ANALYSIS IN BRIEF

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

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Changes in U.S. Medical Schools' NIH Rankings, 1991-2000

Approximately 50 percent of all National Institutes of Health (NIH) extramural funding is awarded to 123 allopathic U.S. medical schools each year.[1] As the NIH's extramural budget has nearly doubled over the past decade so has the amount of its funding to these medical schools — from $3.9 billion of the agency's $7.7 billion extramural budget in fiscal year (FY) 1991 to $7.5 billion of its $14.8 billion budget in FY 2000.

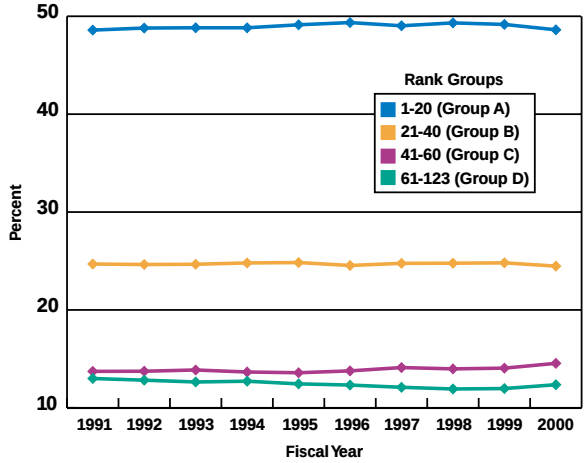
This analysis examines the stability of NIH extramural funding to various tiers of U.S. medical schools over the past 10 years as well as the mobility of individual schools within the NIH's annual rankings of all schools by funding level. Both the ranking and funding have historically been used as markers for a medical school's research intensity and success.

NIH Funding Data

Ninety percent of all NIH funding awarded to medical schools is made through investigator-initiated research grants to individual faculty members. For the purposes of this study, U.S. medical schools were grouped by the dollar amount of NIH extramural research grant funding into categories of 1-20 (Group A), 21-40 (Group B), 41-60 (Group C), and 61-123 (Group D). In 1991, schools in Group A received 49 percent of research grant funding awarded to U.S. medical schools; schools in Group B received 25 percent; Group C, 14 percent; and Group D, 12 percent.[2] These percentages have remained constant throughout the past decade. (See Figure 1.)

- While NIH funding to U.S. medical schools has increased substantially over the past decade, distribution of funding by rank groups has remained remarkably stable.
- Despite this overall stability, many medical schools, including the most research intensive, have experienced significant changes in their individual NIH rankings.

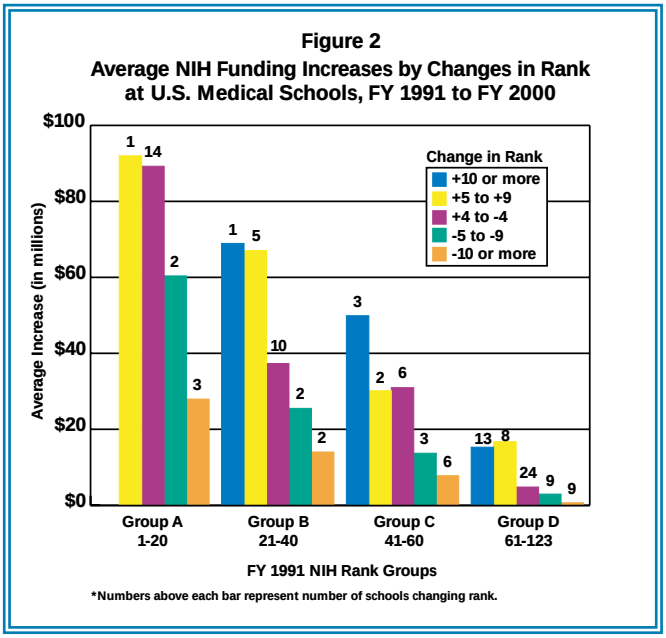
Figure 1
Share of NIH Research Grants to U.S. Medical Schools by Rank Groups, FY 1991 through FY 2000



While the funding distribution by group remained static between 1991 and 2000, more than half of medical schools experienced changes in rank of five positions or more, and nearly a third of 10 positions or more. In both cases, slightly more schools experienced decreases than increases: Of the 69 schools that changed rank five positions or more, 33 increased and 36 decreased. And of the 37 schools that experienced a change in rank of 10 positions or more, 17 increased and 20 decreased.

