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#### bmj.com

• Hip resurfacing offers no benefits over total hip replacement in some patients

# Restore ward rounds to former glory to improve patient care and team working, say royal colleges

#### Zosia Kmietowicz LONDON

Doctors' and nurses' leaders have called for ward rounds to be restored to the position they once held as the cornerstone of hospital care and for a "concerted culture change" to enable clinicians and mangers to work together to improve quality.

In a joint statement the Royal College of Physicians and the Royal College of Nursing said that ward rounds were often neglected during the planning and organisation of patient care.<sup>1</sup> How and why hospitals conducted ward rounds was variable, and their value to patients and the whole clinical team was often underestimated, the statement said.

However, ward rounds served several functions. They helped establish and refine the diagnosis; reviewed progress, treatments, and investigations; formulated discharge arrangements; communi-



Old style ward round: James Robertson Justice at the bedside in the 1966 film Doctor in Clover

cated with the clinical team and relatives; ensured safety; and provided training.

Reinstating ward rounds that included the whole of the clinical team would help deliver compassionate care in which doctors and nurses worked more closely together, said the statement.

It added, "Ward rounds are critical to developing rapport and building trust with patients, while discharging a duty of care. Ward rounds also enable all individuals involved to express a shared aspiration to make the patient the centre of attention, empowered in his or her own care."

The statement included seven recommendations to make ward rounds more effective in delivering the right care and also in building rapport and trust with patients.

These say that ward rounds should be led by consultants, include a nurse, and be conducted in the morning to allow time for tasks set to be completed the same day. Everyone involved should be briefed before the round. Patients, their carers, and relatives should be given a summary sheet outlining what was discussed.

To promote effective communication and team working, patients' records should be kept centrally, said the statement. And ward round teams should use locally adapted checklists to reduce omissions, improve patient safety, and strengthen multidisciplinary communication. Cite this as: *BMJ* 2012;345:e6622

## Screening for type 2 diabetes doesn't affect mortality at 10 years

#### **Nigel Hawkes LONDON**

Screening middle aged people for type 2 diabetes has no overall effect on the number who die over the next 10 years, concludes a study by the UK Medical Research Council (MRC).<sup>1</sup>

The finding, which came from a randomised trial conducted in the east of England, contradicts earlier modelling studies that indicated that screening for diabetes every five years would reduce deaths by as much as 40%. Simon Griffin, from the MRC's epidemiology unit in Cambridge, said, "Our study was the first robust evaluation of diabetes screening, and the results suggest its effectiveness may have been overestimated. Based on our findings, screening is only likely to benefit the small minority of people living with undiagnosed diabetes and is unlikely to reduce deaths in the general population."

The study, published in the *Lancet*, looked at 15 089 people

aged between 40 and 69 and who had an elevated risk of type 2 diabetes. They were classed as being in the top 25% of those at risk because of their age, sex, and body mass index and whether steroids or antihypertensives had been prescribed to them.

They were invited to attend a single screening and were compared with 4137 controls who were not invited to screening. The mean duration of follow-up was 9.6 years, in which time there were 1532 deaths among those invited to screening and 377 among the controls, giving a mortality hazard ratio of 1.06 (95% confidence interval 0.9 to 1.25). When deaths were broken down by cause—cardiovascular, cancer, or diabetes related—the difference in mortality between the screened and unscreened groups remained statistically insignificant. Cite this as: *BM*/ 2012;345:e6687

### Horatio's garden gives spinal injury patients a place of escape

#### Annabel Ferriman BMJ

Victoria Holton, a former spinal cord injury patient, is pictured in a garden that was opened last week at the Duke of Cornwall Spinal Treatment Centre, Salisbury, in memory of Horatio Chapple, who was killed at the age of 17 by a polar bear while on an expedition to Svalbard, Norway, last year.

Horatio, whose father is a consultant spinal surgeon at the centre, volunteered at the unit during his school holidays and was inspired by the patients to study medicine. He conducted the research project that identified the patients' need for a garden. He found that patients wanted to be outside in the fresh air, away from the hospital ward. They asked for a beautiful place to escape to—somewhere they could be with friends and relatives.

The garden has been funded by charitable donations after Horatio's death and was designed by Cleve West, who has won the "best in show" prize at the Chelsea Flower Show for the past two years.

