nphies

Implementation Guide

Insurance Services

TMB Version | 1.2.878_1

May 2024

Version 2.6

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The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

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DOCUMENT RELEASE NOTE

REVISION HISTORY			
Document Version Number	**Date of Release**	**Details of Changes**	**Section No.(s)**
1.0	27-Aug-20	Created the first version to be published.	All Sections applicable
1.1	13-Sep-20	1. Updated Message Structure Definitions for all the profiles 2. Updated Sample Header Message, Message Structure of Bundle, Header Request, Header Response 3. Added a new section: Endpoint Operation 4. Added a new section: Scenarios	Sections: 6.2.1 6.2.2 6.2.7 6.2.8 6.2.9 6.2.10 8 9
1.2	15-Oct-20	1. Added Abbreviations in the document 2. Inserted Page Numbers in the footer 3. Updated FHIR Bundle Resource Hierarchical Structure 4. Updated Information Flow with addition of Asynchronous Polling, Queue Management 5. Updated Message Structure Tables 6. Updated Table of Extensions	Sections: 6.2.4 6.2.5 6.2.6 6.3.0 6.3.1 6.3.2 6.3.3 6.3.4 9.1.1 9.2.1 9.3.1 9.4.1 9.5.1 9.6.1 9.7.1 9.8.1 9.9.1 9.10.1 9.11.1 9.12.1 9.13.1 9.14.1 9.15.1

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			9.16.1 9.17.1 9.18.1 9.19.1 9.20.1
1.3	18-Nov-20	1. Updated Abbreviations in the document 2. Added Message Structure Definition Section in Information Flow 3. Moved Transactions Using the Task Resource 4. Updated Message Structure: Bundle 5. Updated Message Structure: Header Request 6. Updated Message Structure: Header Response 7. Updated Information Flow with addition of NPHIES Messaging Mechanism, update Polling, Methods to Reduce Polling Requests, Resource Instance Example 8. Added new section Identify Code Lists 9. Cross Referenced the use case links in Scenarios 10. Updated Cardinality for CoverageEligibilityRequest.purpose 11. Updated ValueSet for CoverageEligibilityResponse.extension.notInForce Reason 12. Updated cardinality for CoverageEligibilityResponse.purpose 13. Updated ValueSet for claim.supportingInfo.category for Auth and Claim Profiles 14. Updated ValueSet for Claim.item.bodySite in Auth and Claim profiles 15. Updated ValueSet for Claim.diagnosis.onAdmission in Auth and Claim Profiles 16. Added ValueSet for Claim.supportingInfo.code (vision claim) in Auth and Claim profiles 17. Added new field Claim.item.extension.payerShare in Auth and Claim Profiles 18. Updated Cardinality for claim.item.extension.patientShare in Claim profiles 19. Updated ValueSet for ClaimResponse.extension.reissue-reason in Claim Response profile 20. Updated ValueSet for Communication Request.reasonCode 21. Updated ValueSet for Communication.reasonCode 22. Updated ValueSet for Task.reasonCode 23. Updated ValueSet for ClaimResponse.outcome	Sections: 6.2.1 6.2.9 6.2.11 6.2.12 6.2.12.1 6.2.13 6.2.13.1 6.3 6.3.7 8.2 9.1.1.1 9.2.1.1 9.3.1.1 9.3.1.2 9.3.1.3 9.3.1.4 9.3.1.5 9.4.1.1 9.5.1.1 9.5.1.2 9.5.1.3 9.5.1.4 9.5.1.5 9.6.1.1 9.7.1.1 9.8.1.1 9.10.1.1 9.1.1.2 9.2.1.2 9.3.1.6 9.4.1.2 9.5.1.6 9.6.1.2 9.7.1.2 9.8.1.2 9.9.1.2

		24. Updated Descriptions for the fields used in Message Structure Tables 25. Removed coverage.policyHolder 26. Added Datatype References for all the Profiles	9.10.1.2 9.11.1.2 9.12.1.2 9.13.1.2 9.14.1.2 9.15.1.2 9.16.1.2 9.17.1.2 9.18.1.2 9.19.1.2 9.20.1.2
1.4	11-Dec-20	1. Updated the Provider and Insurer fields' descriptions in message structure fields 2. Added a point in Important Note: Provider and Payer Licenses can be referenced in the Community Portal: Health Dictionary (HD) → Code Lists → Essential Lists	Sections: 9.1.1.1 9.2.1.1 9.3.1.1 9.3.1.2 9.3.1.4 9.3.1.5 9.5.1.1 9.5.1.2 9.5.1.4 9.5.1.5 9.11.1.1 9.12.1.1 9.13.1.1 9.21
1.5	10-Jan-21	1. Updated FHIR datatypes description 2. Added a Section: Note for Implementers 3. Added a summary paragraph in Section 5 4. Updated Output of Process Message 5. Updated Message Events 6. Updated List of Message Events, Transactions and Focal Resources 7. Updated Information Flow 8. Added a section: Message Exchange Cycle in Information Flow 9. Added a Section: Error Handling in Information Flow 10. Updated NPHIES Messaging Mechanism with Message initiated by HIC, HCP 11. Added References in the Scenarios Section	Sections: 3.1 3.3 5 6.2.2.2 6.2.7 6.2.8 6.3 6.3.1 6.3.2 6.3.5.1 6.3.5.2 8 9

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		12. Removed Message Structure Definition Tables, Datatype References 13. Updated the description for Data Model section	
1.6	31-Jan-21	1. Updated the Process Message URL 2. Updated Error Handling 3. Updated Polling 4. Updated NPHIES Messaging Mechanism 5. Updated Methods to Reduce Polling Requests 6. Added Message Transmission 7. Updated Important Notes before Support Information	Sections: 6.2.2 6.3.2 6.3.4 6.3.5 6.3.7 6.4 9.21
1.7	21-Feb-21	1. Added a new section: Max Length 2. Updated Note for Implementers 3. Updated HIC and NPHIES Error Handling 4. Updated Task Input Type Table 5. Added Profile Release Note after Document Release Note	Sections: 3.3 3.4 6.3.2.2 6.3.2.3 6.3.4.1
1.7.1	28-Feb-21	1. Updated the Profile Release note after Document Release Note	N/A
1.8	23-Mar-21	1. Updated the Profile Release note 2. Updated Note to Implementers 3. Added Task Usage 4. BRVR Updated Version 1.2 has been released	Sections: 3.4 9.19.1.1 N/A for BRVR
1.8.1	24-Mar-21	1. Added Datatype Guidance 2. Moved Note for Implementers 3. Updated Task Usage Table	Sections: 3.4 3.5 9.19.1.1
1.9	2-May-21	1. Updated Profile Release Note 2. Updated Note to Implementers 3. Added Pre-Auth Use Case Scenarios 4. Added Coverage Resource Details	Sections: 3.5 7.4.1 9.10
1.9.1	6-May-21	1. Updated Profile Release Note	Sections: N/A
1.10	21-Jun-21	1. Updated Note to Implementers 2. Added Section on Special Handling for Elements 3. Renamed Batch Item to Batch Number in Table of Extensions 4. Updated Polling 5. Updated Profile Release Note	Sections: 3.5 6.3.10 6.2.6 6.3.4
1.10.1	29-Jun-21	1. Updated FHIR DataTypes (Attachment) in alignment with Attachment DataType section 3.4.1	3.1

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1.10.2	29-Jun-21	1. Updated Profile Release Note	N/A
1.11	30-Nov-21	1. Updated Note for Implementers 2. Removed the Advanced Authorization Use 3. Added section Patient Referral use case 4. Renamed Pre-Authorization to Authorization across the document 5. Updated Profile Release Note	Sections: 3.5 7.3 7.3.1
1.11.1	29-Dec-21	1. Updated the “Prior Authorization” use case in the Prior Authorization Examples table. 2. Removed the “Extending an existing Prior Authorization” use case in the Prior Authorization Examples table.	Sections: 7.3.2
1.11.2	17-Jan-22	1. Updated Profile Release Note	N/A
1.11.3	20-Jan-22	1. Updated Profile Release Note 2. Updated Table of Extensions 3. Updated Note to Implementers 4. Added section Newborn Eligibility Prior Authorization Claims 5. Added section Patient Policy Discovery	Sections: N/A 6.2.6 3.5 6.5 6.6
1.11.4	15-Feb-22	1. Updated Profile Release Note	Sections: N/A
1.11.5	24-Feb-22	1. Updated Category Codes and Supporting Info 2. Updated Profile Release Note	Sections: 6.3.10.2 N/A
1.11.6	17-Mar-22	1. Updated Profile Release Note	Sections: N/A
1.12	23-Mar-22	1. Added new sections Eligibility Extensions and Eligibility Response Extensions under Check Eligibility Cycle Use Case 2. Added new section Claim Extensions under Process Claim Cycle Use Case. 3. Updated Newborn Eligibility Prior Authorization Claims 4. Updated Category Codes and Supporting Info table 5. Added Partially Approved or Rejected Prior Auth Handling use case in Prior Authorization Examples table 6. Changed the heading Payment Confirmation Notification to Payment Notice 7. Reordered the Use Cases section	Sections: 7.1.1, 7.1.2 7.4.1 6.5 6.3.11 7.3.1 7.8 7

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1.12.1	28-Jun-22	1. Added new section Duplicate Checking under Information Flow 2. Removed the content related to Not in Force from Table of Extensions 3. Updated the content with adding three new extensions in the Patient Referral Prior Authorization - Transfer of Care 4. Updated the Profile Release Note	Sections: 6.7 6.2.6 7.3 N/A
1.12.1_1	17-Aug-22	1. Updated Note to Implementors	3.5
1.12.2	04-Jul-22	1. Updated the Profile Release Note 2. Updated Table of Extensions	N/A 6.2.6
1.12.3	16-Aug-22	1. Added a new column IG Version in the Table of Extensions 2. Added section “Sending Claim Supporting Documents after adjudication” 3. Removed the phrase “during the 14 day review period” 4. Updated the picture title to Payment Notice	6.2.6 7.4.1 7.4.2.3 7.8
1.12.3_2	23-Aug-22	1. Updated Profile Release Note	N/A
1.12.3_3	12-Sep-22	1. Added “TMB Version” column to Profile Release Note Table 2. Shifted “Date” column before “TMB Version” column in the Profile Release Note Table	N/A
2.0	12-Dec-22	1. Added APA to Profile sheet 2. Updated Profile Release Note 3. Updated Abbreviations in the document 4. Updated Table of Extensions 5. Updated Message Events 6. Updated List of Message Events, Transactions and Focal Resources table, Updated Codesystem URL 7. Updated Transactions using the Task Resource 8. Added ‘Instant’ DataType 9. Added ‘Ref.4’ Datatype 10. Added a new Note for Implementers 11. Updated the Information Flow, removed the old flow diagram 12. Added Advanced Authorization to the Communication Offline - Happy Path table 13. Updated Communication Offline - Happy Path to asynchronous message – Happy Path	N/A N/A N/A 6.2.6 6.2.7 6.2.8 6.2.9 3.1 3.1 3.5 6.3 6.3.1.1 6.3.1.1 6.3.5

