Biomedical briefing

POLICY

Patient push

Patient advocacy groups' lobbying for research funding seems to be paying off. According to a study published in the October issue of *American Sociological Review* (77, 780–803, 2012), the more a disease nonprofit spends to pressure the US government on focused science spending, the more that federal funding agencies allocate to the specific disease that the organization concentrates on. "This is an area where advocacy can be incredibly successful," says study author Rachel Kahn Best, a public health fellow at the University of Michigan–Ann Arbor. Best looked at lobbying activities and budget allocations for 53 diseases over a span of 19 years. She found that for every $1,000 a group spent on lobbying, the US National Institutes of Health or the Department of Defense dished out an additional $25,000 on average in funding for that disease the following year.

Compound interest

The outbreak of fungal meningitis in the US last month, which was traced to tainted steroid shots, has renewed calls for heightened oversight of pharmacies that repackage or recombine drugs, often for off-label use. Such 'compounding' pharmacies mostly tailor drug dosages and formulations for individual patients, which puts them under the scrutiny of state regulators. But with drug-dispensing centers increasingly compounding large lots of medicines for nationwide use—as the New England Compounding Center in Framingham, Massachusetts, was doing with the contaminated back pain medication at the heart of the October meningitis outbreak—critics say it's time for the US Food and Drug Administration (FDA) to exert greater authority. "If they're acting like a manufacturer, the FDA should be able to step in," says Allen Vaida, executive vice president of the Institute for Safe Medication Practices, a Pennsylvania-based advocacy organization.

Research revamp

In the face of budget constraints, South Africa's Medical Research Council (MRC) has announced plans to streamline its programs, cutting the agency's intramural research units from the current 23 to 12, and overhaul its external peer-review system, among other measures. The restructuring, according to MRC president Salim Abdool Karim, who also directs the Centre for the AIDS Programme of Research in South Africa (known as CAPRISA) in Durban, will result in a "coherent intramural research program based on the highest priorities as defined by the local burden of disease, specifically the top ten causes of death in South Africa."

Sedeer

Peptide painkillers found in black mamba snake venom

The lethal bite of a black mamba snake packs quite a punch. A single squirt from the African serpent's fangs contains enough neurotoxin to kill more than a dozen adult humans. Yet the venomous cocktail of compounds also includes two proteins that, at least in mice, can ease pain as effectively as the most potent analgesics with fewer complications. Eric Lingueglia and his colleagues at the Institute of Molecular and Cellular Pharmacology in Valbonne, France, discovered the proteins, dubbed mambalgins. Reporting last month in *Nature* (doi:10.1038/nature11494, 2012), Lingueglia's team injected the mambalgins, which inhibit acid-sensing ion channels, into mice and showed that their pain-relieving properties were as strong as morphine's but with no respiratory side effects and a weaker propensity for causing drug tolerance. "In pain, it's important to find new molecules working through different pathways than the ones we already know," Lingueglia says.

PEOPLE

Nobel nods

Health-related discoveries dominated this year's Nobel-lauded accomplishments. On 8 October, the Nobel Committee announced that Shinya Yamanaka of the University of Kyoto, Japan, and John Gurdon of the University of Cambridge, UK, had won the 2012 physiology or medicine prize for their discoveries that adult cells can be reprogrammed to an immature state. The chemistry prize, unveiled two days later, went to two biochemists—Robert Lefkowitz of

Duke University Medical Center in Durham, North Carolina, and Brian Kobilka of Stanford University School of Medicine in California—for their work on G protein–coupled receptors, the target of approximately one-third of all marketed pharmaceuticals. Meanwhile, the University of California–Los Angeles's Lloyd Shapley and Stanford's Alvin Roth took home the economics award for developing the 'matching' theories that, most notably, have helped facilitate kidney donor exchanges and medical residency placements.

