



A division of ACCESS Health International

Microservice Specification (Technical)

‘Patient Registration’



Patient Registration Microservice – Technical Specification based on Microservice Event Sourcing Architecture

Name – PatientRegistration Microservice

Domain Model

Aggregate Root

PatientRegistration

S.No	Attributes (PatientRegistration Class)
1	patientId
2	List of PatientAddressDetails ValueObject
3	Ambulance entity (optional)
4	Employee entity (optional)
5	SourceOfPayment entity (for insurance beneficiary patients)
6	personId (Person entity – one to one mapping with Patient entity)
7	Patient Entity

Entity

Person (Person entity is a superclass of Patient entity or has one to one mapping with Patient entity) _

Fields

personId
Unique Health Identification Number
Alternate Unique Identification Number (UID) Type
Alternate Unique Identification Number (UID)
Nationality Code (default – Indian)

(These are minimum fields based on MVP requirements and Tech vendors may define more field attributes based on their specific business requirements

Entity

Patient

Fields

patientId
personId (if one to one mapping between patient and person entities)
Provider's Patient ID
Patient Name
Patient Age
RCH)
Identity Unknown Indicator
PatientAddressDetail ValueObject
PatientContactPersonDetails ValueObject
Ambulance ValueObject (Optional)
AmbulanceRouteDetail ValueObject (Optional)
EmergencyPatientDetail ValueObject (for emergency patient registration)
PatientClass (e.g. APL,BPL,PMJAY Beneficiary, RCH Beneficiary etc)
Employee entity (for corporate patient registration)
SourceOfPayment entity (for insurance patient registration)
facilityID

Entity

Employee

Fields

EmployeeID
EmployerID
PatientID
EmployeeTelephoneNumber
EmployeeMobileNumber
EmployeeEmailAddress
EmployeeDesignationCode
EmployeeOrganizationName

Entity

SourceOfPayment
SourceOfPayment (for recording attributes related to beneficiaries registered (covered under a govt insurance scheme) or any insurance patient registration)

Fields

SourceOfPaymentID
patientId
InsuredCardID (Beneficiary ID in case of PMJAY or Bhamashah scheme e.g.)
TPACode (for private insurance)
HealthPlanTypeCode (valueset from MDDS – Govt or Private Health Insurance Scheme Code)
InsurancePolicyID
SourceOfPayment
SecondaryPolicyIndicator (for coordination of benefit cases)
List of SecondaryPolicyID

Value Object

PatientAddressDetail

Fields

patientId
PatientAddress
PatientAddressType
patientLandlineNumber (keeping patient contactdetails(landline and mobile numbers) with address details as many patients may have different contact details depending on their temporary or permanent residences)
List Of patientMobileNumber
patientEmailAddressURL

Value Object

PatientContactPersonDetails

Fields

patientId
contactPersonName
contactType
contactRelationship

contactPersonLandLineNumber
List of contactPersonMobileNumber
contactPersonEmailAddressURL

Value Object

Ambulance

Fields

AmbulanceIdentificationNumber
AmbulanceType
AmbulanceRouteDetail ValueObject
AmbulanceParamedicID
AmbulanceDriverIdentificationNumber

Value Object

AmbulanceRouteDetail

Fields

AmbulanceIdentificationNumber
AmbulanceOrignationSiteName
AmbulanceOriginationStartTime
AmbulanceReachLocationSiteName (in case of registered facilties - facilityID here)
AmbulanceReachLocationFinishedDateTime
RouteEvent
RouteEventDateTime
EnRouteDeliveryOutcome
DestinationRationale

Value Object

EmergencyPatientDetail

Fields

patientID
patientStatus
patientArrivalDate
patientArrivalTime
MLCStatus
FIRNumber (in case of MLC cases)

REST API Specification

To read API specifications, please visit the URL provide below

<https://app.swaggerhub.com/apis/vedpr2020/MVP/v0>

Commands

Patient Registration service will be capable of handling Nineteen different types of commands

1. CreatePatientCommand()

Parameters -

PatientRegistration aggregate Root

Mode - Synchronous

2. UpdatePatientRecordByPHIDCommand

Parameters –

PatientRegistration aggregate Root

Mode - Synchronous

3. UpdatePatientRecordByFacilityAssignedRegistrationNumber

Parameters

providerPatientID

Patient aggregate Root

Mode - Synchronous

4. DeactivatePatientRecordByFacilityAssignedRegistrationNumberCommand

Parameters

providerPatientID

Mode - Synchronous

5. DeactivatePatientRecordByPHIDCommand

Parameters

Unique Health Identification Number

Mode - Synchronous

6. ActivatePatientRecordByFacilityAssignedRegistrationNumberCommand

Parameters

providerPatientID

Mode - Synchronous

7. ActivatePatientRecordByPHIDCommand

Parameters

HealthIdentificationNumber

Mode - Synchronous

8. MergePatientCommand

Parameters

uniqueHealthIdentificationNumber sourcePatient
uniqueHealthIdentificationNumber targetPatient

