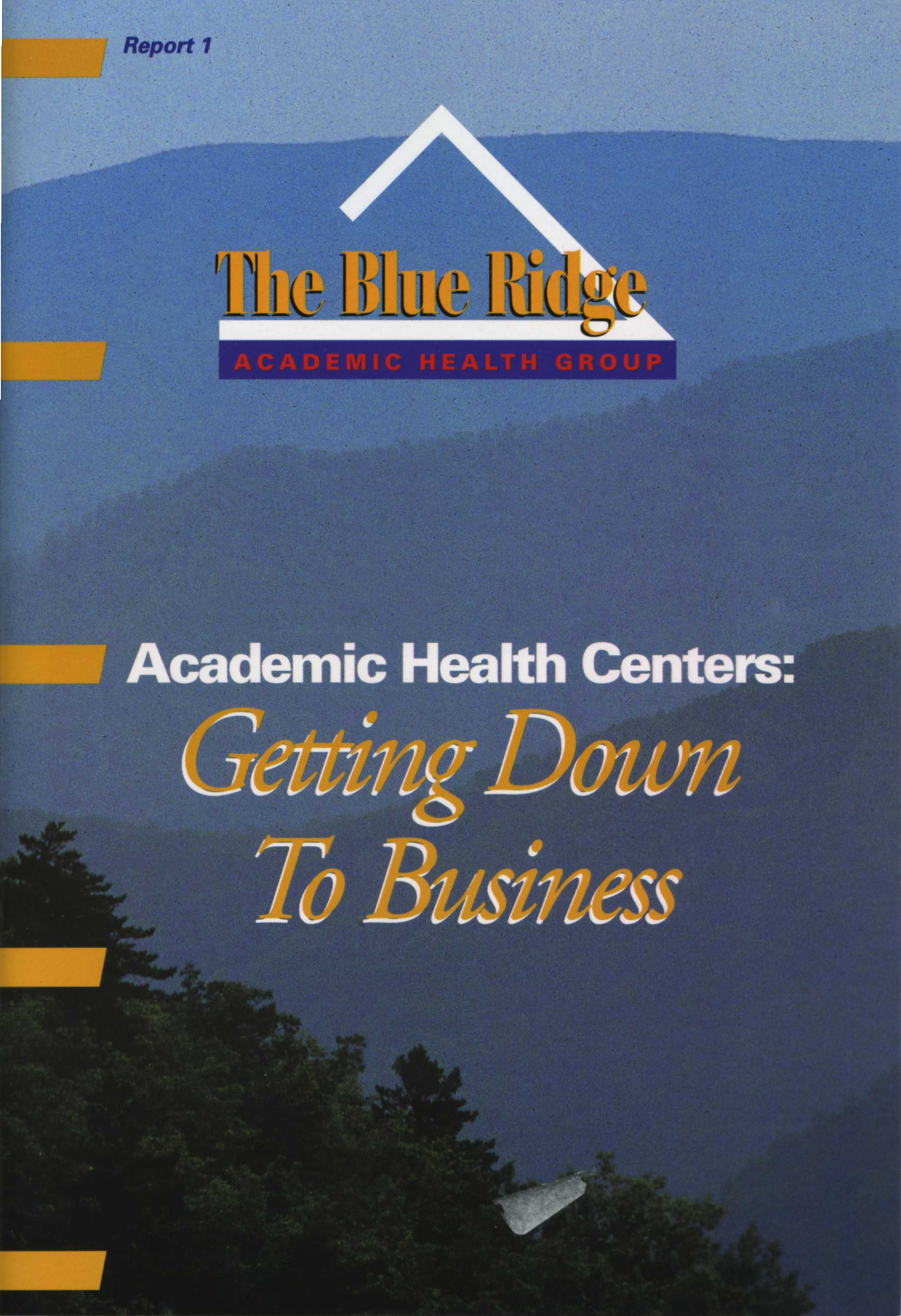
Report 1



Academic Health Centers:

Getting Down To Business

"Without health, there is no happiness. An attention to health, then, takes the place of every other object."

—Thomas Jefferson, 1787

"When you can measure what you are speaking about and express it in numbers you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be."

—Lord Kelvin, 1883

Academic Health Centers: Past and Present

Since the 1940s—when President Franklin D. Roosevelt established the National Institutes of Health and Congress passed the Hospital Survey and Construction Act (i.e., Hill-Burton Program)—until the mid-1980s, the United States poured a growing share of its wealth into health care (*Starr, 1982; HIAA, 1996*). In 1960, national health expenditure (NHE) in the U.S. was $27 billion, had a growth rate of 53 percent, and represented five percent of gross national product (GNP). In 1995, NHE was an estimated $1 trillion, had a growth rate of six percent, and accounted for 14 percent of GNP (*HIAA, 1996*). For much of this period, academic health centers (AHCs) were major beneficiaries of this societal largess.

In return, AHCs trained health care professionals, conducted cutting-edge research, innovated in clinical care, provided highly specialized patient care, and treated patients who could not afford care elsewhere. They were the primary custodians of our health care delivery system—paragons who continually challenged boundaries of knowledge and sought to cure illness at any cost. Along the way, the typical AHC grew from a small operation to a substantial organization with thousands of employees and hundreds of millions of dollars in its annual budget (*Blumenthal and Meyer, 1996*).

The last decade, however, has been turbulent for many AHCs. (See Appendix 1 for a brief discussion of the external challenges faced by AHCs.) Their products, previously propelled by non-market drivers, have been forced into the marketplace. All three parts of the AHC mission have been and continue to be affected by managed care and other forms of competition because AHCs can no longer charge as high a premium for their clinical services to support uncompensated clinical services, education, and research activities. Along with increasing competition, AHCs face a variety of other challenges:

- Continuing pressures on health care costs (e.g., an aging population and new technologies)
- Rising costs for uncompensated care
- Leveling and targeting of research funding
- New demands for health professional curricula
- The impending transition in graduate medical education (GME) financing
- Increasing scrutiny of AHC practices

Yet despite these challenges and many previous predictions of doom, most AHCs are doing well (*Blumenthal and Meyer, 1996*). Today's strong economy can be credited for mitigating some of the pressures on AHCs and allowing most of them to report reasonably strong financial performances. Looking beyond the immediate future, however, the form, scale, and revenue base of AHCs are uncertain (*Detmer, 1997*).

Thus, AHC leaders are grappling with how to ensure long-term financial viability while supporting new initiatives, maintaining existing programs, and continuing their tradition of serving society, because they know that previous sources of support will likely continue to erode. At the same time, they face substantial inertia within their organizations in changing their way of doing business (*Iglehard, 1997*).

