Innovative system to improve use of patient education materials

June Lawrence Smith, BN, MED, Cheryl Levitt, MB, BCH, CCFP, Eliane D. Franco, MD, MPH

ABSTRACT

OBJECTIVE To evaluate a new storage system for patient education materials.

DESIGN Anonymous surveys before and after implementation of new storage system.

SETTING Family medicine residency teaching centre.

PARTICIPANTS All nurses, staff doctors, and first- and second-year residents in the unit.

INTERVENTIONS Implementation of a new storage system for patient education materials, orientation of all health professionals in the unit to the new system, and periodic distribution of patient education newsletters.

MAIN OUTCOME MEASURES Self-reported use of patient education materials.

RESULTS Response rates were 73% (30 of 41 health professionals) in 1990 and 86% (36 of 42) in 1992. Responses to the first survey on use of 20 categories of patient education materials showed materials were seldom used by most respondents. Back Care, Nutrition, Diabetes, VD/Birth Control, and Pregnancy categories were the most frequently used. In the second survey, more respondents reported using these five categories of pamphlets. Rates of use varied only slightly for the remaining 15 categories.

CONCLUSIONS Health professionals reported more frequent use of certain patient education materials following implementation of a new storage system.

RÉSUMÉ

OBJECTIF Évaluer un nouveau système pour faciliter l'accès au matériel éducatif destiné aux patients.

CONCEPTION Sondages anonymes avant et après la mise en place d'un nouveau système d'accès.

CONTEXTE Centre d'enseignement pour les résidents de médecine familiale.

PARTICIPANTS Tout le personnel infirmier, les médecins et les résidents de 1re et 2e années de l'unité d'enseignement.

INTERVENTIONS Mise en place d'un nouveau système d'accès au matériel éducatif destiné aux patients, session d'orientation au nouveau système pour tous les professionnels de la santé de l'unité et diffusion périodique de bulletins d'information concernant l'éducation des patients.

PRINCIPALE MESURE DES RÉSULTAT Utilisation du matériel d'éducation des patients telle que signalée par le personnel.

RÉSULTATS Les taux de réponse furent de 73 % (30 professionnels de la santé sur 41) en 1990 et de 86 % (36 sur 42) en 1992. Les réponses au premier sondage portant sur l'utilisation de 20 catégories de matériel éducatif pour les patients montrent que la plupart des répondants utilisent rarement le matériel. Les catégories les plus souvent utilisées comprenaient les soins du dos, la nutrition, le diabète, MTS/contrôle des naissances et la grossesse. Dans le deuxième sondage, un plus grand nombre de répondants ont rapporté utiliser ces cinq catégories de dépliants. Quant aux 15 autres catégories, les taux d'utilisation ont peu varié.

CONCLUSIONS Suite à la mise en place d'un nouveau système d'accès, les professionnels de la santé ont rapporté utiliser plus fréquemment certaines catégories de matériel éducatif destiné aux patients.

Can Fam Physician 1997;43:58-62

"Every family physician is a patient educator. The Latin origin of the word 'doctor' is 'docére,' which means 'to teach.'"[1]

Patient education, an integral part of comprehensive patient care, is traditionally effected through verbal communication or written instructions, pamphlets, or fact sheets. Studies have shown that written material, given to patients to reinforce verbal instructions, can increase patients' knowledge about disease[2] and medication[3,4]; can decrease medication errors[5]; and can improve understanding,[6] retention,[7] and compliance.[8,9] Therefore, it is important to make patient education materials easily accessible to health professionals and to make professionals more aware of the written materials available in the workplace. In family practice units, health professionals are inundated with written materials for their patients. Collating and storing these materials presents a challenge.

In our clinic, most of the patient education materials were shelved haphazardly in a small storage room and each examining room had an accordion file stuffed with pamphlets on various topics. Collating, replenishing, and reorganizing the materials was not well coordinated. Staff members expressed frustration and complained that they were unable to find anything in the storage room or in the accordion files. There was a general feeling that the materials were underused, resulting in the loss of an important source of information for patients.

A review of the literature on storage methods revealed information on computerized storage of patient education materials but none on storage systems for pamphlets, booklets, and fact sheets. We explored some library cataloguing systems in current use[10-16] and found them too complicated for our needs. We decided to develop a new system tailored to our needs.

