worldwide reputation for our thoroughness and meticulous attention to detail. We have the same aim as clinicians, the benefit of the patient; and united we can extract the best from the manufacturing companies, eliminating dangerous and unsuitable products on the way. In case I am accused of merely fretting over my livelihood, I must point out that removing glucose completely from my laboratory's repertoire cuts our number of tests from about 120 000 to 105 000—and we have one of the smallest laboratories. To remove everything we do means a lot of work for someone somewhere, and is it really what the clinicians want?

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Self-monitoring of blood glucose in diabetic pregnancy

SIR,—We have read with great interest the article by Dr I Peacock and his colleagues (24 November, p 1333) and agree with them that diabetic pregnancy can now best be managed on an outpatient basis. Over the past 12 years we have adopted a very similar regimen for the 153 pregnancies with which we have dealt. The perinatal mortality when corrected for lethal congenital malformations has been 3%.

We have, however, on occasions been worried that the occasional patient was observing her strict dietary and insulin regimen only during the days when she was doing her own outpatient blood glucose monitoring; and more recently we have taken blood for glycosylated haemoglobin estimations each time the patient visits the hospital. We have found this estimation to be of great value in detecting those mothers whose blood glucose control is less than optimal. The mean glycosylated haemoglobin during the final trimester correlates well ($r=0{\cdot}69$, $P<0{\cdot}01$) with the cord blood C-peptide:glucose ratio, which has been shown[1] to indicate the degree of hyperresponsiveness of the fetal beta-cells induced by maternal hyperglycaemia. We have also found that the maternal glycosylated haemoglobin at the time of delivery correlates well with the mean blood glucose over the final trimester ($r=0{\cdot}74$, $P<0{\cdot}05$). We have further found that the glycosylated haemoglobin levels (estimated by the method of Fluckiger[2]) below 9% suggest that a good fetal outcome is likely and that maternal blood glucose control is good.

While supporting the principles outlined by Dr Peacock we do recommend the combination of outpatient blood glucose monitoring and regular measurement of maternal glycosylated haemoglobin levels as the best method of monitoring diabetic pregnancy.

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[1] Burke, B J, *et al*, *Lancet*, 1979, **1**, 1372.
[2] Fluckiger, R, Bergen, W, and Winterhalter, K H, *Diabetologia*, 1977, **13**, 393.

Interpretation of biochemical values

SIR,—I am writing in the hope that one of your readers may be able to clarify a mysterious and widespread medical practice—namely, drawing the conclusion that because an individual's value on some biochemical investigation, such as thyroxine estimation, is within the population normal range for the particular laboratory the function in question is de facto normal for that individual.

Elsewhere in biometrics, in particular in psychometry, practitioners distinguish between nomothetic (for example, the case in which the individual's value is compared with population norms) and idiographic (for example, the case in which the individual's present value is compared with his own personal norm or baseline) assessment. Thus it is not uncommon to diagnose pathological underfunctioning in the presence of values which may be above average for the population but which are known, or suspected on reasonable grounds, to fall below the norm for that particular individual.

Although writers such as Eastham[1] point to the lack of any necessary correlation between normal biochemical value and the patient's actual clinical state, I have yet to meet a doctor who appears to act on acceptance of the principle of idiographic assessment, even when baseline data obtained when the patient was asymptomatic are available. Even when the normal range for a particular substance is extremely wide, many complaints from patients whose values fall within that range often seem to be dismissed as unfounded. Can someone enlighten me why this is so?

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[1] Eastham, R D, *Biochemical Values in Clinical Medicine*. Bristol, John Wright, 1978.

Hypertension and general practice

SIR,—Dr H G Nicol's reaction (24 November, p 1368) to Dr D G Beever's little outburst (3 November, p 1137) prompted us to re-read the letter's words and to offer some history, some figures, and the following comments.

One should be very sure of one's facts before making sweeping generalisations. The truth is that all physicians were disgracefully unaware of the importance of detecting and treating hypertension for very many years. The life insurance companies were far ahead of us and long ago showed[1] that the early middle aged with diastolic pressures of 99 mm Hg and over had about a 15 times greater chance of having a stroke by their 65th year than the normotensive. By 1914 few could obtain a life insurance policy without having their blood pressure recorded.

One of us (MC) has a letter in the files of 15 years ago from a consultant physician advising that no treatment was necessary for a patient with a blood pressure of 220/115 mm Hg because a well-known professor of cardiology (named) advised no therapy until the diastolic pressure was 120 mm Hg or above. This was the teaching which most general practitioners (and consultants) then received. It is only within the last 10 years that the mass of opinion has changed. The interest of one of us (MC) was originally aroused when he realised that so many hypertensives were presenting initially with a stroke. Could early detection prevent this? We have now known for some time that it can.[2,3]

What are the present facts? Some light may be thrown on this question by the analysis of the screening figures obtained by one of us (GB), who is closely concerned with the present Medical Research Council treatment trial for mild-to-moderate hypertension. In 72 general practices 194 801 people aged 35-64 years were screened (the response rate being 74%). The total found to be mildly hypertensive (systolic pressure <200 mm Hg, diastolic $\geqslant 90$ mm Hg <110 mm Hg) was 14 611 or 7·5% after four readings, while those with severe hypertension (systolic pressure $\geqslant 200$ mm Hg or diastolic $\geqslant 110$ mm Hg, or both) were only 0·95%. Moreover, of the total screened (194 801) 6·4% were found to be already on treatment and of these half had diastolic pressures of under 90 mm Hg.

Surely this does not show general practitioners to be disgracefully underdiagnosing or undertreating hypertension, especially with regard to detection, as a great number of these people had not seen their doctor for some considerable time. Let us therefore stop throwing brickbats and all work towards improving the detection of hypertension (and occult disease) in our general or hospital practices. This, of course, would be aided by any uninvolved general practices inquiring about the MRC trial (Epidemiology and Medical Care Unit, Northwick Park Hospital, Harrow, Middx HA1 3UJ) and maybe taking part if they are suitable.

A little more age and experience will change, we hope, Dr Beever's views.

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[1] *Metropolitan Life Insurance Survey*. New York, 1961.
[2] Leishman, A W D, *Lancet*,, 1963, **1**, 1284.
[3] Breckenridge, A, Dollery, C T, and Parry, E H O, *Quarterly Journal of Medicine*, 1970, **39**, 411.

Blood pressure measurement

SIR,—In the course of seven articles Dr Eoin O'Brien and Professor Kevin O'Malley consider multifarious sources of error in estimating—what? At times it is the instantaneous intra-arterial pressure (systolic and diastolic); at other times a casual reading is maligned and a mean or "representative" blood pressure, from continuous or from home recording, is preferred. Surely the errors resulting from variable definition are greater than those (fortunately often random or mutually opposed) which are addressed in the articles.

If we exclude continuous recordings of home recordings as impractical for the majority of diagnoses and follow-ups, should blood pressure be defined from samples of one, two, or more sets of readings? Their answers vary, though we are consistently advised to take three readings (one systolic and two diastolic) in each set. There are indeed good reasons for three—a single quirky value can be identified; and in this case three values are readily obtainable, with less bias too than if they were supposedly identical.

We also need to know, however, at what