A working area allows patients to use the garden as part of their rehabilitation. A greenhouse is fitted with staging built to wheelchair height, and there are raised beds and a work station for patients to grow flowers, vegetables, and herbs.

For more information go to www.ssit.org.uk. Cite this as: *BMJ* 2012;345:e6648



Victoria Holton enjoys the new garden in Salisbury



Barbara Hakin (left) was accused by Phil Hammond of prioritising targets on waiting over patient safety

# GMC investigates government's director of commissioning development

#### **Clare Dyer BMJ**

The UK regulator of doctors, the General Medical Council, is investigating Barbara Hakin, national managing director for commissioning development at the Department of Health for England, over an allegation that in her previous job she prioritised national targets on waiting times at the expense of patient safety.

The investigation relates to Hakin's time as chief executive of the East Midlands Strategic Health Authority.

Hakin is subject to the GMC's jurisdiction because she remains on the medical register as a GP, the role she had before moving into management in 2000. The complaint was lodged by the journalists Phil Hammond, who is also a doctor, and Andrew Bousfield, who sent the GMC emails, letters, and board minutes they uncovered while researching "Shoot the Messenger," a special report on whistleblowing for the satirical magazine *Private Eye*, published in July 2011.

The solicitors Field Fisher Waterhouse, which the GMC has asked to look into the complaint, are expected to interview Gary Walker, former chief executive of United Lincolnshire Hospitals NHS Trust.

Hammond and Bousfield alleged in their letter to the

GMC that Walker wrote to the chief executive of the NHS, David Nicholson, in July 2009 to complain that Hakin was putting him under improper pressure to meet targets when the trust's hospitals were overfull.

He was sacked, allegedly for swearing, and brought an employment tribunal claim for unfair dismissal, which was settled for a reported £500000 (€625000; \$810000). The compromise agreement included a gagging clause that prevented him speaking about his experiences. However, this would not have stopped him telling his story to the regulator. Cite this as: *BMJ* 2012;345:e6639

# GMC accuses cardiologist of submitting trial data to a congress knowing they were wrong

#### Clare Dyer BMJ

A consultant cardiologist who took part in a clinical trial of a US made heart device is facing accusations by the UK medical regulator that he submitted an abstract to an international congress knowing that the data in it were wrong.

Michael Mullen, of the Heart Hospital in London, faces a two week hearing next month at the Medical Practitioners Tribunal Service in Manchester. Mullen, formerly of London's Royal Brompton Hospital, is one of two former investigators on the MIST (migraine intervention with STARFlex technology) trial who stand accused by the General Medical Council of misconduct over their part in the trial.

The MIST trial was designed to test the STARFlex device for closing patent foramen ovale as a possible cure for migraine. It hit the headlines when the other principal investigator, Peter Wilmshurst, was sued for libel in the UK courts by the device's US based manufacturer, NMT Medical, over comments he made at a US cardiology conference.<sup>2</sup>

The libel case, which eventually collapsed when NMT went into liquidation, was highlighted in a

### NFWS

# Pregnant women in UK are offered whooping cough vaccine to protect newborns as cases and deaths rise

#### Matthew Billingsley BMJ

Pregnant women in the United Kingdom are being urged to be vaccinated against whooping cough to protect their babies against the virus.

The recommendation from the Department of Health for England follows new figures showing that 10 people, all infants under 12 months old, have died from whooping cough in the UK so far this year (nine in England and one in Northern Ireland). This is the highest mortality since 1982, when there were 14 deaths.

Whooping cough has increased in incidence in England and Wales since 2011, when there were 525 reported cases and five deaths. So far this year 4791 cases have been reported. Most of the severe cases are being seen in infants aged less than 2 months, before childhood vaccinations start.

England's chief medical officer, Sally Davies, said, "We are going to give this vaccine to the mothers so they make an antibody against it [whooping cough] which will travel across the placenta into the baby. This will protect the baby from whooping cough up to the time of the first immunisation, which is at eight weeks."

The health department said that the vaccine should be offered to the 650000 pregnant women in the UK when they are 28-38 weeks into their pregnancy during routine antenatal appointments. Women who have already been immunised should be vaccinated again to boost their immunity.



Women should be offered the vaccine at 28-38 weeks into their pregnancy

Although billed as a temporary measure, the vaccination of pregnant women will continue until numbers of cases begin to subside.

