Requirements

Process Model

Architecture Description
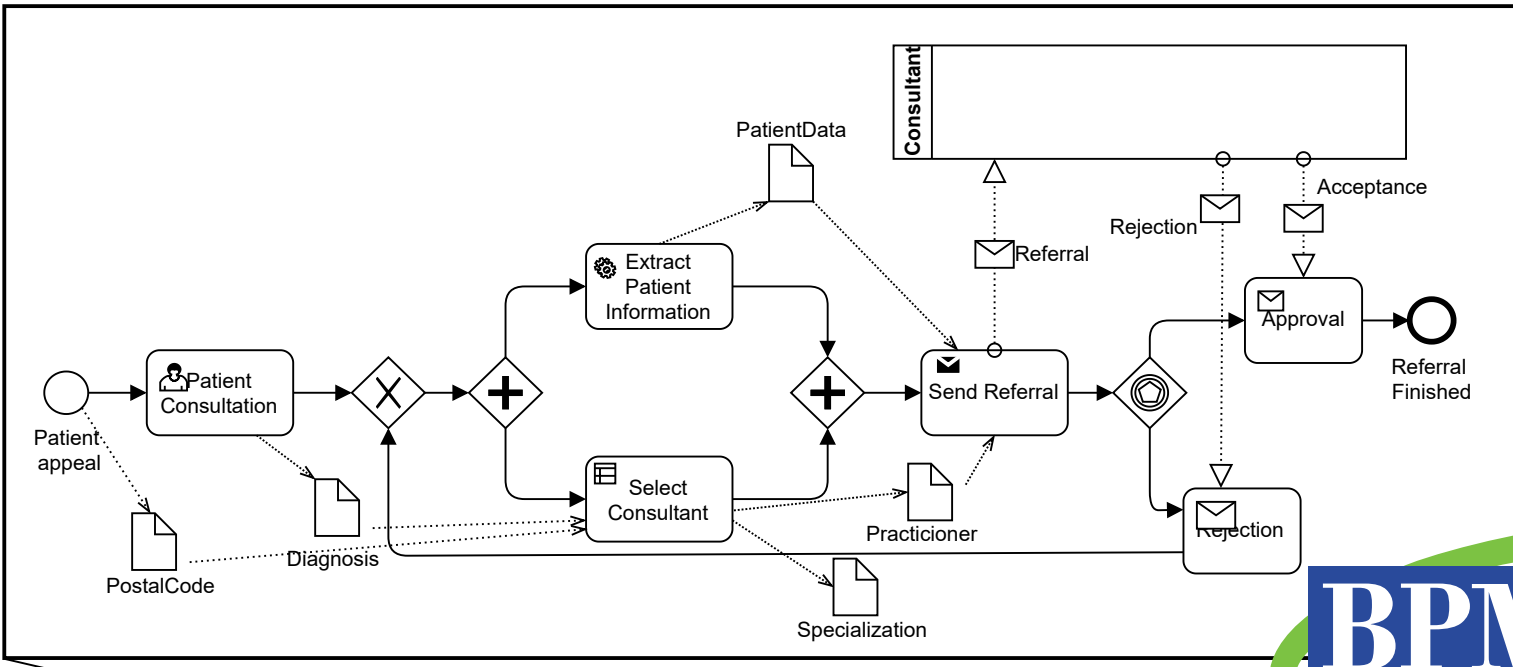