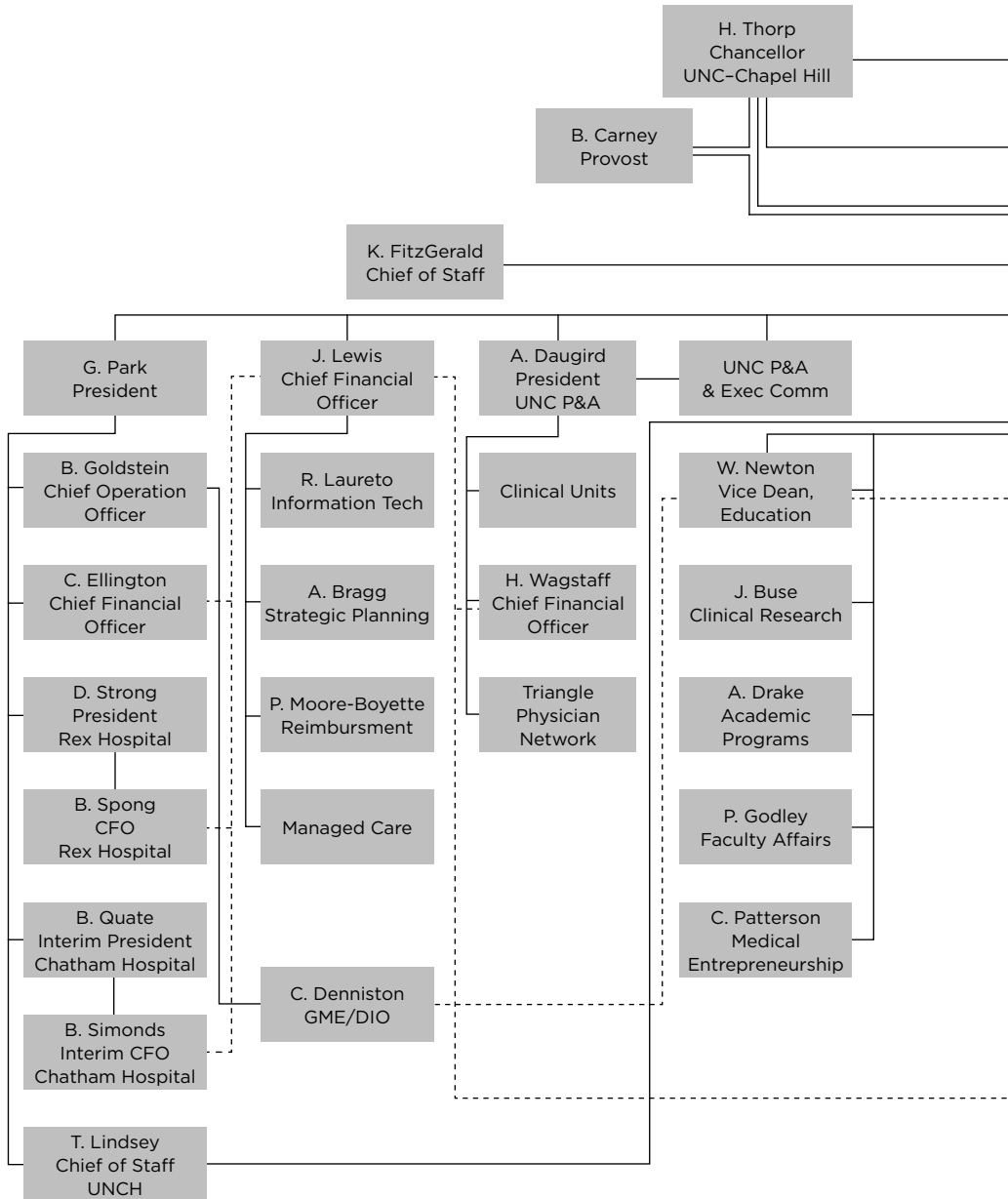


Figure 1. Promotional spending by type of marketing activity, 1989 to 2008 (in billions of dollars). The Congressional Budget Office (CBO) issued an “Economic and Budget Issue Brief” on December 2, 2009, regarding “Promotional Spending for Prescription Drugs.” These data were obtained from SDI, a company that collects and sells information about the pharmaceutical industry. The SDI data set is not all-inclusive. However, the trends in the different categories are telling.

