**Introduction to Team Project Five:**

Read about the project described here, and also read the sample project for this chapter. Use the sample project as a model in carrying out the steps for your team project. If you can do so, interview people who are familiar with the environment described in your project. Based on your interviews, the written descriptions, and your own analysis of the project, do the following four steps. Remember that you should not make any assumptions about the internal structure of the database at this point. Your reports and forms should be based on user’s needs, not on what you think the eventual structure of the database might be. Do not create a database at this point.

**Step 1.1 – Draw (sketch out) every input document that provides information to be stored in the database. For each input document, also provide a description/purpose (write out) of every input document.**

**Step 1.2 – Draw (sketch out) every routine report to be produced using the database. For each routine report, also provide a description/purpose (write out) of each routine report.**

**Step 1.3 – Draw (sketch out) the input and output screens for every routine transaction to be performed against the database. For each input and output screens, provide a description/purpose (write out) of each input and output screens for every routine transaction.**

**Step 1.4 – Provide a description (write out) of the initial list of assumptions for the project.**

## Project Five: Wellness Clinic - Medical Group

* **General description**

The Wellness Clinic is a facility providing medical care in a rural area of the country. Its professional staff consists of five medical doctors (physicians), two nurse-practitioners who provide non-acute care and can prescribe medication, two registered nurses, two midwives who provide pre-natal care and supervise delivery except in cases with complications, a pharmacist, and a medical technician. The non-professional staff members include an office administrator, a receptionist, and a bookkeeper who works part time. The clinic serves several thousand patients, each of whom may visit the clinic any number of times per year, both for preventative care such as checkups or immunizations, and for treatment of illness. Its facilities consist of a waiting room with a reception desk, an administrative office, a nurses’ station, ten examining rooms with adjoining consultation rooms, a small operating room, a birthing room, a recovery room, a pharmacy, and a small laboratory.

* **Basic Operations**

The clinic has regular hours of operation weekdays, Saturday mornings, and two evenings per week. Normally two physicians or one physician and one nurse practitioner, one registered nurse, and one midwife are in the clinic during regular hours. In addition, the professional staff members rotate responsibility for covering emergency calls 24 hours per day, 7 days a week. At the end of each day, the administrator or receptionist sets up call forwarding so that emergency calls are automatically directed to the telephone number of the person providing emergency coverage. When the clinic opens in the morning, the call forwarding is halted. Two of the physicians are surgeons who perform routine surgery not requiring general anesthesia at the clinic one morning a week, assisted by a nurse. Others have specialties in pediatrics and internal medicine. However, all of the physicians can provide general and acute care for any of the patients. Patients who require major surgery or other hospital care must go to a hospital located outside the immediate area served by the clinic. The clinic staff members do not normally visit their patients who are in the hospital, instead leaving their care to the hospital staff with whom they communicate during the hospitalization. However, the clinic provides both pre- and post-hospital care for the patients.

Hours of operation are divided into scheduled appointments and unscheduled hours, which are open for walk-ins. Patients usually schedule checkups and immunizations well in advance. Patients suffering from chronic or acute illness can usually schedule appointments promptly, or they may come in during the unscheduled hours. The administrator is responsible for setting up all schedules, both for the staff and for patients, and for keeping records updated. Prior to the beginning of each month, the administrator makes up complete coverage schedules for all staff. The bookkeeper is responsible for doing all billing and recording payments. The receptionist is responsible for making appointments, for handling traffic, and for making the patient’s medical records available in a folder during the visit. The nurse prepares the patient, takes medical history, performs some medical routines or tests, takes samples for lab tests, updates the folder, and assists the practitioner (the physician, nurse practitioner, or midwife) during the visit. The practitioner examines the patient, administers medical treatment, can perform some tests, can also take samples for lab tests, and write prescriptions for medications or orders for additional lab tests during a visit. Each visit results in one or more diagnoses, which the practitioner adds to the patient’s folder, along with any comments or observations. Prescriptions can be filled at the clinic’s pharmacy at the patient’s request. Some laboratory tests are performed at the clinic by the medical technician, using samples taken by one of the professionals. More specialized tests are performed at a medical laboratory at the hospital outside the region. Whenever possible, specimens, such as blood samples, are taken at the clinic by one of the professionals there and sent to the hospital laboratory. If the lab test requires the presence of the patient and equipment that is not available at the clinic, the patient is sent to the hospital laboratory for the test, and results are sent back to the clinic.