Mode - Synchronous

9. UnMergeEpisodeCommand

Parameters

uniqueHealthIdentificationNumber sourcePatient
uniqueHealthIdentificationNumber targetPatient

Mode - Synchronous

10. CreatePatientBatchRegistrationCommand

Parameters

CSV file or XML file containing bulk patient registration details

(Please implement FileUpload logic here)

Mode - Asynchronous

11. UpdatePatientBatchRegistrationCommand

Parameters

CSV file or XML file containing bulk patient registration details

(Please implement FileUpload API here)

Mode - Asynchronous

12. DeActivatePatientBatchRegistrationsCommand

Parameters

CSV file or XML file containing bulk patient registration details (Unique Health Identification)

(Please implement FileUpload API here)

Mode - Asynchronous

13. ActivatePatientBatchRegistrationsCommand

Parameters

CSV file or XML file containing bulk patient registration details (Unique Health Identification)

(Please implement FileUpload API here)

Mode - Asynchronous

14. GetDuplicatePatientsByFacilityAssignedRegistrationNumberCommand

Parameters

Provider Patient ID

Mode - Synchronous

15. GetDuplicatePatientsByPHIDCommand

Parameters

Unique Health Identification Number

Mode - Synchronous

16. CreateFlaggedPatientRegistrationCommand ('VIP','BPL' etc)

Parameters

Unique Health Identification Number
FlagIndicator

Mode - Synchronous

17. LinkPatientRegistrationNumberWIthPHIDCommand

Parameters

Provider Patient ID
Unique Health Identification Number

Mode - Synchronous

18. UnLinkPatientRegistrationNumberWIthPHIDCommand

Parameters

Provider Patient ID
Unique Health Identification Number

Mode - Synchronous

19. LookupPHIDFromRegistryCommand

Parameters

String patientGenderCode - (values – ‘M’, ’F’, ’T – based on MDDS Health valueset domain)
Date patient DateOfBirth
String PatientName
String PatientPermanentAddress (Address is a composition of several fields e.g. premises Identifier, Town Code , City Code, State Code, Zip Code etc based on MDDS Panchayati Raj standard) String PatientCurrentAddress
String PatientLandLineNumber
String PatientMobileNumber
String PatientMotherMaidenName
String MatchAlgorithm
Number MinimumDegreeMatch

Mode – Synchronous

Events Published

Channel – Patient Registration event channel

Patient Registration will have seventeen events

1. PatientRegistrationCreatedEvent
2. PatientRegistrationActivatedEvent
3. PatientRegistrationDeactivatedEvent
4. PatientRegistrationOnHoldEvent
5. PatientRegistrationUpdatedEvent
6. PatientFlagCreatedEvent
8. PatientFlagUpdatedEvent
9. PatientBillingTypeFlagUpdatedEvent
10. PatientFlagRemovedEvent
11. PatientBillingTypeFlagRemovedEvent
12. PatientDuplicateCheckByPatientIdEvent
13. PatientDuplicateCheckByFacilityAssignedRegistrationNumberEvent
14. PatientMergeEvent
15. PatientUnMergeEvent
16. PatientIDCreatedEvent
17. PatientIPHIDMappedWithFacilityAssignedRegistrationNumberEvent

Queries

The Registration service will be capable of handling seven different types of Queries:

1. getAllPatients()

Parameter – Nil

Paginated query
2. getAllPatientByRegistrationDate

Parameter - Date date

Paginated query

3. getAllPatientByFacilityAssignedRegistrationNumber

Parameter – Provider Patient ID

Paginated query

4. getPatientByPHID

Parameter – Unique Health Identification Number

5. getAllCorporatePatientRegistrationByDate

Parameter – Date date

Paginated query

[**getAllCashPatientRegistrationsByDate**](#)

Paginated query

Parameter – Date date

Paginated query

[**getAllInsurancePatientRegistrationsByDate**](#)

Parameter – Date date

Paginated query

[**getAllPatientsByBPLStatus**](#)

Parameter

String patient Class (e.g. BPL, APL, VIP etc)

Paginated query

[**getAllPatientByEmployerID**](#)

Parameter

String employerID

Paginated query

[**getAllPatientByCareProviderID**](#)

(For Doctor's Patient Worklist)

Parameter

String Unique Individual Health Care Provider Number

Paginated query

Dependencies

Invokes	Subscribes To
PHID Registry Lookup MicroService (HTTPClient) patientRegistryQueryByDemographics()	Appointment Microservice AppointmentCheckedIn Event