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		14. Added Advanced Authorization Messaging Mechanism 15. Added Advanced Authorization to the paragraph 16. Added Advanced Authorization Use Case 17. Added Advanced Authorization Examples 18. Added Advanced Authorization Cancellation Use Case 19. Added Advanced Authorization Data model	6.3.5.1 7.9 7.9.1 7.9.2 9.5
2.1	21-Dec-2022	1. Added FMS into Profile sheet 2. Updated Profile release notes 3. Updated abbreviations in the document 4. Updated Note for Implementers 5. Updated table of extensions 6. Updated message event 7. Updated Information flow 8. Added Fraud Notification use case 9. Added Fraud Notification data model	N/A N/A N/A 3.5 6.2.6 6.2.7 6.3 7.10 9.8
2.2	17-Aug-2023	1. Added Prescriber Request and Response into Profile sheet 2. Updated Profile release notes 3. Updated abbreviations in the document 4. Added disclaimer 5. Updated table of extensions 6. Updated message event 7. Updated Information flow 8. Updated Message Exchange cycle 9. Added Prescription verification (Predetermination) use case 10. Added Prescription verification (Predetermination) data model	N/A N/A N/A 6.2.2 6.2.6 6.2.7 6.3 6.3.1 7.11 9.8
2.3_2	11-Sep-2023	1. Typing Correction 2. Addition for Adjudication and Rejection Reasons section	N/A 6.3.10.2
2.4	28-Sep-2023	1. Updated Profile release note	N/A
2.5	04-Oct-2023	1. Relabel section 6.3.10.2 – change from “Adjudication and Denial Reasons” to “Adjudication and Rejection Reasons” 2. Removal of the below 2 denial Codes:	6.3.10.2

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		• AD- 3-9: Diagnosis code invalid for billing/reporting • MN-1-3: Service/supply may be appropriate, but too frequent	
MDS	30-Nov-2023	1. Updated Profile release notes 2. Updated period data type 3. Updated encounter profile section 4. Updated table of extensions N/A	N/A 3.1 9.19 6.2.1
2.6	02-May-2024	1. Updated Profile release notes 2. Updated data type table 3. Updated encounter profile section 4. Updated Category codes and supporting information. 5. Added “accident” section. 6. Typo correction for ClaimResponse.preAuthRef 7. Updated Table of extensions 8. Update nphies document repository paths from community portal to Nphies Unified Portal. 9. Replaced “Authorization” & “Pre-authorization” by “Prior Authorization” for consistency and terminology unification purposes. 10. Remove the attached files enclosed within the document and replace it with nphies unified portal document location.	N/A 3.1 9.19 6.3.11 6.3.12 7.3 6.2.6 All sections N/A 6.3.10.2 9.19 9.25

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PROFILE RELEASE NOTE

Update Version	Update Description	Date	TMB Version
3.2	Added meta fields in all the profiles	16-2-2020	
3.2	Added structure definition table for all the resources	16-2-2020	
3.2	Updated the structure definition to include the profile version "|.1.0.0"	16-2-2020	
3.2	Added OperationOutcome profile	16-2-2020	
3.2	Added Error Notice profile	16-2-2020	
3.2	Added error.extension.expression to all business responses (Eligibility Response, Claim Response, Prior Authorization Response, Task)	16-2-2020	
3.2	Removed Location.name from the location profile	16-2-2020	
3.2	Added a column to indicate if the field is an array or not, as per the FHIR standards	25-2-2021	
3.2	Added the .extension parent element within the resources to indicate that the extension element is an array	25-2-2021	
3.2	Added element resourceType to all resources	25-2-2021	
3.2	Updated description for missing elements	25-2-2021	
3.2	Added the structure definition for all extensions in the comments column	25-2-2021	
3.2	Created a consolidated list of profiles highlighted in dark yellow. This should help in faster update and easier navigating to resources through filtering the left most column	25-2-2021	
3.4	Removed the business version number from the extension structure definitions in the [structure definition-profile V1 and reflected the update on the comment section in all the related extension elements within the profiles.	21-03-21	
3.4	Updated the extension naming from extension-original-request/response to extension-original-request/response. And reflected the same on all profiles.	21-03-21	
3.4	Updated the dataType for the extension elements (Changed it from "Element" to "Extension") in line with the FHIR standards	21-03-21	
3.4	Updated the Meta field Array description from being an array to Not an Array	21-03-21	
3.4	Updated the description of the Task.intent element (Distinguishes whether the task is a proposal, plan, or full order.)	21-03-21	
3.4	Updated the comment section for all items that must use a fixed value to include the (Must use the fixed value) phrase	21-03-21	
3.4	Added the value set with the condition to the task.output.value element. if Task.output.type="error" then Task.output.value must be	21-03-21	

Update Version	Update Description	Date	TMB Version
	a valueCodeableConcept with a code selected from http://Nphies.sa/terminology/ValueSet/adjudication-error		
3.4	Updated ClaimResponse.extension.adjudication-outcome to optional as it will not be necessary in the business responses generated by Nphies or HICs where the Claim.outcome elements is ‘queued’, ‘partial’ or ‘error’. The field is still needed in the HIC responses when Claim.outcome element is ‘complete’, which will be managed through a BRVR.	21-03-21	
3.4	Updated the comment on the MessageHeader.meta.tag element to explain that it can be used for indicating if the message is Generated by Nphies, or if there are any queued messages for the HCP to go and poll. using the valueSet (http://Nphies.sa/terminology/CodeSystem/meta-tags) and possible values "queued-messages", "Nphies-generated"	21-03-21	
3.4	Updated .extension element max cardinality to * to comply with FHIR standards	21-03-21	
3.4	Updated cardinality for the extension.expression from 0..* to 0..1	21-03-21	
3.4	added OperationOutcome profile (structure definition) to the [structure definition-profile] sheet	21-03-21	
3.4	added task.usage table within the Task sheet to explain the different uses of this profile	21-03-21	
3.4	Updated attachment description in Data Types Sheet to include more clarity on the element’s usage	21-03-21	
3.5	updated the reference elements to indicate the Nphies defined Nphies profiles	30-03-21	
3.6	Add the Claim.careTeam.qualification field in Prior authorization institutional, professional, vision and dental	04-04-21	
3.6	Add the Claim.careTeam.qualification field in claim institutional, professional, vision and dental	04-04-21	
3.6	Add the Claim.careTeam.qualification field in practitioner Profile	25-04-21	
3.6	Add the policy holder field in the coverage profile	25-04-21	
3.6	Add organization profile for policy holder	25-04-21	
3.6	Update the data type reference for Claim.extension.eligibilityResponse from ref.1 to Ref.3a Use .business identifier instead of Use .reference to the full URL of the included resource	25-04-21	
3.6	Add an extension in the claim profile for priorauth Response : Claim.extension.priorauthResponse in the 5 types(institutional, dental, vision, professional and pharmacy) with cardinality 0..1	25-04-21	
3.6	Add a data structure for the priorauthResponse extension	25-04-21	
3.6	Change PaymentReconciliation.detail.request - cardinality needs to change from 1..1 to 0..1	25-04-21	

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3.6	Change PaymentReconciliation.detail.response - cardinality needs to change from 1..1 to 0..1	26-04-21	
3.6	Updated the data structure for the field datetime	27-04-21	
3.6	Include the definition for the "instant" to the dataType sheet in the profiles	27-04-21	
3.6	Update the data type reference for the payment reconciliation profile	27-04-21	
3.6	Update the structure definition	27-04-21	
3.6	Change PractitionerRole.code cardinality to be optional(0-1)	27-04-21	
3.6	Change PractitionerRole.speciality cardinality to be optional(0-1)	27-04-21	
3.7	Breakdown the patient.identifier.type in the patient profile	06-05-21	
3.7	Remove the preAuthRef field from claim response	06-05-21	
3.7	Add back the preAuthRef field from prior authorization response	06-05-21	
3.7	Add the auth period in prior authorization response	06-05-21	
3.7	Change PaymentNotice.recipient data type to ref.2a only instead to ref.2a and ref1	06-05-21	
3.7	Change the cardinality of the Claim.item.careTeamSequence from 1..1 to 1..*	06-05-21	
3.8	Add the word{error} to the CoverageEligibilityResponse.error.extension	19-05-21	
3.8	Update the description of the field CoverageEligibilityResponse.error.extension.expression	19-05-21	
3.9	Update the binding URL for coding element in extension-adjudication-reissue in claimResponse and prior authorization response	20-05-21	
3.9	Updated the typo in the data structure from Batch-item to batch-number	20-05-21	
3.9	Add back the coverage.period to the coverage profile	25-05-21	
3.9	Add the Claim.extension.eligibilityOffLine field in the 5 types of the prior authorization (institutional, professional, vision, dental and pharmacy)	25-05-21	
3.9	Add the Claim.extension.eligibilityOffLineDate field in the 5 types of the prior authorization (institutional, professional, vision, dental and pharmacy)	25-05-21	
3.9	Add the Claim.extension.eligibilityResponse in the 5 types of the prior authorization (institutional, professional, vision, dental and pharmacy)	25-05-21	
3.9	Add the Patient.identifier.extension.country field in the patient coverage	25-05-21	
3.9	Change the cardinality of the ClaimResponse.item.detail.adjudication.amount and	25-05-21	

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	ClaimResponse.item.detail.adjudication.amount and ClaimResponse.item.detail.subDetail.adjudication.amount to 0-1 instead of 1-1 in the claim response and prior authorization response		
3.9	Add new Sheet including all the supporting info structure and validation	25-05-21	
3.9	Update Organization.identifier	09-06-21	
3.9	Change the data type for Bundle.timestamp from datetime to instant	22-06-21	
4	Update in structure definition-profile from batch-item to batch-number	23-06-21	
4	Update in 5 types of the claims profile the batch-item to batch-number	23-06-21	
4	Task.focus ref 3b instead of Ref1	23-06-21	
4	Update the Task.output.value[x] for cancel response and Check-StatusResponse	07-07-21	
4.1	Add new data type Ref4 in Data type sheet	27-05-21	
4.1	use the Ref4 in the field VisionPrescription.prescriber	27-05-21	
4.1	Add a field Task.statusreason (task profiles)	07-06-21	
4.1	Change the cardinality of the Claim.item.careTeamSequence from 1-1 to 1-*	16-06-21	
4.1	Add PaymentReconciliation.detail.extension.component-payment	23-06-21	
4.1	Add PaymentReconciliation.detail.extension.component-early-fee	23-06-21	
4.1	Add PaymentReconciliation.detail.extension.component-nphies-fee	23-06-21	
4.1	Update the data type in MessageHeader.response.details to accept only ref1 Instead of ref1 and ref2a	28-06-21	
4.1	Change the cardinality of the communication.payload choice elements from 1-1 to 0-1	11-07-21	
4.1	Update in the structure definition the operation outcome to lower case.	14-07-21	
4.1	put the value set in front of the correct field: http://hl7.org/fhir/ValueSet/coverage-financial-exception	25-07-21	
4.2	remove the payment element from the claim response profile: ClaimResponse.payment	25-07-21	
4.3	Update a typo Claim.accident.locationAddress in in claims and prior authorization	05-08-21	
4.4	Update the Organization Payer & Provider identifier description	08-08-21	
4.4	Update the organization policy holder identifier data type to Identifier a	08-08-21	
4.5	Update the value set for type institutional (claim and prior authorization)	16-08-21	

