Non-trivial FDs:

Employee:
Employee_id → email, phone, firstname, lastname
Employee_id is a unique identifier given to each employee in the system.

Physician:
Employee_id → license_number, specialization
License_number → specialization
Physicians are uniquely identified by their license number. A physician (i.e. an employee) can only hold one license. The license also limits what speciality a physician is.

Clinic:
Clinic_id → address, phone
Each clinic is assigned an unique ID. Only one clinic (so only one location) can have a given clinic ID.

Employs:
Employee_id, clinic_id → Employs.start_date, Employs.hours
The same employee may work at multiple clinics, so both employee_id and clinic_id are needed to identify an employee's work term.

Patient:
Patient_id → firstname, lastname, phone, address, gender, email, birthdate, emergency contact
patient_id is a unique identifier given to each patient in the system.

Appointment:
Clinic_id, license_number, patient_id, date, startime → Appointment.code, Appointment.endtime, Appointment.comments, patient_id
A doctor can't have more than one appointment at the same time, so each appointment (all columns) are uniquely identified by the physician who attended that appointment and the time of the appointment.

Laboratory:
Lab_id → city
Lab_id is a unique identifier given to each laboratory.

Test:
Test_id → status, results, description, time, lab_id
Test_id is a unique identifier that each laboratory assigns to their list of available tests.

Prescribes:
Drug_id, prescription_id → quantity

Each prescription is assigned a unique id in the system, so no two prescriptions can have the same prescription_id.

Prescription:
Prescription_id → date, patient_id, license_number
Each prescription is assigned a unique id in the system, so no two prescriptions can have the same prescription_id.

Drug:
Drug_id → Drug.description, Drug.name, Drug.class, Drug.price
Each drug is assigned a unique id in the system, so no two drugs can have the same drug_id.

MedicalRecord:
Medical_record_id→ height, weight, notes, medications, immunizations, allergies, treatments

3NF Decomposition:

All tables are in 3NF form already. No further decomposition is necessary.

As a recap:

Employee(employee_id, email, phone, firstname, lastname)

Receptionist(**employee_id**)
      PK is employee_id
      FK employee_id references Employee(employee_id)

Physician(**employe_id**, license_number, specialization)
      PK is employee_id.
      FK employee_id references Employee(employee_id)
      **license_number can be used as an alternate key

Clinic(clinic_id, address, phone)
      PK is clinic_id.

Employs(**employee_id, clinic_id,** start_date, hours)
      PK is employee_id, clinic_id
      FK employee_id references Employee(employee_id)
      FK clinic_id references Clinic(clinic_id)

Patient(patient_id, firstname, lastname, phone, address, gender, email, birthdate, emergency_contact)
      PK is patient_id

Appointment(**license_number,** date, starttime, **clinic_id, patient_id**, code, endtime, comments)
      PK is clinic_id, license_number, date, starttime.
      FK clinic_id references Clinic(clinic_id)
      FK license_number references Physician(license_number)
      FK patient_id references Patient(patient_id)

CaresFor(**license_number, patient_id**)
      PK is license_number, patient_id
      FK license_number references Physician(license_number)
      FK patient_id references Patient(patient_id)
i.e. what physician each patient is assigned to (may be multiple)

Laboratory(lab_id, city)
      PK is lab_Id

Test(test_id, status, results, description, time,**lab_id**)
    PK is test_Id
    FK lab_id references Laboratory

LabOrder(**lab_id**, **test_id**, **license_number**, **patient_id,** date)
    PK is lab_id, test_id, license_number ,patient_id, date
    FK lab_id references Laboratory(lab_id)
    FK test_id references Test(test_id)

Prescribes(**drug_id, prescription_id**, quantity)
    PK is drug_id, prescription_id
    FK drug_id references Drug(drug_id)
    FK prescription_id references Prescription(drug_id)

Prescription(prescription_id, date, **patient_id, license_number**)
    PK is prescription_id
    FK patient_id references Patient(patient_id)
    FK license_number references Physician(license_number)

Drug(drug_id, description, name, class, price)
    PK is drug_id

MedicalRecord(medical_record_id, **patient_id**, height, weight, notes, medications, immunizations, allergies, treatments)
    PK is medical_record_id
    FK patient_id references Patient(patient_id)