David Salisbury, director of immunisation at the health department, said that the UK Joint Committee on Vaccination and Immunisation carried out an options analysis to decide the best way to combat the "significant problem" of rising cases of whooping cough.

"The vaccine that we are offering to pregnant women has been recommended by experts, and a similar vaccine is already given to pregnant women in the United States," he said at a press briefing.

Doctors will use Repevax in pregnant women, the vaccine that has been used for the past decade in UK children as a preschool booster. It contains inactivated or toxoid vaccines of tetanus, diphtheria, acellular pertussis, and polio and has also been used as a booster for adults in France and Germany, some of whom will have been pregnant.

Salisbury said that the joint committee had no concerns about the safety of use of this vaccine at any stage of pregnancy. "We've got close to a decade experience of using this vaccine in children. We know its safety profile is excellent. The adverse reactions are mostly local reactions with redness and sore arms, which is transitory," he said.

However, the manufacturer's summary of product characteristics for Repevax states that although "no teratogenic effect of vaccines containing diphtheria or tetanus toxoids or inactivated poliovirus has been observed following use in pregnant women," there is "limited post-marketing information available on the safety of administering Repevax to pregnant women."1

Cite this as: BMJ 2012;345:e6594

campaign for libel law reform that resulted in the Defamation Bill now going through the UK parliament. The value of the company's shares plunged, triggering its demise, after the results of another trial, Closure 1, showed that the STARFlex was of no use in preventing stroke.<sup>3</sup>

Wilmshurst, now an honorary consultant cardiologist at University Hospital of North Staffordshire, complained to the GMC about the conduct of Dowson and Mullen.

Mullen is accused, in a hearing due to start on 22 October, of submitting an abstract to the XXI Nordic congress of cardiology in Oulu, Finland, in 2007 with data interpretations that had been used at the American College of Cardiology in 2006, knowing that the data were incorrect. Cite this as: BMJ 2012;345:e6580

### GP earnings hit a five year low as practice expenses rise

#### Adrian O'Dowd LONDON

The growing costs of running a general practice mean that GPs' income has fallen to a five year low-declining £6000 since 2005-6.

Figures from the NHS Health and Social Care Information Centre show that the average income for contract holding GPs before tax was £104100 in 2010-11—a fall of 1.5% on the previous year.

The BMA said that GPs were providing an "exceptional value for money service" and were effectively accepting a pay cut so that they could maintain a high level of service to patients.

Income for contractor GPs was still higher than in 2004-5the year new contracting arrangements for GPs were introduced-when their income was £100170. Contractor GPs formed most (around 80%) of

the GP workforce in 2010-11.

Rising expenses, such as premises and staff costs, were the main reason that GPs were taking home less money. Although average gross earnings for contractor GPs rose to £266500-a 1.5% increase on 2009-10-this was undermined by their expenses, which rose 3.5% from 2009-10 to £162400 in 2010-11. Cite this as: BMJ 2012;345:e6569

## IN BRIEF

#### Cases of S marcescens closed neonatal

unit for two weeks: Two premature babies died and a third is still in isolation after an outbreak of the enterobacterium Serratia marcescens at the neonatal intensive care unit at the University Hospital of North Staffordshire, the trust said last week. The infection shut the unit to new admissions for two weeks in July. Four other premature babies were also infected but recovered.

#### Time limit on alteplase for stroke is extended:

The National Institute for Health and Clinical Excellence has issued final guidance on the use of alteplase for the treatment of acute ischaemic stroke. The drug can now be used up to 4.5 hours after the onset of the symptoms of an ischaemic stroke and after intracranial haemorrhage has been excluded-up from the previous three hour limit—after a change in the drug's licence.

#### Public does not support cancer drug fund:

Nearly two thirds (64%) of 4000 people surveyed in England, Wales, and Scotland by researchers from Bangor University's Centre for Health Economics and Medicines Evaluation do not support providing more money to pay for anticancer drugs over drugs for other equally serious conditions. Welsh Conservatives have called on the public there to sign a petition for a cancer drugs fund similar to the £200m one that operates in England.

#### Smokers get extra help to quit in October:

Smokers in England are being given extra support to guit for 28 days through the Department of Health's "Stoptober" campaign. People joining the campaign get a support pack, an online and smartphone app, and a 28 day text support service. Research shows that people who stop smoking for 28 days are five times as likely to stay smoke free.

