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Cash in Hand

By R. MORGAN, A. J. CHEADLE and P. W. J. STAPLES

Despite the Department of Health and Social Security's disclaimer in paragraph 10 of H.M. 71/90, the earnings of psychiatric patients for work done in hospital were effectively limited to a maximum of £2 between the years 1958 and 1972. The progressive decline in the value of money during this period led to mounting agitation for the limit to be raised (e.g. Wansbrough, 1971, p. 29). Hospitals were notified of the decision to raise the limit in a letter (reference no. DS. 214/72) from D.H.S.S. dated August 1972, the first paragraph of which reads: 'The National Insurance Act 1972 raises the maximum amount a person may earn whilst in receipt of National Insurance benefit from £2.00 to £4.50 a week for work carried out under medical supervision as part of his treatment as a patient of a hospital or similar institution. This takes effect from 5th October 1972.'

For a hospital which specializes in rehabilitation of long-stay psychiatric patients (Morgan *et al.*, 1965) it was expected that this change would have far-reaching effects. For the purposes of this paper they may be divided into two parts. Administratively, it was necessary to make arrangements to implement the change in a way that promised to motivate patients as fully as possible; this decision was a staff matter. Clinically, we had to wait until the patients had had this explained to them in words and then had experienced it in reality before we could have any idea of their response; the latter was determined almost entirely by themselves both individually and, as we hope to show, collectively.

The change was introduced against a background of the terms to which the present patients and their predecessors had been used for the past 11 years, and these need to be described.

(1) Productive work in this hospital is paid according to piecework rates; the rate for every job is well known to every member of the workshops' staff and to every alert patient, completely unknown to very detached or uninterested patients, and partly known to patients intermediate between these two extremes.

(2) A system variously called 'hospital income tax' or 'deductions' is applied to piecework earnings. This sounds complicated, but is quite simple in principle and easy to administer. Out of each week's earnings the patient was paid in full the first 80p, was paid three-quarters of whatever he earned in the next 80p bracket, half of the next 80p bracket, one-quarter of the fourth 80p bracket, and nothing above that. So, for example, a patient who did 300 somethings for a piecework rate of 1p each would earn £3.00 gross and be paid £1.95 net (80p+60p+40p+15p).

Figure 1 shows the relation at all levels between gross earnings and net pay under this system. Few patients understood it clearly or could describe it in detail, but most patients understood its implications quite well. The most important of these was that doing more than £3.20 worth of work in a week did not bring in any more money, because the system automatically gave effect to the £2 limit. Patients reacted in different ways to this. A few disregarded the tax system and worked fast and long although there was no money in it for them, and exceptionally they would do £15 or £20 worth of work in a week. But of those who were capable of such output the majority adjusted their tempo and application to achieve up to about £3.50 worth of completed work in a 36¼ hour working week. They did this so naturally that they had most of us convinced that it was the limit for most of them.

(3) Each patient is provided with a pay slip in his or her wage packet each Friday afternoon, stating gross earnings, deductions, net pay and other information. Preparation of these

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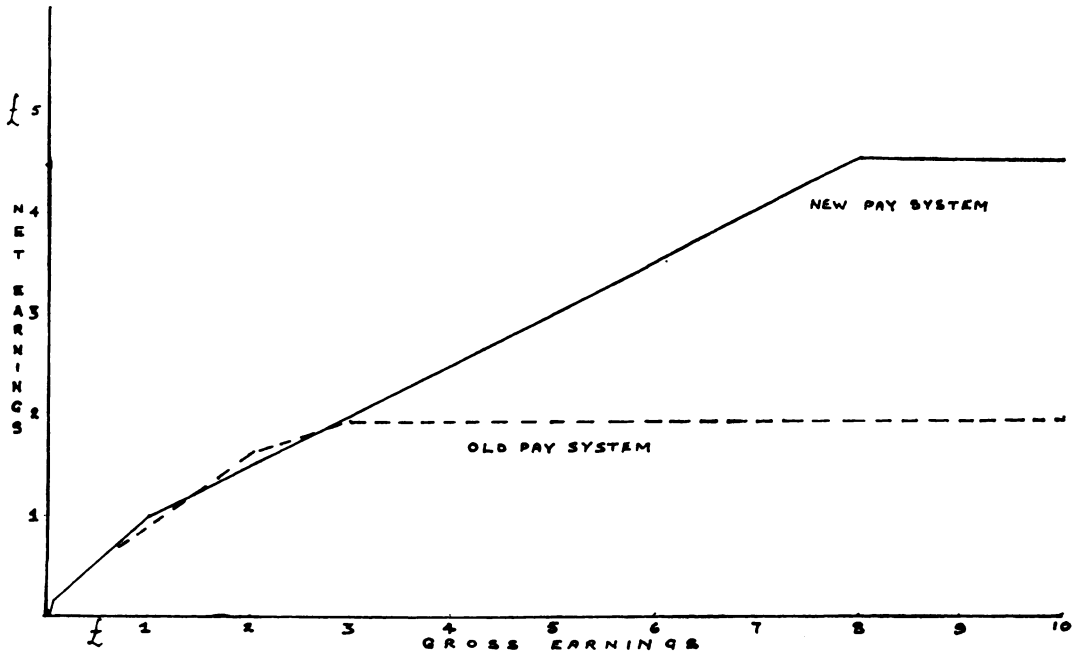


