Contract has not meant better care, say doctors

Lisa Hitch LONDON

Only 12% of consultants in England believe that patient care has improved under the new consultants’ contract, a critical report by the National Audit Office (NAO) says.

The contract was implemented in 2003 and was supposed to provide better services for patients; increase productivity through improved management of consultants’ work; and reward consultants for their NHS work through higher pay. It is based on an agreed “job plan” made up of 10 programmed activities of four hours each. The contract is the first update since the NHS was formed in 1948.

But a survey from the NAO of 2361 consultants compared time spent before and after implementation on patient care and showed no increase in time spent on direct care.

It also found that although consultants are paid an average of 25% more for doing the same or fewer hours than three years ago, their morale has fallen, with some admitting to adopting a “clockwatching attitude.” Hours of work have decreased since the contract came in, from an average of 51.6 to 50.2 a week.

“The contract has yet to deliver the full value for money to the NHS and the public that the Department [of Health] expected,” it says.

In negotiations it was agreed that the contract would be based on an average working week of 43 hours, although most consultants work longer hours.

Staff at 208 NHS acute and mental health trusts were asked their opinion of the contract. Most (90%) thought the contract had been implemented in a hurry. Although half felt that their job plan did not reflect their working hours, 70% thought that their new salary better reflected their workload. Only 11%, however, thought that time spent on clinical care had increased.

Costs seem to have been underestimated by the Department of Health, which originally set aside an extra £565m (€831m; $1131m) over three years for the contract but had to add a further £150m after trusts reported that it was more expensive than predicted.

Trusts didn’t limit costs when working out job plans so they agreed to more hours than budgeted for, which led to overspending, the report points out. Eighty four per cent of the chief executives asked said that they did not think the contract was fully funded.


Exodus of medical staff strains Iraq’s health infrastructure

John Zarocostas GENEVA

The exodus of Iraqi doctors fleeing the escalating violence—including targeted threats, kidnappings, and murder of medical staff—is threatening the country’s strained health infrastructure, say humanitarian relief experts.

“Health facilities are stretched to the limit as they struggle to cope with daily emergencies caused by mass casualties,” said Angelo Gnaedinger, director general of the International Committee of the Red Cross (ICRC).

Mr Gnaedinger told a recent conference in Geneva on the needs of refugees and internally displaced persons in Iraq and in neighbouring countries, “Patients and medical staff are threatened or targeted. As a result, medical personnel are fleeing the country in large numbers, leaving health facilities short of staff.”

A report by the ICRC published this month on the situation of civilians in Iraq says, “According to the Iraqi Ministry of Health, more than half the doctors have left the country.”

At the end of last year, 18 000 of the 34 000 doctors had left the country, according to reports confirmed by Iraq’s Ministry of Health, say ICRC officials.

The UN Refugee Agency (UNHCR) estimates that about 1.9 million Iraqis are displaced within the country, and that as many as two million have fled abroad—mainly to neighbouring countries, such as Syria and Jordan.

A 2006 study by the Washington based Brookings Institution, cited by an International Federation of the Red Cross and Red Crescent Societies report on Iraq, estimated that 2000 doctors had been killed and 250 kidnapped.

The Iraqi Red Crescent Society, which cooperates closely with the ICRC, has had 14 of its staff and volunteers killed and 45 abducted, 12 of whom remain unaccounted for, and has witnessed numerous attacks on its offices, warehouses, and convoys, says Mr Gnaedinger.

But some senior UN officials say that the Brookings Institution estimate is rather conservative and that the numbers are probably much higher but difficult to quantify.

WHO officials say it is hard to estimate numbers of doctors killed or kidnapped because of the lack of accurate data.
US Supreme Court approves ban on “partial birth abortion”

Janice Hopkins Tanne NEW YORK

The nine member US Supreme Court ruled five to four last week to ban the “partial birth abortion” procedure in the United States. The court upheld a federal law banning the procedure that was passed by Congress in 2003. The law had been challenged in the courts for lacking an exception to protect women’s health, not just their lives.

Many commentators called the decision the most important ruling on abortion in 30 years, and women demonstrated in front of the Supreme Court in protest at the ruling (right).

Abortion will be an important topic in next year’s presidential election. Potential Democratic candidates criticised the court’s decision and potential Republican candidates approved it, including former mayor of New York Rudy Giuliani, despite the fact that he has said he supports abortion rights.

