they strongly disagree with the policy. Logistically this also makes sense. The transactional costs of an "opt in" policy will be formidable. If too few patients are included, the potential benefits of the programme will be lost.

The essence of the ethical dilemma is that explicit informed consent preserves freedom of choice at the cost of less health and welfare while strong paternalism, without the possibility to opt out, promotes health and welfare at the cost of freedom. Soft paternalism—in this case accepting the default policy—preserves freedom of choice and promotes health and welfare for all.

I have three caveats to this conclusion, however. The NHS must convincingly show that technical, organisational, and legal safeguards will be implemented in its information technology programme. These safeguards must include strict and transparent rules of access to health records, mechanisms of complaint, and open understandable information about the programme and its implications.

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The NHS programme for information technology

This massive natural experiment needs evaluating and regulating

See *Editorial* by Norheim and *Analysis and comment* p 39

The NHS National Programme for IT in England is one of the largest information technology programmes in the world.[1] The programme has been subjected to hostile media coverage in its four year history, and it has been difficult to know how much of this is justified. The publication of the National Audit Office report on the programme gives both supporters and critics food for thought.[2] The audit office finds that elements of the programme are progressing well, but also points to key challenges over the next few years—in ensuring that the promised systems are delivered and that NHS staff are engaged with the programme.[3]

The report contains a wealth of detail, but doctors should pay particular attention to two issues. Firstly, the report notes that the Department of Health has failed to show benefits of the programme that will justify its costs and that the Treasury accepts this and is content for the programme to proceed. The difficulty in identifying benefits is not surprising, given that systematic reviews show relatively modest benefits associated with information technology projects,[4 5] and the audit office stresses the need for high quality empirical evidence about the programme. To place the issue in context, the audit office estimates that the total costs of the programme to 2014 will be around £12.4bn (€18bn; $23bn). This is a big number but equates to only about 1-1.5% of NHS expenditure a year. Doctors need to judge, therefore, whether the programme will improve services and patient outcomes by an equivalent amount.

From a researcher's perspective, the programme is a massive natural experiment which offers a unique opportunity to capture good observational evidence about the costs, risks, and benefits of large scale investments in information technology. It is not necessary to stop the programme—this is not practicable now anyway—but the Department of Health should move quickly to commission studies that will generate robust, useful results in the next 12 months and beyond.

The second issue concerns the ways in which doctors and other clinicians engage with suppliers in the new electronic environment. In the early phase of the programme centralisation was justified. The audit office concluded that the processes for central procurement of infrastructure were well managed and that contracts have been managed in a way that protects NHS interests. Individual NHS organisations—and private firms providing NHS services—do not typically have the skills or the political clout to manage large contracts for building infrastructure. There are outstanding questions about the technological solutions favoured by the programme, but a review—prompted by an open letter from 23 academic computer scientists to the House of Commons Health Committee[6]—should provide a better understanding of those issues.

The process had relatively little clinical involvement early on, and this has led to criticisms that the programme is not doctor friendly. Staff working on the programme nationally now seem to appreciate that clinicians and suppliers need to work closely together if the more ambitious elements of the programme—notably the shared electronic health and social care record—are to be successful. The NHS does not want or need products imposed on it, whether on time or years late, and then be locked into them until a company chooses to develop replacements. Rather, a

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key objective over the next two or three years is to create a dynamic environment for research and development within which doctors can work with suppliers and others on the new electronic services, can continue to innovate after the initial services have been delivered, and can, if necessary, take part in decisions to amend or stop unsuccessful developments.

Staff working on the programme face a dilemma, however. How can they retain the advantages of the central procurement arrangements while at the same time encouraging localism? The answer may be for Connecting for Health, the agency responsible for the programme, to become a regulator. The agency could stop directing implementation centrally and could become responsible for encouraging good working relationships between suppliers and clinicians. In this way the agency would retain its role in monitoring compliance with multibillion pound contracts while letting clinicians and suppliers get on with development. It would also have an ongoing role in protecting the wider public interest on matters such as patient confidentiality. This arrangement might help to allay some clinicians' natural fears that their concerns will not be taken into account in the rush to computerisation.

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Antipyretic drugs for children

There's still not enough evidence to support prescribing paracetamol and ibuprofen in combination or alternately

Fever is common in children[1] and can cause distress, parental anxiety, and—in some parents—"fever phobia."[2] Rationales for treating childhood fever include relieving distress (allowing the child to sleep, rest, or feed) and lowering temperature, often in the hope of reducing the risk of febrile convulsions. Non-pharmacological treatments include loosening clothing, reducing the ambient temperature, and encouraging the child to take fluids. The pharmacological options are paracetamol and ibuprofen, and parents commonly give both drugs to a child with fever.[3] But should these drugs be used together, or alternately, and for which children, and at what dose and frequency? Advice is inconsistent, leading to confusion and frustration among parents, nurses, and doctors.

Both drugs are licensed and widely purchased over the counter in Europe for children: sales in 2004 were £128m for paediatric ibuprofen and £277m for paracetamol (€186m and €403m, $233m and $504m; personal communication, Boots Healthcare International). Paracetamol and ibuprofen exert their effects at differing points in the pyrogenic pathways,[4] so synergistic action is plausible.

We searched Medline (1966 to March 2006), the Cochrane database, and our own databases and found three studies comparing a combination of paracetamol or ibuprofen with separate use.[5–7] The first studied 89 children admitted to hospital in India with axillary temperatures greater than 38.5°C.[5] Children received ibuprofen 10 mg/kg singly or in combination with paracetamol 10 mg/kg, each three times daily. The paracetamol-ibuprofen combination was more effective than paracetamol alone from 0.5 hours to 2 hours and less effective from 10 hours to 24 hours, but the temperature differences amounted to less than 1°C and were not statistically significant.

The second study randomised 123 children presenting to a UK emergency department with tympanic temperatures ≥38°C to receive paracetamol 15 mg/kg or ibuprofen 5 mg/kg, or both, and measured tympanic temperature at one hour.[6] The investigators defined a clinically important temperature difference as ≥1°C. Although they found a statistically significant difference ($P=0.023$) between all treatments, the temperature difference between the groups receiving combined treatment and paracetamol only was 0.35°C and between those receiving combined treatment and ibuprofen only was 0.25°C. The confidence intervals exclude the original target difference of 1°C and so, if the 1°C threshold is accepted, the study was able to rule out a clinically important difference at one hour. Neither the Indian nor UK studies measured symptoms associated with fever.

The third study randomised 464 children presenting to Israeli ambulatory care centres with rectal temperatures of ≥38.4°C to receive paracetamol 12.5 mg/kg every six hours or ibuprofen 5 mg/kg every eight hours or both alternating four hourly.[7] Irrespective of their intervention group, all children received a double loading dose of either paracetamol or ibuprofen. Rectal temperatures and distress scores were measured (at times determined by the parents) three times daily for three days and the thermometry outcome used for the analyses was the maximum temperature recorded. The investigators found differences lasting three days in temperatures (range 0.8°C to 1.1°C, all $P<0.001$) and distress scores (all $P<0.001$) between the alternating and monotherapy groups.

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