FIG. 1.—Comparison of effects of old and new pay systems.

pay slips is one of the many jobs of the patients in the Clerical Section.

(4) The money levied from deductions goes into a so-called Industrial Account (originally part of Free Monies but since HM 66/25 treated as part of Exchequer Monies). From this account are paid sick pay to those temporarily too ill to work, supplementary payments to earners of less than 80p, and resettlement grants to patients on discharge; and the balance is used to buy machinery and equipment for the workshops and other amenities for the patients' communal benefit. The uses to which this money is put are well understood by all staff, but despite repeated explanation are very poorly understood by almost all patients. It is considered unlikely that any of them are altruistic enough to be motivated to work hard by consideration of the uses to which the Industrial Account is put.

The increase of permissible earnings to £4.50 was introduced into the very stable and comparatively well understood situation described above. This meant that the systems of deductions had to be changed, and the following simplified method was adopted. Under this new system the patient receives in full anything he earns up to £1, but is paid only a half of however much he may earn above that first £1. Thus, for instance, anyone doing £5 worth of work is paid £3 (£1+£2). Thus a patient has to do £8 worth of work or more before he is paid the full £4.50 which is allowable. So it remains worth his while to go on working up to £8 worth instead of £3.20 worth of output a week as it was under the previous system. (The relation at all levels between gross earnings and net pay under this system is shown in Fig. 1.) This change was explained in advance several times to the patients. Most of them received the news with apathy and apparent incomprehension. Those who seemed to understand appeared doubtful or even suspicious. It was as if the change remained unreal to them in varying ways while it still lay in the future and only achieved reality after it had happened and been experienced by them. Some of course were slower than others to grasp it even then.

After the changes had been introduced, the patients carried on working on the new terms

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for about three months before anyone noticed what was happening. Then it was observed that a change in the pattern of earnings had occurred. Each week a patient in the Clerical Section prepares an analysis of all patients' earnings, and among many other things he makes a list of the names of all those whose gross earnings for the week are over £5. We made a survey of a whole year's worth of his weekly analyses, and this showed that the number of such patients had averaged 16 throughout the year until October, but had gone up to an average of 35 for the last two months of the year. This was statistically significant, and we realized that we had a ready-made experimental situation, with each patient acting as his or her own control. In principle we decided to sort the patients into those whose gross earnings rose significantly after the change and those whose gross earnings did not, and to compare the characteristics of the two groups.

We shall refer throughout to the *gross* earnings of the patients, because (a) this is the best indicator we have of the amount of work done and (b) it is the only indicator of output that is unaffected as a measure by the changes in regulations and deduction systems.

Hypotheses

At this stage we drafted the following hypotheses. The possibility of earning more will motivate some patients, but not others, to work harder. Their response to the change is likely to depend mainly upon their alertness, IQ, diagnosis, severity of clinical condition, degree of social withdrawal, and length of stay. It may also depend upon their age and sex, status as in-patients or day-patients, possession or not of a separate income (e.g. sickness benefit or war pension) and the paranoid or non-paranoid nature of their illness.

Method and Results

Since patients here are not paid for their (Monday to Friday) week's work until the following Friday, the date on which they were first paid for work done under the new terms was Friday, 20 October 1972. We chose to compare their work done during the thirteen-week period before this date with work done during the thirteen-week period starting with this date. The raw data were studied and recorded. Numbers of patients had to be discarded because (1) they had been admitted or discharged at some inconvenient point during the six months period, (2) they had been off work through illness, (3) they had moved during the period from one workplace to another, or (4) a combination of these factors. In addition, nearly all the patients had 1–2 weeks' seaside holiday during the first period and about a third of them had 1–2 weeks at home for Christmas during the second period. Having surveyed the data we laid down that in order to qualify for inclusion a patient needed to have worked in the same workplace for at least 10 of the 13 weeks in each period.