Seven years ago, the Supreme Court overturned a state law that banned “partial birth abortion” because it did not have an exception to protect women’s health (BMJ 2004;328:1398), and it has several times struck down abortion laws that did not have a health exception. The federal law states that the procedure is never medically necessary and the Supreme Court upheld the federal law despite its previous decisions requiring a protection for women’s health.

The law defines a partial birth abortion as a procedure in which the doctor “deliberately and intentionally vaginally delivers a living fetus until, in the case of a headfirst presentation, the entire fetal head is outside the body of the mother, or, in the case of a breech presentation, any part of the fetal trunk past the navel is outside the body of the mother, for the purpose of performing an overt act (usually the puncturing of the back of the child’s skull and removing the baby’s brains) that the person knows will kill the partially delivered living fetus.” The number of such abortions carried out each year in the US is thought to be between 2200 and 5000.

The American College of Obstetricians and Gynecologists said that the procedure might be the safest but its view had been disregarded. Dr Douglas Laube, president of the college, said that the decision “leaves no doubt that women’s health in America is perceived as being of little consequence.”

The college, Planned Parenthood, the American Civil Liberties Union, the Center for Reproductive Rights, the National Abortion Federation, and many other organisations criticised the court’s decision. They said it was a step towards prohibiting abortion. Pro-life, anti-abortion groups applauded the decision.

Breast cancer fell when women stopped hormone replacement

Janice Hopkins Tanne NEW YORK


Women’s use of hormone replacement fell substantially after the Women’s Health Initiative study showed an increased risk of cardiovascular events and breast cancer in women using a combination of oestrogen and progesterone called Prempro (JAMA 2002;288:321-33, 366-8).

Incidence of breast cancer fell sharply between 2002, when the JAMA study results were released, and levelled off in 2003, said researchers from MD Anderson Cancer Center, the US National Cancer Institute, and the Los Angeles Biomedical Research Institute. The decrease occurred only in women aged at least 50 and was more evident in cancers that were oestrogen receptor positive. Their study, based on data from nine cancer registries in the surveillance epidemiology and end results (SEER) programme of the National Cancer Institute, includes about 9% of the US population.

In contrast, in the 1990s, incidence of breast cancer increased in older women by about 0.5% a year. Although other factors might have had an effect, “only the use of hormone-replacement therapy changed substantially between 2002 and 2003,” the authors write.

In 2001-4, when incidence in older women was falling, breast cancer among women younger than 50 rose by 1.3%.

By 2005, prescriptions for Prempro, the combined hormone replacement therapy pill, had dropped 90%, and those for conjugated equine oestrogens by 60%. Donald Berry, chairman of biostatistics at MD Anderson Cancer Center in Houston, Texas, told the BMJ, “It’s pretty likely that hormone replacement therapy doesn’t cause breast cancer but fuels it,” he said. There is “a possibility” that some breast cancers might remain indolent but are encouraged to grow by hormone replacement, he said.

When a woman stops hormone replacement, the cancer might slow its growth, or stop, or even regress. “The rapidity of change [of incidence in the study] suggested that clinically occult breast cancers stopped progressing or even regressed after discontinuation of the therapy,” the authors wrote.

As for the effect of hormones in oral contraceptives, the study did not look at, he told the BMJ, “We don’t know.”

Stopping postmenopausal hormone replacement might delay the occurrence of clinically detectable tumours or might lead to long term reduction.
Report recommends tighter legislation to reduce traffic injuries

Susan Mayor LONDON

Better legislation and its enforcement are needed to reduce the number of deaths and injuries associated with road traffic crashes in young people throughout Europe, a report published by the World Health Organization warns this week.

Almost 32,000 people younger than 25 years in the WHO European region die after injuries caused by road traffic every year, making it the third leading cause of death in this age group. About half of the children younger than 15 years old who are killed die as pedestrians, whereas people aged 15-24 years are most likely to die while driving a car or motorcycle.

The policy briefing says that children and young adults need special consideration because they may not have the necessary skills and experience to handle road environments that have been designed for adults. Some of the factors that put them at more risk include speed; alcohol; not being conspicuous; not using crash helmets, seatbelts, and child restraints; and design of roads and vehicles that lack inherent safety features.

Russia, Lithuania, Latvia, Portugal, and Greece are the countries with the greatest mortality caused by road traffic among 0-24 year old people.