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4.5	Update the value set in Task profile for the check status response from http://hl7.org/fhir/ValueSet/remittance-outcome to http://nphies.sa/terminology/ValueSet/claim-response-outcome	16-08-21	
4.6	Update the cardinality of Bundle.entry from 1-1 to 1-*	16-08-21	
4.6	Remove the fields from the bundles: Bundle.entry.focal-resource,Bundle.entry. Other resource #1, Bundle.entry. Other resource #2	16-08-21	
4.6	Update the fields name in the policy holder organization: Organization.identifier.type.coding.system, Organization.identifier.type.coding.code	16-08-21	
4.6	Update the cardinality from 0-1 to 1-1 of Organization.identifier.type.coding.code	16-08-21	
4.6	Put the value set in front of the correct field: http://nphies.sa/terminology/valueSet/policyholder-identifiertype	16-08-21	
4.7	Claim.item.servicedPeriod updated field description	30.11.21	
4.7	Claim.item.servicedPeriod updated the comment	30.11.21	
4.7	Claim.supportingInfo.timingPeriod: updated comment	30.11.21	
4.7	Add Claim.extension.transfer Prior Authorization only (structure definition added)	30.11.21	
4.7	Add CoverageEligibilityRequest.extension.transfer	30.11.21	
4.7	Added Claim.insurance.preAuthRef in all prior authorization types	13.12.21	
4.7.3	Added New Data type CodeableConcept 1	17.01.22	
4.7.3	Update CodeableConcept	17.01.22	
4.7.3	Revise the data type for the field Claim.supportingInfo.code to CodeableConcept 1	17.01.22	
4.7.3	Adding validations on supporting info categories	17.01.22	
4.7.4	Adding a new field for episode of care in 5 types of claims	18.01.22	
4.7.4	Adding new field for newborn in eligibility	18.01.22	
4.7.4	Adding new field for newborn in 5 types of claims	18.01.22	
4.7.4	Adding new field for newborn in 5 types of prior authorization	18.01.22	
4.7.4	Adding new field invoice number in all claim types and claim response	18.01.22	
4.7.4	Add the URL for 4.7.4 extensions in the data structure	18.01.22	
4.7.4	Remove the version for all the extensions in the data structure	18.01.22	
4.7.5	Add supporting info category	15.02.22	

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4.7.5	Revise the value set for the Task.oputput revised form: http://hl7.org/fhir/ValueSet/remittance-outcome to: http://nphies.sa/terminology/ValueSet/claim-response-outcome	15.02.22	
4.7.5	Remove ResourceType row from all the resources	15.02.22	
4.7.6	Adding new field for siteeligibility in CoverageEligibilityResponse.extension.siteEligibility & CoverageEligibilityResponse.insurance.extension.siteEligibility	24.02.22	
4.7.7	Changed cardinality for ClaimResponse.item.extension.patientInvoice from 1..1 to 0..1	17.03.22	
4.7.8	CoverageEligibilityResponse.extension.notInForceReason	28.06.22	
4.7.8	CoverageEligibilityResponse.insurance.extension.notInForceReason	28.06.22	
4.7.8	CoverageEligibilityResponse.extension.siteEligibility	28.06.22	
4.7.8	CoverageEligibilityResponse.insurance.extension.siteEligibility	28.06.22	
4.7.8	CoverageEligibilityRequest.status	28.06.22	
4.7.8	CoverageEligibilityResponse.status	28.06.22	
4.7.8	ClaimResponse.extension.transferAuthorizationNumber	28.06.22	
4.7.8	ClaimResponse.extension.transferAuthorizationPeriod	28.06.22	
4.7.8	ClaimResponse.extension.transferAuthorizationProvider	28.06.22	
4.7.8	extension-transferAuthorizationNumber	28.06.22	
4.7.8	extension-transferAuthorizationPeriod	28.06.22	
4.7.8	extension-transferAuthorizationProvider	28.06.22	
4.7.8	http://nphies.sa/terminology/ksa-marital-status	28.06.22	
4.7.9	PaymentReconciliation.detail	04.07.22	
4.7.9	http://nphies.sa/terminology/ValueSet/institutional-body-site	04.07.22	
4.7.9	Coverage.exception.type	04.07.22	
4.8	VisionPrescription.prescriber	04.07.22	1.2.875
4.8	PaymentReconciliation.requestor	04.07.22	1.2.875
4.8	Identifier.c	04.07.22	1.2.875
4.8	PaymentReconciliation.paymentIdentifier	04.07.22	1.2.875
4.8	Communication.payload	04.07.22	1.2.875
4.8	CommunicationRequest.payload	04.07.22	1.2.875
4.8	Period datatype	04.07.22	1.2.875
4.8	Claim.supportingInfo.timingPeriod	04.07.22	1.2.875
4.8	Encounter.period	04.07.22	1.2.875
4.8	Claim.billablePeriod	04.07.22	1.2.875
4.8	Claim.item.servicedPeriod	04.07.22	1.2.875

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4.8	ClaimResponse.extension.transferAuthorizationPeriod	04.07.22	1.2.875
4.8	Claim.extension.batch-period	04.07.22	1.2.875
4.8	ClaimResponse.extension.batch-period	04.07.22	1.2.875
4.8	PaymentReconciliation.period	04.07.22	1.2.875
4.8	CoverageEligibilityRequest.servicedPeriod	04.07.22	1.2.875
4.8	CoverageEligibilityResponse.servicedPeriod	04.07.22	1.2.875
4.8	CoverageEligibilityResponse.insurance.benefitPeriod	04.07.22	1.2.875
4.8	coverage.period	04.07.22	1.2.875
4.8	coverage.exception.period	04.07.22	1.2.875
4.8	PractitionerRole.period	04.07.22	1.2.875
4.8_2	Data type Ref4 updated	23.08.22	1.2.875
4.8_2	Data type binding updated for VisionPrescription.prescriber	23.08.22	1.2.875
4.8_3	Ref 3a - Updates to reflect the display element which is optional	24.08.22	1.2.875
4.8_3	Claim.item.extension.package - Updated the information in all auth and claims type (typo error)	24.08.22	1.2.875
4.8_3	Claim.item.extension.tax - Updated the information in all auth and claims type (typo error)	24.08.22	1.2.875
4.8_3	Claim.item.extension.payerShare - Updated the information in all auth and claims type (typo error)	24.08.22	1.2.875
4.8_3	Claim.item.extension.patientShare - Updated the information in all auth and claims type (typo error)	24.08.22	1.2.875
4.9	Claim.item.extension.prescribedMedication - New field added	06-09-2022	
4.9	Claim.item.extension.medicationSelectionReason - New field added	06-09-2022	
5.0.4	Advaned Preauthorization Profile - Added new elements	30-08-2022	1.2.876
5.0.4	Advaned Preauthorization Profile - Updated "Structured Definition-profile" tab with new structure definition URLs for applicable elements	31-08-2022	1.2.876
5.0.4	Claim.extension.priorauthResponse - added reference to advanced auth in all claim types	21-09-2022	1.2.876
5.0.4	Communication.about - added a note to include reference to advanced authorization as well	21-09-2022	1.2.876
5.0.4	CommunicationRequest.about - added a note to include reference to advanced authorization as well	21-09-2022	1.2.876
5.0.4	Claim.extension.priorauthResponse - added a note to include reference to advanced authorization as well -	21-09-2022	1.2.876
5.0.4	ClaimResponse.extension.transferAuthorizationProvider - added ref 4	21-09-2022	1.2.876
5.0.4	"Structure Definition-profile" tab - Added StructureDefinition URL entries for ClaimResponse.extension.supportingInfo elements	10-10-2022	1.2.876

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5.0.4	ClaimResponse.extension.adjudication-outcome (Advanced Authorization) - Updated Description, ONLY approved/partial	14-11-2022	1.2.876
5.0.4	ClaimResponse.addItem.extension.adjudication-outcome (Advanced Authorization) - Updated Description, ONLY approved/partial	14-11-2022	1.2.876
5.0.4	Organization.identifier.type.coding.system - Update ValueSet (it was CodeSet lurl)	15-11-2022	1.2.876
5.1	Fraud notification - Added tab Message header (FMS)	09-12-2022	1.2.876
5.1	Fraud notification - Added tab Operation outcome-FMS	09-12-2022	1.2.876
5.1	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-sender - structure definition added	09-12-2022	1.2.876
5.1	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-request - structure definition added	09-12-2022	1.2.876
5.1	Data type Tab - New data types (Range, Ratio, Timing, Dosage) added	05-10-2022	1.2.877_1
5.1	Structure Definition tab - StructureDefinition for prescriber-preauth added	05-10-2022	1.2.877_1
5.1	Prescriber Authorization tab - New tab added for prescriber authorization request profile	05-10-2022	1.2.877_1
5.1	Appendix-Dosage - New tab added for Dosage data type definition	05-10-2022	1.2.877_1
5.1	Appendix-Timing - New tab added for Timing data type definition	05-10-2022	1.2.877_1
5.1	Structure Definition tab - removed Selection Reason	13-10-2022	1.2.877_1
5.1	Structure Definition tab - Added Prescriber Priorauth	13-10-2022	1.2.877_1
5.1	Structure Definition tab - Added medicationRequest	13-10-2022	1.2.877_1
5.1	Structure Definition tab - Added extension-absence-of-scientific-code	13-10-2022	1.2.877_1
5.1	Pharmacy Auth- Claim.item.detail.extension.package - updated typo (added detail)	13-10-2022	1.2.877_1
5.1	Pharmacy Auth-Claim.item.detail.extension.tax - updated typo (added detail)	13-10-2022	1.2.877_1
5.1	Pharmacy Auth-Claim.item.detail.extension.payerShare - updated typo (added detail)	13-10-2022	1.2.877_1
5.1	Pharmacy Auth-Claim.item.detail.extension.patientShare - updated typo (added detail)	13-10-2022	1.2.877_1
5.1	Claim.item.detail.extension.prescribedMedication - New field added to Prior Authorization Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.extension.pharmacistSelectionReason - New field added to Prior Authorization Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.detail.extension.pharmacistSelectionReason - New field added to Prior Authorization Pharmacy Request profile	13-10-2022	1.2.877_1