By this criterion 157 patients qualified for inclusion. We calculated their individual mean earnings for the two periods and then the differences between the means. Table I shows that 63 per cent had responded to the changes by earning more in the second period and 26 per cent had earned significantly more ($p < 0{\cdot}05$); 37 per cent had earned less and 7 per cent had earned significantly less. Almost half of the patients whose earnings increased and over half of those whose earnings increased significantly worked in one particular workshop. In another two workshops the proportion who improved was distinctly lower. This difference is highly significant ($\chi^2 = 16{\cdot}686$, $p < {\cdot}001$).

The 41 patients who made a significant improvement on their own previous earnings form a sub-group whom we have named the 'significant improvers'. We attempted next to match each of these with another patient who:

1. Worked in the same workshop;
2. Had the same mean earnings in the first period to within 10p;
3. Failed to increase his earnings by more than 10 per cent in the second period.

Using these criteria it was possible to obtain individual matches for 24 of the 41 significant improvers. We then proceeded to test our hypotheses by comparing the two groups.

There was no difference between them in alertness (as measured by their answers to five

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TABLE I
Comparison of patients' earnings before and after increase in disregard

Workshop name	Number of patients earning				
	Significantly more	Insignificantly more	Insignificantly less	Significantly less	Total
Grey	11	16	13	1	41
Blue	25	23	10	3	61
Red	3	9	16	4	32
Gold	3	9	8	3	23
Total	41	58	47	11	157

χ^2 (those earning more v. those earning less) = 16·686, d.f. = 3, $p < 0{\cdot}001$

standard current events questions), IQ, diagnosis, clinical severity, degree of social withdrawal, length of stay, age, sex, status as in-patients or day-patients, private income or paranoid traits. Indeed by matching them intentionally for three criteria, we achieved unintentionally an almost perfect group matching of all the other variables. We obtained only two positive findings. There were 9 patients with multiple diagnostic handicaps (e.g. schizophrenia with mental subnormality) in the control group but only 3 among the significant improvers ($\chi^2 = 4{\cdot}00$, $p < 0{\cdot}05$). Patients on high doses of neuroleptic drugs (defined as more than half the conventional maximum daily dose) were less likely to improve their earnings than those on low doses ($\chi^2 = 4{\cdot}764$, $p < {\cdot}05$). Six of the significant improvers were receiving antidepressive drugs compared with only two of the controls.

DISCUSSION

Occupationally, the long-stay patient is handicapped for a number of reasons by the fact that his output is low. Unless this handicap can be overcome he remains unemployable in open industry. If a rehabilitation service or unit is aiming at resettlement, one of its essential tasks is therefore to increase the output of its patients to a level at which they once again become employable. It cannot do this independently of the patients' own choice in the matter. How much work gets done is always ultimately decided by the patient.

It is therefore important to consider the factors which influence each patient in determining what his or her current output is to be. From the results of this study and from previous experience we would say that there are four main groups of factors:

1. The patient's individual handicaps.
2. The total amount of work available.
3. National and local regulations governing permitted earnings.
4. The atmosphere and organization of the workplace.

The patients' own handicaps are usually considered and were considered by us when we framed our hypotheses, to be the only factor affecting his output. The existence of other factors is usually ignored. This study has shown how very small a part the patient's handicaps play in fact. Few of the expected clinical or social variables could be shown to have exerted any influence. Only if patients had two distinct illnesses instead of one was a clinical handicap demonstrable. Their output was also associated with the amount of drugs they received, but interpretation of this finding is uncertain. The association of high dosage with static output could mean that performance was impaired either by the drugs themselves or by the active psychosis for which the high dosage was given. Since our drug policy is the conventional one of using the minimum dose that is effective, we incline to favour the latter explanation.

At first we found these predominantly negative clinical findings very difficult to believe. We suspected that they might be the product of our predetermined research design and the small number of matched pairs that it was possible to produce. We suspected also that a

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sub-group of significant improvers might be contaminating the picture; namely those who improved significantly but from an initially very low to a still relatively low figure, both figures being below the level at which the change in regulations made any difference. To check both these possibilities an entirely new comparison was made between all those significant improvers whose second period output was greater than £3.20 (n = 28), and the remainder of the sample (n = 129). The result of this comparison was even more barren than the matched-pairs comparison. There was a tendency for multiple handicaps to impair performance, but this failed to reach significance (p = 0·08—Fisher's Exact Test). No association with drug dosage was found. There was again no difference between sub-groups on any of the factors listed above under the heading of Results. Having run this check we feel that our findings can now be asserted with confidence despite their apparent improbability. Patients' individual handicaps play very little part in determining their output and motivation to work, certainly a much smaller part than the other factors we have listed.