The policy briefing, “Youth and Road Safety in Europe,” is available at www.who.org.

Abstinence education has no effect on US teenagers’ sexual activity

Janice Hopkins Tanne NEW YORK

Although the United States spends about $88m (£44m; €65m) a year teaching teenagers to abstain from sex outside marriage, young people in the programmes are just as likely to have sex as those who don’t receive counselling, a new study says.

Teenagers who received abstinence education did not delay sexual activity any longer than those in a control group. When they became sexually active they had the same number of partners and were as likely to use condoms or other contraceptives as those who had not been counselled.

Sharon Camp, president and chief executive officer of the Guttmacher Institute, which studies reproductive issues, said, “This rigorous, well designed study adds to and confirms previous research findings that abstinence only education programmes are ineffective and a waste of taxpayer dollars.” She called for more comprehensive programmes that not only teach abstinence but also provide information on contraception and safe sex.

Federal funding of abstinence programmes was established by the 1996 Personal Responsibility and Work Opportunity Reconciliation Act. Individual states provide additional funding. The US has more than 700 programmes.

A study commissioned by the US Department of Health and Human Services and conducted by Mathematica Policy Research looked at 2507 teenagers from four groups representing urban and rural areas and different socioeconomic levels. The students were randomly assigned to a programme group that received abstinence education or to a control group that received the usual health, family life, and sex education services in their schools or communities.

Students were 11 or 12 years old when they began the programmes in 1999 and the programmes lasted one to three years. The study followed them for four to six years, at which point their average age was 16.5 years.

The report is at www.mathematica-mpr.com.
IN BRIEF

US approves bird flu vaccine: The US Food and Drug Administration approved a human vaccine against the H5N1 influenza virus on 17 April, marking the first such approval in the United States. The vaccine, manufactured by Sanofi Pasteur, will only be available through public health officials for people who are at increased risk of exposure to H5N1.

Scottish charity offers funding for pain research: Medical Research Scotland is inviting applications for research projects on pain relief after it recently received an anonymous legacy of almost £500 000 (€740 000; $1m), which stipulated the money be used for research into pain relief. Grants for research projects will be to a maximum of £150 000. See www.medicalresearchscotland.org.uk.

Prosecutors drop appeal against man cleared of helping in suicide: Public prosecutors in the Netherlands have dropped their appeal against the acquittal of philosopher Ton Vink, of the suicide support group Horizon, who had been charged with helping a 53 year old woman commit suicide. Prosecutors could not prove his actions crossed the line between offering support and actively directing her actions (BMJ 2007;334:228-9).

Psychotic psychiatrists would prefer atypical antipsychotics: A survey of psychiatrists’ preferences for treatment should they become mentally ill shows that for psychosis atypical antipsychotics were generally favoured, with risperidone getting most votes. The survey, which had a response rate of 59% from 921 psychiatrists, shows that psychotherapy and antidepressants were both endorsed as treatments for mild to moderate depression, and citalopram, fluoxetine, and venlafaxine were the three preferred antidepressants. Electroconvulsive treatment received the backing of a large majority of psychiatrists (Scottish Medical Journal 2007;52:17-9).

Patients will top up inadequate services, group claims: NHS patients in the United Kingdom will turn to the private sector as a result of cuts and longer waiting times, according to a report for the campaign group Doctors for Reform. The authors include Karol Sikora, professor of cancer medicine at Imperial College School of Medicine. He says that patients are “topping up” NHS care with private treatments in places where services are patchy. Free at the Point of Delivery: Reality or Political Mirage is at www.doctorsforreform.com.

Inquiry will study removal of Sellafield workers’ body parts

Owen Dyer LONDON

An independent inquiry will look into claims that body parts were removed from deceased workers at Sellafield nuclear power plant in Cumbria without their families’ consent.

Michael Redfern QC, the barrister who led the inquiry into the retention of children’s organs at Liverpool’s Alder Hey Hospital, will examine what procedures were followed, whether consent was obtained, and what use was made of the tissues, said Alistair Darling, the trade and industry secretary, last week.

Sixty five cases in which tissue was taken from deceased former workers have been identified by British Nuclear Fuels, the company that today operates Sellafield. The workers all died between 1962 and 1991.

