for each survey so the parent must focus on it," says Souder. He and others also worry that sex and drug surveys actually promote the behaviors they are trying to study. "It starts to plant an idea of what is normal behavior," says Souder. So the new rule "shifts the balance between privacy protection and social science research toward the interest of protecting families," he says.

But written consent costs, says Steve Sussman, an associate professor of preventive medicine at the University of Southern California's Institute for Health Promotion and Disease Prevention Research in Los Angeles. Typically, he says, 50% of parents don't respond initially when their written permission is requested. "But they're not people who don't want their kids involved," he says, citing several studies on parental consent (studies carried out by Sussman and others). "They're just people who don't return mail or hand the form back to their kid." Only 1% to 2% of these parents, when finally contacted, refuse permission for their children to be in the survey—the same percentage as surveys with passive consent, he says: "You can get that consent. It just becomes more expensive." A 1989 study by Ellickson and Jennifer Hawes-Dawson at RAND showed that the phone calls, home visits, and extra time needed to get parents to return written consent forms increased the survey cost to $25 a student, compared to just $1 for passive-consent surveys.

Moreover, studies by Johnston and others indicate that children of parents who don't initially return signed forms are generally those at highest risk for behaviors such as dropping out of school and drug use. "In most at-risk families, the situation is so disordered that they're not in the habit of returning mail," says Johnston. As a result, "you're going to be missing out on precisely those students you hope to study," says Christine Bachrach, chief of demographics at the National Institute for Child Health and Human Development's Center for Population Research. That bias, Johnston says, will artificially lower prevalence rates for behaviors such as drug use, camouflaging their seriousness and casting doubt on the accuracy of the overall survey.

While Souder calls such concerns "credible," he maintains that "they have to be balanced with the liberty of the subjects," which he says is only ensured with written consent. Survey advocates trying to lobby against the legislation are encountering much the same sentiment in the Senate, which is expected to take up the bill in June. "It's a hard sell," says Howard Silver, director of the Washington, D.C.–based Consortium of Social Science Associations. "It's hard to convince members that information collection is as important as privacy."

–Robert F. Service

ACADEMIC MEDICAL CENTERS

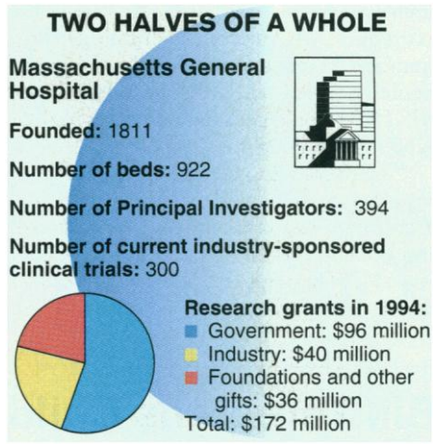
Can Risky Mergers Save Hospital-Based Research?

BOSTON—In New England, they say that if you don't like the weather, wait a minute. But officials trying to forecast the funding climate at Massachusetts General Hospital (MGH) a few years ago saw nothing but a long-term drought. Rivers of revenue that traditionally kept the 1200 basic and clinical researchers at the hospital afloat were beginning to run low. A dozen pharmaceutical companies, for instance, had shifted clinical trials of their experimental drugs—which help the hospital pay for labs, computers, and support staff, in addition to helping patients—to less costly venues such as HMOs. "That revenue stream had the potential to dry up very, very rapidly," says Greg Koski, MGH director of clinical research support and development.

And that was only one of the threatened tributaries in the hospital's financial flow. Even $161 million in grants from the National Institutes of Health (NIH) and other sources in 1992—making MGH the largest nonuniversity-based research hospital in the country—was not enough to offset the rising cost of doing that research. Revenues from patient care, monies the hospital used to subsidize the shortfall, were falling below expected levels as well, again drained off by HMOs. One option was to cut back on research activities. But, says Koski, "we wanted to preserve the General as a research-based academic medical center." So the hospital elected in 1993 to throw in its lot with a longtime rival in similar straits, Boston's Brigham and Women's Hospital (BWH).