The response of paranoid patients to money incentives is a matter of particular interest. O'Connor (1957) attributed their linear learning curve to 'motivational peculiarities'. The results of further experiments (O'Connor and Rawnsley, 1959) showed 'that chronic paranoid patients will respond better to a regime in which socially rewarding experiences are made available (but not thrust upon them) than to one in which they are immediately involved in person-to-person relationships'. The interpretation of later results in which the offer of money was followed by decreased performance (Topping and O'Connor, 1960) led the authors 'to assume that money is an "incentive" for paranoid schizophrenics, but that they react to it negatively'.

We have found that the patient's response to something presented verbally may be very different from his response after time has been allowed for him to discover what the words really mean. In our study there was a clear distinction between the patients' response to our explanations of the impending changes and the response of some of them to the actual experience of the effects of the changes. Even so, as Table II shows, our paranoid patients responded less enthusiastically than the non-paranoid ones, but the difference may have been due to chance ($\chi^2 = 0{\cdot}91$, N.S.).

TABLE II
Response of paranoid and non-paranoid patients

	Paranoid	Non-paranoid	Total
Improved group	5	19	24
Not improved group	9	15	24
Total	14	34	48

$X^2 = 0{\cdot}91$ N.S.

The total amount of work available to be done by the patients of a Unit is relatively fixed at any given time. An increase in the available quantity of sub-contract work can be obtained only after locating and negotiating successfully with firms who are willing to supply it: since this search can only begin after the Unit has shown evidence of its capacity to do more work, the process takes a long time. A Unit has more immediate control of the production of its own products, and so long as it has an adequate supply of raw materials it can increase this straightaway to satisfy a demand for more work. However, increased production, unless it is matched by increased sales, soon fills storage space with unsold stocks and this dictates that output be reduced again. The amount of this type of work available to a Unit is therefore effectively governed by the volume of orders from its customers and this can be increased only slowly, if at all, depending on a number of factors.

The results of our study illustrate this. Despite significant increases in the output of individual patients the total amount of work done by all patients in the second period was only 11 per cent greater than in the first period. At least in the short term the significant individual increases have been offset by reductions elsewhere, and on reflection this is seen to be inevitable. It comes to this, that a patient or group of patients in a given context can succeed in the short term in increasing their output and earnings only at the price of other patients.

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Our data have shown that 41 out of 157 patients did increase their output significantly during the six months period under survey. This happened at the same time as the changes we have described in national and local arrangements governing their pay. These changes had the effect of making it possible for the first time to reward patients with substantially more pay for doing substantially more work. We cannot prove but have no doubt that the legislative change was the cause of the observed effect in most cases. A subsidiary cause, serving to explain the improved performance of no more than about six of the 41 patients, was a substantial improvement in mental state. These were patients who happened to be actively psychotic and hence worked very poorly during the first period; their response to appropriate treatment coincided with the second period, but their earnings then would have been substantially greater even without the legislative change. They were matched, of course, by a small number of other patients whose earnings dropped in the second period owing to clinical deterioration at that time.

At the time (January–February 1973) when this study was designed negotiations had been completed between the hospital and the local Social Security office, about the way in which the new £4.50 disregard would be implemented in regard to day-patients. The Social Security disregard, we were informed, has not been increased but remains at £2. At our request they agreed to let day-patients be paid up to £4.50 by the hospital for work done, but insisted that any day-patients who did earn over £2 would be paid correspondingly less Social Security money (this is a true simplification of a much more complicated arrangement). Day-patients here receive their Social Security payments by Order Book. Each book contains three months worth of weekly orders, and each order is for an identical predetermined fixed amount, the size of which depends on the patient's earnings during the previous quarter. By January 1973, when the data for this study end, no day-patient had had time to learn by experience that it was not worthwhile earning more than £2, because doing so would only lead to the amount of Social Security money being reduced. We believe that it is for this reason that, according to our results, day-patient status does not impair motivation. Since January 1973 all day-patients have learnt that high earnings do cause their benefits to be reduced, but further analysis of their earnings up to June 1973 shows no downward trend as yet. The day-patients' motivation is at present being assailed in two opposite ways, (a) it is not worthwhile earning more than £2 or benefits will be reduced, (b) benefits have already been reduced this quarter because of higher earnings last quarter, so they tend to have to keep their earnings up unless they are prepared to make do with less total money. It remains to be seen how they will resolve this conflict.