Rotary commits \$75m to end polio: Rotary International has contributed \$75m over three years to the global polio eradication initiative as part of an effort to close a \$945m funding gap that threatens to derail the 24 year old effort to rid the world of the disease. Although fewer than 140 cases of polio in the world have been reported this year, the funding shortfall has affected several scheduled immunisation activities in countries affected by polio. If polio rebounds, up to 200000 children a year could be paralysed.

Cite this as: BMJ 2012;345:e6650

# Company bans sale of its drug propofol for lethal injections

#### Clare Dyer BMJ

One of the world's biggest makers of the anaesthetic propofol has barred its sale for the purpose of lethal injections, as US states that still have the death penalty face growing problems obtaining drugs for executions.

Fresenius Kabi USA has written to healthcare providers to tell them that its propofol would be supplied only to an approved list of selected wholesalers and distributors who agreed not to sell it on to any correctional facilities or even to retail pharmacies or other distributors.

The ban followed a decision by the state of Missouri to move to a one drug protocol using propofol alone for lethal injections, in place of the three drug protocol that had been used by most death penalty states. Missouri took the decision, which other states were also considering, after supplies of thiopental sodium, one of the three drugs, dried up.<sup>1</sup> PROPOFO

Some states switched to pentobarbital in place of thiopental in their three drug protocol, but supplies of that drug have also dried up as manufacturers refuse to supply it for use in lethal injections.<sup>2</sup>

Scott Meacham, executive vice president of Fresenius Kabi USA, said in the letter that use in lethal injections was contrary to the US Food and Drug Administration approved indications for the drug and "inconsistent with Fresenius Kabi's mission of 'Caring for life.'"

He said the company had an obligation to protect the supply of the drug, one of the most widely used anaesthetics, to patients and healthcare facilities where its use is medically

necessary.



Germany, and he pointed out that the company's propofol is manufactured in the European Union, which has a regulation banning the export of any product that may reasonably be expected to be used in executions. "Should propofol begin to be used in execu-

### Doctor is arrested in transit in United Arab Emirates for a 10 year old conviction passed in his absence

**Professor Cyril Karabus** 

has been held in prison

for more than six weeks

#### Sophie Arie LONDON

Concern is growing for a 78 year old South African paediatrician who has been held in prison in the United Arab Emirates for more than six weeks, after it emerged that he had been tried and convicted in his absence over the death of a child he treated while working as a locum in the country 10 years ago.

Cyril Karabus, a paediatric haematologist and oncologist at the Red Cross War Memorial Children's Hospital in Cape Town, was arrested on 18 August when his flight home from a family wedding in Canada stopped in Abu Dhabi.

It emerged that he had been convicted in 2003 of manslaughter and falsifying documents, sentenced to 3.5 years in jail, and ordered to pay a fine of around \$100000 (£62000; €77000) to the family of the child.

The child, a 3 year old Yemeni girl, had terminal acute myeloid leukaemia, and Karabus was accused of failing to give a platelet transfusion when required and then falsifying documents to

say that the transfusion had been ordered. He was not contacted at the time and so had no opportunity to mount a defence.

"Professor Karabus is probably one of the world's leading paediatricians," his lawyer, Michael Bagraim, told the BMJ. "He never amended anything at all. It's not in his nature. And if he'd been

> told about these allegations at the time of the trial, he'd have been there."

> Since his arrest Karabus, who wears a pacemaker, has attended five court hearings and been refused bail. He is being held in the medical section of the main prison in Abu Dhabi and is receiving required treatment. His family have said that with the extreme heat and psychological pressure of the situation they are "not sure he is going to hold up."

The prosecution has failed to present the documents said to have proved the case against him. The original conviction has been expunged, and a new trial was due to begin on 3 October, as the BMJ went to press. Cite this as: BMJ 2012;345:e6611





Use of propofol in lethal injections was "inconsistent with Fresenius Kabi's mission of 'Caring for life'"

tions in the US and should the EU commission place propofol on its list of export restricted substances under the anti-torture regulation, it could severely restrict US access to the drug."