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5.1	Claim.item.extension.medicationSelectionReason - field removed from Prior Authorization Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.extension.prescribedMedication - New field added to Claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.extension.pharmacistSelectionReason - New field added to Claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.detail.extension.prescribedMedication - New field added to Claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.detail.extension.pharmacistSelectionReason - New field added to Claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-pharmacist-substitute - Added to structure definition	13-10-2022	1.2.877_1
5.1	Claim.item.extension.pharmacistSubstitute - New field added to Prior Authorization and claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Claim.item.detail.extension.pharmacistSubstitute - New field added to Prior Authorization and claim Pharmacy Request profile	13-10-2022	1.2.877_1
5.1	Days' Supply in supporting info Tab - Supporting-info.valueQuantity updated to be quantity 2	12-12-2022	1.2.877_1
5.1	Claim.item.sequence - new field added in prescription request	02-02-2023	1.2.877_1
5.1	http://nphies.sa/terminology/ValueSet/info-code > removed from claim, auth and APA as details included in supporting Info Tab	23-02-2023	1.2.877_1
5.1	PaymentReconciliation.paymentIdentifier - changed order in excel	07-03-2023	1.2.877_1
5.1	ClaimResponse.addItem.productOrService - updated different value sets in comments	07-03-2023	1.2.877_1
5.2	Supporting Info tab - Added patient's past medical, surgical and medication history.	11-10-2023	MDS
5.2	Mandate Patient.maritalStatus	11-10-2023	MDS
5.2	Added Patient.extension.occupation	11-10-2023	MDS
5.2	Patient.extension.Patient-religion Updated the structure definition and Value set(was missing-typo)	23/11/2023	MDS
5.2	patient.name: Cardinality changed to 1..1	23/11/2023	MDS
5.2	coverage.class: Cardinality changed to 1..*	23/11/2023	MDS
5.2	Mandate coverage.policyHolder and updated to be onlt Ref1	11-10-2023	MDS
5.2	Added Encounter.extension	11-10-2023	MDS
5.2	Added Encounter.extension.emergencyDepartmentDisposition	11-10-2023	MDS
5.2	Added Encounter.extension.emergencyArrivalCode	11-10-2023	MDS
5.2	Added Encounter.extension.triageDate	11-10-2023	MDS

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5.2	Added Encounter.extension.triageCategory	11-10-2023	MDS
5.2	Added Encounter.extension.emergencyServiceStart	11-10-2023	MDS
5.2	Added Encounter.extension.serviceEventType	11-10-2023	MDS
5.2	Added Encounter.hospitalization.extension.admissionSpecialty	11-10-2023	MDS
5.2	Added Encounter.hospitalization.extension.dischargeSpecialty	11-10-2023	MDS
5.2	Added Encounter.hospitalization.extension.intendedLengthOfStay	11-10-2023	MDS
5.2	Added Encounter.extension.causeOfDeath	11-10-2023	MDS
5.2	Encounter.subject: updated to ref1 only	23/11/2023	MDS
5.2	Encounter.serviceProvider: updated description	11/27/2023	MDS
5.2	Encounter.period datatype: Changed to Period3	23/11/2023	MDS
5.2	Encounter.hospitalization.dischargeDisposition: Valueset was changed from http://hl7.org/fhir/ValueSet/encounter-discharge-disposition to http://nphies.sa/terminology/ValueSet/encounter-discharge-disposition	11-10-2023	MDS
5.2	Supporting Info tab: Added morphology	11-10-2023	MDS
5.2	Supporting Info tab: Added investigation-result	11-10-2023	MDS
5.2	Supporting Info tab: Added treatment-plan	11-10-2023	MDS
5.2	Supporting Info tab: Added physical-examination	11-10-2023	MDS
5.2	Supporting Info tab: Added history-of-present-illness	11-10-2023	MDS
5.2	Supporting Info tab: Added Admission Weight	23/11/2023	MDS
5.2	Supporting Info tab: Added Estimated Length Of Stay	23/11/2023	MDS
5.2	Supporting Info tab: Removed Hospitalized	23/11/2023	MDS
5.2	valueQuantity in supporting-info: Update valueQuantity2	23/11/2023	MDS
5.2	supportingInfo.reason (value set): updated for vital-sign-weight, vital-sign-systolic, vital-sign-diastolic, vital-sign-height, oxygen-saturation, pulse, temperature, respiratory-rate	23/11/2023	MDS
5.2	Claim.supportingInfo.reason: Removed value set- refer to supporting info tab	18-01-2024	MDS
5.2	Claim.type: updated description	18-01-2024	MDS
5.2	Claim.extension.encounter: Mandate Encounter in Prior Authorization and Claim institutional, professional and oral	15-11-2023	MDS
5.2	Claim.item.extension.maternity: Added as mandatory in Institutional,Professional, Pharmacy Prior Authorization and Claim Profile	11-10-2023	MDS
5.2	Claim.diagnosis.extension.conditionOnset: Added as mandatory in Claim Institutional Profile	11-10-2023	MDS
5.2	Claim.subType: Mandate Claim.subType	11-10-2023	MDS
5.2	ClaimResponse.subType: changed to mandatory in All	23/11/2023	MDS
5.2	ClaimResponse.addItem.extension.maternity: new field added under advanced authorization	11/27/2023	MDS
5.2	DataType DateTime: Update description for the DateTime in DataTypes	23/11/2023	MDS

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5.2	Organization.extension.providerType: new field added	11/27/2023	MDS
5.2	Encounter.hospitalization.admitSource: updated valueset	11/27/2023	MDS
5.2	Encounter.hospitalization: Array flag removed	1/23/2023	MDS

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ABBREVIATIONS

Abbrev.	Description
ACHI	Australian Classification of Health Interventions
API	Application Programming Interface
AM	Account Management Component of Solution Architecture
APM	Application Performance Monitoring
BAM	Business Activity Monitoring
BI	Business Intelligence
CHI	Council of Health Insurance
CDA	Clinical Document Architecture
COTS	Commercial Off the Shelf
CPT	Current Procedural Terminology
CR	Change Request
CRUD	Create, Read, Update, Delete
DC	Data Center
DNS	Domain Name System
EFWA	Errors, Fraud, Waste & Abuse
ESB	Enterprise Service Bus
ETL	Extraction, Transformation, and Loading
EULA	End User License Agreement
FHIR	Fast Healthcare Interoperability Resources
FS	Financial Services
FTP	File Transfer Protocol
HCP	Healthcare Provider
HIC	Health Insurance Company
HIPAA	Health Insurance Portability and Accountability Act
HIS	Hospital Information System
HL7	Health Level – 7
HTTP	Hypertext Transfer Protocol
IAM	Identity and Access Management
ICD	International Classification of Diseases
JSON	JavaScript Object Notation
KPI	Key Performance Indicator
LDAP	Lightweight Directory Access Protocol

LOINC	Logical Observation Identifiers Names and Codes
MOH	Ministry of Health
NHIC	National Health Information Center
NPHIES	National Platform for Healthcare Information Exchange Services
OLA	Operations Level Agreement
PrTM	Providers Transaction Management Module
PaTM	Payers Transaction Management Module
PM	Project Manager
PMO	Project Management Office
SMTP	Simple Mail Transfer Protocol
QA	Quality Assurance
RAC	Real Application Clusters
REST	Representational State Transfer
RFP	Request for Proposal
RPO	Recovery Point Objective
RTP	Recovery Time Objective
SeHE	Saudi eHealth Exchange
SHIB	Saudi Health Insurance Bus
SLA	Service Level Agreement
SOA	Service-Oriented Architecture
SOP	Standard Operating Procedures
SSO	Single Sign-On
TMB	Transaction Management Bus
TPA	Third-Party Administrators
UAT	User Acceptance Testing
UniPlat	Unified Platform for Health Insurance Transactions and Electronic Health Data Exchange
WSI	Web Services Integration
XML	Extensible Markup Language
APA	Advanced PriorAuthorization
FMS	Fraud Management System
EBP	Essential Benefit Package

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1 ABSTRACT

Health Level-7 or HL7 refers to a set of international standards for the exchange of clinical, financial, and administrative data between software applications used by various healthcare providers. HL7 specifies a few flexible standards, guidelines, and methodologies by which various healthcare systems can communicate with each other. Such guidelines or data standards are a set of rules that allow information to be shared and processed in a uniform and consistent manner.

Fast Healthcare Interoperability Resources (FHIR) is a new standards family from HL7 International designed to be easier to implement, more open, and more extensible than other standards families from HL7 or other Standards Development Organizations (SDO). The FHIR leverages a modern web-based suite of API technology, including topic-based content models (resources), methodology for composing larger information sets from resources (bundles of resources as collections, documents, messages etc.), HTTP-based RESTful protocols for information object exchange, and a choice of JSON or XML for data representation.

2 OBJECTIVE

The objective of the Implementation Guide is to enable external payers and providers to integrate with NPHIES. The guide describes the references, overview of NPHIES, information exchange construction and flow between different healthcare stakeholders and NPHIES, use cases, defines the profiles' message structure for FHIR implementation, and specifies the links to relevant FHIR artifacts and documentation.

3 REFERENCES

FHIR is a healthcare information exchange standard that makes use of an HL7-defined set of resources to support information sharing by a variety of means, including documents, messages, services, and RESTful interfaces. Thus, FHIR is suitable for use in a wide variety of contexts - cloud communications, server communication in large institutional healthcare providers, and much more.

FHIR defines resources for clinical, financial and administrative content (e.g., Patient, Location, Organization, Claims, Tasks, etc.) as well as resources for infrastructure purposes. FHIR resources are small reusable structures where each resource has a logical table, and XML or JSON template. To exploit the FHIR standard for the Financial Services project, resources will be first represented using the data elements that are followed by their types and cardinalities. Thus, it is important to understand the concept of datatypes.

