Fig. 2 also shows that difference in plasma bicarbonate levels are likely to alter pK; and this is confirmed in fig. 3 which presents the pK', values determined on fresh undiluted but similarly tonometred plasma from a healthy male on seven different occasions. We cannot explain why this should be so.

Data will be presented in full elsewhere.

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AUTOMATIC BLOOD-PRESSURE MEASUREMENT

Sir,—An editorial earlier this year referred to the availability of an automatic blood-pressure (BP) machine ('Vita Stat') in a London store and stated that the scheme should be encouraged “provided that the measurement is reasonably accurate”. We were interested in such a machine, especially for outpatients departments, because research at another London teaching hospital had shown how few patients attending hospital, as inpatients or outpatients, have their BP taken.

An opportunity to evaluate the machine arose when a health fair was held for employees of a local psychiatric hospital. BP measurement was one of the services offered. All employees who had their BP measured had it done twice—once on a vita stat automatic machine and once on a random-zero sphygmomanometer. The order in which the measurements were taken was partly left to the discretion of the subjects.

The table also shows that the mean recordings from the vita stat automatic machine were higher than the mean observer readings for each observer. This suggests a systematic tendency of the automatic machine to record high (even if it does abolish inter-observer variation).

The data suggest that the use of the machine may increase BP—i.e., high recordings are not simply a measurement error. For each observer, the mean reading was higher when the sphygmomanometer was used for the second recording, after the machine. This may be because individuals with high BP used the machine first. In addition, the automatic machine may cause anxiety which is reflected in the raised BP.

Beevers et al. found that automatic machines tend to read high, and so did L. N. Jones and colleagues in a paper given at the Fifth National Conference on High Blood Pressure Control, held in Arlington, Virginia, in April, 1979. Until the hypothesis that such machines cause BP to rise has been refuted, their widespread use cannot be recommended.

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JO WALSWORTH-BELL

HYPERPHENYLALANINÆMIA AND PREGNANCY

Sir,—The need for further studies on dietary treatment of pregnant women with phenylketonuria (PKU) is emphasised in your editorial and by Dr Buist and colleagues (Sept. 15, p. 589). Our experience in Michigan points to a problem not mentioned in these contributions.

In the twelve years 1967–78 the Michigan Department of Public Health has found 80 newborns with PKU and 77 with hyperphenylalaninaemia (hyperPhe) in 1 759510 screenings. PKU incidence was approximately 1 in 23 000; hyperPhe was 1 in 22 000; overall abnormal incidence was 1 in 11 000. We have noted, in both male and female infants with hyperPhe, that, as they grow to childhood and adolescence, their blood Phe levels have fallen—perhaps because of reduction in ingested protein per kilogram, maturation of metabolic processes, or for other reasons. So blood screening of women in the childbearing years may miss some of these and the heterozygotes at risk of having affected infants.

It would have been of interest if Buist et al. had listed the cord or newborn Phe blood levels in their series, along with the maternal levels. Cord blood Phe levels seem much higher than those in the newborn or maternal levels. The difference might be statistically significant or not. It seems likely that the blood levels in the newborn are lower than those in the maternal blood.