Ms Smith *is a nurse in the Herzl Family Practice Centre at the Sir Mortimer B. Davis-Jewish General Hospital and a part-time faculty lecturer at the Department of Family Medicine in the Faculty of Medicine at McGill University in Montreal, Que.* **Dr Levitt** *is Chair of the Department of Family Medicine at McMaster University. She was Chief of the Department of Family Medicine and Director of the Herzl Family Practice Centre and an Assistant Professor in the Department of Family Medicine at McGill University when this study was conducted.* **Dr Franco** *is a Research Associate for the Department of Family Medicine at McGill University.*

This paper describes the development of a storage system for patient education materials and its implementation at the Herzl Family Practice Centre (HFPC), a McGill University residency training unit. Results of a survey conducted before and after implementation of this system are presented and show the self-reported level of use of patient education materials by nurses and physicians (doctors and residents) at our centre.

METHODS

Survey of use of materials

A questionnaire was designed to determine how frequently specific categories of materials were being used by the health professionals at HFPC. Each survey consisted of only one mailing of the questionnaire to each physician and nurse practitioner. Respondents were asked to remain anonymous and to check whether their use of each of 20 categories of patient education materials was frequent, seldom, or never. Comments were solicited. Colour coding identified the professional category of respondents while preserving anonymity.

Following the 1990 survey, we implemented the new storage system. Two years later we did a second survey, using the same questionnaire, to determine whether materials were being used more frequently.

Storage system design

First we sorted and listed all materials on hand and then grouped them according to category and classified them alphabetically (eg, Adolescent, Back Care). An index of subject categories was created and numbers were assigned to each category and subcategory, which allowed for future addition of materials (**Table 1**). Once the brochures and pamphlets were collated into categories, we developed an appropriate storage system, produced a reference manual, and placed a collection of sample brochures and pamphlets in a binder for easy reference.

Storage system. The newly developed storage system was housed in a room full of shelves. Brochures and pamphlets were placed in sections labelled with numbers (eg, all patient education information in the category "Adolescent" was placed together on the shelves labelled 5.0). Each category contained several subcategories (eg, 5.1 Moving into the Teens, 5.2 Approaching Adolescence). Because items within the categories often went out of print, the system was designed so that pamphlet numbers, such as

Table 1. Examples of the indexing system

CATEGORY TOPICS	CATEGORY NUMBERS	SUBCATEGORY NUMBERS	PAMPHLETS
Abuse	1.0	1.1	Violence: a reality...
		1.1	La violence: une réalite...
		1.2	Elder abuse: what do you think it is?
		1.2	L'abus envers les personnes âgées
Adolescent	5.0	5.1	Moving into the teens
		5.2	Approaching adolescence
		5.2	A l'approche de l'adolescence
		5.3	Accent on you
Alzheimer	10.0	10.1	Alzheimer disease
		10.1	La maladie d'Alzheimer
		10.2	Alzheimer Wandering Registry
		10.2	Registre d'errance Alzheimer

5.1 (Adolescent: Moving into the Teens), could be reassigned to newly available pamphlets that fit into the same category.

Reference manual of indexed categories. The reference manual included a guide on how to use the manual, an alphabetized list of categories and subcategories (pamphlets), and a map of the storage room. The map showed the storage shelves where labels indicated category and subcategory numbers (eg, for a brochure on the topic "Adolescent," the index provided a number for the category and the map helped the searcher locate the shelf where brochures on adolescence could be found).

Catalogue. Samples of the patient education materials on the shelves were collected in a loose-leaf binder to ease the task of reordering and to assist staff in identifying and familiarizing themselves with the material.

System implementation

Once the storage system was in place, group and individual orientation sessions were held. Copies of the reference manual were placed in examining rooms, the storage room, and the central teaching rooms. Copies of the guide for use and the shelving map were included in the orientation package distributed to new residents each year. A short patient education newsletter, distributed periodically, helped to keep patient education materials in people's minds and alerted staff to newly acquired and seasonally appropriate materials.

Analysis

The entire staff, our target study population, consisted of 41 people in 1990 and 42 in 1992. Assuming a 100% response rate in both surveys, an α level of 0.05 (one-tailed) and β of 0.20 (power 0.80), we would have been able to detect only differences larger than 25% in the proportion of staff using these pamphlets. Because not all staff participated, we could detect only differences larger than 30%. Since it was impossible to increase our sample size and thus maintain an adequate power, we elected not to conduct any statistical testing to avoid concluding that the new storage system was ineffective when in fact it was effective (type II error).

An additional concern was that the two samples were related (dependent), because many of the same people participated in both surveys. Because of the anonymous nature of our study, we would have had to use statistical tests not suitable for dependent samples. Therefore, we restricted our reporting of the results to the actual frequencies for each category.

