

Hospital and Research Management

MongoDB Schema

1. Staff Collection

```
{
  _id: ObjectId,
  staffId: String, // Unique ID (e.g., D001, N001)
  name: String,
  contactInfo: {
    phone: String,
    email: String
  },
  joiningDate: Date,
  department: [String],
  role: {enum: ["Doctor", "Nurse", "Technician", "Pharmacist", "Admin"]},
  specializations: [String], // for Doctors
  consultationHours: [{day: String, start: String, end: String}], // for Doctors
  assignedWardICU: String, // for Nurses
  supervisorId: {type: String, ref: 'staff', default: null}
}
```

2. Patients Collection

```
{
  _id: ObjectId,
  patientId: String,
  name: String,
  age: Number,
  gender: {enum: ["Male", "Female", "Other"]},
  address: String,
  contact: String,
  patientType: {enum: ["Inpatient", "Outpatient"]},
  insurance: {
    company: String,
    policyNumber: String,
    coverage: {enum: ["Full", "Partial", "None"]}
  }
}
```

```
}
```

3. Medicines Collection

```
{  
  _id: ObjectId,  
  medicineId: String,  
  name: String,  
  dosageForm: String,  
  stockLevel: Number,  
  reorderThreshold: Number,  
  supplierName: String  
}
```

4. Appointments Collection

```
{  
  _id: ObjectId,  
  appointmentId: String,  
  patientId: {type: String, ref: 'patients'},  
  doctorId: {type: String, ref: 'staff'},  
  appointmentDate: Date,  
  appointmentTime: String,  
  status: {enum: ["Booked", "Completed", "Canceled"]}  
}
```

5. Prescriptions Collection

```
{  
  _id: ObjectId,  
  prescriptionId: String,  
  appointmentId: {type: String, ref: 'appointments'},  
  patientId: {type: String, ref: 'patients'},  
  doctorId: {type: String, ref: 'staff'},  
  medicines: [{  
    medicineId: {type: String, ref: 'medicines'},  
    name: String,  
  }  
]
```

```
    dosage: String,
    duration: String
  }},
  date: Date
}
```

6. Lab Tests Collection

```
{
  _id: ObjectId,
  testId: String,
  type: String,
  patientId: {type: String, ref: 'patients'},
  technicianId: {type: String, ref: 'staff'},
  description: String,
  cost: Number,
  date: Date
}
```

7. Billing Collection

```
{
  _id: ObjectId,
  billId: String,
  patientId: {type: String, ref: 'patients'},
  items: [{
    description: String,
    amount: Number
  }],
  totalAmount: Number,
  insuranceCovered: Boolean,
  insuranceDetails: {
    company: String,
    policyNumber: String,
    coverage: {enum: ["Full", "Partial", "None"]}
  },
  billingDate: Date
}
```