wines, both white and red, are an excellent source of salicylic acid and its metabolites, 2,3-dihydroxybenzoic acid (DHB), and 2,5-DHB, both of which have proven vasodilator and anti-inflammatory activities, in addition to other health-related functions. Many plants, in addition to grapes, produce salicylic acid. It is produced in plants as a constitutive and as an inducible defence chemical. Indeed, salicylic acid is so common that it has been postulated to be a plant hormone.

We have determined concentrations of salicylic acid, 2,3-DHB, and 2,5-DHB in several Californian and other wines. Salicylic acid concentrations ranged from 11·0–21·5 mg/L, 2,3-DHB 21·0–26·5 mg/L, and 2,5-DHB 22·0–28·5 mg/L.[5] As expected, higher concentrations of each compound are present in red wines. Even in white wines, the total of these compounds per litre of wine is, on average, equivalent to almost double the widely recommended daily dose of 30 mg of aspirin to maintain cardiovascular wellness. In addition, because in wine salicylic acid (and other antioxidants) coexist with ethanol, synergistic effects among these substances may have an increasing role in cardiovascular wellness. It is conceivable that ethanol might enhance general antioxidant absorption from the intestinal lumen as well. Furthermore, detoxification of ethanol to acetate by the liver (and to a lesser extent in other organs) produces reducing equivalents (reduced nicotinamide-adenine dinucleotide) in profusion. These reducing equivalents (either directly or indirectly) aid in maintaining any ingested antioxidants in their reduced state as well as in recycling spent antioxidants (which could conceivably be damaging as pro-oxidants).

In conclusion, those of us who are entrusted with the privilege of prescribing, might well do so as: "Take two glasses of wine and see me in the morning". Surely then, iatrogenic-related complaints would be eliminated.

C J Muller, K C Fugelsang
Enology Program, California State University, Fresno, CA 93740-0017, USA

1 Sharp D. When wine is red. *Lancet* 1993; **341:** 27–28.
2 Seigneur M, Bonnet J, Dorian B, et al. Effect of the consumption of alcohol, white wine, and red wine on platelet function and serum lipids. *J Appl Cardiol* 1990; **5:** 215–22.
3 Fitzpatrick DF, Hirschfield SL, Coffey RG. Endothelium-dependent vasorelaxing activity of wine and other grape products. *Am J Physiol* 1993; **265:** H774–78.
4 Gaziano JM, Buring JE, Breslow JL, et al. Moderate alcohol intake, increased levels of high-density lipoprotein and its subfractions, and decreased risk of myocardial infarction. *N Engl J Med* 1993; **329:** 1829–34.
5 Muller CJ. "Wine and health: its more than alcohol." In: Zoecklein BW, Fugelsang KC, Gump BH, Nury FS. Wine analysis and production. New York: Chapman and Hall (in press).

Diagnosing growth-hormone deficiency in adults

SIR—Hoffman and colleagues (April 30, p 1064) conclude that the insulin tolerance test (ITT) is the test of choice in the diagnosis of growth hormone (GH) deficiency in adults. This conclusion is mainly based on a comparison of ITT with mean 24 h GH concentration (72 pooled samples). Hoffman et al do not provide data that rule out other, less dangerous, provocative investigations as being the test of choice (intravenous arginine or clonidine, heat exposure). Age and obesity are negative determinants of spontaneous GH secretion and GH release in response to stimuli. Therefore in a control group aged up to 78 years and having a body mass index up to 38·9 kg/m² we would expect to find impaired 24 h GH concentrations as well as impaired GH response to stimulation tests.

We are not told how many controls underwent both investigations. Hoffman et al stress that a single GH profile lacks diagnostic specificity because of intra-individual variation up to 30%. However, the intra-individual variation in ITT may be at least as great in adults[1,2] and in children[3] and this measure does not necessarily reflect physiological spontaneous 24 h GH secretion.[4]

The wide variation in response to pharmacological stimuli must also call in question the usefulness of those investigations. A thorough investigation of the physiological spontaneous pulsatile GH secretion demands several GH measurements over 24 h, a sensitive GH assay, and the use of computerised algorithms and/or a deconvolution technique. Diagnosing GH deficiency in adults cannot be based on a single non-physiological test such as the ITT or a mean 24 h serum GH. A diagnosis of GH deficiency, which could lead to life-long treatment, must be based on at least two diagnostic tests, possibly including physiological (spontaneous) GH secretion.