# UNC School of Medicine and UNC Health Care



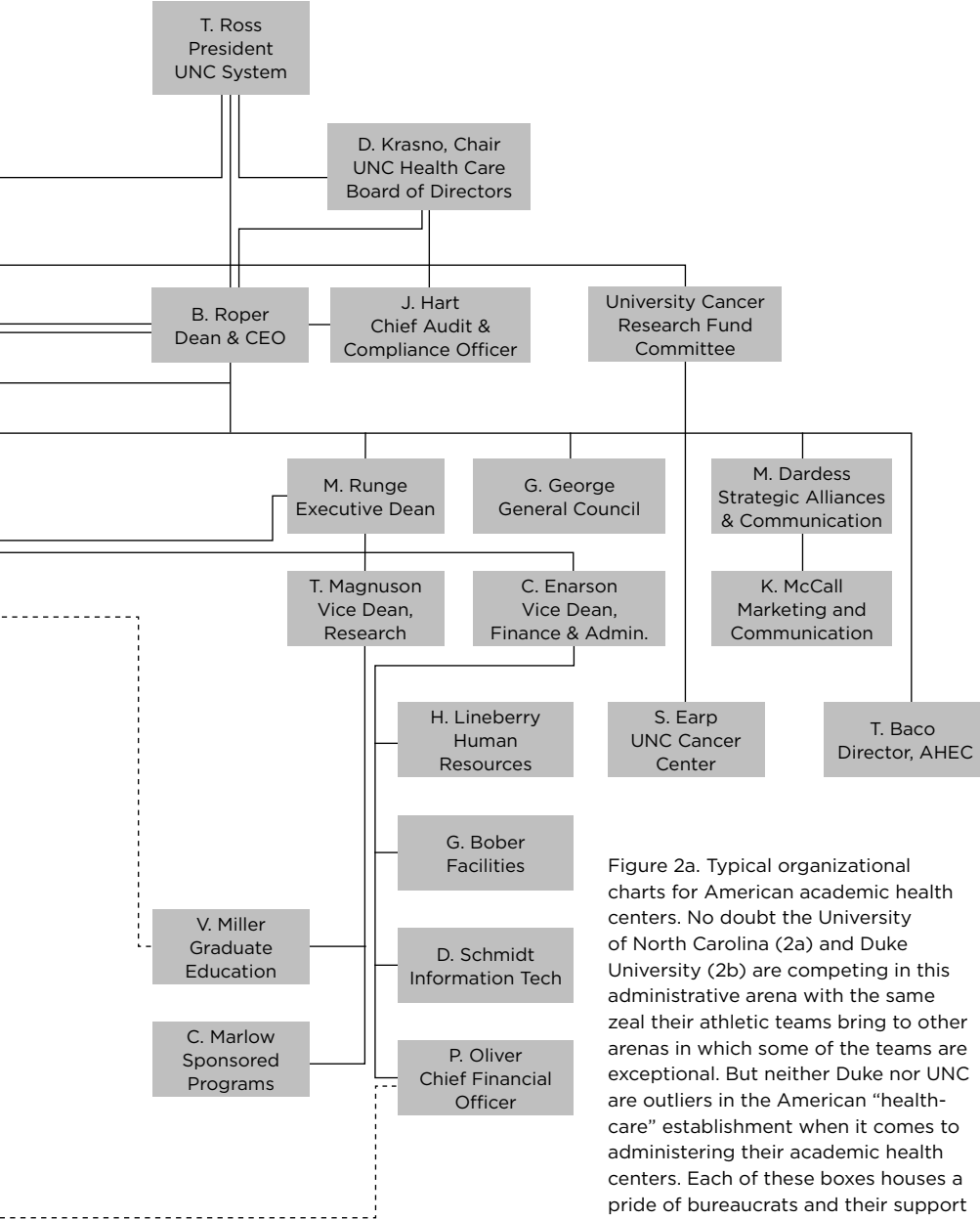


Figure 2a. Typical organizational charts for American academic health centers. No doubt the University of North Carolina (2a) and Duke University (2b) are competing in this administrative arena with the same zeal their athletic teams bring to other arenas in which some of the teams are exceptional. But neither Duke nor UNC are outliers in the American “health-care” establishment when it comes to administering their academic health centers. Each of these boxes houses a pride of bureaucrats and their support staff. My visceral response to the images is a mixture of derision and revulsion. These are matrices that only the Pentagon could envy and that might cause Malvina Reynolds to write another version of “Little Boxes” for Pete Seeger to sing. (Chart effective January 2012)