AHCs: Into the Future

Despite the turmoil and challenges AHCs face, the potential is compelling for a renaissance in health care, spirited by a new kind of leadership. Rather than simply enduring the buffeting of external forces, AHCs can transform themselves in response to the changing needs of society and the reality of market forces. They can do so by looking beyond concerns about cost, renewing their focus on health, and emphasizing the value of their services. This renewed focus provides distinct opportunities for AHCs. To leverage these opportunities, they must:

- Commit to a new kind of leadership that capitalizes on existing skills, yet also identifies and masters new competencies
- Develop a "competitive capacity" to deal with an increasingly competitive and fast-moving economic environment (*Kotter, 1996*)
- Regain their power in terms of measures other than market share
- Regain their moral authority while succeeding in the market
- Take charge and be accountable for their performance and use of public resources
- Optimize their ability to innovate and evaluate as they develop, apply, and then test new models and new technologies aimed at improving the health of the public
- Exert leadership by acting on and disseminating throughout the health care community the evidence-based knowledge they gain on the effectiveness of procedures and treatments so that marginal clinical practices are discontinued

The Challenge for AHCs

A major challenge for AHCs today is balancing the dichotomy of a competitive environment with the AHC mission and the culture of public service. To manage this tension, AHCs must remain driven by their missions, yet fully leverage the business practices used in health care and other industries. The Blue Ridge Academic Health Group (Blue Ridge Group) recommends four areas of focus for AHCs:

1. Adoption of an enterprisewide approach to management
2. Development of evidence-based, value-generating performance measures
3. More aggressive use of business practices, including decision-making based on return on investment
4. Development and use of community-health-related measures

For a description of the Blue Ridge Academic Health Group, see Page 16.

As is evident from the recommendations and discussion that follow, the Blue Ridge Group believes AHCs should "get down to business" in two ways. First, they must exert leadership for themselves and for the health care industry by renewing their missions in light of current market forces, societal needs, and technological capabilities.

Developing, evaluating, applying, and disseminating knowledge to advance health can and should mean much more in 1998 than it did in 1988 or even in 1993. As AHCs broaden their view to more of a community or regional focus (as suggested in Recommendation 4, Page 13), they will need to develop new competencies but will also be afforded new market opportunities.

Second, AHCs need to apply business models rigorously and consistently to their enterprises wherever applicable. AHCs must learn how to continue to *do well* while *doing good* in a much more complex and competitive environment. It is the Blue Ridge Group's firm belief that to "do well," AHCs must measure what they are doing.

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About This Report

The Blue Ridge Group has prepared this report to assist AHCs as they strive to build the competitive capability to succeed in their respective markets while protecting their societal mission. The report presents the findings and recommendations of the Blue Ridge Group's July 1997 working session. There, participants focused on the need for AHCs to commit to measuring performance and accountability.

This report is intended primarily for the leadership of AHCs and their professional organizations (including vice presidents, deans, hospital directors, practice plan directors, department chairs), those who govern AHCs (university presidents and boards), and perhaps most important, those who make AHCs work—their faculty and staff. The report is deliberately brief to increase its readership.

The Blue Ridge Group recognizes that individual AHCs and other groups—The Association of Academic Health Centers, the Association of Academic Medical Centers, The Commonwealth Fund, and The University Health System Consortium —are also addressing the issues that motivated the Blue Ridge Group to prepare this report. Thus, the report seeks to complement those efforts by contributing to the debate and, most important, by stimulating action.

This report is designed to assist AHCs with building the competitive capability to succeed in their markets while protecting their societal mission.

Getting Down to Business

Recommendation 1. *AHCs must base their management structures on the "enterprise." Individual components of AHCs that currently perceive themselves as independent and isolated must view themselves as integral to a common enterprise and must commit to accomplishing common goals and objectives.*

AHCs are often characterized as conglomerates of mini-fiefdoms. They comprise highly autonomous units, such as departments or programs that have varying degrees of financial independence and frequently divergent goals.

Among the units that constitute an AHC are a school of medicine and other schools for health professionals, a teaching hospital, a clinical practice plan for managing professional fees of the faculty, clinical departments and divisions, a library, interdisciplinary centers, and other ancillary programs.

The AHC organizational structure typically maximizes a wide range of activities and freedom for individual units and faculty members alike. Financial risk is typically concentrated at the top of the organization, and individual clinical faculty members or health professionals bear little or no risk for the decisions they make. Their income is ensured in the short run, regardless of how the institution fares.

This structure has made AHCs exceedingly difficult to manage and lead. Moreover, the typical AHC is part of or affiliated with a university, an association that brings another layer of complexity to its environment and management.

AHC operations and revenue flow are often determined more by history than by current institutional needs. In the precompetitive era, when revenue streams were strong, AHC executives, deans, and hospital directors could afford to "cut deals" with department chairs and program leaders to attract or retain key faculty and build recognized programs. This culture of dealmaking has been pervasive throughout academic medicine. As a result, funds flow through the organization based on past negotiations rather than on maximizing return on investment or supporting a current institutional priority.

To survive in the new environment, however, an AHC must function as a common enterprise in which individuals and units support shared objectives and participate in the risks and rewards of working toward those goals. Thus, AHC faculty must go beyond stating that teaching, research, and patient care are interrelated.

They must understand that enterprisewide decisions such as investing in information systems, reallocating space in research laboratories, integrating billing systems, developing capacity in primary care or other emerging disciplines, reducing numbers of residents, or closing beds are not done to or for an individual unit but to strengthen the entire enterprise.

Enterprisewide management involves managing all pieces of the AHC enterprise toward a common objective. It does not imply a particular organizational structure and may take various forms of ownership such as affiliations, contractual arrangements, or asset mergers. It does, however, require a collaborative and unified approach to governance whether or not the AHC owns all of the major units—including the school of medicine, hospital, and practice plan.

Success in enterprisewide management requires influencing what is in the system to

achieve a common set of goals. For clinical services, from the market's perspective, there must be a single unified voice for the institution, a centralized authority for contracting, and the ability to make timely decisions.

AHC leaders need to create an environment in which each unit understands that its long-term success is intricately tied to the success of the whole enterprise. Accordingly, enterprisewide goals will be considered more important than goals of individual units, and individual unit goals that conflict with enterprise goals should be revised or eliminated.

For example, individual clinical departments traditionally have maintained control over cash reserves that accrue over time from their services. An enterprisewide approach would enable each department to retain some cash reserves, but would also enable the AHC to have access to a pool of reserves obtained from all departments to serve as strategic capital and support AHC-wide investment needs.

In the past, success was measured at the unit level by faculty size, amount of space allocated, volume of clinical activity, level of research funding, revenue generated by faculty, percentage of residency matches, publications, and individual reputations. Today, success must be measured by how those elements contribute measurably to the individual unit and to the entire enterprise.

This shift must not come at the expense of innovation by units and individuals, and it must not lead to a centralization of economic risk within the organization. In fact, it is essential that risk be distributed throughout the enterprise by clearly defining accountability and responsibility and by aligning incentives (including personal recognition and compensation) with budget and operational performance. Ultimately, enterprisewide performance, including all economic activity of the AHC mission, must be measured to ensure long-term academic viability.

In addition to common goals, enterprisewide management requires shared policy and other tools in the form of appropriate infrastructure support, including clearly defined governance and management structures as well as integrated financial and information systems. Of particular importance is the need for agreed-upon performance measures (as discussed under Recommendation 2, Page 7).