Medical care is provided for all patients, regardless of their ability to pay. Bills are generated based on the services provided, not on the payment method. Private patients who can afford to pay out of pocket can do so at the time of service or be billed at the end of each month. Those who have medical insurance provide information about their insurance policies, and the insurance companies are billed. Usually in that case patients pay a small amount of co-insurance (co-pay), which is determined by the type of policy they hold, at the time of the visit. Those who cannot afford to pay normally have government-provided health care, for which they have a government-issued medical card. They pay nothing and the clinic is reimbursed by the government for the entire cost of the visit, including any lab tests performed and medications dispensed there. A small number of indigent patients who do not have health coverage are treated and the cost is absorbed by the clinic until they qualify for government-provided coverage.

* **Information Needs**

Currently all information about patients and their care is kept manually, and billing is done using a spreadsheet kept on a personal computer. Physicians use standard mail, fax or telephone communications to provide information to the hospital and receive information about patients who need hospital care. The clinic has recently upgraded its computer and it will have access to hospital records for its patients, as well as on-line systems provided by insurance companies and the government for third-party billing. It needs a database that keeps track of all the patient-related activities of the clinic and to provide information about billing and payments. The database will not keep track of medical supplies, plant maintenance, or payroll information.

* **The following forms or reports are needed:**

**Weekly Coverage Schedule** - This schedule should list the daily hours and the professional and non-professional staff who are scheduled to be in the clinic at specific times each day of the week. It should also list the name and telephone number of the person who is covering for emergencies during all hours each week. (Recall that the administrator provides the coverage information each month.)

**Daily Master Schedule** - This is a master schedule for all practitioners for each day. It should list each of the practitioners who are in that day, with all appointments scheduled for them. Most appointments are allocated 10 minutes each, so each hour has 6 timeslots. However, some appointments are given more than one timeslot, depending on the nature of the care needed. Each professional has hours dedicated to walk-ins during which no pre-scheduled appointments are made. As walk-ins sign in for care, they are assigned to a practitioner and the patient’s name is added to the schedule. The registered nurses do not have appointments scheduled, and are available to assist the practitioners with visits, or to administer tests or take samples on an unscheduled basis. The lab technician also does not have an appointment schedule.

**Individual Practitioner’s Daily Schedule** - Each of the practitioners should receive a printed copy of his or her own schedule for any day he or she is in the clinic. Appointments list the patient’s name and the reason given for the visit. The copy is updated manually by the nurse as visits for walk-ins are conducted.

**Physician’s Statement for Insurance** Forms - This is a pre-printed form that is used as a receipt primarily for insurance purposes. It lists the clinic name, address, and telephone number, along with the names and tax identification numbers of all the professionals on the staff. It also lists all the types of visits, the procedures that can be performed, with a code for each, and some blank lines for “other”, along with a line to entering the fee for each. It also has a list of the common diagnoses and codes, with a few blank lines for “other”. At the bottom are lines for Total Charge, Amount Paid, and Balance Due. The provider uses this form during a visit, to record visit type, procedures performed, and diagnosis. When the patient checks out after the visit, the receptionist fills in the fee for each service using a fee schedule, calculates the total, and writes in the amount paid, if any, and the Balance Due. One copy is kept by the clinic and another is given to the patient. At present, a third is mailed to the insurance company or government health agency, but in future the required information will be submitted electronically.

**Patient Monthly Statement** - Any patient who has an unpaid balance receives a statement that is compiled at the end of each month, listing all the services provided that month, any payments received, and the balance due.

**Prescription Label and Receipt** - This form consists of two parts. The top part is gummed and used as a label for the container in which medication is dispensed. The label shows the Rx Number, Doctor Name, Patient Name, Patient Address, Directions, Drug Name, Form, Strength, Quantity, Pharmacist's Name, Date Filled, Original Date, and Number of Refills Remaining. The bottom part repeats the information on the label, and also lists the total price of the medication, the amount covered by insurance or the government, and the balance due from the patient, as well as more information about the drug, complete directions for use, and warnings about possible side effects and drug interactions. The receipt can be used for submitting claims for insurance coverage. In the future, this information will also be submitted electronically to insurance companies and the government medical care agency.

**Daily Laboratory Log** - This log is used to record all lab tests performed each day.

**Operating Room Schedule** - This schedule provides information about all scheduled surgeries for the day.

**Operating Room Log** - This records information about the surgeries actually performed on a given day, including identification of the patient, surgeon, and nurse, and notations and observations about the surgery.

**Daily Delivery Room Log** - This records information about all the deliveries performed each day.

**Recovery Room Log** - This report records information about the use of the recovery room, including the patient’s name, attending practitioner, bed, date in, time in, date out, time out, and signature of the practitioner who signs the patient out. A nurse records the times and results of any medical checks performed while the patient is in recovery.

**Monthly Activity Report** - This is an internal report summarizing the clinic’s activity each month. It shows such items as the number of visits conducted by each provider, the number of surgeries performed, the number of deliveries, the number of lab tests broken down by type, the number of prescriptions dispensed, the average time per visit, and so on.