Michael Højby Rasmussen, Jannik Hilsted
Department of Endocrinology, Hvidovre University Hospital, DK-2650 Hvidovre, Denmark

1 Greenwood FC, Landon J, Stamp TCB. The plasma sugar, free fatty acid, cortisol, and growth hormone response to insulin I: in control subjects. *J Clin Invest* 1966; **45:** 429–36.
2 Vestergaard P, Hosck HC, Jakobsen PE, Laurberg P. Growth hormone responses to repeated insulin tolerance tests in normal healthy adults. *Eur J Endocrinol* 1994; **130** (suppl 1): 8.
3 Zadik Z, Stuart AC, Gilula Z, Kowarski AA. Reproducibility of growth hormone testing procedures: a comparison between 24 h integrated concentration and pharmacological stimulation. *J Clin Endocrinol Metab* 1990; **71:** 1127–30.
4 Bercu BB, Shulman D, Root AW, Spiliotis B. Growth hormone (GH) provocative testing frequently does not reflect endogenous GH secretion. *J Clin Endocrinol Metab* 1986; **63:** 709–16.

Antiretroviral prevention of HIV perinatal transmission

SIR—In the AIDS Clinical Trials Group study 076 (ACTG 076) interim analysis established that the risk of transmission from mother to child in those taking zidovudine was reduced by two-thirds, as Choo reports in your Feb 26 news item. Prenatal and postnatal administration of zidovudine may soon become standard prevention strategy in industrialised countries.

The full lessons of ACTG 076 have yet to be learned. How did zidovudine work, for example, and would a different regimen have been even more effective? The most pressing questions, however, relate to the developing world, where up to 98% of the nearly 10 million women infected with HIV and where almost all of the more than 2 million perinatally infected infants live.[1] Are there differences, for example, in maternal nutrition, metabolism, health status, or birthing practices that might affect drug safety and efficacy in these settings? HIV subtype B predominates in North America and Europe, but will zidovudine be as effective for the other HIV subtypes that prevail in Africa and Asia?

Conditions in many developing countries (limited access to antenatal care, delivery under less than optimum conditions, and very brief stays in maternity units) differ greatly from those under which ACTG 076 was conducted. For antiretroviral protocols to be adapted for the developing world, rigorous clinical trials will be required. Ethical issues would be important. For example, does the fact that most HIV-infected women in the developing world have no access to zidovudine, or even to more basic drugs, justify placebo-

controlled trials of a less expensive and shortened course of antiretroviral therapy? Will several trials be necessary to allow for virus strain variations and differences in culture, behaviour, and health care system? Most infected mothers in developing countries only learn of their HIV status because they have given birth to an infected infant. The drastic expansion of voluntary testing and counselling services, the availability of informed reproductive options, and the protection of confidentiality—particularly for those who received zidovudine during pregnancy or after birth, which is indicative of HIV status—need to be reassessed in the light of a proven, life-saving strategy having become available. Economic disparities are also of concern. The cost of medication alone for ACTG 076 was about US$600 per mother-and-child pair which is a prohibitive cost for most developing economies.

ACTG 076 is one of the rare successes in HIV clinical research that has immediate application potential. This discovery is most directly and unequivocally relevant to the developing world. Only the rights—clearly spelled out in the International Bill of Human Rights[2]—of people throughout the world to benefit from scientific progress will provide us with the power to overcome the obstacles ahead.

No one institution can be expected to meet the challenges alone. The scientific community has to continue to aggressively seek answers to the crucial issues raised by ACTG 076. National authorities should assess the policy, strategic, and economic implications of the new findings and both curb perinatal transmission and expand prenatal and postnatal care. International health organisations have to move swiftly to ensure that unfolding knowledge is widely shared and that this new prevention tool is affordable and sustainable in all situations. Drug manufacturers and international agencies, now facing a situation in which the access of developing countries to antiretrovirals can greatly affect the pandemic, must assist in the development, distribution, and effective use of their products.