To establish enterprisewide management, AHCs need transparency; all parties must be able to see credible performance information for measurement and accountability of all parts of the organization. Only with such information will individual components be able to compare their performance, and AHC leadership be able to make rational decisions on allocating resources.

For example, a comprehensive budget that identifies all revenue sources and documents all cross-subsidies within the organization is essential for AHCs to track their true performance. This approach need not mean a loss of control for individual units; rather, it means increased accountability and potential for greater gains.

Regular communication with various stakeholders is fundamental to building trust in the enterprise. So, too, is the commitment to act on credible data (as discussed under Recommendation 3, Page 11). The culture shift that is needed to manage the enterprise can be facilitated through specially designed training programs for targeted audiences. These programs should focus on the skills needed at the individual and unit levels in this new kind of organization.

Routine "town meetings" aimed at keeping the entire organization abreast of changes should ease the transition as well. Among the stakeholders to be involved in the evolution of the enterprise will be the relevant governing board and senior executives of the university so that they will understand and support AHC efforts.

Recommendation 2. *AHCs must use performance measures with evidence-based value to make informed decisions and to demonstrate public accountability.*

Getting down to business requires increased accountability for the use of AHC resources. Two kinds of accountability are relevant to AHCs. First, each level of the AHC—including the individual faculty or staff member; the program, division, or department; and the school or hospital—must demonstrate accountability to the enterprise for use of institutional resources.

Second, the AHC as a whole must demonstrate accountability to society for the public investment in its mission. Accountability, in turn, requires performance measures that track key elements of an enterprise's strategy.

AHCs need a more quantitative and analytical approach to allocating their resources as they strive to achieve their missions with quality and efficiency. They need more appropriate performance metrics that provide logic for decision-making.

Traditional financial performance measures such as return on investment and internal rate of return are important and should be part of the set of data points routinely tracked by AHCs (*see Exhibit 1*). Such measures need to be balanced with other measures of quality, services, and productivity that are tied to the organization's mission, vision, and strategies.

Ultimately, AHCs need to develop a balanced score card of performance measures. Such measures will not only aid AHC leaders in resource allocation, but will also assist faculty who frequently have received imprecise signals on the priorities of the organization and have been frustrated by the lack of clear expectations.

AHCs must build on existing efforts to develop performance measures with evidence-based value that incorporate AHCs' unique components of research, education, and clinical services. Performance measures that provide value are those that assist AHCs in making sound decisions by keeping them focused on making the best use of resources.

A variety of performance measures are relevant to AHCs, including those used by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Liaison Committee on Medical Education in their review processes. JCAHO plans to integrate the use of outcomes and other performance measures into the accreditation process through its ORYX initiative (*JCAHO, 1997*).

ORYX requires each accredited hospital and long-term-care organization to select an approved performance measurement system and at least two clinical measures that relate to at least 20 percent of its population. Performance measures are also being developed by other organizations (*Iglehard, 1997; NCQA, 1997*).

Exhibit 2 presents sample performance measures for AHCs, and Appendix 2 presents performance measures already in use by two AHCs. Some performance measures are better than others, and all deserve continuing review and improvement. Among the performance measures in use by AHCs, those related to productivity, such as gross revenues generated per faculty full-time equivalent and direct cost per case, are more developed than those related to quality, innovation, or societal value.

Looking across the AHC missions, productivity measures related to patient care and research tend to be more developed

Exhibit 1. Financial Performance Measures*

Return on Investment (ROI) is defined as net income divided by investment. The term "investment" is used in three different senses in financial analysis, thus giving three different ROI ratios: return on assets, return on shareholders' equity, and return on invested capital (*Anthony and Reece, 1979*).

Return on Assets—net income divided by total assets—reflects how much the firm has earned on the investment of all the financial resources committed to the firm. It is a useful measure to evaluate how well an enterprise has used its funds, without regard to the relative magnitudes of the sources of those funds. The return-on-assets ratio is used to evaluate individual operations within a multidivisional firm.

Return on Shareholders' Equity—net income divided by shareholders' equity—reflects how much the firm has earned on the funds invested by the shareholders (either directly or through retained earnings). This ratio is of interest to present or prospective shareholders, and is also of concern to management, which is responsible for operating the business in the owner's best interests.

Return on Invested Capital—net income divided by long-term liabilities and shareholders' equity—focuses on the use of the permanent capital of the firm. Permanent capital is equal to noncurrent liabilities plus shareholders' equity, and thus represents the funds entrusted to the firm for relatively long periods of time. Some firms use the return-on-invested-capital ratio to measure divisional performance.

Internal Rate of Return is a technique for analyzing capital investment proposals. It is the maximum rate of interest that could be paid for the capital employed over the life of an investment without loss on the project (*National Association of Accountants, 1959*).

Balanced Score Card is a set of measures that "gives managers a fast but comprehensive view of the business" (*Kaplan and Norton, 1992; Kaplan and Norton, 1993*). It combines measures of past performance (e.g., financial measures) with operational measures of future financial performance (e.g., customer satisfaction, internal processes, and innovation and improvement activities).

* These measures are often used in evaluating investor-owned companies. They are listed to identify the types of financial performance measures that are used, not as an immediately transferable list of measures.

than those related to education. During the 1990s, however, there has been increased interest in calculating the cost of undergraduate medical education, and several methodologies have been developed and used by schools of medicine (*Franzini, Low, and Proll, 1997; Goodwin, Gleason, and Kontos, 1997; Jones and Korn, 1997; Rein et al., 1997*). As federal GME financing changes and competition grows from contract research organizations, AHCs will likely face greater incentives to manage the processes of GME, and research will therefore need more sophisticated measures in these areas.

AHCs need to look aggressively and creatively at business performance metrics that can be applied to AHCs and then

Exhibit 2. Sample Performance Measures for AHCs

	Productivity	Quality	Innovation	Societal Value
Patient Care	Clinical revenue per M.D. Outpatient encounters per hour Cost per case	Health-related functional and outcomes assessments Satisfaction with experience of care Health status of the community	Savings from introduction of new clinical protocol Revenues generated from introduction of new service	Amount of indigent care provided per year Improvements in community health markers Local economic impact of clinical activities
Research	Direct grant revenue per faculty full-time equivalent (FTE) Indirect grant revenue per faculty FTE Research revenue per net assignable square feet	Publications per faculty FTE Patents per faculty FTE Royalties per faculty FTE Rank in federal research funding	Increased revenue from new institutional practices to capture financial benefits of research Reduction in grant preparation time	Health impact of new diagnostic or treatment capabilities (e.g., projected lives saved) Cost impact of new diagnostic or treatment capabilities (e.g., projected dollars saved) Local economic impact of research activities
Education	Clerk weeks per department Contact hours per faculty FTE in teaching activities (e.g., lectures, labs, small groups, grading) Cost per student	Student satisfaction with support services Student evaluations of faculty Percentage of students who pass boards Percentage of students who graduate	Improved student access to knowledge sources from introduction of online resources or tutorials Improvement in student satisfaction, board scores, or faculty productivity from curriculum reforms	Percentage of students who enter primary care or other needed disciplines Balance of health professionals within a region Local economic impact of educational enterprise

develop additional metrics unique to their missions. For example, activity-based accounting that relates spending to work performed by the organization, and then to results of that work, has not been fully leveraged by health care (*Drucker, 1995*).