The charity Reprieve, which campaigns against the death penalty, is urging companies to sign its "pharmaceutical Hippocratic oath" and pledge to stop their drugs being used to kill. Maya Foa, head of Reprieve's lethal injection project, said: "Fresenius Kabi has gone to unprecedented lengths to ensure that its medicines are used for the purpose for which they were intended—to improve and save the lives of millions of patients across the US—and not abused in executions. Fresenius Kabi is leading the way in showing how the industry can put a stop to this grotesque abuse of medicines." Cite this as: *BM*/2012;345:e6558

# Dutch court finds gynaecologist guilty of "culpable homicide" after baby dies and mother is injured

#### Tony Sheldon UTRECHT

A Dutch court has found a gynaecologist guilty of "culpable homicide" in a rare criminal prosecution in which an "accumulation of mistakes" led to the death of a newborn baby.

The public prosecution service stated that the 48 year old doctor, named as Maarten B, was not a criminal, as there was no intent. But his actions amounted to gross negligence.

The court in Alkmaar heard how in May 2009 the mother, Mrs Ramgoelam-Soekhoe, was admitted to the Westfries Hospital in Hoorn. She was considered a high risk patient. A previous birth had ended with an urgent caesarean section. It was agreed with another gynaecologist that a caesarean section would be performed if the delivery was not proceeding normally after three hours.

But Dr B was not aware of the family's wishes, and communication with the woman and her husband was unsatisfactory, as was consultation with the midwife and nursing staff. Instead Dr B remained "fixed in his own treatment policy" towards a natural birth.

With the delivery already lasting longer than three hours and not progressing satisfactorily, Dr

B went home at 5 pm to eat, failing to leave proper instructions for hospital staff. While there he did not contact the hospital so could not follow the progress of the delivery.

The court said that these factors formed a "chain of circumstances" that eventually resulted in Dr B performing a caesarean section "far too late." The baby was brain damaged and died two days later. The mother had a ruptured uterus. The court judged Dr B to be culpable for the baby's death and the severe physical injury to the mother.

The court rejected his defence that the midwife should have warned him earlier.

He was sentenced to one month in prison and was banned from practising for a year, both suspended for two years. The court also ordered him, at the request of the family, to pay  $\in 1000$  (£800; \$1290) to a foundation that photographs babies who have died, to help grieving parents.

A spokeswoman for the public prosecution service said that it will prosecute if, as in this case, its investigations show evidence of a causal link between treatment and death and culpability in the legal sense of gross negligence. Cite this as: *BMJ* 2012;345:e6615

### US Supreme Court is asked to rule on validity of patents on cancer genes

#### Clare Dyer BMJ

The US Supreme Court has been asked to review the validity of patents on isolated human genes associated with breast and ovarian cancer, which campaigners and medical groups said stifle research and hamper women's access to care.

The American Civil Liberties Union (ACLU) and the Public Patent Foundation have filed a brief with the court asking it to look at whether patents held on BRCA1 and BRCA2 by a Utah company, Myriad Genetics, are valid. "Laws of nature" and "products of nature" are not patentable under US law, and the ACLU has argued that the process of isolating genetic material from human DNA did not make the isolated material patentable.

The Supreme Court brief is the latest step in a long running challenge to the patents, held by Myriad Genetics and the University of Utah Research Foundation. In 2009 a lawsuit was launched by medical professional organizations, geneticists, patients, and women's health groups, which was initially successful when a district court judge ruled that the patents were invalid.<sup>1</sup>

But that ruling was overturned, and the right to patent isolated genes was upheld by the Federal District Court of Appeals in July 2011.<sup>2</sup> The US Supreme Court directed the court of appeals to look at the question again in the light of the Supreme Court's decision in another case, Mayo Clinic versus Prometheus Laboratories, in which it ruled that a treatment regime for autoimmune disorders such as Crohn's disease was not a patentable invention.<sup>3</sup>

But in August 2012 the appeals court again ruled by 2-1 in the Myriad case that the isolated genes could be patented.<sup>4</sup> Now the Supreme Court is being asked to consider the issue again.

The ACLU has argued that the monopoly made it impossible for women to access the more comprehensive tests that other laboratories could provide and prevented researchers from looking at the genes without permission from Myriad. Cite this as: *BMJ* 2012;345:e6624



Myriad's right to patent genes has been upheld twice by the Federal District Court of Appeals

# Coca-Cola helps deliver essential drugs in Tanzania

#### Anne Gulland LONDON

Millions of people in Tanzania have gained access to essential medical supplies through a partnership that harnessed the distribution expertise of the Coca-Cola company.

