APPPOINTMENT SCHEDULING BY COMPUTER

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In many practices—especially multi-group and hospital-based practices with a high clerical turnover—patient scheduling can be a real problem. One physician is overbooked; another is underbooked. The patient asks for a return appointment and is scheduled for a new physician, unfamiliar with the case. Patients are often given appointments for times their physicians are not in the office at all. Such happenings are frustrating to physicians and intolerable to patients.

Today, sophisticated computerized scheduling systems can ensure that a patient gets back to the right physician, at the right time. They also help to spread the visit load evenly among many clinical physicians, and to improve the overall productivity of the practice. Some systems can even coordinate appointments so that a mother could see her gynecologist and her child could then see a pediatrician on the same day. Intended for large institutional practices, most systems of this kind run on minicomputers, and are expensive. While you will also find “appoint­ment systems” on microcomputer billing systems, their capabilities so far tend to be limited.

In this report, I will describe the capabilities of the more sophisticated scheduling systems and assess the strengths and weaknesses of a number of specific systems (see Table 1). I will also address policy issues that might be important in the choice of an appointment system. This information should be of immediate interest to physicians practicing in large groups or hospitals. However, it is also relevant to physicians in smaller practices, since the capabilities of these systems are likely to be available on the microcomputer practice systems of the future.

Appointment systems provide functions in four general classes:

(1) defining the provider's availability and scheduling policies, (2) selecting a particular appointment slot to meet each patient's requirements, (3) performing needed intravisit procedures, such as check-in and check-out, and (4) providing administrative support and management reports. I will discuss each in turn.

DEFINING THE PROVIDER'S SCHEDULE

In my opening remarks, the scheduling of patients to physicians was emphasized. But most of the systems referenced in this review also permit the scheduling of patients to nurses and other ancillary staff when necessary. Many of them (for example, Cycare and MCI sys-
tems) also permit you to schedule resources such as examining rooms and specialized equipment—such as a fiber optic flexible colonoscope, for instance.

Before you can schedule the patient to either a person or a facility resource, you must first define to the computer system the constraints that control the scheduling process. The most obvious one is the availability of the provider for scheduling. Some other constraints are the length of time for a single appointment (“slot” size); the length of time into which one or more slots may be scheduled (“block” size); restrictions on the type of appointments that can be made in a given slot, block, or total time period; and time-period-specific controls on overbookings.

The definition of these constraints yields a computer-storable pattern called a “template.” A major difference among appointment systems lies in the sophistication of templates: how many constraints can be controlled by a template, whether their values can be varied within a single template, how many different templates can be created and stored for a single provider or group of providers, whether a template can be automatically linked to provider- or external-world-related data (specialty, day of the week, etc.), and so on.

A template is used for mapping slots against a “session” (a period of clock time, usually a full or half business day). In effect, the template acts like a page in an appointment book. In a system like Global Health’s, the template is divided up into a number of fixed-length slots whose number and length are determined by the practice. Typically these slots are between five and thirty minutes long. Any kind of appointment can be put into any slot. Appointments longer than one slot length will span multiple slots. Shorter appointments may be “overbooked”—several may be scheduled into a single slot, with each having the same starting time.

More advanced appointment systems allow the definition of templates with variable-length slots, and they also allow you to create multiple templates for different provider types as well as for an individual provider. The templates can then be reproduced in whole or in part to eliminate the time-consuming process of re-entry for similar session patterns. You can also reserve whole blocks of time (one or more contiguous slots) for any purpose, such as rounds.

Nearly every system listed allows you to restrict individual slots to particular types of appointments. For example, you could specify that the first four slots on a given day should be reserved for initial screenings. The Comtec and Cycare systems (among others) also allow sequences of appointment types to be controlled, to implement rules such as “don’t let two surgeries occur back to back.” Many other parameters may be controlled on a block-by-block basis. Examples are the degree of overbooking allowed, and the specification of who is authorized to make changes in booked schedules.

Several systems (Regenstrief and Comtec, for example) let you control the scheduling of appointments on days that are likely to have exceptional demands, such as the day after Labor Day weekend or after a physician has been on a two-week vacation. These days can be protected against scheduling until a few weeks before the visit date. This reserves these days for the acute patients who will need early returns.

Once a schedule has been created, a physician can still protect or remove certain times or days. For example, a surgeon might block out the first hour of an afternoon schedule because he knows he will have a long procedure that morning. Or a physician may block out the first week in January so that he can attend a meeting in Miami.

Some systems also allow you to record characteristics of provid-