Mr Darling said that medical records indicated that 23 samples were taken after a coroner’s inquest and 33 after a coroner’s postmortem examination. Three requests for analysis arose from legal claims, while another was made by an individual before death. Yet another was carried out on what was described as a “legally correct basis.” In the four remaining cases there is no clear record of what prompted the request for tissue samples, he said.

Mr Darling stressed the limited nature of the records. He said, “They do not provide an audit trail which would show in every case who asked for such an examination under what authority and for what purpose. Nor do they disclose whether or not the appropriate consent from next of kin was received.”

Hospital patients should be assessed for risk of venous thromboembolism

Susan Mayor LONDON

Every hospital patient should be assessed for their risk of developing venous thromboembolism (VTE), an expert working group has recommended to the Department of Health in England. The latest figures show that about 30 000 people die from venous thromboembolism a year in English hospitals. The government set up the expert working group to explore how best practice and guidance could be promoted and implemented to reduce the risk of venous thromboembolism.

The group recommends a mandatory documented assessment of the risk of the condition for every patient admitted to hospital and evidence based interventions according to their level of risk. The Department of Health should set core standards for the NHS and the independent sector for assessing the risk, and hospitals’ compliance with these standards should be monitored by the Healthcare Commission, the group recommends. The report from the expert group comes in the same week as publication of evidence based guidance from the National Institute for Health and Clinical Excellence (NICE) about preventing venous thromboembolism in patients having surgery.

The guidance recommends...
Reform of patients’ forums unnecessary, MPs say

Zosia Kmieciowicz LONDON

A bill going through the UK parliament that abolishes patients’ forums and replaces them with larger bodies has been criticised by MPs. They say evidence is lacking of any benefit and that the bill risks losing the patient volunteers who have brought about valuable changes in the health service over the past three years.

The Local Government and Public Involvement in Health Bill proposes establishing Local Involvement Networks (LINks) in the place of patients’ forums, 400 of which have been established in England since December 2003.

The new bodies will cover social care as well as health and are intended to attract a wider and more representative sample of the community to consult on the provision of services, including young people and ethnic minorities, something patients’ forums have failed to do.

However, in a report, MPs from the cross party health committee conclude that they are “not convinced that PPIFs [patient and public involvement forums] should be abolished.”

They add that patients’ forums could have been allowed to evolve into the larger organisations envisioned by the government in its proposed bill by merging them.

“Merging the existing PPIFs to form LINks would have been much less disruptive for volunteers and would have reduced the risk of significant numbers of them leaving. Once again the Department [of health] has embarked on structural reform with inadequate consideration of the disruption it causes,” says the report.

MPs are also angry that the bill modifies section 11 of the Health and Social Care Act, 2001, which places a duty on health authorities and trusts to consult patients and the public when planning or changing the services that they provide. Under amendments, consultation is only needed for “significant” changes—a modification the report says is unnecessary and which will weaken the obligation for providers to consult patients about changes to services.

The report calls for greater clarity as to the functions and remit of LINks, their funding, and how they will be made accountable, something which is not made clear in the proposed bill, it says.

Sharon Grant, chairwoman of the Commission for Patient and Public Involvement in Health, said, “We concur with its [the report’s] substantial conclusion that the current proposals to reform the system for a public voice in health are flawed.”

The Department of Health announced in July this year that the commission, which was set up to oversee the forums, is to close in July 2005.

The report, Patient and Public Involvement in the NHS, is available at www.parliament.uk

More than 90% of US doctors receive drug company favours

Bob Roehr WASHINGTON, DC

Ties between American doctors and the drug and medical devices industries are ubiquitous, concludes a large national US survey of doctors.

An analysis of the 1662 responses to the survey, which was supported by the non-profit Institute on Medicine as a Profession, found that 94% of respondents reported some form of relationship with drug companies (New England Journal of Medicine 2007;356:1742-50). The most common benefits of such relationships were receiving food in the workplace (reported by 83% of respondents) and receiving free drug samples (78%), while more than a third (35%) were reimbursed for attending professional meetings or training, and a quarter (28%) were compensated for consulting or enrolling patients in clinical trials that were beyond the cost of those trials.

The authors found differences between the six medical specialties studied—anesthesiology, cardiology, family practice, general surgery, internal medicine, and paediatrics—as well as by sex and place of employment.

They divided industry support into four categories: samples, gifts, reimbursements, and payments. They found that cardiologists were the greatest beneficiaries of industry largesse in three of the four categories. The exception was reimbursements, where internists scored more highly.