3.1 FHIR DataTypes

The FHIR specification defines a set of datatypes that are used for the resource elements. In general, datatypes are categorized into two groups:

1) Primitive types which are single elements
2) Complex types which are re-usable clusters of elements which may be further classified in General Purpose, metadata and special purpose datatypes

Note: HL7 FHIR Datatypes are defined in https://www.hl7.org/fhir/datatypes.html

Commonly used datatypes are summarized below. Note that some lesser used sub-elements have been omitted from some complex elements, see the above noted FHIR datatypes section for a complete list of datatypes including sub-elements:

Datatypes: FHIR name	Field Structure	Description
id	set of numbers and letters up to 64 characters	N/A
Ref.1	.reference: FullUrl	reference using the full URL where the reference resource will be included within the bundle
Ref.2a	• .type (uri) (optional) • .identifier (Mandatory) • type (CodeableConcept) (Mandatory identifier is for provider, payer, practitioner…) • system (uri) (Mandatory) • value (string) (Mandatory)	It is used when providing well known identifiers rather than including a resource when there is only one valid resource type. It is used to reference a known identifier for clearly stated resource. Identifier captured within NPHIES registries Example: reference (Organization)
Ref.2b	• .type (uri) (Mandatory) (supplied as there is a choice of resources) • .identifier (Mandatory)	It is used when providing well known identifiers rather than including a resource when there is a choice of resource types. It is used to reference a known identifier for a choice of resources.

	• type (CodeableConcept) (Mandatory) (identifier is for, provider, payer, practitioner) • system (uri) (Mandatory) • value (string) (Mandatory)	Identifier captured within NPHIES registries. Example: Reference(Organization | Practitioner)
Ref.3a	• .type (uri) (optional) • .identifier (Mandatory) • type (optional) • system (uri) (Mandatory) • value (string) (Mandatory • display(optional)	It is used when providing the business identifier for a resource. (claim, eligibility, prescription, referral,) when there is only one valid resource type. It is used to reference a business identifier for clearly stated resource. Example: reference (Claim)
Ref.3b	• .type (uri) (Mandatory) (supplied as there is a choice of resources • .identifier (Mandatory) • type (optional) • system (uri) (Mandatory) • value (string) (Mandatory)	It is used when providing the business identifier for a resource. (claim, eligibility, prescription, referral...) when there is a choice of resource types. It is used to reference a business identifier for a choice of resources. Example: Reference(Claim | eligibilityRequest)
Ref.4	• .type (uri) (optional) • .identifier (optional) • type (CodeableConcept) (Mandatory . identifier is for, provider, payer, practitioner…) • system (uri) (mandatory) • value (string) (mandatory) • Reference.display (optional) • Either display or (type and identifier) shall be provided	It is used when providing either the name example(practitioner name) when the full resource information is unknown or a well known identifier
Identifier.a	Identifier: a list of • type (CodeableConcept) (optional) • system (uri) (Mandatory) • value (string) (Mandatory)	Used to list the business identifier of the resource. Example (resource): claim
Identifier.b	Identifier: a list of • type (CodeableConcept) (Mandatory) (as used for patient, provider, payer, etc.…) • system (uri) (Mandatory) • value (string) (Mandatory)	A business unique identifier to identify a well-known entity based on the identification standards adopted by NPHIES Example: Patient. Identifier (Iqama or Saudi Health ID).
Identifier.c	"identifier: a list of type (CodeableConcept) (Mandatory as used for patient, provider, payer, etc…)	A business unique identifier to identify a well known entity based on the identification standards adopted by nphies (

	system (uri) (optional) value (string) (Mandatory)	Example: PaymentReconciliation.paymentIdentifier(cheque , EFT etc.)
positiveInt	whole number > 0	N/A
code	String	N/A
Coding	• system (Mandatory) • code (Mandatory) • display	N/A
string	String	N/A
Date	YYYY-MM-DD	Date must be a complete date
dateTime	YYYY-MM-DDThh:mm:ss.fff+zz:zz	Date or DateTime can be provided
BackboneElement	Array element	N/A
CodeableConcept	an array of coding system (uri) (Mandatory) code (code) (Mandatory) text (optional)	N/A
CodeableConcept 1	example: an array of **coding (Optional)** system (uri) (Mandatory) code (code) (Mandatory) text (Optional)	N/A
CodeableConcept 2	example: an array of **coding 1..2 (Mandatory- maximum 2)** system (uri) (Mandatory) code (code) (Mandatory) text (Optional)	N/A
boolean	true or false	N/A
Quantity 1	• value (decimal) (Mandatory) • comparator (code) (optional) unit can be specified as .unit or .system and .code, but not both • unit (string) (optional) • system (uri) (optional) • code (code) (optional)	Used to identify a quantity value only
Quantity 2	• value (decimal) (Mandatory)	Used to identify a quantity value and the additional mandatory attributes

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	• comparator (code) (optional) unit can be specified as code • system (uri) (Mandatory) (if used in day supply field in pharmacy claim) • code (code) (Mandatory) (if used in day supply field in pharmacy claim)	Example: Claim.item.productOrService (medication quantity)
Money	• value (decimal) (Mandatory) • currency (code) (Mandatory)	N/A
decimal	number containing decimals	N/A
Address	• use (code) • type (code) • text (string) (Mandatory) • line (array of string) • city (string) • district (string) • state (string) • postalCode (string) • country (string) • period (period)	text required BRVR at least one element from address text or combination of another element
Human Name	• use (code) • text (string) (Mandatory) • family (string) • given (array of string) • prefix (array of string) • suffix (array of string) • period (period)	text required
Attachment	• contentType (code) (Mandatory) • language (code) (Optional) • data (base64Binary) (Mandatory if no url) • url (Mandatory if no data) • size (unsignedInt) (Mandatory if url is provided) • hash (base64Binary) (Mandatory if url is provided) • title (string) (Mandatory) • creation (dateTime) (Mandatory)	Either .url must be supplied pointing to the attachment contents or .data must be supplied containing the attachment data
Choice	Example[x] string | date | reference(Patient)	N/A

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	either: exampleString (string) or exampleDate (date) or exampleReference(Patient)	
uri	various types, e.g., "Patient" "urn: uuid: 125371…" "urn: oid: 2.14.113344.2.15.12349876"	N/A
url	various types, e.g., "http: //somewhere.com/…/Resource/id" "mailto: name@domain.com" "urn: oid: 2.14.113344.2.15.12349876"	N/A
Annotation	author[x] string | Reference (Practitioner | Patient | RelatedPerson | Organization) time (dateTime) text (markdown)	N/A
Instant	YYYY-MM-DDThh:mm:ss.fff+zz:zz	N/A
Period 1	period start (dateTime) (Optional) end (dateTime) (Optional)	
Period 2	period start (dateTime) (Mandatory) end (dateTime) (Mandatory)	
Period 3	period start (dateTime) (Mandatory) end (dateTime) (Optional)	
Period 4	period start (dateTime) (Optional) end (dateTime) (Mandatory)	
Range	"Range (low shall have same or lower value than high) low (quantity) (Mandatory) high (quantity) (Mandatory)	

low (quantity) (Mandatory)	Ratio numerator (quantity) (Mandatory) denominator (quantity) (Mandatory)	
high (quantity) (Mandatory)"	Appendix-Timing	
Ratio	Appendix-Dosage	

Table 1: FHIR Datatypes

3.2 Cardinality

Cardinality Value	Description
0..1	No instance or just one (optional, but no more than one)
0..*	Zero or more instances (optional, and any number of instances is allowed)
1..1	Mandatory with exactly one instance
1..*	Mandatory with at least one instance

Table 2: Cardinality

3.3 Max Length

Max Length indicates the maximum length in characters that is permitted to be present in conformant instances and expected to be supported by conformant consumers that support the element. NPHIES blocks/rejects with an error message transaction which violate the max length.

3.3.1 Max Length for All Datatypes

The table below specifies the datatype of elements and their max length in English characters and Arabic characters:

Datatype	Length Characters (EN)	Length Characters (AR)
boolean	5	
integer	12	
string	*	*
decimal	30	

uri, url, Canonical	255	
base64Binary	10MB	10MB
instant	29	
date	10	
dateTime	29	
time	8	
code	30	
oid	60	
id	64	
markdown	10MB	10MB
unsignedInt	11	
positiveInt	11	
uuid	45	
Attachment.title	250	125
Identifier.value	50	
Annotation.authorString	100	50
CodeableConcept.text	250	
Coding.version	100	
Coding.display	100	
Quantity.unit	40	
SamplesData.data	30	
HumanName.text	250	125
HumanName.family	100	50
HumanName.given	100	50
HumanName.prefix	100	50
HumanName.suffix	100	50
ContactPoint.value	100	
Address.text	500	250
Address.line	200	100
Address.city	200	100
Address.district	200	100
Address.state	200	100
Address.postalCode	50	
Address.country	100	50
ContactDetail.name	250	125
Contributor.name	250	125
RelatedArtifact.label	100	50
RelatedArtifact.display	250	125

RelatedArtifact.citation	1000	500
ParameterDefinition.max	10	
ParameterDefinition.documentation	500	250
Expression.description	1000	
Expression.expression	1000	
TriggerDefinition.name	100	
Reference.reference	250	
Reference.display	200	
Dosage.text	4000	2000
Dosage.patientInstruction	4000	2000

Table 3: Max Length for All Datatypes

* *Max length defined in separate table for string fields*

3.3.2 Max Length for String Fields

The table below specifies the fields with 'String' datatype and their max length in English characters and Arabic characters:

Fields with String Datatype	Characters (EN)	Characters (AR)
Task.description	2000	
CoverageEligibilityResponse.disposition	250	125
CoverageEligibilityResponse.insurance.item.name	100	50
CoverageEligibilityResponse.insurance.item.description	250	125
CoverageEligibilityResponse.insurance.item.benefit.allowedString	60	
CoverageEligibilityResponse.insurance.item.benefit.usedString	60	
CoverageEligibilityResponse.preAuthRef	40	
Claim.supportingInfo.valueString	250	125
ClaimResponse.disposition	250	
ClaimResponse.processNote.text	2000	1000
CommunicationRequest.note.authorString	100	50
Communication.payload.contentString	*	*
Communication.note.authorString	100	50
coverage.dependent	10	
coverage.class.value	30	
coverage.class.name	100	
coverage.network	30	
Organization.name	250	125
PaymentReconciliation.disposition	250	
Location.name	250	125

Table 4: Max Length for String Fields

Refer to the links below:

- https://hl7.org/fhir/R4/elementdefinition-definitions.html#ElementDefinition.maxLength
- https://hl7.org/fhir/R4/elementdefinition.html

3.4 Datatype Guidance

3.4.1 Attachment DataType

Attachment (format and size) is given below:

1. **contentType** (code) (required): mime type (application/pdf, image/jpeg)

Extension	Kind of Document	MIME Type
.pdf	Adobe Portable Document Format (PDF)	application/pdf
.jpeg .jpg	JPEG images	image/jpeg

2. **language** (code) (Optional):
    - en: English
    - ar: Arabic
3. **data** (base64Binary) (is required if no url is provided): the attachment to be Base64 encoded and placed in this element.
4. **url** (url)(is required if no data is provided)This is the location of the attachment content
5. **size** (unsignedInt) (required if an url is provided): Number of bytes of content (if url provided)
6. **hash** (base64Binary) (required if an url is provided) : Hash of the data (sha-1, base64ed)
7. **title** (string) (required): Label to display in place of the data, or the name of the file
8. **creation** (dateTime) (required): Date attachment content was first created

3.5 Note for Implementers

- If the element in a resource or datatype, is of an array type then even if the profile reduces the cardinality from 0..* or 1..* to 0..1 or 1..1, it still needs to be represented in the JSON as an array, with the square brackets (“[ ]”).
- Enforcement of including the profile version number, e.g., adding "|1.0.0" to the end of the name of the profile, will be included in a future update so that version management can be

implemented for profiles.