The largest changes in rank were for the schools in Group C, in which 45 percent (nine schools) experienced a change of 10 positions or more and 70 percent (14 schools), a change of five positions or more. Schools in Group A experienced the least change with only 15 percent (three schools) changing 10 positions or more and 30 percent (six schools) changing five positions or more. Because NIH extramural funding increased nearly two-fold over the past decade, the average funding rose for all groups, even for those groups of schools that decreased in rank over the 10-year period. (See Figure 2.)

Although large changes in NIH funding rank were less frequent for schools ranked high in 1991, some substantial changes did appear in this group. Sixteen of the top 20 medical schools (Group A) in 1991 remained in 2000, with four schools dropping into Group B. The four schools that dropped out of and the four that entered into Group A all changed rank five positions or more, with three of



the eight experiencing a change of 10 positions or more. Data on year-to-year changes for these eight schools illustrate that the ranking changes from 1991 to 2000 were not caused by single-year large variations but were the result of gradual and sustained movements over the 10-year period. During the same time period, four schools dropped out of Group B and into Group C, and six dropped out of Group C and into Group D.

Discussion

As NIH extramural funding has grown, both the more research-intensive and the less research-intensive tiers of medical schools have received proportional increases in NIH support. On one hand, this stability across groups is not surprising given that the NIH awards research grants based primarily on the technical and scientific merit of proposed research projects and not on the characteristics or reputation of an applicant's medical school.

On the other hand, one might surmise that as more research-intensive institutions garnered additional research grant awards, their research enterprise (infrastructure, faculty, staff, training, etc.) would increase proportionally, enabling them to secure a greater comparative percentage of NIH research grant funding. The data, however, support the notion that less research-intensive institutions are able to compete with their more research-intensive counterparts to the extent of maintaining their relative share of research grant funding.

The finding that medical schools ranked lower in NIH funding are holding their own may have implications for programs such as the NIH Institutional Development Award (IDeA). This NIH program was established in 1993 to enhance the competitiveness for research funding of institutions located in states with historically low aggregate success rates for grant applications to the NIH.

NIH data over the past decade also indicate that significant changes in rank have occurred for a number of individual medical schools regardless of position in the ranking hierarchy. This is most striking for mid-level ranked schools as shown by Group C. In general, large changes in rank were more frequent for schools ranked lower to begin with, no doubt in part because the actual dollar amounts of their total awards were proportionately less. Nevertheless, large moves also occurred in the top-tier schools, illustrating that even the most research-intensive schools can experience substantial and sustainable changes in ranking.

Although rankings continue to be used as a barometer for research growth or decline by both medical schools and research policy leaders, opinions on the utility of this measurement vary. Some believe that an institution's marketability as a premier research institution enhances its ability to attract research faculty, fellows, and students, thereby bolstering its research enterprise. Others assert that although rank, in itself, is not important, it is an indicator of the capital and human resources that an institution has and is willing to commit toward research. Perhaps the value of rankings is that they encourage medical schools to continually improve their methods and strategies for advancing the research missions of their communities and of the nation as a whole.

Future Directions

AAMC staff plan to perform additional analyses on the NIH funding data and to examine the experiences of medical schools that have changed their rank significantly as a result of the doubling of the NIH budget. These studies will help AAMC institutions determine the elements needed to maintain and strengthen a medical school's research enterprise.

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[1] Although there are 125 allopathic U.S. medical schools, the NIH (a) designates Mayo Medical School as a foundation and not a medical school and (b) combines funding data from the two University of Minnesota Schools (at Minneapolis and at Duluth).

[2] Individual medical schools in each group change from year to year. However, for the remainder of the analyses, groups were defined using 1991 data.