

# A computer generated patient carried health check card

MARTIN LAWRENCE, MRCP, FRCGP  
General Practitioner, Chipping Norton and H.E.C.  
Lecturer in General Practice, University of Oxford

**SUMMARY.** A computerized record system has been programmed so a patient's important medical information can be printed out and given to the patient in the form of a 'health check card'. One aim was to enable patients to take more responsibility for their own preventive care. Following the issue of cards to 331 patients in 126 families, there was an increase in the uptake of cervical cytology screening, blood pressure recordings and tetanus immunization. Replies to a questionnaire enclosed with the card were received from 161 patients (in 86 of the families): most found the cards acceptable and believed they would be useful.

## Introduction

ISSUING patients with all or part of their medical record has often been advocated but, other than for the antenatal record, rarely attempted.<sup>1-10</sup> This has been mainly because of problems of sensitive information, double entry, cost and the time required to explain information to patients. Despite this the pressure for patient access to information is increasing.

This practice has devised a system of computer-generated health check cards for patients to keep. The aims of offering the card to patients are:

1. To provide a summary of medical data for the use of other doctors or pharmacists.
2. To reduce patients' anxiety about records by making them more 'open'.
3. To improve doctors' records by enabling patients to point out omissions or faults.
4. To enable patients to take more responsibility for their own care often via the nurse rather than the doctor.

This paper reports on a pilot study of the acceptability of such cards to patients and the change in recorded data and uptake of preventive procedures in the four months after they were issued.

## Method

### The health check card

In January 1984 a computer system (VAMP/IGP) was introduced into the author's practice of 6000 patients. The company and the author together designed a preventive health check display which for each patient showed:

1. Important medical history items (given priority 1 or 2 when entered).
2. Authorized repeatable prescriptions.
3. Allergies and intolerances.
4. Contraception: and when FP1001 due.
5. Cervical smear status and when next due.
6. Last blood pressure recording and when repeat due.
7. Smoking status.
8. Immunization data and when items due.

The display is adjusted for age and sex, and the doctor's visual display unit screen only includes data necessary for actions (for instance only the immunizations due and not the full immunization history unless asked for).

The opportunity was taken for similar information to be printed out and given to patients in the form of a health check card (Figure 1). The data is the same as on the screen except that only medical items entered with priority 1 are printed, contraception is omitted because it involves many problems of confidentiality, smoking status is omitted because smokers are known often to abandon all health maintenance offers if their smoking is constantly emphasized and immunization records are printed in full.

HEALTH CHECK CARD issued: 13/12/85	
12 West St Surgery CHIPPING NORTON OXON OX7 5AA	
AARON DELIA	
THE FLOOR HOUSE KINGHAM OXON	
Dob: 01/01/44 NHS: DTA1006 Reg with Dr: M.S.T.Lawrence	
-----	
Allergies	: no record
Intolerance	: 24/06/82 AMOXIL
Medical summary	: 22/11/67 APPENDICECTOMY
	1974 VARICOSE VEINS STRIPPING
	07/05/77 HYSTERECTOMY TOTAL OVARIES CONSERVED
	1979 IRRITABLE BOWEL SYNDROME
	1985 HAEMORRHOIDS
Cervical smear	: 07/05/77 HYSTERECTOMY
Immunisation	: 05/02/80 Bst Tetanus
	05/02/80 Bst Polio
	01/06/84 Cholera
	01/06/84 Typhoid
	01/07/84 Cholera
	01/07/84 Typhoid
	Bst Tetanus DUE 05/02/90
Blood pressure	: 08/11/85 145/ 85 DUE 08/11/90
Recall	: 09/11/85 CHECK-UP DUE 09/11/90
Repeat medication:	COLOFAC TAB 135.00 1 TDS
	FYBOGEL ORANGE SACHE GRA 3.50 1 DAILY
-----	
If immunisation due or no record, make appointment with nurse	
If cervical smear is due or no record please make an appointment	
with nurse or at Well Woman clinic	
If blood pressure check due or no record, please ask doctor when	
you next consult	

Figure 1. The print-out of the patient's health check card.

The health check cards are printed on to plain FP10 size paper which fits flat in a Lloyd George envelope. This print-out is folded once and inserted into a small plastic wallet (cost approximately 6p) similar in size to a driving licence (Figure 2).

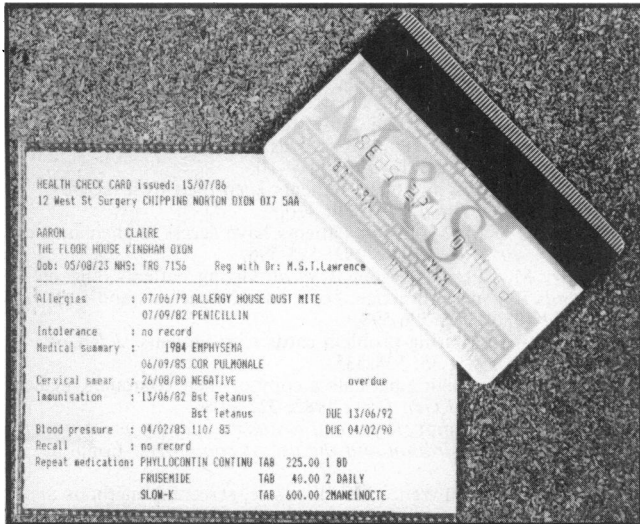


Figure 2. The health check card folded into the plastic wallet.