Implementers can correct their systems in advance of the update being deployed and will not receive any errors for doing this correctly. Once the update is applied any messages that do not handle this correctly will be rejected by NPHIES with an error code to indicate the problem.

- Data elements in FHIR are never empty or null and will always contain a value or an extension. If the optional field doesn't have a value, then the field shouldn't be included.
- Refer to http://hl7.org/fhir/R4 for the FHIR R4 specification. This Implementation Guide assumes an understanding of the FHIR R4 specification and we will generally not repeat material already contained in the FHIR R4 specification unless it is to highlight a point or to provide a localization.
- This Implementation Guide also uses and assumes an understanding of common web technologies such as UTF-8, HTTP, XML, JSON, PKI-X509.
- Provider and Payer Licenses can be referenced in the nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents): Dash → Code Lists → Essential Lists
- The links mentioned in the document should be considered for reference and might change later for actual implementation.
- Some profiles/ resources might be available for integration at a later phase.
- Versioning if using KSA profile:

  1. If it is KSA profile, you need to use the name of the profile along with the profile business version (for example "|1.2.3")
  2. If it is a base FHIR profile, then you just need to include the name of the profile. Recommend the profile name which include the FHIR version number example: "http://hl7.org/fhir/4.0/StructureDefinition/Observation"

- Shadow Billing Rules are mentioned here:

  1. If item or detail or sub detail, if there are no children then net equal ((quantity * unit price) * factor) + tax
     - If factor is missing, the value equals 1
     - If tax is missing, the value equals 0
  2. If item or detail have children, (example: if it got children from a package or glasses prescription)
     - If it is a package, then accept the net value of package without validating the net value on the item details

  - Otherwise, the net on the item should equal to sum of the net on the children

- Business rules (BRVR) - can be expressed as constraints in profiles (part of the structure definition) or invariants (business rule expressions) specified with the profiles.

- Do not re-submit a claim that was accepted within the batch. Don't fix the batch and re-send it, send only a batch of the fixed items.

- The specialty of the careTeam provider goes into the careteam.qualification.

- The Claim, Claim Response support five different values of type element to support the different business practices. The types are:

  - Institutional – Admitted care (In-patient and day case) health services provided typically by Hospitals .

  - Professional – Out-patient for healthcare products and services such as Emergency Dept., medical, rehabilitative, and speech-related services that are not covered in Oral, Pharmacy or Vision services mentioned below

  - Oral – Out-patient services for dental, hygiene, and denture services and products

  - Pharmacy – Out-patient supply medications and health related products

  - Vision – Out-patient supply of eye exam, glasses, contact lens, and other vision services

- When billing the medication codes or any type of Prior-authorization or Claim, the supporting information, or the number of days' supply of the medication SHALL also be provided. This is accomplished by creating supportingInfo element where category code is "days-supply" and the number of days of supply is provided in the valueQuantity element.

Note: Days-supply is not required on Institutional claim line items where the medication is for in-patient services. It is, however, required for any line items for discharged medications provided to the patient.

- Given the all computer systems are not required to synchronize their clocks to a central clock, the current time on computers can vary. This may result, for example, in the creation time of transmitted message which was set to the current time of the sending system to appear to be in the future according to the clock of receiving system. Therefore, it is recommended to allow a buffer time of 15 minutes when comparing times such that "time sent" +- 15 minutes = "Received time".

- In a Prior Authorization Response and Claim Response where .outcome=complete, the adjudication categories 'benefit', 'tax' and 'approved-quantity' must be provided for each .item.

- When to put monetary amount vs value element for adjudication code category, only the approved-quantity uses the value element.

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Adjudication Category Code	Element
patientShare	amount
benefit	amount
approved-quantity	value
tax	amount

- The provider may send services for multiple prior authorizations in one claim and will provide the prior authorization references in the Claim.insurance.preAuthRef array.
- The provider may send multiple claims for a prior authorization with each claim identifying the appropriate prior authorization references in the Claim.insurance.preAuthRef array.

Note: All data elements in the Nphies profile excel spreadsheet are considered “Must Support” data elements which means that the creator of the message must provide data for the element if they have it even if the element is optional (cardinality is “0..”) and that receiver of the message cannot reject the message if the data elements are supplied but may choose to not use in their processing. In the upcoming Web Implementation Guide, presentation of profiles all the Must Support elements will be marked with Must Support symbol, a red square containing a white ‘S’.

- Patient share at Claim level: The claim.item.extension.patientShare is the amount that the HCP has collected from the patient.
- Patient share at Claim Response level: The patient in the adjudication.category is the amount that should be paid by the patient.
- **nphies new extensions**:
    - Patient Invoice – The number of the patient invoice on which the service was billed.
    - Episode of care – The provider specific episode identifier.
    - Site Eligibility – Code to indicate whether the patient is eligible or not eligible and why.
    - Newborn – Flag to identify that this claim is for a newborn. *For more information, refer to Newborn Eligibility Prior Authorization Claims*

Name	Resource/Element
Episode of care	extension-episode
Newborn	extension-newborn
Patient invoice	extension-PatientInvoice

Site eligibility	extension-siteEligibility

The above extensions will be used by the market complying with the cardinality and the data type mentioned in the profile excel sheet. However, the validation by nphies will be implemented later.

- Nphies identifies a large claim once submitted and a queued message is returned to the HCP from nphies with a flag “large claim” in the messageHeader.meta.tag .nphies will pass then the large claim through the validation, if the claim is valid it will be queued in the payer side, if invalid an error message will be queued in the HCP side.

- Advance Prior Authorization (APA) is a transaction which is sent by the HIC to HCP where a prior approval is needed to facilitate different business scenarios.
    - If provider is accepting the APA without any changes, then no additional Prior authorization is required
    - If any modification on the APA is required, then additional prior authorizations must be sent with reference to the initial APA.
    - APA can be cancelled by:
        - HCP by providing the data based on HL7 FHIR “KSA PROFILES” Cancel/Nullify Prior Authorization task.
        - HIC by using the reissue reason "Cancel"

- Fraud Management system is only related to Payers. It is considered a key component of Financial services to identify/detect unusual behaviour/pattern aiming to reduce its frequency and improve the transparency in the health insurance industry
- This process is automatically executed by Nphies in order to identify transactions that match the pre-defined logic of Unusual behaviour rules and notify the concerned stakeholders to execute investigation and corrective action if required.
- It will only be sent to the payer if only there is an unusual behaviour
- Regardless of the response, the payer will receive the Fraud notification message once the claim request is received by the HIC.
- OperationOutcome.extension.request resource has the claim identifier for the payer to link between the Claim request and the fraud notification
- New rejection codes with categories have been added to enhance the ability to accurately manage the claims and prior authorization within Nphies.
- The new rejection codes categorization can be summarized as below:
    - Administrative (AD) → Use for administrative errors in coding, redundant requests, missing, incomplete or inappropriate information about patient or service/procedure codes.

- Coverage (CV) → Use for requested service(s) that are not covered by the policy for any reason.
- Medical Necessity (MN) → Use when the requested healthcare service is not clinically justified.
- Supporting Evidence (SE) → Use when medical documentation is inadequate or missing information (e.g., chart notes, imaging, medications, clinical data, failed treatment trial.)
- Billing Errors (BE) → Use when there is a billing error (e.g., payment errors, Price agreement mismatch, claim submission error.)

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4 SOLUTION OVERVIEW

Nphies is a centralized network and processing system, which will connect all stakeholders to efficiently and effectively manage and monitor the standards-based information exchanges between providers (Hospitals, Clinics, Pharmacies, Optical shops [collectively referred as HCPs]) and payers (Health Insurance Companies (HICs) and TPAs) for the benefit of all stakeholders including the beneficiary.

4.1 Roles Catalog

Sr. No.	Role	Description
1	Department Staff	This role represents the group of employees within CHI/ Sehati who will interact with NPHIES to conduct their day-to-day operations including accreditation department staff, pre-qualification department staff, in addition to NPHIES department staff.
2	HCP	HCP role represents the HCP staff/ backend systems that will be interacting with the NPHIES to conduct the health insurance business processes (Eligibility, Claims, and Payment Management Services) through NPHIES.
3	HIC	HIC role represents the HIC staff/ backend systems that will be interacting with the NPHIES to conduct the health insurance business processes (Eligibility, Claims, and Payment Management Services) through NPHIES.
4	TPA	TPA role represents the TPA staff/ backend systems that will be interacting with the NPHIES to conduct the health insurance business processes (Eligibility, Claims, and Payment Management Services) through NPHIES. TPAs act on behalf of HICs.
5	NPHIES	NPHIES role represents the electronic platform that will be acting as the integration hub between all stakeholders involved in the health insurance business in the Kingdom.
6	Beneficiary	The beneficiary role represents the individuals who will access the NPHIES portal to consume customized services targeted for the members insured by the HICs.
7	Non-Enterprise User (Researcher, Individual)	The researcher role represents the researchers who will access NPHIES portal to consume customized value-added services related to viewing reports and statistics related to the performance of the health insurance industry in the Kingdom.

Table 5: Roles Catalog

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5 WHAT IS NPHIES (AS FAR AS THE FINANCIAL SERVICES ARE CONCERNED)?

The NPHIES is a centralized validating standards-based information exchange gateway to connect all healthcare providers and payers within KSA. Its role is to support the market in providing timely, efficient, and cost-effective products and services to people requiring healthcare in Saudi Arabia.

Breaking this down:

- **Centralized** – financial data exchanges (eClaims transactions) between providers and payers will be facilitated by a single centralized hub. There will no longer be peer to peer exchanges.

- **Processing & Validating** (**Not Adjudicating**) – transactions will be processed and validated for compliance to data formats and coding standards and monitored for compliance with regulatory requirements and good business practices. The platform will validate exchanges and reject invalid submissions.

- **Standards-based** – the data formats for the information exchanges are based on internationally recognized standards that are appropriately constrained to meet the local Saudi business needs. Coded data will similarly use consistent terminology drawn from internationally recognized or Saudi nationally recognized coding standards.

