain future."[3]

There is heterogeneity in the structure and funding of AHSs in the United States (and of course internationally), which is reflected in a persistence of debate over how existential a threat to health research the new health care financing landscape represents. As authors representing the research and health policy leadership at a research-intensive public AHS in the United States, we believe it is essential for AHSs to assume a leadership role in revisioning the United States' health research enterprise and developing a sustainable path forward. The solution will require understanding the history of AHSs and health research in the United States, the limitations of the current organizational and financial model for health research, and the principles on which a robust health research operation is built.

A brief history of health research in AHSs in the United States

Academic health systems in the United States were founded in the early 20th century under an implicit social contract with the public, in which financial, political, and moral support for medical education and research were exchanged for service to the public.[1] The 3 elements of the mission were mutually supportive and reinforcing. In the mid-20th century, federal investment in medical research increasingly subsidized the cost of health research and research infrastructure.[1] The impact of this investment has been hugely positive. However, as operating costs for health research grew in the latter half of the 20th century, federal health research funding did not keep pace and AHSs increasingly turned to clinical revenues to subsidize the cost of health research. As market pressures have continued to increase in the last few decades, AHS leaders increasingly see health research as a cost center for the growing clinical enterprise.[4]

The challenge facing health research in AHSs

In 2014, the Association of Academic Health Centers (AAHC) published a report on the financing of health research in US AHSs.[5] The report showed that most AHSs spend between

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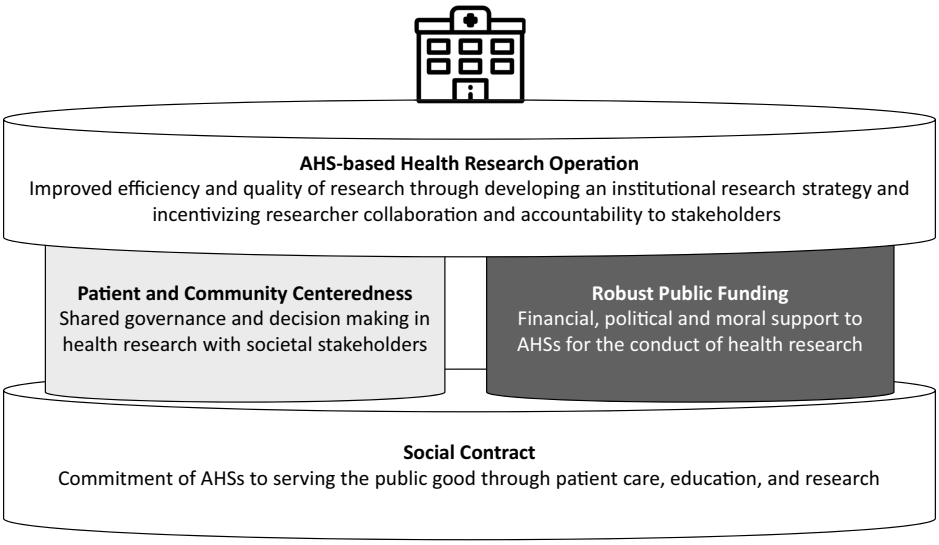

Figure 1. Model for 21st century academic health system (AHS)–based health research. Our model of sustainable health research is grounded firmly in the social contract at the heart of the AHS mission. It contains 2 pillars that extend from this contractual foundation to support the enterprise: patient and community centeredness and robust public funding. Lastly, it envisions a health research operation that has improved strategic and operational efficiencies.

33% and 63% of their entire budget on health research and that, for every dollar increase in research expenditures funded by extramural grants and contracts, total research expenditures increase by another 52 cents.[4,6] The realities of the 21st century health care marketplace's transition from fee-for-service to value-based payment models are only worsening the situation. Henry Aaron, Chair of the Economic Studies Program at the Brookings Institute, wrote in 2000 that AHSs "cannot continue to perform all their traditional functions without help. The unstated premise here is that policy should indeed be changed to help them."[7] Aaron's last sentence is prescient. Twenty years later, we have yet to take the transformative policy steps needed to prevent the "margin meltdown" that AHS leaders now see looming.

A model for AHS-based health research in the 21st century

In 2012, the National Academies of Sciences, Engineering, and Medicine (NASEM) published a report entitled "Research Universities and the Future of America" directly addressing the broad crisis of sustaining America's research universities.[8] In 2015, the AAHC published a monograph entitled "The Transformation of Academic Health Centers: Meeting the Challenge of Healthcare's Changing Landscape," which more specifically addressed the plight of health research in AHSs.[9] Leveraging the findings of these national efforts, we propose a model for sustainable health research in the 21st century (Figure 1). Importantly, this model is proposed explicitly for the US AHS community. Internationally, there are surely pressures on the health research enterprise, but the challenges and solutions will vary by and depend on each individual country's unique history, resources, and policies.

Grounding health research in the social contract

Grounding health research in the social contract refocuses AHS-based health research on the public good. Recommitting to this social contract will require bidirectional change; the health research community will need to center its work more directly on the priorities of patients and communities, and society will need to support the work of health researchers more comprehensively.

Centering health research on patients and communities

Society's resources should be spent with consideration given to activities that address society's most pressing needs. To achieve this, health researchers must adopt a patient- and community-centered framework for generating and prioritizing health research questions. Essential to this framework is the formal inclusion of patient and community voices (among other key stakeholders) at all levels of health research decision making. This framework differs from the more common construct in today's AHSs that centers health research firmly on the researcher's interests and prioritizes academic voices in funding decisions, and it is a framework that both the NASEM and AAHC reports endorse.[8,9] There are groups active in promoting this vision at the local and national level, including the Research Justice Institute, the Patient Centered Outcomes Research Institute (PCORI), the Involve Foundation, and the Strategy for Patient-Oriented Research (SPOR).

