care make interpretation of mismatches difficult and require judgments based on the strength of the evidence in different settings, feasibility, and potential dangers. There is little evidence to support many guideline recommendations about what general practitioners should do, including routine examination, educational advice or advice on activities advice, and back exercises. General practitioners should probably be more aware of danger symptoms, advise patients with uncomplicated back pain to mobilise themselves early, and, with some reservations, consider arranging manipulation for persisting symptoms. Guidelines should be audited: standards should include accepted criteria,^{3,5} discussion study methodology and the setting of evidence, and clear referencing of recommendations. More research based in general practice is needed to inform general practitioner assessment and management of back pain.

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Explaining variations in general practice prescribing costs per ASTRO-PU (age, sex, and temporary resident originated prescribing unit)

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In the light of evidence which suggests that the use of medicines is in some degree predictable from the demographic structure of practice populations,¹ a move has been made towards the use of a weighted capitation formula in determining general practitioners' prescribing budgets. One recently devised weighting structure, the age, sex, and temporary resident originated prescribing unit (ASTRO-PU), allocates individual weightings to nine age groups for

each sex, plus one for temporary residents, in the practice list.² Family health services authorities were advised that they might use weightings based on ASTRO-PU to adjust the prescribing allocations, otherwise based on historic costs, for the financial year 1994-5.³

Over and above a budgetary allocation so determined, scope will always exist for discretionary or "soft" factors, reflecting particular patient need in individual practices.⁴ Evidence on what should be considered as genuine soft factors, however, is not readily available. We report a study of prescribing variations in a single English health authority, with a view to identifying factors influential in determining prescribing costs per ASTRO-PU.

Methods and results

Data on a wide range of general practice characteristics were available for 99 out of the 108 practices in Lincolnshire for 1993. Multiple regression analysis of the data was performed with prescribing cost per

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Table 1—Descriptive statistics and regression results

Variable	Mean or number	Percentiles		Regression coefficients	
		25th	75th	Full	Final
Fundholding? (1=yes, 0=no)	18			-1.231	-1.711*
Training practice? (1=yes, 0=no)	25			-0.718	
GPs subscribe to PACT, level 3? (1=yes, 0=no)	39			0.720	
Practice uses a prescribing formulary? (1=yes, 0=no)	48			-1.092	
Practice uses computer for repeat prescribing? (1=yes, 0=no)	87			-0.536	
Management hours per GP	14.36	8.50	18.50	0.022	
Practice nurse hours per GP	15.68	10.00	20.00	0.010	
Number of non-medical staff per GP	62.29	48.46	72.94	0.006	
Number of branch surgeries	0.77	0.00	1.00	0.245	
Proportion of medicines prescribed generically (%)	36.34	23.90	45.64	-0.101**	-0.079**
Patients per GP (thousands)	1.92	1.52	2.15	0.310	
Unemployment rate (%)	8.17	5.75	9.55	0.027	
Proportion of list resident in institutions (%)	1.13	0.50	1.34	-0.142	
Total referrals per 1000 patients on list	168.32	128.79	194.29	0.005	
Miles to the nearest hospital	7.03	1.18	11.01	0.024	
Night visits made per 1000 patients per annum	33.89	27.43	38.85	0.126**	0.129**
Proportion of patients with payment exemption (%)	3.67	3.25	4.05	1.402**	1.322
Rural practice payment per patient (£)	0.26	0.06	0.41	-2.177	
Constant				12.217**	12.877
Adjusted R ²				0.431	0.419

*P<0.05, **P<0.01.

ASTRO-PU as the dependent variable. The mean cost per ASTRO-PU for the sample was £18.898 (SD 3.193). Descriptive statistics of the independent variables and regression results are shown in table 1. The model was estimated in both a full and a final form, the latter entailing the addition or removal of variables from the full model in order to obtain significant coefficients and the best possible degree of goodness of fit. In the final model the coefficients indicate that, evaluated at the mean, a 1% increase in night visits raises costs per ASTRO-PU by about 4p, a 1% increase in payment exemptions raises these costs by about 5p, and a 1% increase in the rate of generic prescribing lowers costs by about 3p.

Comment

On the basis of the models we conclude, firstly, that prescribing costs per ASTRO-PU are associated with the prevalence in the list of payment exemption certificates issued by the family health services authority. These exemptions are offered to patients with a range of disabling medical conditions and to those holding prepayment vouchers precisely because they are likely to be extensive users of prescribed medication. Alternatively, general practitioners may be conscious that such patients bear no financial costs and thus feel less obligation to economise on their prescriptions.

Secondly, prescribing costs are related to night visits. This can be explained either by presuming that night visits indicate morbidity related to deprivation⁵ or by accepting that a night visit often leads to the issue of an emergency prescription, which is followed up with a regular prescription at a subsequent arranged consultation.

Thirdly, an increased rate of generic prescribing lowers prescribing costs. This result is to be expected, given the comparative costs of generic and branded medicines, and has been suggested in previous studies.⁴ Finally, both fundholding and the use of practice formularies seem to exert a cost reducing effect. Of equal interest, however, are the insignificant variables in the equation. There is no evidence that, for example, hospital referrals, geographical location, unemployment, or the staffing structure of the practice influences prescribing costs per ASTRO-PU.

Our final model succeeds in explaining about 42% of the variation in prescribing costs. The architects of the ASTRO-PU believed that their weightings would account for around 25% of prescribing cost variation,² and our analysis has exposed additional factors which contribute to the overall determination of prescribing cost for each practice.

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ONE HUNDRED YEARS AGO

EARLY RISING AS A CAUSE OF INSANITY.

Some time ago we showed cause why early rising, instead of being a virtue as unscientific moralists have taught us, should be considered a mischievous practice condemned by sound physiology as well as by the natural instinct of mankind. It now appears—if we are to believe an American specialist in mental disease—that, in stating the case against early rising, we did not go far enough. Dr. Selden H. Talcott, of Middletown, New York, has

recently called attention to the relative frequency with which farmers and their families become insane. The cause of this, we learn, has hitherto been thought to be the isolation of their lives, the hard work they have to do, and perhaps the excessive use of "pie" and potatoes. Insanity in this country has been attributed to almost everything from tea drinking to the reading of tracts, but the influence of the potato as an etiological factor is new to us.

(*BMJ* 1896;i:167.)