- **Information exchange** – the key purpose of the NPHIES is to facilitate the exchange of consistent and high-quality transactions between providers and payers to support the business of health insurance.

- **Gateway** – the NPHIES will validate and deliver transactions to the intended recipient in real-time or store the transaction for delivery when the recipient is available or reject the transaction if it is invalid.

Summarizing the above points, NPHIES is a single point of contact platform to which all HCPs and HICs may connect to exchange standards-based messages where NPHIES will validate the form and content of those messages to maximize the validity, the standards and compliance of those information exchanges.

5.1 Expected Benefits

- Increased data consistency, quality, and computability for providers and payers;
- Increased consistency in the data requirements for eClaims exchanges;
- Increased satisfaction for providers, payers and patients with the eClaims experience;
- Reduction in overall market costs;
- Increased processing efficiency and regulatory compliance;
- Increased ‘first time right’ exchanges;
- Reduce barriers to entry to the private insurance market.

5.2 What the NPHIES does not Do

- Does not process or adjudicate the transactions. NPHIES is a ‘smart courier’ but does not take on the role of the provider or payer or Third-Party Administrator (TPA).

- Does not regulate the market, it monitors the transactions and alerts regulators such as CHI for compliance issues.
- Does not determine ‘fraud’, it marks questionable transactions for the payer to consider. It highlights the suspicious transactions based on the rules.
- Does not provide an online practice management system for healthcare providers or a claims administration for system payers. It will provide a simple claims entry system to support providers until they acquire a proper healthcare information management system.
- Does not provide an online claims backup system, providers and payers are required to properly design and manage their infrastructures.

5.3 Information Retention

The Nphies will retain copies of information exchanges to support the market and regulators such as CHI in dispute resolution, in understanding market health and the management of the regulatory processes.

6 INFORMATION EXCHANGE CONSTRUCTION AND FLOW

6.1 Units of Information

The basic content model in FHIR is the resource, a topic-specific collection of data elements, e.g., a Patient, Organization, Encounter, or Claim, which contains the data elements to support that topic and refers to other Resources to provide the information elements for that topic. Complex information exchanges such as all the information to document an Encounter is modeled as an Encounter resource which provides certain information on the encounter and refers to the appropriate Patient, Practitioner and Observation, etc. resources.

6.2 Information Exchange Packages

HL7 FHIR supports a variety of exchange patterns including point-to-point FHIR RESTful (CRUD) exchange of individual resources; FHIR Operations with defined input and output parameters; exchanges of groups (Bundles) of resources to Message, Document, and other operational endpoints; and the exchange of single resources or resource Bundles over any non-FHIR specified transports such as FTP, SMTP (email), WSI web services, etc.

The business exchanges needed to support eClaim in Saudi have a few defining characteristics with guide the selection of content packaging and content exchange in FHIR:

- The exchanges are made via a central gateway, rather than point-to-point, with the gateway responsible for both validation and routing
- Communicating parties are separate organizations, from each other and the central gateway
- Communicating parties are at a material distance such that latency and connection costs are a business consideration
- The exchanges are typically complex, comprised of multiple resources where the time/version context of the resources is material
- Each party may be required to have their local information repository

This leads to one general packaging guidance, that all needed resources to support the intended information exchange should be included in the same package except where references are made to commonly accessible repositories such as may exist for images, labs, and medications.

Given the design of the NPHIES ecosystem and financial information exchange requirements, NPHIES is implementing FHIR Messaging as a combination of synchronous and asynchronous exchange of FHIR Message Bundles each containing one, or more when permitted, suite of HL7 FHIR Resources which constitute a coherent information exchange such as an eligibility request or claim.

The message bundle is exchanged via the $process-message endpoint of the gateway.

6.2.1 Message Structure Definition

Message Structure defines the characteristics of a message that can be shared between provider/payer and NPHIES, including the type of event that initiates the message, the content to be transmitted and what response(s), if any, are permitted.

6.2.2 Endpoint Operation: Process Message

All the mentioned use cases in Section 7 will refer to one endpoint operation i.e., https://hsb.Nphies.sa/$process-message.

Disclaimer: the conformance testing environment (OBA) and its related Pseudo-payer conformance application are set up and designed for technical development and testing purposes, please refrain from transacting or sharing any real confidential information through it, please ensure that all the data is masked and utilize dummy information when executing any testing scenario.

The process message operation accepts a message, processes it according to the definition of the event in the message header, and returns one or more response messages.

Process Message Structure will have in-parameters (Input) and out-parameters (Output).

6.2.2.1 Input

Name	Type	Card.	Description
content	Bundle	1..1	The message to process

Table 6: In parameters of Process Message

6.2.2.2 Output

Name	Type	Card.	Description
return	Bundle	0..1	2 types of responses: • Payer Response Message • Acknowledgement Message Response • Error Notice

Table 7: Out parameters of Process Message

6.2.3 Sample Structure of FHIR Bundle Resource

The structure of a FHIR Bundle Resource and example are shown below:

Bundle Resource	Bundle (type=message)
MessageHeader Resource	MessageHeader (event=claim-request)
Focal Resource	Claim Resource (use=claim, type=pharmacy)
Referenced Resource #1	Patient Resource (Beneficiary)
Referenced Resource #2	Organization Resource (e.g., Payer)
…	
Referenced Resource #n	Practitioner Resource (Servicing Provider)

The bundle resource will have a combination of resources 1,2,n (Data model) depending on the use case.

6.2.4 FHIR Bundle Resource Hierarchical Structure

The hierarchical representation of the sample structure of FHIR Bundle Resource is shown as below:

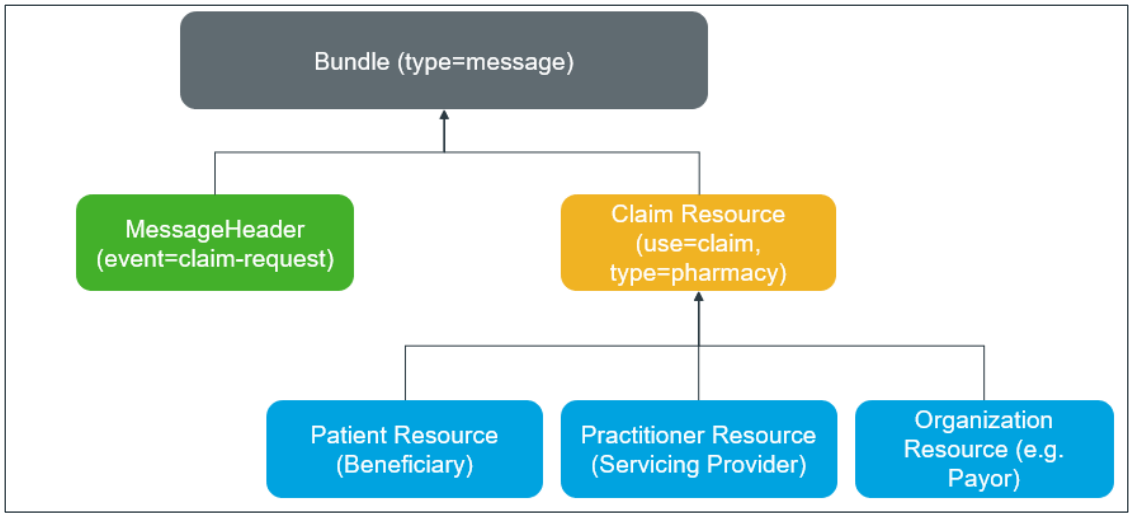

Figure 1: FHIR Bundle Resource Hierarchical Structure

6.2.5 Structure of Selected Financial Services Message Bundles

The message structure for request and response bundles are shown in the tables below.

Eligibility	Prior Authorization	Claim
Bundle (type=message)	Bundle (type=message)	Bundle (type=message)
MessageHeader (event=eligibility-request)	MessageHeader (event=priorauth-request)	MessageHeader (event=claim)
ksa-CoverageEligilibilityRequest	ksa-Claim Resource (use=authorization, type=pharmacy)	ksa-Claim Resource (use=claim, type=pharmacy)
ksa-Patient Resource	ksa-Patient Resource	ksa-Patient Resource
ksa-Organization Resource Provider	ksa-Organization Resource Provider	ksa-Organization Resource Provider
ksa-Organization Resource Insurer	ksa-Organization Resource Insurer	ksa-Organization Resource Insurer
[ksa-Coverage Resource]	ksa-Practitioner Resource	ksa-Practitioner Resource
	ksa-PractitionerRole Resource	ksa-PractitionerRole Resource

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	ksa-MedicationRequest Resource	ksa-MedicationRequest Resource
	ksa-DeviceRequest Resource	ksa-DeviceRequest Resource
	[ksa-ClaimResponse Resource]	[ksa-ClaimResponse Resource]
	ksa-Encounter Resource	ksa-Encounter Resource
	[ksa-Coverage Resource]	[ksa-Coverage Resource]
	[ksa-Patient Resource Subscriber]	[ksa-Patient Resource Subscriber]

Table 8: Structure of Selected Request Messages Bundle

Eligibility	Prior Authorization	Claim
Bundle (type=message)	Bundle (type=message)	Bundle (type=message)
MessageHeader (event=eligibility-response)	MessageHeader (event= priorauth-response)	MessageHeader (event=claim-response)
ksa-CoverageEligilibilityResponse	ksa-ClaimResponse Resource (use=authorization, type=pharmacy)	ksa-ClaimResponse Resource (use=claim, type=pharmacy)
ksa-Patient Resource	ksa-Patient Resource	ksa-Patient Resource
ksa-Organization Resource Provider	ksa-Organization Resource Provider	ksa-Organization Resource Provider
ksa-Organization Resource Insurer	ksa-Organization Resource Insurer	ksa-Organization Resource Insurer
[ksa_Coverage]	ksa-Practitioner Resource	ksa-Practitioner Resource
[ksa-Patient Resource Subscriber]	ksa-PractitionerRole Resource	ksa-PractitionerRole Resource
	[ksa-Coverage Resource]	[ksa-Coverage Resource]
	[ksa-Patient Resource Subscriber]	[ksa-Patient Resource Subscriber]

Table 9: Structure of Selected Response Messages Bundle

6.2.6 Table of Extensions

Extensions are the FHIR technique for including custom yet standardized addition data elements into a data structure or even a data element to provide additional information nit otherwise define in the base FHIR data standard. The guide will use some extensions already defined in the FHIR R4 specification (http: //hl7.org/fhir/extensibility-registry.html) and also defines some new extension just for the purpose of this guide.

