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Containing risk

The ad-hoc proliferation of high-security biological labs must be controlled, and should be tied in more closely to broader research and public-health goals.

At the heart of any effort to control proliferation or improve safety, whether it concerns plutonium, toxic chemicals, disease agents or anything else, is the ability to take an inventory — to know with some confidence just how much material exists and where it is being kept. So it's disturbing to realize that authorities in many parts of the world often have only the vaguest notion of how many high-level biosecurity facilities exist on their territory, and that so few of them can document what stocks of deadly biological pathogens such facilities hold and exchange.

These labs have multiplied over the past decade as a consequence of concerns about bioterrorism following the terrorist attacks of 11 September 2001, and the appearance of public-health threats such as SARS and avian flu. New construction is already set to boost the number of biosafety-level-4 (BSL-4) labs in the European Union (EU) from 6 to 15 or more, and that in the United States from 7 to 13. BSL-4 is the highest level on the World Health Organization's rating scheme, and is required for labs that work with deadly, highly contagious pathogens, such as Ebola, Marburg, Nipah or Lassa viruses, for which no treatment exists.

Meanwhile, a September report by the US General Accounting Office (www.gao.gov/new.items/d09574.pdf) estimates that the number of American BSL-3 facilities has more than trebled, from around 415 in 2004 to 1,362 last year, But the report emphasizes the uncertainties. "The universe of BSL-3 and -4 laboratories is unknown," it states. "[T]here are likely other laboratories that we were unable to identify." Stocktaking in Europe is no better.

Building adequate high-containment infrastructure is important, in the sense that high-containment labs are essential for understanding exotic viruses, analysing samples from outbreaks and researching therapeutics and vaccines (see page 154). But the uncontrolled and uncoordinated nature of the growth of such facilities is problematic. Multiple agencies, countries and institutions too often pursue their own agendas, building biosecurity facilities with insufficient consideration for one another's plans or asking whether so much overall new lab capacity is needed — especially given the attendant risks of proliferation, accidental human infections and lab escapes.

The relevant authorities should undertake a much broader evaluation of such questions across institutions, focusing on how many and what sort of facilities are needed, if any at all; where they should be located; and how they could be coordinated to best suit the goals of broader research and public-health agendas. In the EU, for example, BSL-4 labs are currently concentrated in western and northern Europe. But they are lacking in southern and eastern Europe, where the BSL-4 class Crimean–Congo haemorrhagic fever virus is endemic.

"The logic of having some sort of overarching oversight structure is sound."

Fortunately, such evaluation seems to be getting on the agenda. The EU has created a pilot for a proposed EU-wide network, the 'European research infrastructure on highly pathogenic agents' (ERINHA), which seeks to better coordinate the construction and operation of BSL-4 labs (see page 146). This is a step in the right direction, and should be complemented by a similar initiative for Europe's BSL-3 labs. Meanwhile, the General Accounting Office report recommends that the National Security Advisor, in consultation with federal agencies, designate a single body to evaluate all US high-containment labs. This recommendation should be taken forward.

In both cases, the logic of having some sort of overarching oversight structure is sound. Such structures could also provide much-needed mechanisms for the sharing of best safety and security practices and experience. Excessive oversight is undesirable. But the uncontrolled growth of labs, and the spate of instances of lax security in the United States in recent years (see *Nature* **461,** 577; 2009), indicate the need for greater independent oversight, and less laissez-faire. ■

No turning back

Spain should not use the recession as an excuse to stall plans to boost its scientific enterprise.

The past two decades have seen Spain transform itself from a scientific backwater into an internationally respected player in the research world. Much of that progress has occurred since the Socialist Party swept to power in 2004, pledging to turn Spain into an innovation economy (see *Nature* **451,** 1029; 2008).

During the Socialists' first term in office, for example, they doubled the science budget to just over €8 billion (US$12 billion), pushing it above 1.1% of the country's gross domestic product (GDP) and much closer to the European Union average of 1.8% of GDP. The party was re-elected in 2008, having pledged to cut bureaucracy and push funding for research to a target of 2% of GDP. Almost immediately it set up the Ministry of Science and Innovation, finally extracting science from under the purview of the education ministry. Cristina Garmendia, a molecular biologist who has founded several successful biotechnology companies, was appointed as head of the new ministry.

Since then, however, the momentum has been lost. Garmendia's political inexperience has shown. She was slow to build up a functioning ministry, and has not developed the necessary political clout to convince the government, now grappling with the global recession, to stick to its vision for science.

Granted, the government has bolstered financial support for the country's budding biotechnology and other high-tech industries. But

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its draft budget for 2010, unveiled in September, proposed a cut of 45% for directly funded basic research. An outcry from the research community reduced that cut to 15%, and an extra 2.8% top-up for the science ministry is likely to emerge during parliamentary discussions. But this would still be a heavy blow to the country's research base.

