Schema Overview:

- **Patients Table**
    - Attributes: `Patient_id`, `First_name`, `Last_name`, `Date_of_birth`, `Gender`, `Contact_info`, `Address`, `Insurance_info`, `Medical_history`
    - Primary Key: `Patient_id`
- **Staff Table**
    - Attributes: `Staff_id`, `First_name`, `Last_name`, `Role`, `Department`, `Contact_info`, `Availability`, `Assigned_patients`
    - Primary Key: `Staff_id`
- **Appointments Table**
    - Attributes: `Appointment_id`, `Patient_id`, `Staff_id`, `Date`, `Time`, `Reason`, `Status`
    - Primary Key: `Appointment_id`
    - Foreign Keys: `Patient_id` (references `Patients.Patient_id`), `Staff_id` (references `Staff.Staff_id`)
- **Medical_Records Table**
    - Attributes: `Record_id`, `Patient_id`, `Diagnosis`, `Treatment`, `Doctor_notes`, `Medications`, `Record_date`
    - Primary Key: `Record_id`
    - Foreign Key: `Patient_id` (references `Patients.Patient_id`)
- **Billing Table**
    - Attributes: `Billing_id`, `Patient_id`, `Total_cost`, `Insurance`, `Coverage`, `Payment_received`, `Outstanding_balance`, `Billing_date`
    - Primary Key: `Billing_id`
    - Foreign Key: `Patient_id` (references `Patients.Patient_id`)

Functional Dependencies:

- **Patients Table**: `Patient_id → First_name, Last_name, Date_of_birth, Gender, Contact_info, Address, Insurance_info, Medical_history`
- **Staff Table**: `Staff_id → First_name, Last_name, Role, Department, Contact_info, Availability, Assigned_patients`
- **Appointments Table**: `Appointment_id → Patient_id, Staff_id, Date, Time, Reason, Status`
- **Medical_Records Table**: `Record_id → Patient_id, Diagnosis, Treatment, Doctor_notes, Medications, Record_date`

- **Billing Table**: `Billing_id → Patient_id, Total_cost, Insurance, Coverage, Payment_received, Outstanding_balance, Billing_date`

3NF Justification for Each Table:

- **Patients Table**: The primary key `Patient_id` uniquely determines all other attributes, with no partial or transitive dependencies. Therefore, the table is in 3NF.
- **Staff Table**: The primary key `Staff_id` uniquely determines each attribute. There are no partial or transitive dependencies, so this table is in 3NF.
- **Appointments Table**: The primary key `Appointment_id` uniquely determines all other attributes, with no partial or transitive dependencies. Thus, the table is in 3NF.
- **Medical_Records Table**: The primary key `Record_id` uniquely determines each attribute, and there are no partial or transitive dependencies, meaning the table is in 3NF.
- **Billing Table**: The primary key `Billing_id` uniquely determines each attribute. There are no partial or transitive dependencies, so this table is in 3NF.

Conclusion: All tables in the schema meet the requirements for Third Normal Form (3NF), with no further decomposition necessary.