Marc Lallemant, Sophie Le Coeur, Daniel Tarantola, Jonathan Mann, Max Essex
Department of Cancer Biology and François-Xavier Bagnoud Center for Health and Human Rights, Harvard School of Public Health, Boston, MA 02115, USA

1 Mann J, Tarantola D, eds. AIDS in the world, vol 2. London, New York: Oxford University Press (in press).
2 United Nations General Assembly. International Bill of Human Rights. Williams P, ed. Glen Ellen, California. Entwhistle Books, 1981. This includes the Universal Declaration of Human Rights and the International Covenants on Economic, Social and Cultural Rights and Civil and Political Rights.

HIV lookback: a forward glance?

SIR—In your March 26 editorial (p 744) discussing UK policy on the management of HIV-infected healthcare workers, you make selective use of available information, and fail to make several important points.

A reader might interpret the statement that, in the one instance where HIV transmission from an infected healthcare worker to patients has been reliably recorded the route of transmission is unclear, as casting a doubt on the need for specific prevention. However, it is not necessary (though it may be desirable) to establish the exact mechanism by which transmission occurs in order to demonstrate that a risk of transmission exists. The lack of an explanation as to precisely how hepatitis B virus is transmitted to patients by hepatitis B-e-antigen-positive health-care workers during exposure-prone procedures in the absence of overt injury to the worker did not preclude the development of a prevention policy.[1] Recent insights into the ease with which handling suture material may lead to inapparent injury[2] have merely strengthened the case for restriction of practice.

As you state, the UK professional regulatory bodies do indeed require that HIV-infected health-care workers seek medical and occupational health advice. More importantly, though, they also require that those who believe that they may have been exposed to infection with HIV, in whatever, circumstances, must seek medical advice and diagnostic antibody testing if appropriate. Fulfilment of these ethical responsibilities obviates the necessity for an alternative approach, including "routine HIV testing of all workers who carry out exposure-prone procedures". Since many HIV infections in the UK are probably acquired after the age at which health-care workers complete initial training, testing would need to be repeated at intervals. The frequency of testing necessary to identify incident infections rapidly enough to provide "real assurance of protection for the public" would be unachievable in practice. In any practicable testing programme, delay in diagnosis of new infections would be inevitable: most of those would be attributable to the interval between repeat tests, rather than to any "delay in antibody titres early in infection". Testing of health care workers is helpful, however, where a vaccine exists to protect those uninfected, as is the case with hepatitis B.

You imply that patient notification might be unnecessary because a patient who was unaware that they had acquired HIV infection nosocomially would in any event protect their sexual partner by responding to "advice on protection against sexual transmission for the whole population". This response is unlikely because most patients who have undergone exposure-prone procedures will not have major risk factors for HIV infection, but will be in, and likely to remain in, monogamous heterosexual relationships,[3] and may correctly perceive that their risks of a sexually transmitted infection are low. If such patients have acquired HIV infection they will benefit from this knowledge because it will enable them to take action to protect their partner. Onward transmission could be prevented if their infection is recognised through initiation of an HIV test by care providers.

You correctly note that the PHLS AIDS Centre "records details of the occupation of patients with AIDS but will not transmit this information to local occupational health physicians or directors of public health". We do not answer queries from any source about whether an individual may have been reported to us as HIV infected or as having AIDS, whatever the clinical or other justification for the inquiry. It is essential to maintain the confidential nature of the voluntary systems for reporting AIDS cases and HIV infections. The trust of clinicains and microbiologists who report to the Communicable Disease Surveillance Centre in the complete confidentiality of these systems is important if high levels of reporting are to be sustained. Moreover, it is not possible definitively to identify the HIV status of an individual from the datasets held nationally.

O Noël Gill, Julia Heptonstall, Ahilya Noone, Janet Mortimer
Public Health Laboratory Service, PHLS Communicable Disease Surveillance Centre, London NW9 5EQ, UK

1 UK Health Departments. Protecting health care workers and patients from hepatitis B. Recommendations of the Advisory Group on Hepatitis. London: HM Stationery Office. 1993.
2 Harpaz R, van Seidlein L, Averhoff K, et al. Hepatitis B virus transmission associated with cardiothoracic surgery. Conference on the prevention of transmission of bloodborne pathogens in surgery and obstetrics. Atlanta, Georgia, Feb 13–15, 1994. Abstract A50.
3 Johnson AM, Wadsworth J, Wellings K, Field J. Sexual attitudes and lifestyles. Oxford: Blackwell Scientific Publications, 1994.