The bill is also expected to reduce costly patent litigation by ensuring, through a review procedure after the patent is granted, that all patents describe working inventions. 'Patent trolls' — individuals and companies who attempt to make money by filing broad patents, then suing those who use similar technologies — will not welcome the move, but legitimate inventors will. A third important change is a presumption that the US Patent and Trademark Office will, at Congress's discretion, be able to keep the filing fees that it raises each year, rather than see them diverted to other parts of the government. That will leave the office with extra resources to clear its backlog of patent applications.

An earlier version of the bill would have prevented Congress from diverting the funds at will, but that provision was watered down by politicians keen to retain congressional control of the budget. The bill also misses an opportunity to loosen constraints placed on research and medicine by gene patents. Researchers or companies who independently develop diagnostic tests based on genes that have already been patented risk being sued for patent infringement. In July, a New York appeals court underscored that risk when it upheld the rights of Myriad Genetics, a genetic-testing company in Salt Lake City, Utah, to enforce its patents on genes implicated in breast and ovarian cancer.

As early as 2006, a National Academy of Sciences panel recommended that Congress consider an exception to the enforceability of patents on genes used for diagnostic tests, to allow independent confirmation of the results. And the Secretary's Advisory Committee on Genetics, Health, and Society — a panel convened by the Department of Health and Human Services — found in 2010 that gene patents were stifling research and restricting patients' access to second opinions. The committee strongly recommended exemptions for anyone conducting independent tests or basic research. An amendment to the America Invents Act could have implemented such exemptions, but now the bill merely calls for yet another study of the issue.

"Gene patents stifle research and restrict patients' access to second opinions."

Still, the bill's passage with bipartisan support is a precious exception to the polarization that has characterized US political debates as campaigns for the 2012 presidential election get under way. Given that attempts to update the US patent system have failed repeatedly in recent years, researchers should be happy to see reform implemented at last. ■

Disease priorities

Non-communicable diseases are on the rise. Emerging nations need to take them seriously.

Although much of the world's population remains poor, most people die from diseases once associated with wealth: cancer, heart disease, diabetes, to name a few. Next week in New York, a high-level summit run by the United Nations will put the threat of such non-communicable diseases (NCDs) firmly on the international agenda. The summit is likely to yield few surprises. A draft of the political declaration, agreed on last week, is short on specific proposals and postpones debate on controversial measures such as mandatory salt reductions in foods. But by recognizing the threat of NCDs and pledging action, it marks a victory for public-health experts and non-governmental organizations, which have long argued that in a world of emerging economies and successful campaigns against infectious diseases, it is time to tackle what many call an 'epidemic' of NCDs in poorer nations.

The sheer number of deaths from NCDs — 36 million in 2008, or 63% of all deaths worldwide — certainly suggests that these diseases should share the global health agenda with communicable diseases, such as malaria, AIDS and tuberculosis. In fact, infectious diseases have lit the way forward for NCDs by showing how to put diseases of the poor on the political agenda and vastly increase support for their control. But they have their limits as a metaphor for the challenge of NCDs. In key respects, both the problem and potential solutions are very different.

There's no question that these diseases are a big problem in poorer nations, but how big is far from clear (see page 260). The World Health Organization and disease groups have a tendency to emphasize headline-grabbing figures. But the number of deaths from NCDs does not tell the full story. More to the point is the age at which a disease strikes and, therefore, the years of life that it steals. On that score, infectious diseases remain a much bigger burden, at least in poorer countries; HIV/AIDS continues to wreak devastation in sub-Saharan Africa.

Talk of an epidemic of NCDs also omits the fact that in poorer countries, such diseases are driven more by demographic changes than by behavioural factors such as obesity and smoking. In many poor and middle-income countries, the age structure of the population is changing, as birth rates fall and the large number of people born in past decades enter middle age. As a result, more people are likely to develop an NCD, which mostly affect older people.

How these trends will play out is unclear. Projections of NCD mortality are too often accepted without question, even though they are based on rudimentary models that rely on patchy data from poorer countries, combined with historical trends on the incidence of ailments in wealthier countries and simple parameters such as expected GDP growth. Projections of NCD mortality in poorer countries should be treated with healthy caution. The summit's call for a way to improve monitoring and data collection on NCDs is therefore welcome and long overdue.

Some of the countries where NCDs are now surging have an opportunity to control them much more quickly than wealthier countries have in the past. In sharp contrast with infectious diseases, which were often neglected, NCDs have been the prime focus of almost all biomedical research and drug development in rich countries. An array of drugs and technologies already exists, as do decades of best practice. Emerging economies could leapfrog richer countries by tapping into these advances.

Poorer countries could also vastly expand access to the many cheap drugs already available there for NCD control, such as statins and aspirin for heart disease, and by implementing well-understood and effective prevention measures to reduce risk factors, such as banning smoking in the workplaces, bars and restaurants. The international community can help by designing public-health programmes and ensuring a supply of inexpensive drugs.

In another respect, NCDs are a much less tractable problem than infectious diseases, and are less well suited to international intervention. When donors commit funds for a vaccination campaign, for example, they can confidently predict the number of lives their investment will save. Efforts to control infectious diseases tend to be faster and simpler than the more drawn-out and complex task of treating chronic diseases, and of addressing risk factors such as obesity and smoking.

Ultimately, a sustained assault on NCDs will require strong national health systems. There the international community can at best catalyse and help to shape efforts. But only national governments can sustainably fund the bulk of health infrastructure and staff. It can only be hoped that the new international focus will spur emerging economies and poorer nations to give NCDs more attention in their funding prioritizations. International summits can help, but it will be down to national governments to really make a difference. ■

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