AHCs that are part of universities with a business school may be well-served to tap the expertise of business faculty and seek collaboration in developing AHC-specific performance measures.

Two kinds of performance measures are needed: a common set of performance measures relevant to all AHCs, such as research dollars per square foot for a given discipline or productivity ratios for various specialties to allow comparison with other organizations; and performance measures unique to specific institutions or applicable only to a specific subset of AHCs, including, urban versus rural, research-oriented versus clinically oriented, and domestic programs versus international programs. Moreover, to ensure continued innovation, appropriate metrics must be developed so that this unique AHC characteristic is preserved—for example, reduction in adverse reactions or dollars saved from introduction of new clinical protocol or patents granted.

Before introducing performance measures, attention should be given to the process of initial development and ongoing refinement. In particular, faculty, staff, and leadership should be jointly educated on the intent, validity, and planned application of the measures and should be consulted in the definition of the measures. Failure to build trust in these tools among faculty and staff will undermine their effectiveness.

A broader use of common performance measures will be the ability to evaluate national investment in areas such as biomedical research and health professional education. Such data will be very useful for public-policy analysis and development. They will also enable AHCs to report the benefits of such public investment, thereby providing greater accountability than they have in the past.

AHCs need more appropriate performance metrics that provide logic for decision-making.

Recommendation 3. *AHCs should implement business practices based on performance metrics to improve return on investment.*

To protect their societal mission, AHCs need to be more disciplined in applying sound business practices and more focused on the bottom line of their operations. Each product line, such as patient care, education, and research, must be as self-supporting as possible, and each program should be scaled according to its ability to sustain itself. Cross-subsidies should be minimized, and any that remain should be made explicit.

Programs that are determined a priori as likely to perform poorly in financial measures must use other performance measures (as described in Recommendation 4, Page 13) to demonstrate their efficiency and effectiveness. Clarifying cross-subsidies will enable AHCs to quantify the costs of supporting programs that are not self-sustaining but are of value to society.

Mere measurement is not enough. Behavior change must accompany the new information. Directors of AHC units must show leadership in using quantitative and qualitative measures, assume appropriate risk, and receive appropriate rewards to accomplish departmental, program, and enterprisewide goals. Performance against these metrics should be aligned through incentives and rewards.

AHCs should also borrow business tools from other industry sectors. For example, some AHCs may need to understand more fully their "megaprocesses" and the accompanying costs and outcomes so that they can determine where to implement quality and efficiency improvements and where to allocate resources among the various processes. The megaprocesses of AHCs include:

- The entire **continuum of patient** care and all the ways and places patients contact or interact with the AHC, such as scheduling, contact with health professionals, ancillary services, patient education, and billing
- The entire **education process**, including requests for application, matriculation, classes, billing, graduation, job placement, alumni affairs, and continuing education
- The entire **research process**, such as hypothesis, grant writing, funding, conducting research, writing results, dissemination, application, patents, and royalties

To protect their societal mission, AHCs need to be more disciplined in applying sound business practices and more focused on the bottom line of their operations.

Other potential business tools for AHCs to adopt include:

- **Enterprise modeling:** analyzing the processes of the entire enterprise, not just single components, and determining how changes to any part of the enterprise will affect other parts
- **Electronic commerce:** using the Internet or other networks to conduct business-to-business transactions. Examples of electronic commerce in health care include: clinicians accessing online medical information to eliminate mistakes and expedite the treatment process, physicians processing insurance claims, and delivery of drug prescriptions for patients from strategically located distribution centers
- **Knowledge management:** effectively creating, capturing, sharing, and using organization-wide knowledge
- **Shared services:** combining or consolidating services to share staff and technological resources and provide high-quality service

The University Health System Consortium (UHC) has a variety of research initiatives underway to assist AHCs in their business decisions. These efforts include, but are not limited to, benchmarking institutions in the area of operations improvement, surveying management structures that have been adopted to address the new health care environment, and developing a set of tools and services to assist UHC members in making outsourcing decisions and managing long-term vendor relationships.

Recommendation 4. *AHCs need to develop and implement performance measures that assess AHC impact on the community and region.*

The market is increasingly unwilling to pay for several public goods that AHCs have traditionally provided, including health professional education, certain kinds of research, and indigent care. There are a multitude of additional activities for AHCs to pursue that fall into this category, including:

- Planning for the regional health work force
- Providing telemedicine services
- Developing a regional health-information infrastructure
- Establishing and tracking health improvement goals for a particular population or a region
- Increasing citizens' attention to prevention and wellness
- Evaluating the cost impact of prevention and wellness
- Assessing the effectiveness of various treatments
- Comparing the impact of alternative delivery systems

Support for these activities typically comes from the public sector or philanthropic sources. There are, however, examples of AHCs demonstrating the value of these kinds of efforts to the business community and ultimately moving a program into the market. For instance, IQHealth, a health risk assessment and wellness program associated with the University of Virginia and marketed to businesses in central Virginia, had revenues of $1.5 million during fiscal year 1996-1997.

In other cases, AHCs have found that the existence of a program significantly improves the health of a population and, in so doing, reduces treatment costs so that it merits ongoing internal investment. The Department of Surgery at the University of North Carolina Hospitals at Chapel Hill, for example, supports a "Learn Not to Burn" program through an endowment fund. The fire-prevention program has been offered to 90 percent of fourth-graders in North Carolina and an individual self-preservation program is now being offered to first-graders.

This trend must be expanded. AHCs must continue developing evidence-based medicine to maximize their effectiveness and demonstrate the value of their services. They must quantify in a more rigorous way the societal benefit, including economic impact, provided by AHCs, and thus they need to design and implement results-oriented measures (rather than process measures) that assess the value of AHC programs.

Among the health performance measures AHCs can use as community health markers are *2000: The National Health Promotion and Disease Prevention Objectives* (*U.S. DHHS, 1991*) and prototype performance-indicator sets for a community health profile and nine specific health issues presented in a recent Institute of Medicine (IOM) report, *Improving Health in the Community: A Role for Performance Monitoring* (*IOM, 1997*). To truly assess their effectiveness, AHCs can—alone or preferably in concert with other health care professionals and institutions in the region—define and track markers of health in the community or region.

For example, Crozer-Keystone Health System in Media, Pennsylvania, conducted a health needs assessment of Delaware County to provide "the foundation upon

which to plan and implement new health care programs in order to improve our overall health status" (*Crozer-Keystone Health System, 1992*). Since that assessment, Crozer-Keystone has redefined its business from caring for the sick to managing community health status.

The Community Health Needs Assessment has become an ongoing measure of corporate success; the Crozer-Keystone Health System Board views management as accountable for how well they perform in community health status management in addition to how well they perform in financial management, operational improvement, and their discharge of community mission. Once the health of the community has been assessed, an AHC can evaluate how effective its efforts are in contributing to that level of health and identify where else it can contribute to developing new programs or expanding existing ones.