Meanwhile, the government has yet to produce its much-heralded law for science. This was supposed to create an independent granting agency and reform the country's inflexible system of academic recruitment, under which university professors and government scientists are civil servants with an automatic right to employment until they retire. Dates for the law to be presented to parliament have been set and then withdrawn, apparently because some parts of the government do not want to exclude scientists from rules that apply to other government employees. Hiring new researchers continues to be a difficult and slow process, and it is almost impossible to offer a competitive package of salary and research money. The science ministry now says that the reform law will be presented to parliament before the end of the year, but the research community is losing faith that this will happen.

In the long-term, industry will be poorly served by a failure to develop and maintain a strong basic-research base. Spain is ill-advised to wed itself to the simplistic and outdated notion that a country can live on transferring knowledge while running down the knowledge generator. This is not a wise way to respond to the financial crisis.

Spain would do far better to emulate the commitments made last month by two other European nations as they too wrestle with the economic downturn. In Germany, a rich country with a near-stagnant economy, the centre-right government is cutting back public expenditure for 2010 everywhere except research and education, to which it is giving huge increases (see *Nature* **462,** 24; 2009). In Greece, a poor country with an economy in recession, the centre-left government says it will likewise cut public expenditure for 2010 everywhere except research and education, to which it is giving modest increases. The governments in both countries also plan to remove some of the red tape that restricts research.

Spain enjoyed one great period of intellectual brilliance in the early nineteenth century, referred to as its Silver Age. Until recently, Spanish scientists were optimistic that they were on their way to a second Silver Age. Now they joke that Spain is heading towards a Bronze Age. But they're not laughing. ■

A healthy get together

The recently launched World Health Summit offers a rare chance for dialogue.

"Medicine is a social science," wrote the German pathologist Rudolf Virchow in 1848, "and politics is nothing more than medicine on a large scale."

That declaration by Virchow, a social activist and champion of scientific medicine who thought that medicine needed to "enter the political and social life" to fulfil its "great task", has lost little of its relevance today. Many of the problems of medicine are indeed social, and are often best addressed politically on a national or even global scale. Even as ageing populations are spending their last decades in need of medical care, expectations of medicine are rising with the promise of therapies based on genomic information or on stem cells, for example, that could be cripplingly expensive for health-care systems.

So it is, perhaps, fitting that the first World Health Summit, which was designed to address this divergence of the possible and the affordable in health care, took place on 15–18 October at the Charité in Berlin, the hospital where Virchow did his most important work.

The World Health Summit, which is planned as an annual event, grew out of the disappointment felt at the Charité when the G8 economic summit met in Germany in 2007 and — aside from a commitment to fight AIDS in Africa — failed to make health a priority on its agenda. Former Charité president Detlev Ganten teamed up with Axel Kahn, president of Paris Descartes University, and together they organized the M8 Alliance. It is a consortium of major medical institutions from eight leading countries that has taken responsibility for organizing this year's summit and all those that will follow.

The intent of the first health summit was not to produce specific decisions, but to provide a forum for dialogue and consensus-building among the world's many players in health — the full range of stakeholders who rarely have the opportunity to gather at the same time. Participants ranged from the researchers who develop high-tech therapies, to the politicians and funding agencies who support those developments, to the industries that will commercialize them, the physicians who will apply them and the health-care providers who will have to decide whether to pay for them.

In one session, for example, researchers working on regenerative medicine in the public and private sectors presented their latest thoughts on how to deliver stem cells into the body. And then they dashed eagerly into the next session where health-care providers presented their latest thoughts on reimbursing the cost of therapies based on regenerative medicine.

Such wide-ranging interchanges have been all too rare in the health arena, even as it becomes more important for medical researchers and health-care providers — and all stakeholders in between — to understand each others' potential and constraints. Health needs to be treated in the same comprehensive fashion that nations treat globalization, trade and finance. The first World Health Summit did not attract wide media attention. But over the years, it could and should develop some of the same political clout and visibility accorded to the G8.

The first summit also took place just weeks before the twentieth anniversary of the fall of the Berlin Wall, adding further historical resonance to the occasion. The Charité ended up in East Berlin after the Second World War. Although it had been a privileged research centre under the communist regime, the disappearance of the wall revealed the centre's infrastructure to be crumbling and its science outdated. It is testament to the success and confidence of reunited Germany that the Charité is now ranked as one of the top medical universities in the country, and is able to showcase such an important global initiative on its campus. That initiative is exactly the sort that Virchow would have championed, had he lived today. ■

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