### The survey

Families were selected by printing out males and females in three age bands — 35 to 44, 45 to 54 and 55 to 64 years. Lists were printed alphabetically and the first 25 patients in each age band were chosen and cards prepared for all members of the families. A copy of each card was kept for later analysis. A letter was then sent to the parents inviting someone to come and collect the family's cards. Each card in its plastic wallet was put in a sealed brown envelope labelled with the name of the patient and marked 'private' for patients aged 16 years or over. In each envelope was included a form asking about any omissions and (for over 16-year-olds) a questionnaire asking about acceptability. Families who did not collect cards were not reminded but after three months those who had collected cards but not returned the questionnaire were telephoned. After four months the health check cards were reprinted so that the preventive care status of the patients could be compared with their status four months earlier.

### Results

During the period 29 April to 24 May 1985 331 cards were prepared for 126 families. Cards were not collected by 26 patients from 15 families; seven were single people living alone, two had chronic mental illness, one has always refused to visit the surgery, one had a very ill patient in the family, and in four no reason was apparent.

#### Acceptability and usefulness

As 52 of the 331 recipients were under 16 years old, only 279 questionnaires were sent out; 161 replies were received from 86 families. Table 1 shows the responses to the questionnaire on acceptability and usefulness: 131 (81%) of the responders liked the card and 146 (91%) thought it useful. All thought it useful to have for their children. More information on the card was requested by 57 (37%) of the responders, usually this was for blood group (34 requests), something many people think important to know.

#### Increased recording of data

Patients were asked to provide any information which they thought was missing from the card. Allergies reported were only

Table 1. Responses of patients to questionnaire about acceptability and usefulness of the health check card (total number of respondents = 161).

What do you think of having this card provided?

Like a lot	68
Quite like	63
Not sure	26
Don't like	2
Dislike a lot	1

Do you think the card is useful to have?

Very	78
Quite	68
Not sure	6
Not very	7
Useless	2

(For parents of children under 16 years old)

Do you think the card useful to have for your children?

Very	41
Quite	8
Not sure	0
Not very	0
Useless	0

Could you understand the items on the card?

All	123
Most	21
Some	1
Very few	0

Will you get the checks done when the card shows they are due?

Definitely yes	77
Yes	59
Not sure	15
No	4
Definitely no	1

entered it after discussion with the patients they seemed genuine and the number of recorded allergies increased by six, from 19 to 25. Intolerances to medicines — that is those which disagree with the patient but to which the patient is not truly allergic — also increased by six. Summary items increased by 74 from 212 to 286; these were either items unknown to us but reported by the patient, or items in the record which were not regarded as major by the doctor but which the patient wished to have on his health check card.

There was an increase in recording rates of preventive procedures (Table 2). For cervical cytology the rate at the time of issuing the cards was already high by national averages, 70% of women aged 30–65 years for whom a card was prepared having had a recent smear and only 19% no smear at all. After four months only 13% had no record and those with a record of a recent smear had gone up to 80%. Twenty-three patients who needed a blood pressure check had it done, 10 of whom did not have a previous record in the notes. Patients with a blood pressure record within the past five years rose from 52% to 62%. There was a large uptake of tetanus immunization. Whereas only 100 patients (30%) were up-to-date on tetanus immunization when the cards were sent out, 156 (47%) were up-to-date four months later; 13 immunizations were reported to have been done elsewhere, 43 were done in the relevant time. There was also a reduction in the number of rubella vaccinations due and an increase in those known to be immune to rubella, but these numbers were small.

**Table 2.** Effect of the health check card on the uptake of preventive health measures (total number of cards prepared = 331).

		Number (%) of patients		
		No record	Recorded but due	Up-to-date record
Blood pressure (patients aged over 30 yrs) (n = 226)	Before	45 (20)	63 (28)	118 (52)
	After	35 (16)	50 (22)	141 (62)
Cervical cytology (women aged 30-65 yrs) (n = 121)	Before	22 (18)	14 (12)	85 (70)
	After	15 (13)	9 (7)	97 (80)
Tetanus immunization (all patients) (n = 331)	Before	231 (70)		100 (30)
	After	175 (53)		156 (47)

## Discussion

A computerized summary such as the health check card described here can overcome many problems of involving patients with their records. The medical items included are selected by the doctor when he is entering the item in the patient's medical history and so sensitive items can be omitted. Repeat medication details are updated when the doctor alters the authorization in the patient's therapy record. Other information is automatically entered in the routine data collecting process of day-to-day practice. In this way no extra time is involved in collecting and entering data for the patient-held record card and a patient can have a new health check card at any time on demand and it is automatically up-to-date.