Robust public funding for health research

One of the core NASEM recommendations for sustaining research universities is that the full costs of research should be supported by federal and other research sponsors.[8] We support this recommendation in principle but recognize that requiring funders to pay the full cost of health research without an overall increase in health research funding would substantially decrease the number of projects that could be supported. This would, in turn, have undesirable impacts on patients and communities: less funding for certain health conditions, fewer independent health researchers, and slower overall progress in developing treatments and other interventions that advance health and health care. Federal agencies and other entities

that sponsor health research should partner with patients, community members, AHS leaders, health researchers, and policy makers to develop a strategy for a robust and sustainable public funding model for health research. A multistakeholder effort led by NASEM could redefine the relationship between public funding and health research and find the right balance of public investment for the 21st century.

Improved AHS health research operations

It is imperative that AHSs reorganize and reinvest in their health research infrastructure to sustain efficient, high-quality health research that will attract and retain health researchers dedicated to the academic mission. In today's resource-constrained environment, AHS leaders must look carefully at how their health research administration and infrastructure translate into productivity and value.[3] Most major research AHSs operate under a distributive, decentralized model where resources pass from AHS leadership to Department Chairs and Division Chiefs who oversee and support the units in which the health research is being conducted. This approach provides flexibility for academic units to invest in local needs and priorities, but it leads to administrative redundancy, inefficiency, and resource heterogeneity.[10] It also leaves Deans and Chief Executive Officers with limited central resources to strategically invest in health research priorities and infrastructure at an institutional level.

Alternative operational models for health research in AHSs are needed; one such model is "appropriation-based."[10] In this model, AHSs centrally manage more of their health research resources, allocating them to departments or organized research units based on well-defined, patient- and community-centered priorities. This model allows for more effective long-range strategic planning at the institutional level, opportunities for AHS leadership to incentivize collaboration across departments, and accountability of the research enterprise to the social contract on which AHSs are founded. We recognize that many health researchers see institutional centralization of research resources and operations as stifling to the flexibility and freedom essential to discovery. Properly constructed and governed, however, we believe that more centralized models for health research operations can provide AHSs with increased efficiencies and impact that will position their research community for future success.

Recommendations for next steps

How do we move AHSs toward a more secure and sustainable health research model grounded in the historical social contract between AHSs and society? We propose 5 steps.

Step 1: Acknowledge that the old model is unsustainable

Although selected leaders may recognize the need for change, most members of the health research community have no real understanding of the problem with the current health research model. All stakeholders must acknowledge that the costs of health research operations under this model are increasingly unsustainable. Researchers must recognize that the public's health is poorly served when health research lacks engagement with and accountability to patients and community members. The public must recognize that the cost of health research is greater than the budgets provided by funders and develop more comprehensive and sustainable financial support. And AHS leaders must communicate to their faculty, staff, and trainees that changes to institutional resource allocation and research oversight are needed to improve the efficiency and equity of support.

Step 2: Create a national accounting of AHS-based approaches for administering and financing health research

There is no national inventory of AHS-based approaches to administering and financing health research. The current landscape should be catalogued and those novel approaches that show promise should be highlighted. Organizations like the Association of Academic Medical Centers (AAMC) and government agencies like the NASEM are well positioned for this task and should work with AHS leaders to accomplish it. AHS leadership will need to look beyond the competitive health care marketplace to the collaborative academic enterprise and openly share business practices.

Step 3: Convene a national effort to develop a "sustaining health research in the 21st century" policy document

Building on the above acknowledgement and accounting of health research policies and practices, we call on the NASEM to convene a committee to develop and disseminate a vision for sustaining health research at AHSs in the 21st century and the specific policy and administrative recommendations needed to achieve it. This committee should include a diverse group of stakeholders, including AHS-based health researchers, patients, community leaders, AHS executives, research funders, and policy makers. This effort should be endorsed by critical stakeholder groups and academic societies.

Step 4: Advocate for changes in local, regional, and national policy that will enable AHSs to sustain a robust health research enterprise

Academic health system leaders, researchers, patients, and other key community stakeholders share a responsibility to advocate for changes in government and institutional policy to better support and enable health research. These efforts should be coordinated across the AHS community and guided by the policy document described in step 3. Such advocacy will require a collective commitment to meaningful change and involve an acceptance of the anxiety and uncertainty that meaningful change engenders. It will also require stakeholders to give up aspects of the 20th century model that are highly valued. All parties must be willing to sacrifice and invest if this advocacy is to be successful in achieving the shared long-term benefits of a robust health research enterprise.

Step 5: Implement new models for health research funding at AHSs based on best practices and study their impact

Once a roadmap for change has been developed and advocacy has organized stakeholder support, AHS-based health researchers, patients, community leaders, AHS executives, research funders, and policy makers must leverage this window of opportunity by committing to design and implement new models of health research funding. This broad collective must also study the impact of these approaches,

demonstrate which are effective, and disseminate them broadly to improve health research nationwide.

Conclusion

Ensuring a robust health research enterprise for the 21st century will be no easy undertaking. Without commitments to patient and community centeredness, robust public funding, and grounding in the social contract between AHSs and the public, health research will grow increasingly resource constrained. A thriving health research operation is central to the mission of AHSs and to society's continued progress in improving health and the common good. This evolution in health research will take deliberate and determined leadership.

Supplementary material

Supplementary material is available at *Health Affairs Scholar* online.

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Conflicts of interest

Please see ICMJE form(s) for author conflicts of interest. These have been provided as supplementary materials.

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