Mergers often eliminate jobs, not preserve them. But the two hospitals—both loosely affiliated with Harvard Medical School but fierce competitors for grants, faculty, and prestige—hoped that merging into a new mega-institution, with the ungainly name of Partners Healthcare System Inc., had another prognosis. It would, they thought, allow them to form a vast health-care network, capturing a patient base large enough to shore up clinical revenues, attract new drug trials, and underwrite basic research. Staff researchers knew there was a lot riding on the move. "We're trying to make one and one equal more than two," says John Parrish, director of photomedicine research at MGH.

A year and a half later, the outlook for the merger is still murky. While the patient network is growing, only $50 million of the $240 million in cost savings projected for the merger's first 24 months have so far materialized. Still, administrators at the nation's 120 other academic medical centers are keeping a close eye on Partners' progress, for the pressures that prompted the Boston merger are pinching research hospitals everywhere. Although there are few opportunities for mergers of research powerhouses like MGH and



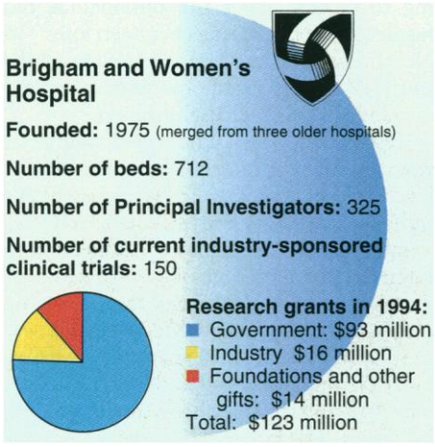
BWH, many academic medical centers are trying to consolidate operations by forging links with local hospitals and physicians' groups. "I am watching very closely what happens in Boston, as I always have when I'm in need of guidance," says Layton McCurdy, a physician and dean of the College of Medicine at the Medical University of South Carolina in Charleston.

For the Boston hospitals, the problems started with their patients. Both hospitals were seeing too few patients who were paying too little money. Improvements in medical technology and pressure from health insurers to reduce per-patient costs had led to shorter inpatient hospital stays and lower bed occupancy rates. (Occupancy at MGH fell from 88% in 1988 to 76% in 1994, and from 89% to 73% at BWH.) Adjustments in Medicare payments, the largest single form of patient revenue, weren't keeping up with medical inflation. And HMOs, enrolling about 40% of the population in Massachusetts, were cutting deeply into the hospitals' traditional pool of outpatients.

Moreover, the costs of doing research had outstripped income from grants. BWH and MGH spent a combined $281 million on research in 1992, but collected only $253 million from their various research sponsors. And there was little prospect that federal grants would help make up that growing difference anytime soon. Lean times at the NIH mean that competition for

funding is up (*Science*, 10 February, p. 780) and the percentage of grant money that hospitals can keep to cover overhead—indirect costs of research—is not keeping pace with expenditures.

Officials realized that without some kind of response, the two hospitals might soon be "bathed in red ink," says William Terry, BWH's senior vice president for research and ventures. But the December 1993 announcement of the impending marriage still evoked disbelief from the affected staffs. "To have two proud and mighty institutions that have often perceived each other as competitors



suddenly be cast in the roles of best buddies is a strange and rather shaking occurrence," says Koski.

By huddling under a single corporate umbrella, the hospitals hope to achieve at least three goals. First, explains Ronald Newbower, MGH vice president for research and technology affairs, the hospitals can keep patients out of the hands of HMOs—and save the energy they wasted in competition with each other—by joining to purchase a large network of private physician practices. Partners will use the network to capture a consistent share of the money spent by Massachusetts residents on outpatient care and to guarantee the flow of patients with complex illnesses to MGH or BWH—thus providing a cushion for what Newbower calls "inherently money-losing" scientific and educational activities.

Second, the hospitals plan to consolidate some existing resources and participate jointly in new capital projects, reducing the costs borne by each. In the future, new research and clinical facilities needed by both institutions will be centralized and shared. And third, the large population of patients whom officials hope will become part of the Partners primary-care network will help restore the hospitals' attractiveness as sites for industry-sponsored drug trials.