The Health Promotion and Sports Medicine faculty at the Oregon Health Sciences University (OHSU), for example, tracked a substantial increase in steroid use among high-school football players in Portland, Oregon, between 1987 and 1991. To reverse this trend, OHSU faculty developed, implemented, and evaluated a steroid education program for high-school football teams. The analysis of this program concluded that it "enhanced healthy behaviors, reduced factors that encourage AAS [anabolic androgenic steroids], and lowered intent to use AAS" (*Goldberg et al., 1996*).

Some health risk issues identified may offer enough value to employers or managed care organizations that they will be willing to support the costs of such programs. Or the AHC may choose to support programs that reduce health risk factors for the indigent population the AHC serves to help in order to reduce its total uncompensated care costs.

This area presents even more challenges and opportunities for AHC leadership than the previous recommendations. It requires AHCs to establish greater influence and forge new partnerships outside their walls. It requires them to commit to and invest in strategies whose impact will not be seen in the immediate future, such as a focusing on the health and not just the medical care of a community or carrying out regional health work force planning. It also requires that they apply innovative capabilities to a whole new set of problems. A prerequisite for success in this endeavor is that an AHC has mastered its business. Most important, it requires AHCs to view their mission in a new light and to place greater emphasis on advancing the health status of the community.

Individual AHCs can make a significant contribution through implementing new health services and developing new approaches to health promotion and disease prevention. AHCs' impact should be evident in their immediate communities, but equally important in the training of future health professionals whose understanding of health and view of professional responsibility will be broadened. By embracing this challenge, AHCs will demonstrate their willingness to meet the needs of society and validate that continued public support of AHCs is a prudent investment by society.

AHCs must continue developing evidence-based medicine to maximize their effectiveness and demonstrate the value of their services.

Recommendations for Action

The Blue Ridge Group believes that if more attention is given to the recommendations of this report, AHCs will be better able to achieve their mission of developing, applying, evaluating, and disseminating knowledge as a means of improving community health.

By measuring their performance, AHCs will be better able to leverage their existing resources and will likely strengthen their competitive positions. By applying business tools to their operations, they will increase efficiency without stifling innovation.

By reporting their return on society's investment, AHCs will validate their value to society and, in so doing, strengthen the case for why the nation should continue to invest in biomedical, clinical, and health services research and health professional education.

Finally, by balancing an increased emphasis on competitive capacity with an expanded commitment to understanding and fulfilling the health needs of society, AHCs will prove themselves to be true leaders of the U.S. health care system.

There are three areas where action on these recommendations can begin. First, the AHC leadership should confront the issues raised in this report with their management teams, boards, faculty, and staff; as a first step, they should identify the state of the art in performance measures in use by their peers.

Second, faculty and staff can contribute to developing performance measures within their units, institutions, and regions, but more important, they can catalyze and support action by their institutions on these issues fundamental to the future of AHCs.

Third, academic health center professional organizations, including AHC, AAMC, and UHC, can pool their resources to build on existing efforts and define a finite but comprehensive set of performance measures for AHCs to adopt. These organizations can also play a role in assessing the usefulness of specific performance measures over time.

This strategy offers rapid and tangible assistance to AHCs. Individual AHCs and their professional organizations can draw upon the work of the President's Commission on Quality, the Institute of Medicine's Quality Initiative, JCAHO's ORYX initiative, and the work of the National Committee for Quality Assurance, thus enabling AHCs to benefit from and contribute to the continuing national dialogue on promoting and measuring health care quality and value.

About the Blue Ridge Academic Health Group

The Blue Ridge Academic Health Group seeks to take a societal view of health and health care needs and to make recommendations to academic health centers to help them create greater value for society. The Blue Ridge Group also intends to recommend public policies to enable AHCs to accomplish these ends.

Three basic premises underlie this mission of the Blue Ridge Group. First, health care in the United States is experiencing a series of transformations that ultimately will require new approaches in health care delivery systems, education, research, and knowledge management.

Second, the recent upheavals in health care have been largely driven by financial objectives. Yet the potential exists for fundamental changes in health care to improve health and to manage costs. Analysis and evaluation of the ongoing evolution in health care delivery must address the impact on the health of individuals and the population, as well as on cost.

Third, AHCs play a unique role in the U.S. health care system as they develop, apply, and disseminate knowledge to improve health. In so doing, they have assumed responsibilities and face challenges other health care provider institutions do not bear. As a result, AHCs face greater risks and greater opportunities as the U.S. health care system continues to evolve.

The Blue Ridge Group was founded in March 1997 by the Virginia Health Policy Center (VHPC) at the University of Virginia and the Health Care Consulting Practice at Ernst & Young LLP (E&Y). The VHPC serves as the center of the Blue Ridge Group's operations; E&Y provides core funding and facilitation. Both organizations provide thought leadership.

Group members were selected to bring together seasoned, active leaders with a broad range of experience in and knowledge of academic health centers and health care in the United States. Blue Ridge Group members collectively select the topics to be addressed. Before meetings, an extensive literature review is conducted and group members refine the topic by responding to specific questions.

Criteria for selection of report topics include relevance to operation of academic health centers and to the ability of AHCs to provide value to society, likelihood of being able to make specific recommendations that will lead to productive action by AHCs or other organizations, and ability to frame useful recommendations during a one-and-one-half-day meeting. Other participants are invited to Blue Ridge Group meetings to bring additional expertise or perspectives to the group's deliberations on a specific topic.

During the meeting, participants reflect on emerging trends, share experiences from AHCs, and hear presentations on specific issues. Most of the working session is dedicated to a focused discussion of what AHCs can and should be doing in a particular area to achieve visible improvement or a discussion of what public and private policy and philanthropic organizations can do to facilitate the efforts of AHCs to fulfill their societal mission. The results of the group's deliberations are presented in brief reports, which are disseminated to targeted audiences.

About the Core Members

Enriqueta C. Bond, Ph.D.

Member
Board of Directors

President
Burroughs Welcome Fund

Enriqueta Bond formerly held a number of research and administrative positions at the Institute of Medicine, National Academy of Sciences; Department of Medical Sciences, Southern Illinois University's School of Medicine; and the Biology Department at Chatham College.

Bond also serves on several advisory committees and boards, some of which include Health Science Policy of the Institute of Medicine; National Center for Infectious Diseases, Centers for Disease Control and Prevention; and the Society for Research on Women's Health.

She has authored and co-authored more than 50 publications and reports in science policy.

Robert W. Cantrell, M.D.

Vice President and Provost
Health Sciences Center, University of Virginia

In addition to his responsibilities at the Health Sciences Center at the University of Virginia, Robert Cantrell is also a surgeon-educator and medical administrator. He is the former president of the American Academy of Otolaryngology, Head and Neck Surgery. As a captain in the United States Navy Cantrell served as chair of Otolaryngology, Head and Neck Surgery at the Naval Regional Medical Center in San Diego, California.