**TABLE 1. Total Expenditures on the Ten Most Costly Conditions among Adults Age Eighteen and Older in 2008 (in Billions of Dollars)**

<b>CATEGORY</b>	<b>WOMEN</b>	<b>MEN</b>
Heart disease	43.6	47.3
Cancer	37.7	33.7
Mental disorders	37.3	22.6
Trauma-related disorders	34.1	33.2
Osteoarthritis	33.2	23.0
Pulmonary diseases	26.8	17.7
Hypertension	25.9	21.4
Diabetes	23.2	22.3
Back problems	20.2	14.4
Lipid abnormalities	18.0	20.5

*Source:* Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, Household Component of Medical Expenditure Panel Survey (2008).

**TABLE 2. Number of Adults and Expenditure per Adult Reporting the Ten Most Costly Conditions in 2008**

CATEGORY	WOMEN	MEN
Heart disease	11.7 million-\$3,723/person	10.8 million-\$4,363/person
Cancer	8.4 million-\$4,484/person	6.9 million-\$4,873/person
Mental disorders	21.4 million-\$1,739/person	11.4 million-\$1,975/person
Trauma-related disorders	13.8 million-\$2,475/person	12.6 million-\$2,635/person
Osteoarthritis	21.4 million-\$1,548/person	13.2 million-\$1,749/person
Pulmonary diseases	21.5 million-\$1,245/person	13.3 million-\$1,324/person
Hypertension	29.5 million-\$879/person	25.6 million-\$838/person
Diabetes	10.9 million-\$2,127/person	10.0 million-\$2,219/person
Back problems	9.9 million-\$2,034/person	7.5 million-\$1,192/person
Lipid abnormalities	22.3 million-\$810/person	22.0 million-\$933/person

*Source:* Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, Household Component of Medical Expenditure Panel Survey (2008).

**TABLE 3. Distribution of Total Expenditures for Men/Women by Source of Payment in 2008 (All Figures Percentages)**

SOURCE OF PAYMENT	TRAUMA	CANCER	HEART DISEASE
Private	46.3/42.3	46.0/48.5	41.2/27.8
Out-of-pocket	7.3/8.2	6.1/7.2	6.0/5.6
Medicare	20.2/32.2	32.8/30.7	38.1/52.0
Medicaid	3.0/6.7	6.6/7.1	6.1/8.8
Other	23.1/10.6	8.5/6.5	8.6/5.8

*Source:* Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, Household Component of Medical Expenditure Panel Survey (2008).

TABLE 4. Health Expenditures per Capita in 2007<sup>a</sup>

RANGE	COUNTRIES
>\$6,000 (U.S.)	United States
\$5,000–6,000	None
\$4,000–5,000	Switzerland, Luxembourg, Norway
\$3,000–4,000	Iceland, Australia, Netherlands, Austria, Belgium, Canada, France, Germany
\$2,000–3,000	Ireland, Finland, Spain, New Zealand, Sweden, Japan, Denmark, United Kingdom, Italy, Greece
<\$2,000	Israel, Singapore, Slovenia, Portugal, Korea, Cyprus

<sup>a</sup>This is the sum of public and private expenditure (in purchasing-power parity terms in U.S. dollars) divided by the population. Health expenditure includes the provision of health services (preventive and curative), family-planning activities, nutrition activities, and emergency aid designated for health, but it excludes the provision of water and sanitation.

Source: United Nations Human Development Report (2007) ([hdr.undp.org](http://hdr.undp.org)).



Figure 3. The forces that took root in the 1970s that would promote escalation of the costliness of health care for the remainder of the twentieth century.