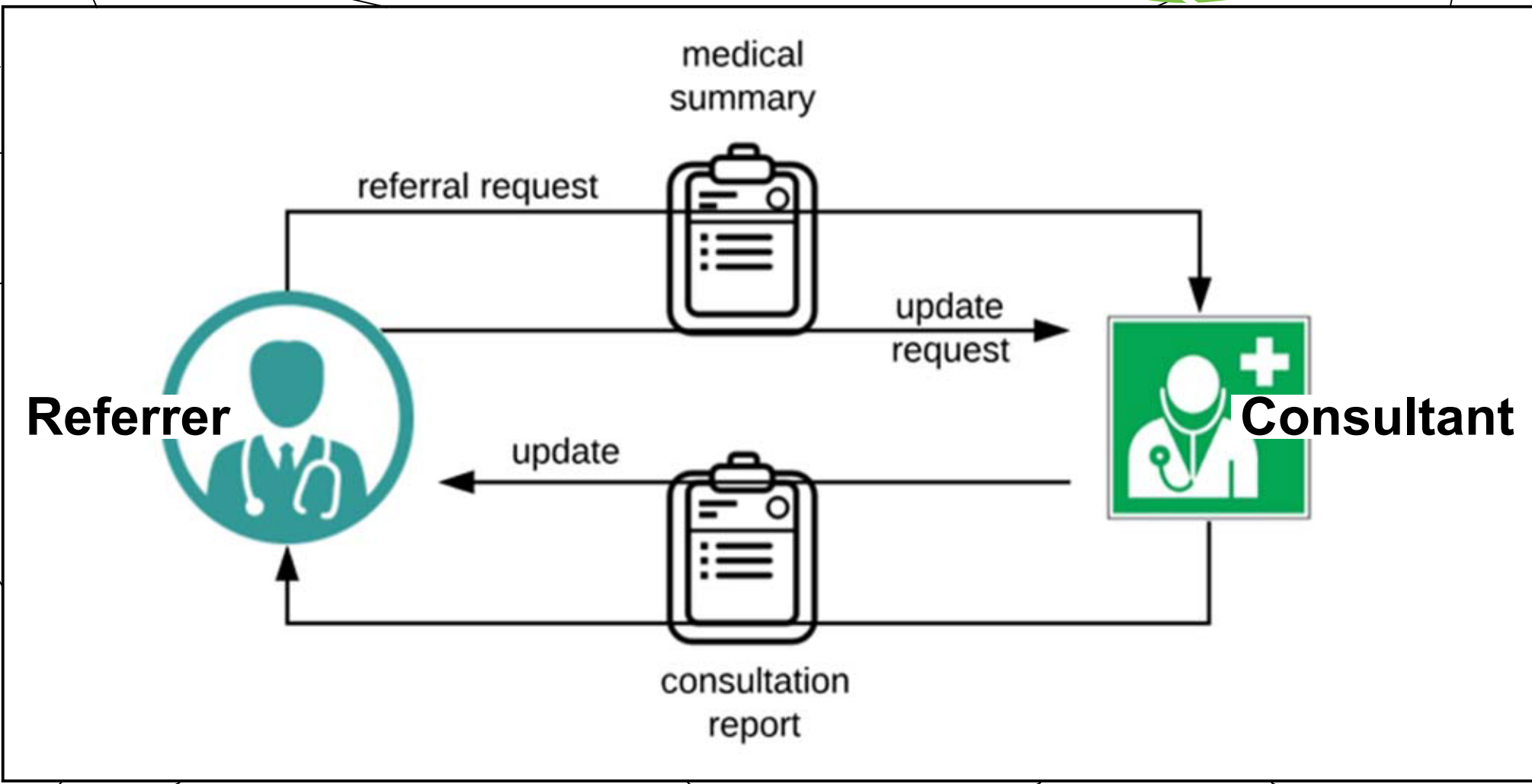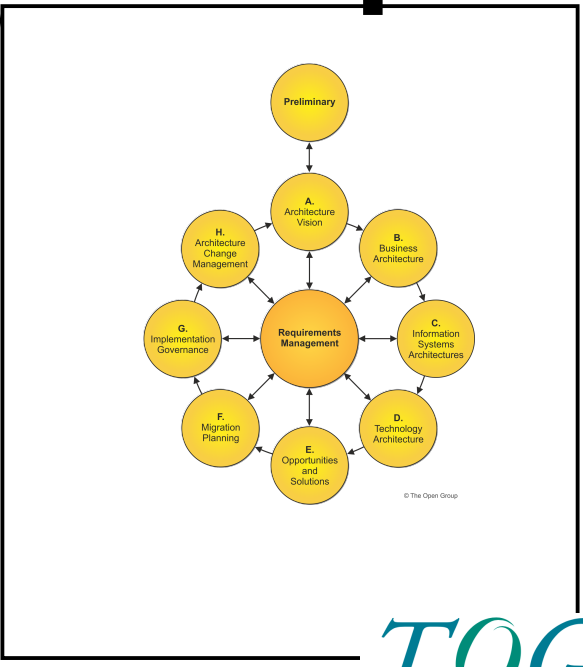
#1 The system *must* allow to refer patients