RESULTS

Of the 41 health professionals at HFPC in 1990, 30 (73%) responded. Of the 42 in 1992, 36 (86%) responded. In the first survey, most respondents reported that they seldom used most patient education materials, but a few categories of brochures were used consistently by a small group of mostly nurses. Comments indicated that the storage room was a nightmare, the accordion pamphlet holders were far from satisfactory, and appropriate materials could never be found. Respondents reported that they would use some materials regularly if they were available, and a few respondents reported they did not use pamphlets because they were unaware of our supply. In the second survey, respondents commented that they were satisfied with the new system.

The five most frequently used categories of pamphlets as reported in both surveys were Back Care, Pregnancy, Nutrition, Venereal Diseases and Birth Control, and Diabetes. These were also the categories where a persistent pattern of increased

Table 2. Reported use of pamphlets* in first and second surveys (1990 and 1992)

FREQUENCY OF USE	BACK CARE 1990 %(N)	BACK CARE 1992 %(N)	PREGNANCY 1990 %(N)	PREGNANCY 1992 %(N)	NUTRITION 1990 %(N)	NUTRITION 1992 %(N)	VD/BC† 1990 %(N)	VD/BC† 1992 %(N)	DIABETES 1990 %(N)	DIABETES 1992 %(N)
Frequent	53(16)	75(27)	57(16)	75(27)	53(16)	64(23)	38(11)	50(18)	35(10)	47(17)
Seldom	20(6)	14(5)	14(4)	11(4)	20(6)	17(6)	24(7)	39(14)	28(8)	31(11)
Never	27(8)	11(4)	29(8)	14(5)	27(8)	19(7)	38(11)	11(4)	38(11)	22(8)
TOTAL	(30)‡	(36)	(28)	(36)	(30)	(36)	(29)	(36)	(29)	(36)

**Includes only the five most frequently used pamphlets.*
†VD/BC – Venereal diseases and birth control.
‡Numbers vary due to missing information.

use emerged. Therefore, we have chosen to present results for these categories only. For the remaining 15 pamphlet categories, rates of use increased for seven (ranging from 2% to 9%), remained the same for one, and decreased slightly for the remaining seven (decreases were smaller than 8%).

Table 2 presents self-reported frequency of use of the five well-used pamphlet categories by survey period. Between 35% and 57% of the health professionals reported frequent use of pamphlets in these categories in the first survey. Increases in rates of use ranged from 11% (Nutrition) to 22% (Back Care).

Subsequently, data on the frequency of use were cross-tabulated by type of health professional. Because of the small sample size, we collapsed the "frequent" and "seldom" ratings into one rating called "sometimes." All of the nurse practitioners used all five pamphlet categories sometimes in both surveys. The proportion of physicians and residents reporting use of these pamphlets sometimes, while lower than that of the nurse practitioners in both surveys, rose between 1990 and 1992 by at least 20% (ranging from 21% to 37%), except for the Nutrition category, which rose 9% (**Table 3**).

DISCUSSION

Developing a patient education materials storage system to suit a particular family practice unit is a challenge because an enormous amount of information must be accessible, distributed, and replaced to be used effectively. Our survey results indicate that the new system might have increased the rate of use of patient education materials in our unit.

This type of storage system could benefit most practitioners. In a teaching centre, where staff share offices and examining rooms with others whose preferences in patient education material might differ, a central storage system helps avoid overstocking rooms with materials tailored to the needs of each practitioner. As well, a structured storage and retrieval system that can be easily accessed helps prevent the disarray that results from the hasty rummaging of many people in the several areas where a particular item might be found. The system can be modified to accommodate the specific needs of solo practitioners or group practices.

Limitations

Although these results are encouraging, they must be interpreted with caution for several reasons. First, the responsibility for patient education materials has traditionally rested with nurses, and this could explain why nurse practitioners used pamphlets more often than physicians and residents. Second, the 2 years between the surveys might have been long enough for other factors, such as curriculum emphasis and faculty development programs on patient education, to have influenced the results. Third, there had been a partial turnover in residents and staff during the period, and new staff might have been more sensitive to patient education. Fourth, the publicity around the new system might have increased awareness of patient education materials, and the effect might be temporary. Fifth, the survey asked whether patient education material was used "frequent(ly)" or "seldom," and these terms are subject to individual interpretation and might not be sensitive enough to detect change. Sixth, the numbers

