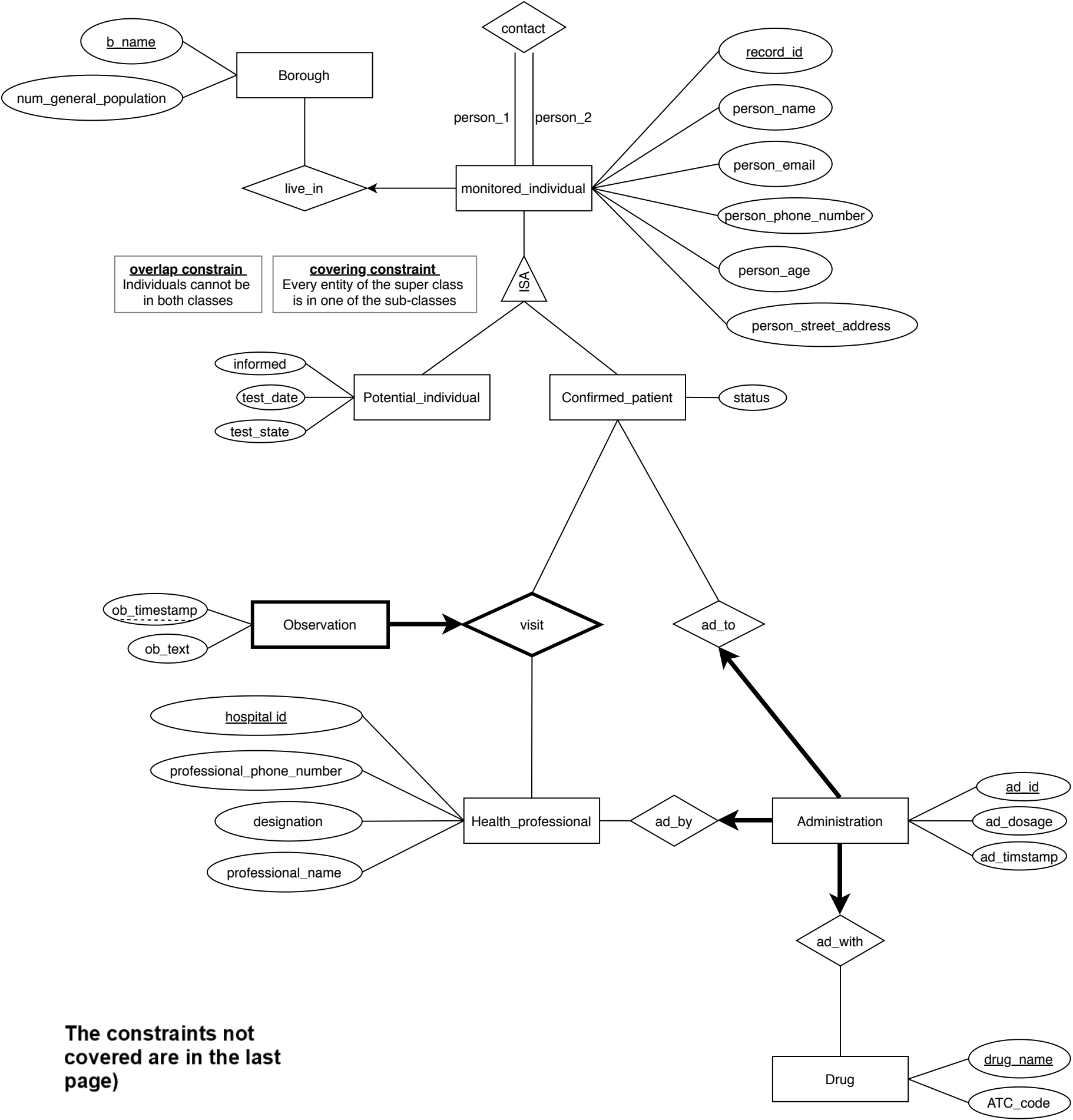
b_name
num_general_population
Borough
live_in
contact
person_1
person_2
monitored_individual
record_id
person_name
person_email
person_phone_number
person_age
person_street_address
overlap constrain
Individuals cannot be in both classes
covering constraint
Every entity of the super class is in one of the sub-classes
ISA
informed
test_date
test_state
Potential_individual
Confirmed_patient
status
ob_timestamp
ob_text
Observation
visit
ad_to
hospital id
professional_phone_number
designation
professional_name
Health_professional
ad_by
Administration
ad_id
ad_dosage
ad_timstamp
ad_with
Drug
drug_name
ATC_code
The constraints not covered are in the last page)

Another assumption: doctors won't be administrate different individuals at the same time

Assumptions: They keep separate copies of data for “hospital professionals” and “residence”. (i.e., a doctor will appear in the hospital data as a doctor, and in resident data as a resident)

Draft:

Possible Entity sets

- hospital system (no need to be an entity set)
    - Also tracking overall general population numbers associated with each borough in the city of Montreal
- Borough
    - Count general population numbers
- patients & contacted persons (may be ISA, and need another id as primary key)
    - name
    - email
    - phone number
    - age
    - street address
    - borough
    - patients have status (infected, recovered, diceased)
- health care professionals (doctor or nurse) (don’t need to specify d or n)
    - **hospital id (unique)**
    - name
    - designation
    - **phone number**
- drugs
    - **name**
    - ATC code (7-character code)

Possible Relations

- hospital informs contacted person to get tested
    - the date on which the **test sample is taken** from the person must be stored along with the test results

    - a person may be tested multiple times, and at least one time (since only interested in contacted person)
    - **we are only interested in the latest test information (no need to be an entity set)**
- the test result would be sated pending
    - the final state will become positive or negative
- tracking contacts between patient and uninfected persons
- patients are administered drugs
    - dosage in milligrams
    - date and hour of the day in which the drug was administrated
    - doctor or nurse responsible for the drug
    - drugs can’t be used on patients who are recovered or dead
- health professionals visits patients
    - track observations, date and hour of the day in which observation is made
    - observation is independent from prescribing drugs

final tables

Borough(b_name, num_general_populatoin)

Monitored_individual(record_id, b_name, person_name, person_email, person_phone_number, age, street_address)

b_name references Borough(b_name)

Potential_individual(record_id, informed, test_date, test_state, test_result)

Record_id references monitored_individual(record_id)

Confirmed_patient(record_id, status)

Record_id references monitored_individual(record_id)

Health_professoinal(hospital_id, professional_phone_number, designation, professional_name)

Drug(drug_name, ATC_code)

Administration(ad_id, drug_name, hospital_id, record_id, add_dosage, ad_timestamp)

Drug_name references Drug(drug_name)

Hospital_id references Health_professional(hospital_id)

Record_id references monitored_individual(record_id)

Contact(person_1, person_2)

person_1 references monitored_individual(record_id)

person_2 references monitored_individual(record_id)

visit(record_id, hospital_id, ob_timestamp)

Record_id references monitored_individual(record_id)

Hospital_id references Health_professional(hospital_id)

Observation(ob_timestamp, record_id, hospital_id, ob_timestamp, ob_text)

Record_id references monitored_individual(record_id)

Hospital_id references Health_professional(hospital_id)

The constraints that are not covered in the ER:

1) We won't want duplicated pairs of (person_1, person_2) in the contact relation, but this can't be specified in ER.

2) It is possible for different doctors to administrate same drugs for the same patient at the same timestamp, but in reality it shouldn't happen.

3) We won't know which of the person_name and person_email will be collectd when contacting the individuals.

4) the street address should be in the borough that the person lives.