A major problem with the increasing emphasis on preventive care in general practice is the effect on the consultation of opportunistic case-finding. This may be acceptable for taking blood pressure, but it is really not practical for smoking status, weight, cervical cytology and immunization for rubella and tetanus all to be included in this way. A recent study showed doctors who claimed to be offering opportunistic care did not have higher recording rates for blood pressures and cervical smears than those who did not.<sup>11</sup> Pringle has recently demonstrated that using an opportunistic screening prompt during the consultation hardly changes the length of the consultation so that what had been done before is squeezed into a shorter time.<sup>12</sup> If, in providing preventive care, we are not to endanger the traditional consultation then we must examine ways of providing that care other than by the doctor 'fitting it in'. One way is to divert patients to the nurse for such procedures;<sup>13</sup> another is to educate patients and provide them with information so that they can seek preventive procedures (again usually from the nurse) when they are due. It appears from the study that the health check card may be a valuable step towards achieving this.

Patients in this study welcomed being issued with health check information. This is in accordance with other findings that patients expect general practitioners to be concerned with health promotion and welcome such involvement.<sup>14</sup> Mailing out the health check card has been effective in increasing the uptake of preventive procedures. Whether patients will keep their cards and continue to attend as preventive health check-ups become due will require prolonged study.

## References

1. Bronson DL, Rubin AS, Tufo HM. Patient education through record sharing. *Q Rev Bull* 1978; 4: 2-4.

2. Giglio R, Spears B, Rumpf D, Eddy N. Encouraging behaviour changes by use of client held patient records. *Med Care* 1978; 16: 757-764.
3. McCormick MC, Shapiro S, Starfield BH. Association of patient held records and completion of immunisation. *Clin Pediatr (Phila)* 1981; 20: 270-274.
4. Skiba LW. Patient retained records — the health identity card. *J R Coll Gen Pract* 1984; 34: 104-106.
5. Metcalfe DH. Why not let patients keep their own records? *J R Coll Gen Pract* 1980; 30: 420.
6. Bird AP, Walji MTI. Our patients have access to their medical records. *Br Med J* 1986; 292: 595-596.
7. Baldry M, Cheal C, Fisher B, et al. Giving patients their own records in general practice: experience of patients and staff. *Br Med J* 1986; 292: 596-598.
8. Thomson P. Sharing problem cards with patients. *J R Coll Gen Pract* 1985; 35: 534-535.
9. Sheldon MG. Giving patients a copy of their computer medical record. *J R Coll Gen Pract* 1982; 32: 80-86.
10. Andersen A (chmn). *Report of a study of family practitioner services administration and the use of computers*. London: HMSO, 1984.
11. Fleming DM, Lawrence MS. List size, screening methods and other characteristics of practices in relation to preventive procedures. *Br Med J* 1985; 291: 869-872.
12. Pringle M, Robins S, Brown G. Computer assisted screening: effect on the patient and his consultation. *Br Med J* 1985; 290: 1709-1712.
13. Fullard E, Fowler GH, Gray JM. Facilitating prevention in primary care. *Br Med J* 1984; 289: 1585-1587.
14. Wallace P, Haines A. General practice and health promotion. *Br Med J* 1984; 289: 534-536.

## Acknowledgements

I wish to thank Mr Jan Boda for software programming and the development of the PD/HCC module; Mrs Mary Parker for nursing and clerical assistance; and Oxfordshire District Health Authority for a research grant for the project.

## Address for correspondence

Dr Martin Lawrence, Department of Community Medicine and General Practice, Gibson Building, Radcliffe Infirmary, Oxford OX2 6HE.

## Vitamin D supplements for the elderly

Many patients in long-stay geriatric wards have very low plasma 25-hydroxy vitamin D concentrations, due to a combination of poor sunlight exposure, inadequate diet, malabsorption of vitamin D and subsequent defects in hydroxylation. This can be corrected by dietary changes, administration of vitamin D and by providing a low intensity ultraviolet source in the patient's day room. A randomized double-blind controlled trial was made of the effect of vitamin D supplementation on the abilities of elderly hospital patients to carry out basic activities of daily life. Those patients included in the trial had plasma 25-hydroxyvitamin D concentrations which were low or low normal as judged by the normal range in young adults. After two to nine months on the trial there was no significant difference in the performance of the control and treatment groups. The study offers no support for any general recommendation that geriatric patients who remain in hospital for long periods should receive routine vitamin D supplementation in order to maintain or improve their independence. However, it is common to find evidence of osteomalacia in elderly patients with fractures, particularly of the femoral neck, and it has been argued that vitamin D depletion also contributes to osteoporosis in the elderly. Nor should the present findings remove the need for vitamin D deficiency to be considered in individual elderly patients with bone or muscle symptoms.

Source: Corless D, Dawson E, Fraser F, et al. Do vitamin D supplements improve the physical capabilities of elderly hospital patients? *Age Ageing* 1985; 14: 76-84.