Anaesthesiologists scored moderately highly only in terms of receiving gifts.

Risk of thromboembolism

that most surgical patients are offered compression stockings to wear while in hospital and says that many patients will also benefit from wearing inflatable “boots” in operations.

The guidance also recommends that blood thinning drugs, such as low molecular weight heparin or fondaparinux, should be given to all people having orthopaedic surgery and to other surgical patients who are at high risk of developing thromboembolism. For people having surgery to mend a broken hip, this blood thinning drug should be continued for four weeks.


Venous thromboembolism (above) is known as the silent killer
Former staff at CMAJ launch open access journal

David Spurgeon QUEBEC

Canada’s first paperless, open access, online medical journal was launched last week (www.openmedicine.ca). Its origins lie in a dispute about editorial independence that led to the firing of senior editors at CMAJ, the journal of the Canadian Medical Association, and the resignation of most of its editorial board (BMJ 2006;332:687).

The new journal’s mission is “to facilitate the equitable global dissemination of high-quality health research; to promote international dialogue and collaboration on health issues; to improve clinical practice; and to deepen the understanding of health and health care.” It is not for profit, editorially independent, and will not charge subscription fees or run drug advertisements.

Six of the editorial team at Open Medicine were formerly editors at CMAJ and left after the dispute. Ten editorial board members at CMAJ resigned and now are on the board of Open Medicine.

Open Medicine’s publisher is John Willinsky, a professor in the education faculty of the University of British Columbia. Its co-editors are Anita Palepu, an internist at St Paul’s Hospital, Vancouver, and Stephen Choi, an emergency physician at the Ottawa Hospital.

Dr Palepu, one of the six editors who left CMAJ, says she thinks that the editorial interference at CMAJ led to the move to create the new journal. “It was a catalyst,” she explained.

She said that Open Medicine was applying for charitable status. It hoped to get operating funds from research libraries, institutional memberships, and foundations that share its mission, and also from non-drug, classified, and career advertising. A research group has already offered $C5000 (£2200; €3300; $4500) for three years.

“So, I am encouraged, but I really have no empirical data to say [whether] this is going to work or not.”

Paul Hébert, editor in chief of CMAJ since January, said, “I wish them well. Launching a medical journal is no small feat and it’s very hard work.

“Since I’ve taken on the job, the CMA [Canadian Medical Association] has decided to invest heavily in the journal, and they basically want to make this journal weekly within five years. We’re already increasing and enhancing the quality of the science.”

UK leads initiative to reduce cost of drugs in poor countries

Robert Short LONDON

A new organisation is being set up to increase transparency in the regulation, procurement, distribution, and sales of drugs in developing countries. Its objective is to drive the cost of drugs down to levels that patients can afford.

The UK led initiative, called the Medicines Transparency Alliance, has just had its first stakeholder meeting and will be launched in the coming months. It will run pilot projects in up to nine countries. Its aim is to publish information on the amount, quality, and price of drugs in poor countries; to allow patients to see what they should pay and give them confidence in the quality and safety of the drugs; and to create a forum in each pilot country that will bring together patients, doctors, non-governmental organisations, and those involved in supplying drugs.

Hilary Benn, secretary of state for international development, said at the stakeholder meeting: “One third of the world’s population has no access to the drugs they need to help them fight disease, and up to 30% of drugs available in the poorest countries are fake or substandard. Even when the right medicines are available they are unaffordable for the majority of people in developing countries, with mark-ups of up to 500% by some pharmacists.”

UK led initiative to reduce cost of drugs in poor countries

“Up to 30% of drugs available in the poorest countries are fake or substandard”

The UK Department for International Development is also creating an international advisory body to inform it of new developments and to identify ways to obtain and deliver drugs at sensible prices to the developing world. At an international conference on access to drugs, hosted jointly by the department and the Lancet, the department’s undersecretary of state, Gareth Thomas, challenged the drug industry, non-governmental organisations, and governments to find new ways to ensure that drugs reached people in developing countries at affordable prices.

“Finding new, innovative solutions—through new partnerships and networks, bringing down costs, accelerating research, [and] jumping over legal hurdles—is vital if we are to get serious about improving access to medicines for the poorest people of the world,” said Mr Thomas.

