effect. The superiority of using an indicator with a long half life (low dose phenobarbitone) over a marker with a short half life (low dose isoniazid) in detecting incomplete compliance has been shown.²

The development of suitable pharmacological markers has probably been adversely affected in the past by recommendations that such substances should have a short half life or be "non-cumulative."^{3,4} The drawbacks of this advice are now recognised. Though such techniques are currently primarily used in research, indicators with a long half life should be included in descriptions of methods of assessing compliance, particularly if markers with a short half life are mentioned.

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Diagnosing maxillary sinusitis

EDITOR,—N P van Duijn and colleagues' study very elegantly assesses the symptomatology of sinusitis in general practice.¹ A simple way of calculating the likelihood ratio for presence of sinusitis would be to use the B score (Bayesian analysis score) method of Dobbs and Fleming.² For the five symptoms and signs found to be independently associated with sinusitis identified by ultrasonography, the B scores for presence and absence of each item are shown in the table.

Bayesian analysis scores² for presence and absence of symptoms and signs in sinusitis

Item	Present	Absent
Beginning with common cold	0	-2
Purulent rhinorrhoea	2	-2
Pain at bending	1	-2
Unilateral maxillary pain	2	-1
Pain in teeth	2	-1

For each item the scores for presence or absence are added. A B score for incidence of sinusitis in this study population, 0 (212 positive out of 441), is then added.

The B score total corresponds to the odds for sinusitis being present for +2 (that is, 2:1, likelihood ratio 2) and +4 (that is, 4:1, likelihood ratio 4). A score of +3 is equivalent to 2.8:1, and the odds double for every increase of 2 in the score. Negative scores correspond to similar odds against sinusitis. A score of zero corresponds to an even chance of sinusitis.

The cut off level recommended by van Duijn and colleagues was a likelihood ratio <0.75 to exclude sinusitis. This would be equivalent to a B score total <-1. They suggested that the diagnosis was uncertain at a likelihood ratio of 0.75 to 1.25, which would correspond to a B score total of -1 to +1. A B score total of more than +1 would be equivalent to a likelihood ratio of more than 1.25, at which level the diagnosis was felt to be established.

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1 Van Duijn NP, Brouwer HJ, Lamberts H. Use of symptoms and signs to diagnose maxillary sinusitis in general practice: comparison with ultrasonography. *BMJ* 1992;305:684-7. (19 September.)
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EDITOR,—N P van Duijn and colleagues state that four methods are available to diagnose maxillary sinusitis objectively,¹ but neglect to mention magnetic resonance imaging. Although expensive and not yet universally available, magnetic resonance imaging offers high sensitivity to sinus disease² and does not use ionising radiation. The extreme sensitivity of the technique for evaluating the paranasal sinuses is due to three main factors: its ability to scan in all three orthogonal planes; the almost universal high signal of virtually all sinus abnormalities on T2 weighted images; and the clear depiction of bone in the sinus wall and air within the lumen due to an absence of signal from these areas as a result of a low density of mobile protons. Human sinonasal secretions form a complex material, which in normal circumstances consists of about 95% water. This accounts for their high signal on T2 weighted images. In chronically obstructed sinuses, however, progressive dehydration of the secretions occurs, resulting in signal loss.³ Magnetic resonance imaging thus shows clear superiority over computed tomography in differentiating acute effusions from chronically inspissated sinonasal secretions. In addition, it allows easier discrimination of inflammatory tissues from tumour within the sinus.⁴

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Designing clinical information systems

EDITOR,—A P Smith has eloquently argued that information systems used by clinicians to support their clinical practice should be simple and easy to use, ideally without any change to existing practices or procedures.¹ This aspiration is laudable, but we feel that there are important issues that have not been addressed, and we would like to widen the debate.

Agreement on clinical and administrative terminology is fundamental. Clinical terminology is being considered in the clinical terms project, but there is also a need to define administrative terms. For example, what is the definition of an episode, contact, or spell, and how are diagnoses to be categorised? Is the primary diagnosis the most relevant to the specialty, the patient, or the episode, or is it the most resource intensive? Agreement on terms surrounding the definition of cases is essential to ensure comparability of national returns.

National, regional, district, or local data sets will dictate the minimum data that need to be collected, but a sophisticated clinical information system must allow the user to collect clinical data in the additional detail required to meet personal or specialty needs for clinical management, audit, or

research. For this to be possible the system must also allow for the complexities and uncertainties of clinical practice. Thus, the clinician needs to be able to plan care, set targets, and assign attributes to the data that are entered, such as certainty, severity, negativity, anatomical location, and attribution to the problems. This level of detail will be essential if measurement of outcome is to be realistic and valid. Debate on the definitions of the terms used in the "process of care" is now starting, led by the NHS Centre for Coding and Classification, and we believe clinicians will want to use them as their experience with information systems grows.

The support needed for the successful implementation of a clinical information system should not be underestimated. Clinical, clerical, coding, information technology, and managerial input may be required. Clinicians need to spend time to reach consensus on local terminology and data sets, and to devise procedures. Secretarial and clerical staff need to understand new procedures and the reasons why they are being implemented. Coding and information technology support will be required to maintain the quality of data, the running of the system, and its successful integration into the wider hospital context. The implementation of new methods and ideas needs education and training, at all levels. Furthermore, this education needs to be repeated continuously as staff change and new ideas are implemented.

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Sexually transmitted diseases and anal papillomas

EDITOR,—In their review of colorectal sexually transmitted diseases and anal papillomas D J Jones and B P Goorney state that "about a quarter of homosexual men attending screening clinics have evidence of anorectal gonorrhoea."¹ This figure may reflect the prevalence of anorectal gonorrhoea in homosexual men in the 1970s and earlier,² but such a high rate of infection is unlikely to have been found currently or in recent years owing to changes in sexual behaviour related at least partly to the epidemic of HIV and AIDS. To investigate this further we have studied the occurrence of anorectal gonococcal infection in homosexual and bisexual men attending the genitourinary medicine department at Charing Cross Hospital.

Case notes of all homosexual or bisexual men attending for the first time in the previous six months (8 April to 8 October this year) were studied retrospectively. The results of culture of anorectal swabs for gonorrhoea taken at the initial attendance for screening were evaluated. Swabs taken after treatment for gonococcal infection were excluded, and men who attended the clinic regularly were not studied to reduce possible bias resulting from counselling about safer sex by health advisers and doctors. Of the 193 men, 102 had rectal swabs taken for gonococcal culture at the initial attendance. Eight of these cultures were positive for *Neisseria gonorrhoeae*. This figure is considerably less than the 25% suggested by Jones and Goorney.

Ross *et al* detected rectal gonorrhoea in 91 cases out of 2578 attendances by homosexual men in Edinburgh between 1985 and 1990, giving an infection rate of 3.5%, although they did not report the proportion of men who had anorectal swabs