Cantrell was also the Fitz Hugh Professor and chair of the Department of Otolaryngology, Head and Neck Surgery at the University of Virginia School of Medicine. He has served as a consultant to the Surgeon General of the U.S. Navy and to the National Institutes of Health.

Cantrell is a member or fellow of 33 otolaryngological societies and has taken an active leadership role in many, including the American College of Surgeons, the American Society for Head and Neck Surgery, and the American Broncho-Esophagological Association.

He has published numerous articles and delivered lectures nationally and internationally.

Don E. Detmer, M.D.

Co-Director
The Virginia Health Policy Center

Senior Vice President
University of Virginia

Don Detmer currently holds the Louise Nerancy Professorship in Health Sciences Policy at the University of Virginia. He also holds a university professorship in health evaluation sciences and surgery, maintains an active surgical practice, and is chairman of Vhita.

Nationally, Detmer chairs the boards on Health Care Services of the Institute of Medicine; National Academy of Sciences; and the Secretary's National Committee on Vital and Health Statistics, Department of Health and Human Services.

He is a board member of several organizations, including the Association for Academic Health Centers and the American Medical Informatics Association.

Detmer has authored more than 140 articles and book chapters. He earned his medical degree at the University of Kansas after undergraduate studies there and at Durham University of England.

Michael A. Geheb, M.D.

Director and Chief Executive Officer
University of Alabama at Birmingham Health System

Professor of Medicine
University of Alabama School of Medicine

Michael Geheb has served as professor of Medicine, associate dean for Clinical Affairs, and chairman of the Coordinating Council for Clinical Affairs at the State University of New York at Stony Brook University Medical Center.

Geheb's professional associations include the American Federation for Clinical Research, the American Board of Internal Medicine's Test and Policy Committee for Critical Care Medicine, and the American Board of Internal Medicine's Board of Directors.

Geheb is co-editor of the textbook *Principles and Practice of Medical Intensive Care* and co-editor for the Critical Care Clinics series. He also speaks frequently to national audiences on health-care policy issues related to academic productivity and financial models for academic clinical enterprises.

Jeff C. Goldsmith, Ph.D.

President
Health Futures, Inc.

Jeff Goldsmith is a lecturer in the Department of Medicine of the Pritzker School of Medicine at the University of Chicago. A former lecturer in the Graduate School of Business at the University of Chicago on health services management and policy, he also lectured on these topics at the Harvard Business School, the Wharton School of Finance, Johns Hopkins, Washington University, and the University of California at Berkeley.

Goldsmith has served as national advisor for Health Care for Ernst & Young LLP, was director of Planning and Government Affairs at the University of Chicago Medical Center, and served as special assistant to the dean of the Pritzker School of Medicine.

Goldsmith has written for the *Harvard Business Review* and has been a source for articles on medical technology and health services for the *Wall Street Journal*, the *New York Times*, *Business Week*, *Time*, and other publications.

Michael M.E. Johns, M.D.

Executive Vice President for Health Affairs
Emory University

Director
The Robert W. Woodruff Health Sciences Center

Chairman of the Board, CEO
Emory University System of Health Care

Michael Johns is the former dean of the Johns Hopkins School of Medicine. He has held numerous positions, including assistant chief of the Otolaryngology Service at Walter Reed Army Medical Center and professor and chair of the Department of Otolaryngology-Head and Neck surgery at Johns Hopkins.

Johns is also a member of the Institute of Medicine, a fellow of the American Association for the Advancement of Science, and the Executive Council of the Association of American Medical Colleges.

Johns received his bachelor's degree and continued with graduate studies in biology at Wayne State University in Detroit.

Peter Kohler, M.D.

President
Oregon Health Sciences University.

Prior to joining Oregon Health Sciences University, Peter Kohler held positions at the National Institutes of Health (NIH). He was also a professor of medicine and chief of the Endocrinology Division at Baylor College, chairman of the Department of Medicine at the University of Arkansas, and dean of the Medical School at the University of Texas Health Science Center in San Antonio.

Kohler has served on several boards, including as chair of the NIH Endocrinology Study Section, president of the Southern Society for Clinical Investigation, chairman of the board of Scientific Counselors for the National Institute of Child Health and Human Development, chairman of the Health Care Delivery Task Force, and a member of the Board of Directors of the Association of Academic Health Centers.

Kohler received his B.A. from the University of Virginia and earned his M.D. at Duke Medical School.

Edward D. Miller, M.D.

Chief Executive Officer
Johns Hopkins Medicine

Dean
The Johns Hopkins University
School of Medicine

Vice President for Medicine
The Johns Hopkins University

Edward Miller's former posts include chairman of the Department of Anesthesiology and Critical Care Medicine, Interim Dean of the School of Medicine, professor of anesthesiology and surgery and medical director of the Surgical Intensive Care Unit at the University of Virginia, E.M. Papper Professor at Columbia University, and chairman of the Department of Anesthesiology in the College of Physicians and Surgeons.

Miller has authored and co-authored more than 150 scientific abstracts and book chapters. He received his A.B. from Ohio Wesleyan University and his M.D. from the University of Rochester School of Medicine and Dentistry.

John G. Nackel, Ph.D.

National Director
Health Care Consulting
Ernst & Young LLP

John Nackel has worked in various positions and directed several projects that include strategy for the development of an integrated delivery system; design, development, and implementation of continuous quality improvement and clinical performance improvement systems for hospitals; and design and implementation of organizational alignment and governance of academic health centers. He has consulting experience in several countries around the world for health care delivery organizations, major pharmaceutical and medical device companies, managed care companies, and supplier distributors.

Nackel has presented papers and keynote addresses at more than 200 professional society and health care trade association meetings. He has published more than 30 articles on applications of cost and quality improvement, information systems and health systems engineering; and is the co-author of the award-winning book *Cost Management for Hospitals*, and co-editor of the Society for Health Systems' special issue focused on patient care.

Nackel received a B.S. from Tufts University and masters degrees in public health and industrial engineering from the University of Missouri–Columbia. Also from the University of Missouri, he was awarded a Ph.D. in health care systems design from the Department of Industrial Engineering.

About the Invited Participants

Roger J. Bulger, M.D.

President and CEO
Association of Academic Health Centers

Roger Bulger formerly served as president of the University of Texas Health Sciences Center at Houston, chancellor of the University of Massachusetts Medical Center at Worcester, and dean of its medical school.

Bulger has served as a member of numerous national advisory committees, has been chairman of two Institute of Medicine committees, and served on the board of the Association for Health Services Research. He is also a member of the Institute of Medicine and currently serves on the board of the American International Health Alliance and the Living Centers of America.

Bulger has been elected to membership in the National Academy for Social Insurance and is a fellow in the Infectious Disease Society of America, the American College of Physicians, and the Royal College of Physicians. Over the last 25 years, he has authored numerous articles and essays on medical sciences and health policy.

Michael J. Goran, M.D.