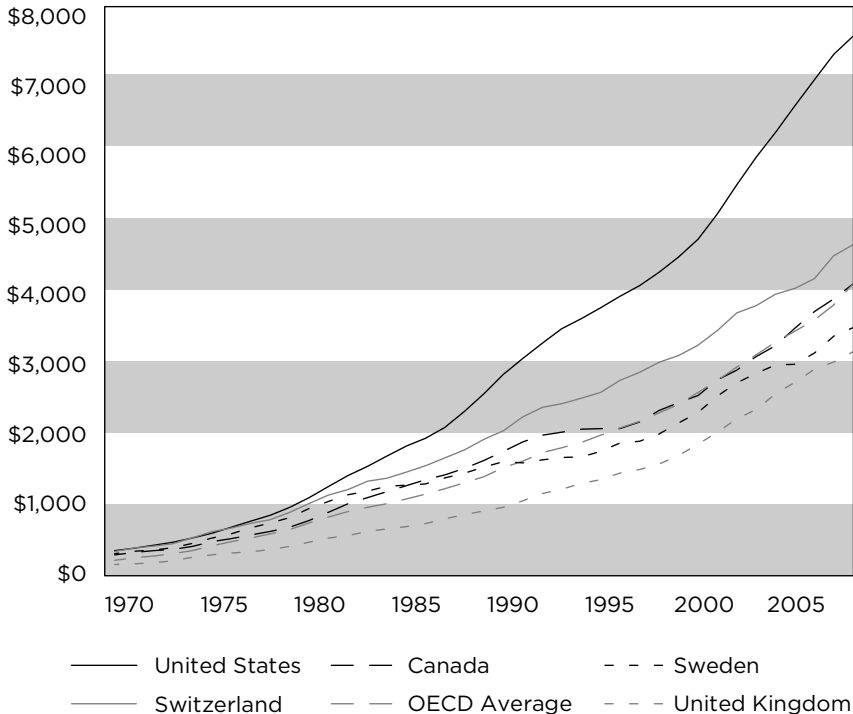


Figure 4. Growth in total health expenditure per capita, United States and selected countries, 1970–2008 (adjusted for purchasing power parity). (Source: Organization for Economic Co-operation and Development [2010], “OECD Health Data,” *OECD Health Statistics* [database]; doi: 10.1787/data-00350-en; accessed February 14, 2011)



TABLE 5. The Number of Routine Chest X-Rays or Mammograms That Would Provide as Much Hazard from Ionizing Radiation as a Routine CT Scan

ROUTINE CT SCAN	EQUIVALENT NUMBER OF CHEST X-RAYS	EQUIVALENT NUMBER OF MAMMOGRAMS
Of head	30	5
Of chest	117	20
Of abdomen-pelvis	220	37

*Source:* Adapted from Rebecca Smith-Bindman and others, “Radiation Dose Associated with Common Computed Tomography Examinations and the Associated Lifetime Attributable Risk of Cancer,” *Archives of Internal Medicine* 169, no. 22 (2009): 2078–86.

**TABLE 6. Projected Number of Future Cancers That Could Be Related to CT Scans Performed in the United States in 2007**

ROUTINE CT SCANS PERFORMED PER YEAR	PREDICTED NUMBER OF RADIATION-INDUCED CANCERS (WOMEN/MEN)	PERCENTAGE OF THE TOTAL NUMBER OF CANCERS ATTRIBUTABLE TO CT EXPOSURE
Head (18.7 million)	1,900/2,100	14
Chest (7.1 million)	3,100/1,000	14
Abdomen-pelvis (18.3 million)	8,500/5,500	48

*Source:* Adapted from Amy Berrington de Gonzalez and others, “Projected Cancer Risks from Computed Tomographic Scans Performed in the United States in 2007,” *Archives of Internal Medicine* 169, no. 22 (2009): 2071–77.

TABLE 7. Confounders of the Association between Alcohol Consumption and Four-Year Mortality

ADJUSTING OBSERVED MORTALITY OF CONFOUNDERS	NONDRINKER	<1 DRINK	<1 DRINK	1 DRINK	2 DRINKS	3 DRINKS
	(NUMBER OF SUBJECTS [N] = 5,672)	PER WEEK (N = 2,327)	PER DAY (N = 1,901)	PER DAY (N = 1,691)	PER DAY (N = 550)	PER DAY (N = 378)
Observed mortality (percentage)	14	10	7	7	8	12
Adjusted for demographics (age, sex, race)	Reference	0.80 (.067–0.94)	0.56 (0.46–0.69)	0.50 (0.40–0.62)	0.65 (0.47–0.90)	0.96 (0.68–1.35)
Adjusted for demographics plus risk factors (comorbidities, smoking, obesity)	Reference	0.93 (0.78–1.10)	0.67 (0.54–0.83)	0.57 (0.46–0.72)	0.67 (0.47–0.94)	1.03 (0.72–1.47)
Adjusted for demographics plus psychosocial factors (support, depression, religion)	Reference	0.91 (0.77–1.08)	0.68 (0.55–0.83)	0.60 (0.48–0.75)	0.75 (0.53–1.05)	1.01 (0.71–1.44)
Adjusted for demographics plus socioeconomic status	Reference	0.91 (0.77–1.08)	0.69 (0.56–0.84)	0.62 (0.50–0.77)	0.77 (0.55–1.07)	1.09 (0.77–1.53)
Adjusted for all of the above plus functional limitations	Reference	1.06 (0.89–1.28)	0.85 (0.68–1.06)	0.72 (0.57–0.91)	0.79 (0.55–1.11)	1.11 (0.77–1.60)

