ENHANCED DATA ACQUISITION USING BARCODES IN A MEDICAL OFFICE MICROCOMPUTER SYSTEM

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ADAPTABLE INFORMATION MANAGEMENT SYSTEMS

The development of this flexible medical office microcomputer system with an efficient data entry technique began in 1980. The system was designed to provide a full range of functions and reports useful to office management, patient care and clinical research. The system needed to be reliable, inexpensive, and simple to operate, yet easily adaptable to a variety of medical and surgical practices. The system is now in operation in eight facilities including offices engaged in family practice, gynecology and surgery, radiology, and urology. These practices range from one to twelve physicians.

Regardless of the system employed, a patient encounter requires identification of the patient, the account, the provider, the services rendered, and perhaps relevant diagnoses. Usually such information is recorded on a document (route slip, encounter form, or superbill) and processed at the front desk. Encounter forms vary among offices to reflect the services available. However, the flow of data is conceptually quite similar. Keyboard entry of the data required on each patient encounter remains inefficient, costly, and fraught with error.

An alternative system employing barcodes to enhance data acquisition was developed. Label stock is placed in the printer and labels are imprinted with barcodes that correspond to unassigned records within the patient and account files. A new patient is entered into the system by affixing a label to the chart or x-ray jacket and passing a Hewlett-Packard HEDS-3050 wand over the barcode. Encounter forms are customized for each office with barcodes (see figure 1) on the top copy to identify charges and providers. The second and third copies of the forms carry CPT codes in place of barcodes thus allowing the forms to be utilized as superbills. These forms are printed using continuous feed paper.

When an encounter form is needed, the patient’s chart is pulled and the wand is passed over the barcode on the label. The forms are advanced and this barcode is reproduced by the printer along with the patient’s name and other pertinent data. Items are checked to indicate the services rendered and the provider. When the form is returned to the front desk, the wand is utilized to identify the patient, the provider, and the services rendered. Diagnoses may be entered from a list which also employs barcodes. For a typical office visit all of this information can be entered in approximately 15 seconds.

The various installations now have a combined experience of approximately 500,000 data entries using the wand and barcodes. While direct comparisons with keyboard data entry systems remain incomplete, users of this wand and barcode system seem unanimous in the opinion that this technique is more efficient and more accurate.