National Director Integrated Delivery and Financing Systems
Ernst & Young LLP

Michael Goran's areas of expertise include managed care strategy, strategic partnering, quality measurement and improvement, advanced care management, network development and management, capitation management and risk sharing, physician practice management including primary care, single-specialty, and multispecialty group practice, faculty practice plans, and academic medical centers.

With more than 30 years of experience, Goran has held a number of prominent positions, including president of a national utilization review company and director of a large third-party administrator and reinsurance company, national director of health care consulting for a large employer benefits consulting company, CEO and medical director of several HMOs, national director of quality assurance and utilization review programs for the federal government, and clinical practice of psychiatry.

Goran earned his A.B. from the University of Chicago and his M.D. from the University of Illinois, College of Medicine. He is also a member of the American Association of Health Plans.

George F. Sheldon, M.D., F.A.C.S.

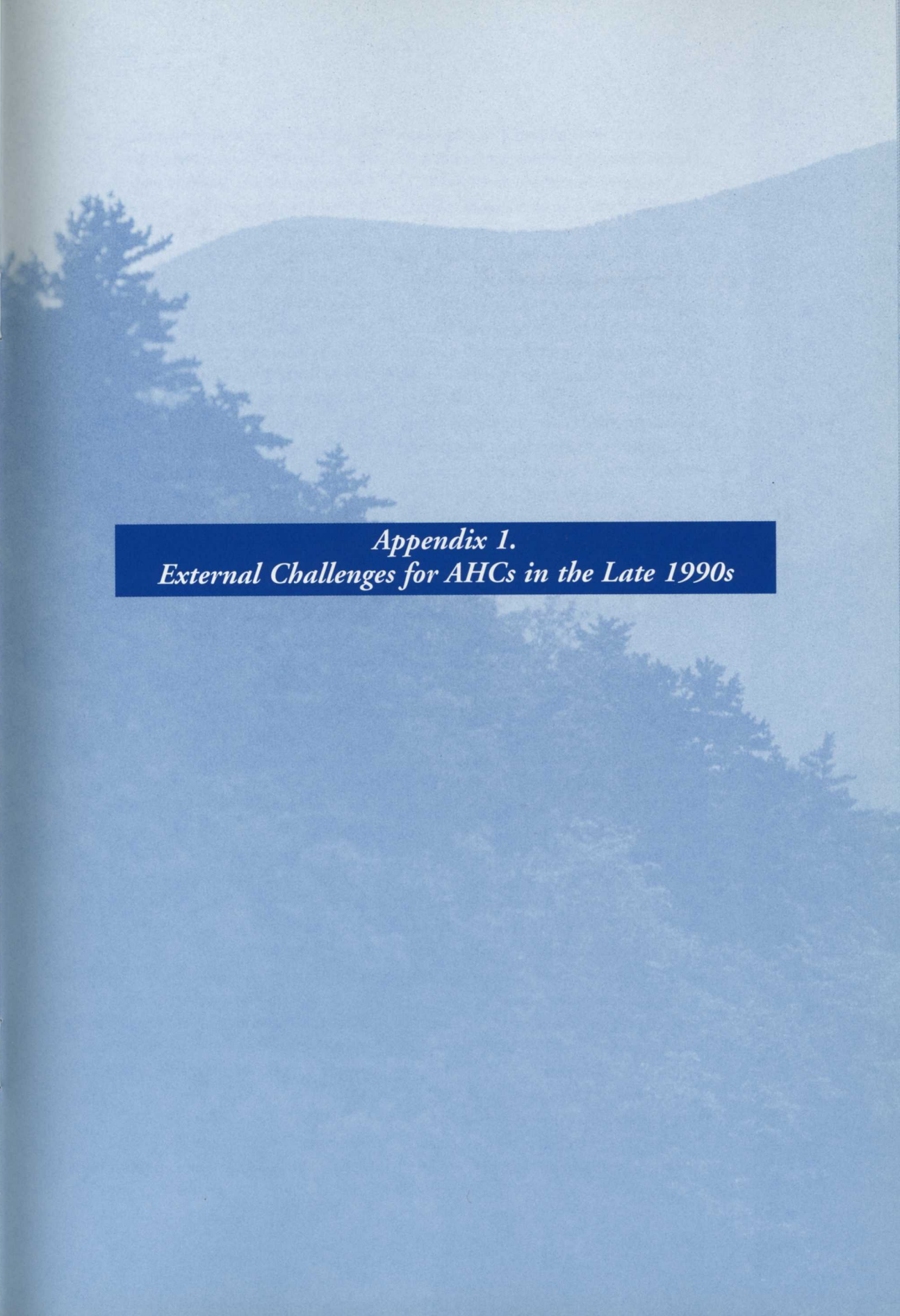
Professor and Chairman
Department of Surgery
University of North Carolina at Chapel Hill

George Sheldon's background in graduate medical education spans four institutions—Kansas University; Mayo Clinic; University of California, San Francisco; and Harvard University.

He is currently a professor and chairman, Department of Surgery, at the University of North Carolina at Chapel Hill; and was formerly professor of surgery in the Department of Surgery at the University of California, San Francisco.

Sheldon has held several national appointments, including president of the American Surgical Association, chairman of the American Board of Surgery, and member of the Council on Graduate Medical Education.

He has published 195 articles and book chapters and co-authored eight books.



Appendix 1. External Challenges for AHCs in the Late 1990s

The late 1980s and early 1990s marked the beginning of a new era for not only U.S. health care, but also U.S. and world economies. Technological advances, international economic integration, maturation of markets in developed countries, and the fall of communist and socialist regimes have led to globalization of markets. The information age has begun to change the substance and structure of work across many industries.

Virtually all business and public-sector organizations are grappling with more hazards, opportunities, and complexities and thus require more large-scale change to survive and become stronger competitors. Hierarchy and bureaucracy are being replaced with decentralized decision-making, multidisciplinary teams, empowered employees, and expectations for more efficiency and increased responsiveness to customers.

Competition among health care delivery organizations for patients based on cost of service is now the norm. Despite its critics, managed care has emerged as a dominant approach to the delivery and payment of clinical services in many parts of the country and has influenced the market even in areas where its penetration is not high (*HIAA, 1996*). Although market forces have pressured health care delivery organizations to rein in their costs, some components of the high health care costs we face as a society are immune to market pressures and will continue to increase. AHCs are often more vulnerable to these cost pressures than other health care delivery organizations.

The U.S. population is aging and therefore experiencing more chronic disease. New diseases such as AIDS continue to emerge, and old diseases such as tuberculosis have been known to resurface. Success in research and clinical innovations—fueled by government research dollars, cost-plus reimbursement systems of the past, and patient demand—led to widespread development and use of sophisticated technologies (*Weisbrod, 1994*). These technologies are frequently expensive and are most likely to be developed and available at AHCs (*Goodman and Gelijns, 1996*).