A partnership that includes the Tanzanian government, the Global Fund to Fight Aids, Tuberculosis and Malaria, and the soft drinks manufacturer said that it has given nearly 20 million people improved access to essential medical supplies such as drugs to treat AIDS, tuberculosis, and malaria; condoms; and bed nets.

Other successes have included reducing the time it takes to deliver drugs to Tanzanian health facilities from 30 to five days; enabling the Tanzanian government to expand the number of distribution points from 500 to 5000; enabling health facilities to place their own orders for drugs; and improving the availability of critical drugs in health clinics by 20% to 30%.

Speaking at the annual meeting of former US president Bill Clinton's Global Initiative in New York, Gabriel Jaramillo, general manager of the Global Fund, said that the starting point for the partnership was the conundrum that you can get a bottle of Coke in the most remote village in the world but you cannot get essential drugs. "If Coca-Cola can go to any corner of the world, why can't our medicines reach there as well?" he asked.

Coca-Cola has provided expertise, with staff from the company and the consulting firm Accenture working with the ministry of health in Tanzania to design a supply chain and distribution system.

Christoph Benn, director of resource mobilisation and donor relations at the Global Fund, told the *BMJ* that Coca-Cola, which has one of the most extensive distribution systems in the world, visits 20 million points of sale every week and was the perfect fit for the project.

"We are always looking for private sector partners who can provide skills and expertise—and there's no better partner [for distribution] than Coca-Cola," said Benn.

More than a third (40%) of the money the Global Fund manages goes on the purchase, procurement, and distribution of drugs, but there are often "bottlenecks with distribution networks and supply chain management," added Benn.

Previous attempts by Coca-Cola to distribute medical supplies on the back of their trucks had largely failed, as trucks would deliver medical supplies such as bed nets and condoms only to find there was no distribution system at the other end. Hence the decision for the firm to



Drugs originating from a warehouse in New York (top) are delivered by bus to regions of Tanzania (below) using Coca-Cola's distribution network

provide its supply chain expertise.

"The problem is the further you get into the periphery the more losses you have and the longer it takes to deliver the supplies. Coca-Cola helped reshape this," said Benn. The next phase of the project will increase the availability of essential drugs to 75% of Tanzania and expand the initiative to Ghana and Mozambique.

Jaramillo said that the partnership was bringing real benefits. Cite this as: *BMJ* 2012;345:e6574

## Danish sperm donor passed neurofibromatosis on to five children

#### Anders Hansen STOCKHOLM

Danish health authorities are expected to restrict regulations regarding sperm donation after a donor was found to have passed on the genetic disease neurofibromatosis to at least five children he fathered.

The donor donated his sperm to the Copenhagen based sperm bank Nordisk Cryobank, which did not screen for the genetic disorder. The sperm were subsequently used by several different fertility clinics. According to the Danish broadcasting corporation (DR), the man has fathered 43 children in 14 different in vitro fertilisation (IVF) clinics.

The clinics are located not only in Denmark but also in Sweden, Norway, and several other countries inside and outside Europe. Nordisk Cryobank said that five of the children have been affected by neurofibromatosis.

Peter Bower, director of Nordisk Cryobank, told DR that the clinic continued to use the sperm after cases of neurofibromatosis had been discovered because doctors did not believe that the donor was responsible for passing on the condition. Confidentiality rules meant that Bower could not comment on when and where the affected children had been born. However, Swedish radio reported that 18 of the 43 children were born in Sweden and Norway.

The fact that Nordisk Cryobank had not immediately withdrawn sperm from the donor when cases of neurofibromatosis were reported has been criticised by Anne-Marie Vangsted, head of the Danish Health and Medicines Authority. Parents of children fathered by the donor are considering legal action.

Denmark has liberal laws regarding artificial insemination and sperm donations. Many women from other countries with more restrictive regulations, such as Sweden, come to Denmark for artificial insemination. Denmark currently has a limit of 25 children per sperm donor.

Starting from October this year, however, new regulations from the Health and Medicines Authority state that each sperm donor may not father more than 12 children. Further, Danish sperm banks will immediately have to withdraw sperm if any suspicions regarding genetic diseases should come to their knowledge. Cite this as: *BMJ* 2012;345:e6570