Source: Adapted from S. J. Lee, R. L. Sudore, B. A. Williams, and others, “Functional Limitations, Socioeconomic Status, and All-Cause Mortality in Moderate Alcohol Drinkers,” *Journal of the American Geriatrics Society* 57 (2009): 955–62.

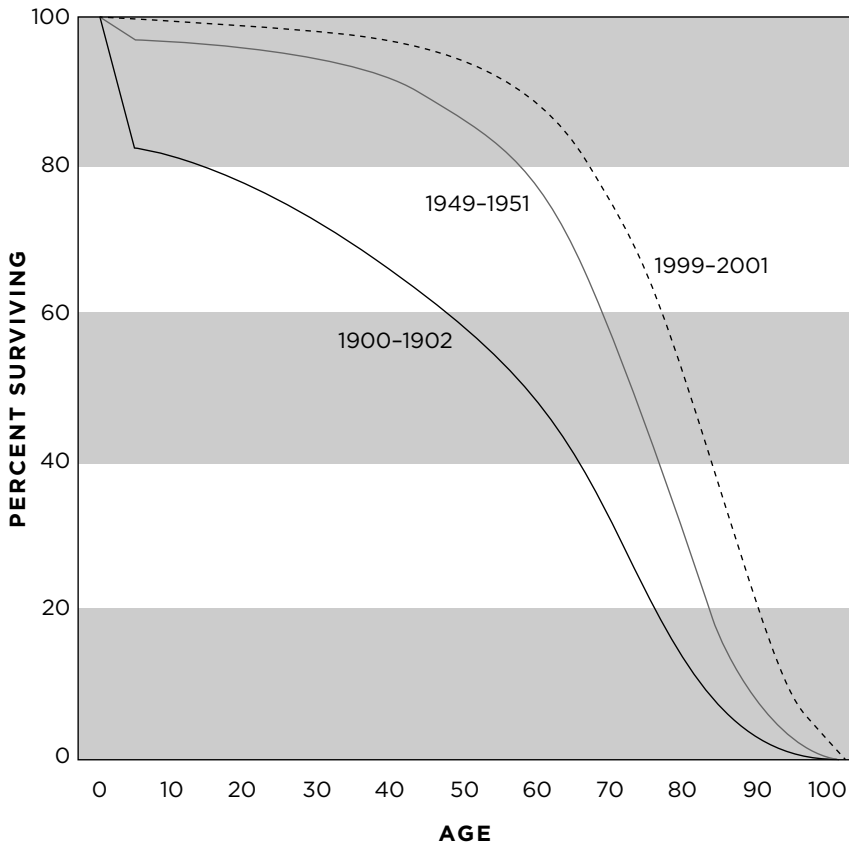


Figure 5. Changes in U.S. longevity rates during the twentieth century. Note how the survival curves become increasingly rectangular as the century progresses. We are ever more likely to become octogenarians, at which point the curves turn increasingly vertical. (Source: U.S. Public Health Service, *National Vital Statistic Reports*, vol. 57, no. 1, August 5, 2008)