So far, 400 out of a targeted 850 primary-care physicians in eastern Massachusetts have joined the network as employees or affiliates, bringing with them some 200,000 new "covered lives," according to Partners network president Ellen Zane. And Partners officials still expect to save $240 million in the hospitals' operating budgets by consolidating activities such as legal and financial affairs. They concede, however, that the savings are taking longer to materialize than originally projected.

Some outside observers say the savings aren't materializing because Partners officials aren't making tough decisions about overlapping services, some of which involve researchers. One university hospital executive in another city comments sharply: "It's the Noah's Ark problem. Partners now has two of everything. Where's the efficiency? Where's the savings? That's what everybody is waiting to see." There are, for example, 37 principal investigators in pathology at BWH and another 29 at MGH.

But BWH's Terry says that as long as researchers can continue to win some outside funding, the hospitals can support parallel research programs. "You can have two immunologists or 200. ... They are each looking at their questions differently," he says. Frederick Wang, a virologist at BWH, agrees: "My impression from the bench is that there's no pressure to consolidate. The partnership is one of augmentation."

The resolution of the "Noah's Ark" problem and other issues is being watched closely by leaders at academic medical centers around the country, for reorganizing to cut costs and create new "integrated delivery systems" is increasingly seen as the only option for nonprofit institutions forced to compete with the managed-care industry. University Hospitals of Cleveland, for instance, acquired three community hospitals and created its own HMO to increase inpatient admissions by 28% this year over the first quarter of 1994, according to chief executive officer Farah Walters. This structural overhaul allowed the institution to spare research and teaching programs, she says. The hospital has also committed $32 million to recruit new faculty and has jumped from 20th in the rankings of NIH-funded hospitals 4 years ago to 12th today.

McCurdy, whose own university hospital in South Carolina is negotiating an alliance with a for-profit community hospital owned by health-care giant Columbia HCA, believes that success or failure in such partnerships rides on finding institutions whose strengths and weaknesses complement one another, to keep internal competition and overlaps to a minimum; hence his eagerness to see "how the cultural fit will occur" between MGH and BWH. If the Boston venture flourishes, observers like McCurdy say, mergers may prove to be good medicine for teaching hospitals across the country.

–Wade Roush

HIGH-ENERGY PHYSICS

Japan Agrees to Help Build the LHC

Japan has become the first nonmember country of CERN, Europe's high-energy physics center, to agree to finance construction of the Large Hadron Collider (LHC), the world's most powerful particle accelerator.

Last week the Japanese Ministry of Education, Science, and Culture announced that it would contribute 5 billion yen ($60 million) this year toward the $3 billion facility in Geneva. The contribution was approved this spring by legislators as part of a midyear supplemental budget to stimulate the sagging Japanese economy. The money will speed up construction of the 14-teraelectron-volt accelerator, say CERN officials, who were forced to push back the original completion date of 2003 by 5 years because of budget squabbling among CERN's 19 member nations. "We hope this will really set the ball rolling," says LHC project leader Lyn Evans.

The United States, Canada, Russia, India, Israel, and China have all had discussions with CERN, but Japan is the first to commit. The Japanese donation, believed to be the country's largest to an overseas science project, will solidify Japan's already strong ties with CERN. About 70 Japanese scientists are working on the LEP, the center's most powerful accelerator, and a few dozen are helping to design Atlas, one of the LHC's two giant detectors. There is also collaboration with the KEK National Laboratory for High-Energy Physics on high-field superconducting magnets for the LHC. "It is exciting to have this opportunity to go ahead," says KEK physicist Takahiko Kondo.

In contrast, U.S. scientists are still waiting for a financial commitment from their government. Although Administration officials see the LHC as a model for international cooperation in the wake of the cancellation of the Superconducting Super Collider (SSC)—"This is an initiative we have to support," Energy Secretary Hazel O'Leary told *Science* last week. "It is the replacement for the [super]collider"—that sentiment has yet to find a home in a shrinking budget.

Kondo says the LHC is a more popular project among Japanese researchers than was the SSC, which was seen as siphoning money from Japanese high-energy physics. He says a number of key organizations have strongly endorsed a contribution to the LHC.

–Daniel Clery

With reporting by Dennis Normile in Tokyo.