#2 All referrals *must* be historical

#3 The referral should be costomizable

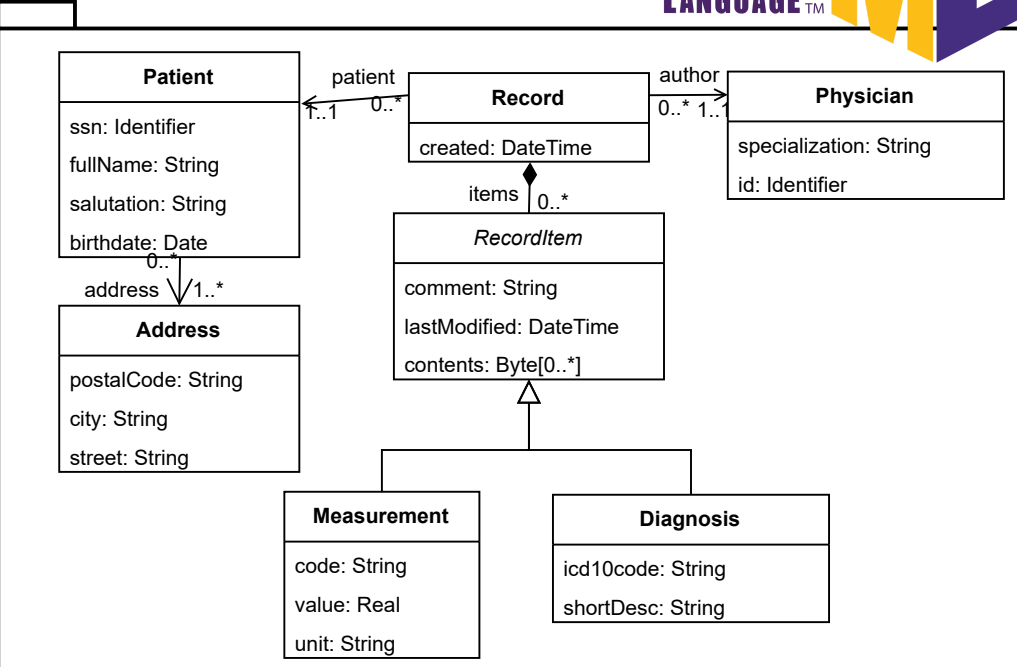**ReqIF** — Requirements Interchange Format
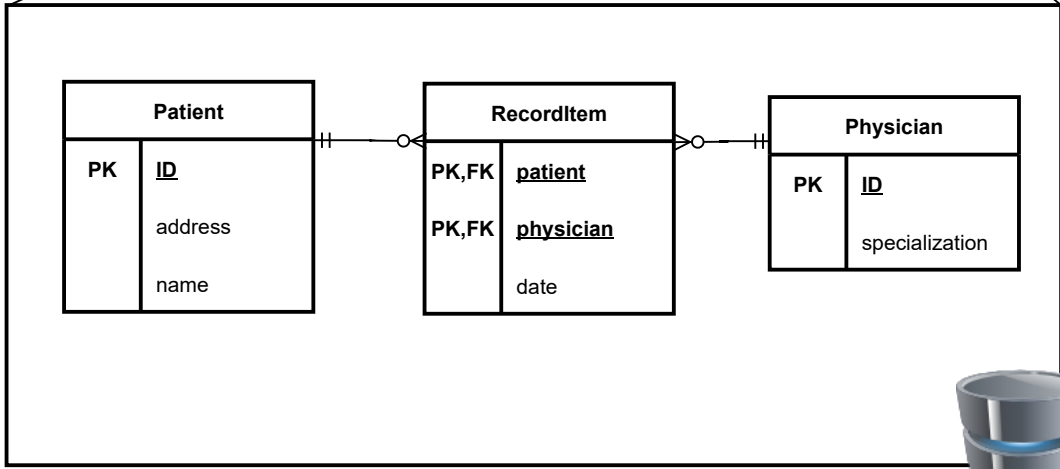
BPMN

Consultant
PatientData
Rejection
Acceptance
Referral
Extract Patient Information
Approval
Patient Consultation
Send Referral
Referral Finished
Patient appeal
Select Consultant
Practicioner
Rejection
PostalCode
Diagnosis
Specialization

TOGAF®

Preliminary
A. Architecture Vision
H. Architecture Change Management
B. Business Architecture
G. Implementation Governance
Requirements Management
C. Information Systems Architecture
F. Migration Planning
E. Opportunities and Solutions
D. Technology Architecture

ReferrerSystem — ConsultantSystem

UNIFIED MODELING LANGUAGE™ — UML®

medical summary

referral request

update request

Referrer

update

Consultant

consultation report

Class Diagram

Patient
ssn: Identifier
fullName: String
salutation: String
birthdate: Date
address

patient 1..1   0..*

Record
created: DateTime

items 0..*

author 0..* 1..1

Physician
specialization: String
id: Identifier

RecordItem
comment: String
lastModified: DateTime
contents: Byte[0..*]

Address
postalCode: String
city: String
street: String

Measurement
code: String
value: Real
unit: String

Diagnosis
icd10code: String
shortDesc: String

LOINC® from Regenstrief

LOINC C-reactive Protein

Standards/ Ontologies

Component & Class Diagrams

Database Schema

Patient
PK | ID
address
name

RecordItem
PK,FK | patient
PK,FK | physician
date

Physician
PK | ID
specialization

Reference Implementation

```java
public class Patient {

    private String id;
    private String name;
    private List<RecordItem> record;

    public Patient(String id) {
        this.id = id;
    }

    public String getId() {
        return id;
    }
}
```

Java

Business Rules

Select Consultant			
Input		**Output**	
Diagnosis	PostalCode	PractionerID	Specialization
string	regex	id	string
1	"Essential Hypertension"	"5...."	123 456 789	"Cardiology"
2	"Bacterial Meningitis"	"5...."	911 113 112	"Neurology"
3	"Complicated migraine"	"5[1-3]..."	420 023 007	"Internal Medicine"
4	"Complicated migraine"	"5[4-9]..."	987 654 321	"Neurology"
5	"Atopic Dermatitis"	"5...."	690 046 046	"Dermatology"
...	...	...	...	...

DMN Decision Model & Notation™

Database Schema

Reference Implementation