BUSINESS

Pharma, transcended

Ten of the world's largest pharmaceutical companies joined forces in September in an effort to cut the cost of running clinical trials. Through a new nonprofit, called TransCelerate BioPharma, the industry hopes to standardize how physician-scientists are trained and the ways that clinical studies are recorded. The project will also work on a common internet portal for doctors running trials and devise a way for companies to obtain already marketed medicines from other firms for use in comparative drug studies. The companies involved are Abbott, AstraZeneca, Boehringer-Ingelheim, Bristol-Myers Squibb, Eli Lilly, GlaxoSmithKline, Johnson & Johnson, Pfizer, Roche's Genentech division and Sanofi.

Merck on the march

In its latest effort to lower operating expenses, the New Jersey–based drugmaker Merck announced plans on 9 October to shutter its global headquarters in Whitehouse Station and move its key offices about 25 miles east to Summit, where the company inherited facilities after acquiring Schering-Plough in 2009. "The relocation of our headquarters will help us achieve our future vision, reduce the size of our operating footprint and increase agility," said Kenneth Frazier, chairman and chief executive of Merck, in a press release. No new job losses are expected as a direct result of the relocation, although Merck announced plans last year to shed as many as 13,000 positions by the end of 2015.

RESEARCH

Eggs from stem cells

Stem cells from mice can be coaxed to form viable eggs capable of giving rise to healthy offspring (pictured), according to a Japanese study published on 4 October in *Science* (doi:10.1126/science.1226889, 2012). Last year, the same team from Kyoto University successfully used both embryonic and reprogrammed mouse stem cells to make functional sperm (*Cell* **146**, 519–532, 2011). But, relatively speaking, "sperm is easy," says Jonathan Tilly, a reproductive biologist at the Massachusetts General Hospital in Boston. The new work "accomplishes something very important for the female side of the story." If the approach can be translated to humans, it could provide an unlimited source of eggs for research. See go.nature.com/oe4znR for more.

Katsuhiko Hayashi

Strike a chordoma

Historically, many so-called single nucleotide polymorphisms (SNPs) associated with cancer are linked to only a modest increase in disease risk. But individuals carrying SNPs within the brachyury gene are a whopping five times more likely to develop a rare bone cancer known as chordoma, according to a study published in October (*Nat. Genet.* doi:10.1038/ng.2419, 2012). "The SNP loads the gun," says study author Adrienne Flanagan, of University College London. "It predisposes people to developing [chordoma]." In September, the same team also reported that blocking the brachyury gene, which encodes a transcription factor involved in normal development, stopped cancer growth in human cell culture, further flagging this gene as a potential target for therapy (*J. Pathol.* **228**, 274–285, 2012).

Brain puzzle

Healthy carriers of a known indicator of Alzheimer's disease actually have lower levels of amyloid-beta, the protein fragments that accumulate in the brains of people with the neurodegenerative disease. The surprising finding, reported last month in *Biological Psychiatry* (10.1016/j.biopsych.2012.08.015, 2012), suggests that the high-risk variant of the complement receptor 1 gene may not have a direct cause on driving Alzheimer's progression, as researchers had previously thought. Now, further work is needed to "understand how genes interact to understand how they influence beta amyloid," says Madhev Thambisetty, a neurologist at the US National Institute on Aging in Bethesda, Maryland, who led the study.

Speedier drug reviews linked to safety problems

Priority reviews are often used by drug regulators to help patients gain quicker access to lifesaving medicines. That haste, however, comes with a cost. According to a study published last month by Joel Lexchin, a health policy researcher at York University in Toronto, drugs approved by Health Canada between 1995 and 2010 following an expedited review were almost twice as likely to be slapped with a black-box safety warning or get withdrawn from the market compared to drugs approved via the standard review process (*Arch. Intern. Med.* doi:10.1001/archinternmed.2012.4444, 2012). Lexchin controlled for both the types of drugs given priority review and the severity of the disease treated. As such, "it is the length of time that is taken to review the drugs that accounts for the difference between standard and priority review drugs," he told *Nature Medicine*.