Table 3. Use of pamphlets by physicians*

FREQUENCY OF USE	BACK CARE 1990 %(N)	BACK CARE 1992 %(N)	PREGNANCY 1990 %(N)	PREGNANCY 1992 %(N)	NUTRITION 1990 %(N)	NUTRITION 1992 %(N)	VD/BC† 1990 %(N)	VD/BC† 1992 %(N)	DIABETES 1990 %(N)	DIABETES 1992 %(N)
Sometimes‡	65(15)	87(26)	62(13)	83(25)	68(15)	77(23)	50(11)	87(26)	52(12)	73(22)
Never	35(8)	13(4)	38(8)	17(5)	32(7)	23(7)	50(11)	13(4)	48(11)	27(8)
TOTAL	(23)§	(30)	(21)	(30)	(22)	(30)	(22)	(30)	(23)	(30)

** Includes residents.*
† VD/BC – Venereal diseases and birth control.
‡ Includes frequent and seldom use.
§ Numbers vary due to missing information.

studied were so small that they precluded statistical testing and served only a descriptive function. Finally, we have no ongoing records of the actual numbers of patient education materials that have been ordered and used. Only recently has a support staff person been assigned to monitor this. Future researchers should take these factors into account when designing studies to evaluate the effectiveness of new storage systems.

Conclusion

The new storage system appeared to improve access to patient education pamphlets and brochures. It seemed to be more user-friendly and, although several factors could have combined to influence and improve use of the materials, the surveys provided encouraging results. Further research should be undertaken to examine factors that might improve use of patient education materials by health professionals.

Acknowledgment

We thank Mr Janusz Kaczorowski from the Herzl Family Practice Research Centre at the SMBD Jewish General Hospital for his assistance in editing the manuscript and for his advice on statistics.

Correspondence to: *June Smith, Herzl Family Practice Centre, Sir Mortimer B. Davis-Jewish General Hospital, 3755 Cote St Catherine Rd, Montreal, QC H3T 1E2*

References

1. Perkin R. Patient education. Part 1: healthcall [Progress notes]. *Can Fam Physician* 1990;36:209.
2. Sackett DL, Gibson ES, Taylor DW, Haynes RB, Hackett BC, Roberts RS, et al. Randomized clinical trial strategies for improving medication compliance in primary hypertension. *Lancet* 1975;1:1205-7.
3. Gibbs S, Waters WE, George CF. The benefits of prescription information leaflets (1). *Br J Clin Pharmacol* 1989; 27:723-39.
4. Gibbs S, Waters WE, George CF. The benefits of prescription information leaflets (2). *Br J Clin Pharmacol* 1989;28:345-51.
5. Ley P, Jain K, Skilbeck CE. A method for decreasing patients' medication errors. *Psychol Med* 1976;6:599-601.
6. Ellis DA, Hopkin JM, Leitch AG, Crofton Sir J. "Doctors' Orders" controlled trial of supplementary, written information for patients. *BMJ* 1979;1:456.
7. Young FK, Brooks BR. Patient teaching manuals improve retention of treatment information - a controlled clinical trial in multiple sclerosis. *Neurosci Nurs* 1986;18:26-8.
8. Miller G, Shank JC. Patient education: comparative effectiveness by means of presentation. *J Fam Pract* 1986;2:178-81.
9. Colcher SC, Bass JW. Penicillin treatment of streptococcal pharyngitis. *JAMA* 1972;222:657-9.
10. Hoffman H. *Small library cataloguing.* 2nd ed. Meutchen, NJ, and London: The Scarecrow Press Inc, 1986.
11. Miller R, Terwillegar J. *Commonsense cataloguing: a cataloguer's manual.* 3rd ed. New York, NY: The H.W. Wilson Co, 1983.
12. Wynar B. *Introduction to cataloguing and classification.* 8th ed. Englewood, Colo: Libraries Unlimited, Inc, 1992.
13. Mooney M, editor. *Sears list of subject headings.* 14th ed. New York, NY: The H.W. Wilson Co, 1991.
14. The H.W. Wilson Co, Bronx, NY. *Vertical file index. Guide to pamphlets and references to current topics.* 1993;63(1):1-37.
15. Serling K, Ruby C. Patient education resources: organizing for easy retrieval. *Papers from the 12th Annual Conference on Patient Education.* Kansas City, Miss: American Academy of Family Physicians, 1990:115-25.
16. Piercy E. *Commonsense cataloguing.* 2nd ed (Revised by Sanner M). New York, NY: The H.W. Wilson Co, 1974.

FOR PRESCRIBING INFORMATION SEE PAGE 147 →