The observed differences between different workshops in the number of patients whose earnings improved is so striking (see Table I) that we have felt obliged to look for possible reasons for this. Grey and Gold workshops, although both engaged in the usual range of sub-contract jobs, including assembly packing inspection, etc., were in fact doing different jobs and do not provide a particularly good comparison. Blue and Red Workshops, on the other hand, do provide a very good comparison. Each was engaged almost entirely in the preparation and packing of soft dressing packs with the same contributory activities of printing, folding, heat-sealing, counting and boxing in each. In Blue Workshop in the second period 25 out of 61 patients (41 per cent) did significantly more work; in Red Workshop only 3 out of 32 patients (9 per cent) did so ($\chi^2 = 8{\cdot}52$, $p < 0{\cdot}01$). It was not a matter of Blue Workshop catching up from a previously inferior position; mean earnings per patient in the two workshops in the first period were only 21p apart (Red £2.90, Blue £3.11). In the second period, mean earnings were Red £2.97 and Blue £3.77. This is the more surprising since hospital policy consigns all more severely disabled patients to Blue Workshop.

We have considered the following possible explanations for such a striking difference: the staff ratios in each workshop, the respective volumes of work assigned to each workshop, the possibility that different soft dressing packs

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were unequally rewarded, some error in allocating rates for different jobs, the higher proportion of day patients in Red Workshop, the higher proportion of women patients in Red Workshop, the possibility that Blue Workshop was more highly mechanized, the amount of patient sickness in the two workshops and the possibility that in Red Workshop the patients' timekeeping was greatly inferior. None of these explanations could account for the observed difference. Having checked that they can be excluded we are left with only one other explanation to offer. The two workshops are parts of two different medical firms. The consultant psychiatrist of Red Workshop has a guarded attitude about the value of workshop work and requires that nurses pay a lot of attention to other aspects of patient care, such as hygiene. The consultant psychiatrist of Blue Workshop regards workshop work more highly, so that his nurses give it top priority during patients' working hours. We feel that these different attitudes must have resulted in subtle differences in the staff-determined values and organization of the respective workshops, in order to account for the observed difference that we have described.

Summary

From 1958 to 1972, patients' earnings for work done in British hospitals were effectively limited to a maximum of £2. In October 1972 a change in the law allowed this ceiling to be raised to £4.50.

This paper examines the consequences of this change to a sample of 157 patients (each serving as his or her own control) over two consecutive periods of three months immediately before and after the change. Forty-one (26 per cent) of the patients increased their output significantly in the second period. Twenty-four of these patients were individually matched with others whose output did not increase substantially. The two sub-groups were remarkably similar clinically, showing that formal handicaps play a much smaller part than is commonly supposed in governing the work performance of handicapped people. Only two factors were associated with failure to increase output: a diagnosis of two or more different psychiatric conditions, and treatment with high doses of neuroleptic drugs (which is taken to indicate a more severe psychosis). Paranoid patients responded less enthusiastically than others to the change, but not significantly so. These results failed to reach significance when the whole population was studied.

From these results it appears that four groups of factors influence patients' motivation to work in hospital: their multiple handicaps, the total amount of work available, national and local regulations governing permitted earnings, and the atmosphere and organization of the workplace.

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References

Department of Health and Social Security (1971) HM. 71/90. *Hospital Memorandum on Patients' Money.*

Morgan, R., Cushing, D. & Manton, N. S. (1965) A regional psychiatric rehabilitation hospital. *Brit. J. Psychiat.*, 111, 955–63.

O'Connor, N. (1957) Reminiscence and work decrement in catatonic and paranoid schizophrenics. *Brit. J. med. Psychol.*, 30, 188–93.

—— & Rawnsley, K. (1959) Incentives with paranoid and non-paranoid schizophrenics in a workshop. *Brit. J. med. Psychol.*, 32, 133–43.

Topping, G. G. & O'Connor, N. (1960) The response of chronic schizophrenics to incentives. *Brit. J. med. Psychol.*, 33, 211–14.

Wansbrough, N. (1971) *Contract and Pay Questions in Industrial Therapy Units.* King's Fund.

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