The number of uninsured citizens in the U.S. had been fairly stable during the last few years, but has begun to increase *(HIAA, 1996)*. Moreover, the costs of uncompensated care are rising and government appropriations for indigent care have declined (*AAMC, 1997*). With the exception of services for children, no clear-cut public policy is in place on how to pay for the care of the uninsured or underinsured (*U.S. Congress, 1997*). In this competitive era, hospitals can no longer shift the costs of caring for the uninsured and underinsured to other payers, thus forcing institutions that provide this care to absorb the costs. AHCs account for an estimated 45 percent of charity care; therefore, uncompensated care is a continuing threat to their financial viability (*AAMC, 1997*).

The leveling of federal research funding and the competitive market for clinical services are creating pressures for research (*Goodman and Gelijns, 1996; Campbell, Weissman, and Blumenthal, 1997; Jaffe, 1996*). Federal funding available to support research is increasingly targeted for specific purposes (*Feussner, 1996; McClure, 1997*). Private industry funding for research has increased but presents additional challenges for AHCs (*Goodman and Gelijns, 1996*).

As cross-subsidies within AHCs are eliminated, research that is not funded by internal sources may decline. Unsponsored research accounts for a surprisingly large percentage of journal articles in some disciplines (*Campbell, Weissman, and Blumenthal, 1997*). Institutional priorities driven by the need for clinical revenues may

encourage faculty to provide patient care rather than spend time on their research. Medical schools located in markets with high managed care penetration experienced slower growth in research funding from the National Institutes of Health than schools located in markets with low or medium managed care penetration (*Moy et al., 1997*).

Managed care is affecting education in several ways. It influences the kinds of health professionals who are likely to be in demand and who therefore need to be trained. The curriculum and clinical practice experience useful to health professionals who practice in managed care settings differ from those traditionally found in AHCs. AHCs' ability to support the educational process through revenues from the clinical enterprise is reduced, as is their ability to support uncompensated care and research.

Other forces are affecting health professional education. Federal graduate medical education (GME) financing is in transition. Incentives to reduce the number of residency positions have been proposed and, if implemented, will affect an important labor source for clinical services in teaching hospitals. In some parts of the nation, the demand for coordinated health professional work force planning within regions is rising. Also, new disciplines such as health evaluation sciences are emerging, and old ones such as public health are being revived, further stretching the limited resources of medical schools.

Finally, AHCs are being subjected to greater scrutiny of their practices and new standards of accountability for the huge volume of public dollars they receive (*Faden, 1996; Cohen, 1997; U.S. Senate, 1997*). This scrutiny cuts across all three parts of the AHC mission and often requires organizational resources in the form of new or revised policies, new information systems and reporting capabilities, or management time to educate internal and external audiences and to address public relations issues.

Appendix 2. Overview of Performance Measures Used by Two AHCs

The following are examples of performance measures used by the University of Alabama and the Washington University School of Medicine.

Exhibit A-1

University of Alabama at Birmingham (UAB):

Funds Flow Analysis
Productivity Ratios

- The funds flow analysis identifies and categorizes all funding and expenditures that flow through the clinical enterprise.
- UAB funds flow analysis is designed to
  - establish accountability across programs
  - facilitate allocation of resources based on program imperatives and productivity
  - explicitly define costs of subsidies for non-revenue-generating activity
  - objectively measure return on academic investment
  - establish common financial language
  - establish internal and external benchmarks for performance
- Performance ratios are calculated using the data that emerge from the funds flow analysis.
- UAB has found that performance ratios vary across departments and that information can affect productivity.

Exhibit A-2

UAB Funds Flow Data

These data are collected for each clinical department for the School of Medicine (SOM) and Health Services Foundation (HSF) and used to calculate ratios that appear in Exhibit A-3.

- Funds invested
- Dean/SOM allocation
- Restricted gifts
- Endowment income
- University support
- Total invested
- Funds generated
- External sales and services
- Grants (direct and indirect)
- Clinical revenue
- Total generated
- Total funds
- Expenses
- Faculty salaries
- Nonfaculty salaries
- Other expenses
- Total expenses
- Revenues over expenses without transfers
- Transfers from HSF to SOM
- Revenues over expenses with transfers

Exhibit A-3

UAB Ratio Analysis

Reported for all departments and each clinical department.

Full-Time Faculty (FTF) Information (Numbers)	M.D.s Ph.D.s Other Total FTFs
Overall Ratios	Funds generated as percent of total funds External funds/Internal funds Funds generated per FTF Other funds per FTF Total sources of funds per FTF Nonfaculty salaries per FTF Total uses of funds except faculty salaries/FTF Total uses of funds/FTF Contribution margin Net contribution per FTF Endowment funds per FTF
Funding Mix (Percent)	Patient care Research grants and contracts State Other Total
Expense Mix (Percent)	Faculty salaries Nonfaculty salaries Benefits Other Total
Clinical Ratios	Clinical revenue per M.D. Medical Group Management Association average clinical revenue per M.D. Imputed clinical FTFs Number of M.D. FTFs
Research Ratios	Direct grant revenue per FTF Indirect grant revenue per FTF Total grant revenue per FTF Average research revenue per FTF Imputed research per FTF
Miscellaneous Ratios	Percent of department expenses that have been paid by transfers to the School of Medicine from the Health Sciences Foundation
Productivity Ratio	Clinical collections plus research revenue expenditures (direct and indirect) (number of full-time faculty)

Exhibit A-4

Washington University School of Medicine:

The Resource Allocation Model (RAM)
Faculty Productivity Reports
Clinical Activity Reports

- The Resource Allocation Model (RAM) measures the economic relationship between the departments and the school, using resources generated by departments and resources utilized by departments.
- RAM uses 10 ratios in four categories as presented below.

Washington University Resource Allocation Model Ratios

Category	Ratios
Research Funding	Direct sponsored funds per total net assignable square feet (NASF) for research Direct sponsored funds per total research faculty FTE
Clinical Funding	Clinical related revenue per clinical NASF Clinical related revenue per clinical faculty FTE Clinical related revenue per total clinical FTE
Space Usage	Total research NASF per total research FTE Organized research NASF per total research FTE Total NASF per total FTE
General	Surplus per total faculty FTE General fund resources generated per general fund resources utilized

Exhibit A-5

Washington University Faculty Analysis Reports

- The Faculty Analysis Reports include four categories of data for each faculty member.

Category	Data
Demographics	Name Rank Title Hire date Tenure date Age
Salary Support	Salary support percents by faculty member: • Funded organized research • Unfunded organized research • Department-funded research • Patient care • Supervision of residents • Management of hospital services • Undergraduate instruction • Department administration • Other
Research	Direct research and training expenditures: • Government research • Government training • Nongovernment • Total Total research NASF Direct research and training expenditures per total research NASF
Clinical	Gross charges generated Relative value units generated

- Clinical Activity Reporting provides:
  - cost analysis for clinical activities
  - ability to track revenue and expenditures
  - ability to determine how much the clinical practice margins are subsidizing research and education activities
  - margins for clinical activities by provider, location, and program

Look for:

- *The Blue Ridge Academic Health Group's next report on Uncompensated Care, Summer 1998.*

Visit The Virginia Health Policy Center Web site at www.virginia.edu/~vhpc

Visit Ernst & Young on the Internet at www.ey.com/health

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