Presentations at the conference showed that success in reducing the cost of drugs in developing countries is not just about obtaining discounts from the industry and engineering flexibility in patent rights—the subjects of media attention. Access to drugs is affected by every aspect of the supply process, delegates heard. Relevant factors included research into and development of treatments for neglected diseases; patent control over the manufacture and sale of drugs; competition with generic drugs; and the supply chain by which the drugs are delivered.
Working in industry’s silken but firm embrace

Geoff Watts | LONDON

“I probably spend more time thinking and talking about science now than I did in academia. Disease states, pathways, cell types . . . every day I’m faced with major scientific issues across a range of areas.”

The man making this surprising observation—surprising to him as well as to me—is Patrick Vallance. Until a year ago he was professor of clinical pharmacology at University College London (UCL); now he’s GlaxoSmithKline’s senior vice president for drug discovery. And nor is his more frequent engagement with science the only surprise he’s encountered since he changed jobs.

“Many of the projects we’re working on in drug discovery are higher risk and more forward looking than some of the things I saw coming through grant panels in academia—the sort of thing that might have been rejected as too speculative. I also realised that I had never previously sat down and talked about what things would look like in 2012 or 2015. That’s an everyday discussion in this industry. There’s no alternative.”

But what prompted him, in his mid-40s, to move into industry? As much as he now relishes the surprise aspects of his work, they clearly don’t account for the job change because he wasn’t anticipating them. So, was it boredom with the academic world, perhaps?

“It certainly wasn’t that I was fed up. I was very happy at UCL running my research group and a big division of medicine.” He had though served for two years on the scientific advisory board of the drug company, enjoyed it, and discovered (another surprise) “a breadth and depth of science and practical outcomes of science, which I found invigorating.”

Although his reasons for accepting GlaxoSmithKline’s offer were, he insists, entirely positive, he imagines that some people will have been thinking predictable thoughts. He laughs: “You’ve sold out; you’re going to be paid more; you’re no longer interested in the same things you were.”

The rewards, of course, can’t be denied. Nor can the facilities. To have met at the company’s headquarters in Greenford, Middlesex, on the date we had agreed would have been tricky for me. No problem, said Vallance’s assistant. The company has a foothold in central London. This turns out to be a smart townhouse in Berkeley Square. And Vallance remarks that the infrastructure and support on which he can now count frees him to do more of the work for which he was hired. It’s a marked departure from an administratively overburdened life as a senior academic.

The work itself involves responsibility for drug discovery—“the part of the process that goes from the initial hit of a chemical on a target through to proof of concept in the clinic”—throughout the whole company. In giving Vallance the job, GlaxoSmithKline knew it was taking on someone who’d been prepared to criticise the industry even while sitting on its scientific advisory board. Giving evidence about clinical trials to a Commons’ select committee on health in December 2004 Vallance said that “some studies funded by industry have been more helpful to marketing than to advancing clinical care” and that “some of the design flaws in commercial studies may be conceived to exaggerate benefit or to obscure access to the clinically important result.”

This conflict between commercial and scientific imperatives is surely what lies at the root of the discomfort that some doctors feel about joining industry. In clinical medicine all decisions (theoretically, anyway) are driven by facts, reason, and benefit to patients.

But drug companies have commercial departments that, although eager to deploy objective evidence if possible, also exploit other forms of persuasion. Image, emotion, prejudice, and a variety of other influences that contribute to successful marketing can lie uncomfortably with the norms and values of scientific medicine.

Vallance concedes that in this respect there can be “tension” within the industry. But pointing out that vested interest isn’t confined to drug companies, he quotes his own experience of attempts to change practice within the NHS and what can happen when reason comes up against entrenched positions or the political realities of the way the service is organised.

“I’m not sure how sound it is, jurisprudentially, to defend your own position by pointing out that the other guy’s behaviour isn’t perfect either. But it’s an understandable response to the holier than thou faction among academic critics of the drug industry.

In his evidence to the select committee, Vallance said that the National Institute for Health and Clinical Excellence (NICE) should consider setting defined targets for new treatments. The idea would be to bring “academics, clinicians, patients’ groups, and industry into the target setting process before a specific product is developed or even considered.”

Meanwhile he would like to see more movement between academia and industry. And not just through career change but for career development periods lasting a few years. Academia, he thinks, could learn a thing or two from the hard realities of industry. As his experience shows, to work within its silken but firm embrace can be intellectually invigorating.