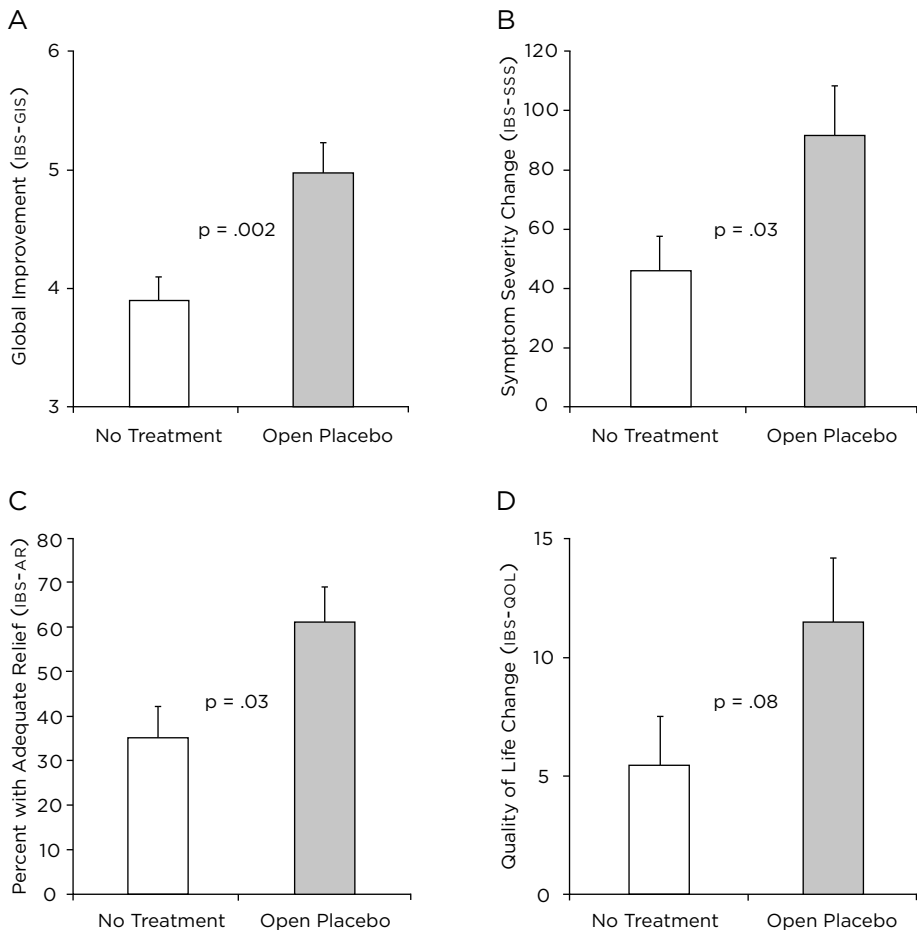


Figure 6. Results at two weeks of an RCT comparing a treatment offered as a “placebo” with no special treatment in patients with irritable bowel syndrome. This is a figure from the original paper published by T. J. Kaptchuk and others, “Placebos without Deception: A Randomized Controlled Trial in Irritable Bowel Syndrome,” *PLoS ONE* 5, no. 12 (2010): e15591; doi: 10.1371/journal.pone.0015591. The result in panel C is particularly noteworthy. Nearly 60 percent of the subjects on placebo experienced “adequate relief” at two weeks. This is much more than the 30 to 40 percent generally seen in the placebo limb of pharmaceutical trials. (A. Hróbjartsson, P. C. Gøtzsche, “Placebo Interventions for All Clinical Conditions,” *Cochrane Database of Systematic Reviews* 1 (2010): CD003974; doi: 10.1002/14651858.CD003974.pub3)



Figure 7. I was privileged to know the late Ernest Craige, M.D., as a friend and colleague on the faculty of the University of North Carolina for many decades. Ernie was a truly distinguished North Carolinian. He was the scion of a family that traced its roots in North Carolina to colonial times. His distinguished undergraduate career at UNC earned him a Rhodes Scholarship, after which he matriculated for an M.D. at Harvard and trained in medicine and cardiology at the Massachusetts General Hospital. He was one of several cardiologists to have been mentored by the legendary Paul Dudley White, and he carried the tradition of clinical acuity, compassion, and perspective with him throughout his life. Through the early decades of the twentieth century, the medical school of the University of North Carolina offered only the two-year preclinical curriculum, after which it sent its graduates to other institutions to complete the requirements for the M.D. degree. In the mid-1950s, the legislature of North Carolina decided to build the medical school into a four-year institution that granted an M.D. degree and to build North Carolina Memorial Hospital as its teaching hospital. Reece Berryhill was the founding dean. He set about the task of recruiting a clinical faculty and cleverly opted to find North Carolinians in the diaspora. Ernie Craige was enticed back home as the founding chief of cardiology. He was a legendary educator and an exemplary physician. He was a renowned clinical scientist instrumental in the development of echocardiography. He was also an excellent artist and a brilliant cartoonist. His cartoons found their way into many a medical publication, *Pharos* in particular.

For years, Ernie and I sat side by side at medical grand rounds. We whispered to each other about the content of presentations. Ernie was wont to turn to the blank side of the handout and draw cartoons about the theme of the presentation. Many were gifts to me. I have a collection that I cherish. This is one of his drawings. It captures the essence of the system we need to reform.