Friendly Name	Description	URL	Datatype	IG Version
Batch Identifier	A provider supplied id for the Batch. Each Batch must have a unique Batch Id for the issuing provider.	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-batch-identifier	string	
Batch Number	The number associated with a claim within a Batch.	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-batch-item	positiveInt	
Batch Period	The date associated with the Batch Date	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-batch-period	Period	
KSA Administrative Gender	The Saudi Administrative Gender codes.	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-ksa-administrative-gender	CodeableConcept	
KSA Diagnosis Related Group	The Diagnosis Related Group code assigned to the suite of treatment, proposed, or performed.	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-ksa-diagnosis-related-group	CodeableConcept	
Eligibility Response	A reference to the eligibility Response previously returned by the insurer.	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-eligibility-response	Reference	
Eligibility Offline Reference	An eligibility string to reference supplied by the insurer when the online	http: //NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-eligibility-offline-reference	string	

Friendly Name	Description	URL	Datatype	IG Version
	services were not available.			
Eligibility Offline Date	The date when the insurer provided the eligibility string to reference supplied by the insurer when the online services were not available.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-eligibility-offline-date	dateTime	
Authorization Offline Date	The date when the insurer provided the eligibility string to reference supplied by the insurer when the online services were not available.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-authorization-offline-date	dateTime	
KSA Tax	The amount of KSA Tax (VAT) being levied on the full cost of this lime item.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-tax	Money	
Encounter	The Encounter during which the claimed services were performed.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-encounter	Reference(Encounter)	
Reissue Reason	The reason the adjudicator has reissued a prior authorization or claim response.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-adjudication-reissue	CodeableConcept	
Adjudication Outcome	A code indicating the outcome of the adjudication such as rejected, partially approved/paid, or	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-adjudication-outcome	CodeableConcept	

Friendly Name	Description	URL	Datatype	IG Version
	approved/paid as submitted.			
Bundle batch-count	Total number of bundles within the bundle.	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-batch-count	positiveInt	
Package	A package billing code or bundle code used to group products and services to a particular health condition	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-package	boolean	
Patient Share	Refer to the patient share amount	http://NPHIES.sa/fhir/ksa/NPHIES-fs/StructureDefinition/extension-patientShare	Money	
Transfer Extension	Flag to indicate a prior authorization to transfer services to another provider.	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-transfer	Boolean	
Episode of Care	The provider specific episode identifier.	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-episode	Identifier	
Newborn	Flag to identify that this claim is for a newborn who doesn't have their own insurance so they are utilizing their subscriber's insurance until their insurance coverage gets issued.	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-newborn	Boolean	
Patient Invoice	The number of the patient invoice on	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-patientInvoice	Identifier	

Friendly Name	Description	URL	Datatype	IG Version
	which the service was billed.			
Site Eligibility	Code to indicate whether the patient is eligible or not eligible and why.	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-siteEligibility	CodeableConcept	
Authorization Number	Transfer approval prior authorization number	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-transferAuthorizationNumber	String	
Authorization Period	Transfer approval prior authorization period	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-transferAuthorizationPeriod	Period	
Authorization Provider	Transferred to provider	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-transferAuthorizationProvider	Reference (nphies Practitioner, nphies Organization(Provider))	
Advanced-Authorization	Advanced-Authorization	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/advanced-preauth|0.1.1	Canonical	2.0
AdvancedAuth-reason	extension-advancedAuth-reason	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-advancedAuth-reason	CodeableConcept	2.0
Service Provider	extension-serviceProvider	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-serviceProvider	Reference nphies Organization (Provider)	2.0
Referring Provider	extension-referringProvider	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-referringProvider	Reference nphies Organization (Provider)	2.0
Diagnosis	extension-diagnosis	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-diagnosis	BackboneElement	2.0

Friendly Name	Description	URL	Datatype	IG Version
Supportinginfo	extension-supportingInfo	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo	BackboneElement	2.0
Sequence	extension-sequence	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-sequence	positiveInt	2.0
Supportinginfo Sequence	extension-supportingInfo-sequence	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-sequence	positiveInt	2.0
Supportinginfo Category	extension-supportingInfo-category	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-category	CodeableConcept	2.0
Supportinginfo Code	extension-supportingInfo-code	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-code	CodeableConcept 1	2.0
Supportinginfo Timingdate	extension-supportingInfo-timingDate	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-timingDate	date	2.0
Supportinginfo Timingperiod	extension-supportingInfo-timingPeriod	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-timingPeriod	period	2.0
Supportinginfo Valueboolean	extension-supportingInfo-valueBoolean	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-valueBoolean	Boolean	2.0
Supportinginfo Valuestring	extension-supportingInfo-valueString	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-valueString	String	2.0
Supportinginfo Valuequantity	extension-supportingInfo-valueQuantity	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-valueQuantity	Quantity	2.0
Supportinginfo Valueattachment	extension-supportingInfo-valueAttachment	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-valueAttachment	Attachment	2.0
Supportinginfo Valuereference	extension-supportingInfo-valueReference	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-valueReference	Reference(Any)	2.0
Supportinginfo Reason	extension-supportingInfo-reason	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-supportingInfo-reason	CodeableConcept	2.0
Diagnosis Sequence	extension-diagnosis-sequence	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-diagnosis-sequence	positiveInt	2.0

Friendly Name	Description	URL	Datatype	IG Version
Diagnosis Diagnosiscodeableconcept	extension-diagnosis-diagnosisCodeableConcept	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-diagnosis-diagnosisCodeableConcept	CodeableConcept	2.0
Diagnosis Type	extension-diagnosis-type	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-diagnosis-type	CodeableConcept	2.0
Informationsequence	extension-informationSequence	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-informationSequence	positiveInt	2.0
Prescription	extension-prescription	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-prescription	Reference	2.0
Sender	extension-sender	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-sender	Reference (organization)	2.1
Request	extension-request	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-request	Identifier	2.1
Prescribed Medication	extension-prescribed-Medication	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-prescribed-Medication	CodeableConcept	2.2
MedicationRequest	extension-medicationRequest	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-medicationRequest	CodeableConcept	2.2
Absence of scientific code	extension-absence-of-scientific-code	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-absence-of-scientific-code	CodeableConcept	2.2
Pharmacist selection reason	extesnion-pharmacist-selection-reason	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extesnion-pharmacist-Selection-Reason	CodeableConcept	2.2
Pharmacist Substitute	extension-pharmacist-substitute	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-pharmacist-substitute	CodeableConcept	2.2
Strength	strength	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-strength	String	2.2
Emergency Department Disposition	extension-emergencyDepartmentDisposition	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-emergencyDepartmentDisposition	CodeableConcept	
Condition Onset	extension-conditionOnset	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-condition-onset	CodeableConcept	

Friendly Name	Description	URL	Datatype	IG Version
Emergency Arrival Code	extension-emergencyArrivalCode	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-emergencyArrivalCode	CodeableConcept	
Triage Date	extension-triageDate	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-triageDate	DateTime1	
Triage Category	extension-triageCategory	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-triageCategory	CodeableConcept	
Emergency Service Start	extension-emergencyServiceStart	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-emergencyServiceStart	DateTime1	
Service Event Type	extension-serviceEventType	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-serviceEventType	CodeableConcept	
Discharge Specialty	extension-dischargeSpecialty	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-dischargeSpecialty	CodeableConcept	
Cause Of Death	extension-causeOfDeath	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-causeOfDeath	CodeableConcept	
Intended Length Of Stay	extension-intendedLengthOfStay	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-intendedLengthOfStay	CodeableConcept	
Admission Specialty	extension-admissionSpecialty	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-admissionSpecialty	CodeableConcept	
Maternity	extension-maternity	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-maternity	Boolean	
Occupation	extension-occupation	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-occupation	CodeableConcept	
Provider Type	extension-providerType	http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-providerType	CodeableConcept	

Table 10: Table of Extensions

6.2.7 Message Events

The list below of codes will be used as message events in MessageHeader of the respective transactions.

Code	Description

eligibility-request	A message requesting the identified patient's insurance, determination if the insurance is in force, and potentially requesting the table of benefits or other insurance details.
eligibility-response	A message responding to the Eligibility Request with errors or insurance details.
authorization-request	A request for prior authorization of products and services.
authorization-response	A response to a request for prior authorization of products and services.
claim-request	A request for adjudication of a claim for products and services.
claim-response	A response to a request for adjudication of a claim for products and services.
status-check	A request to check on the processing status of a prior submission.
status-response	A response to a request to check on the processing status of a prior submission.
cancel-request	A request to cancel the processing, were complete or not, of a prior submission such as a claim.
cancel-response	A response to request to cancel the processing, were complete or not, of a prior submission such as a claim.
payment-notice	A notice providing the current status of a payment.
payment-reconciliation	A report of a payment and the allocation of the payment to the respective claims being settled.
communication-request	A request for supporting information for a previously submitted request.
communication	A provision of supporting information in response to a request or to support a prior submission.
acknowledgement	Message with just a MessageHeader, and optional referenced OperationOutcome if there are errors, to acknowledge the receipt of a message.
poll-request	A request for the next 'n' undelivered messages from the queue of undelivered messages for the requester.
poll-response	A message responding to a poll-request containing up to 'n' requested undelivered messages.
error-notice	A message sent from NPHIES to HIC to indicate a prior response from the HIC contained errors. This message identifies the prior message and the type of error
advanced-authorization	A response without existing request for prior authorization of products and services.
prescriber-request	A request for advisory response from payer during medication prescription
prescriber-response	A response for advisory request received from provider during medication prescription

Table 11: Message Events

6.2.8 List of Message Events, Transactions and Focal Resources

The message event codes are from the http://nphies.sa/terminology/CodeSystem/ksa-message-events CodeSystem.

Transaction List	Focal Resource	Message Event
Eligibility Request	CoverageEligibilityRequest	eligibility-request
Eligibility Response	CoverageEligibilityResponse	eligibility-response
Prior Authorization	Claim	Prior authorization-request
Prior Authorization Response	ClaimResponse	Prior authorization-response
Claim	Claim	claim-request
Claim Response	ClaimResponse	claim-response
Status Check	Task	status-check
Status Response	Task	status-response
Cancel Request	Task	cancel-request
Cancel Response	Task	cancel-response
Communication	Communication	communication
Communication Request	CommunicationRequest	communication-request
Payment Reconciliation	PaymentReconciliation	payment-reconciliation
Payment Notice	Payment Notice	payment-notice
Acknowledgement	N/A	acknowledgement
Poll Request	Task	poll-request
Poll Response	Task	poll-response
Error Notice	OperationOutcome	error-notice
Advanced Authorization	AdvancedAuthorization	advanced-authorization
Fraud Notification	FraudNotification	fraud-notification
Prescriber Request	PrescriberRequest	prescriber-request
Prescriber Response	PrescriberResponse	prescriber-response

Table 12: List of Message Events, Transactions and Focal Resources

6.2.9 Transactions using the Task Resource

The table below lists the transactions which use the Task resource to accomplish a processing behavior and the Task.code value which indicates the type of activity requested.

Activity	Code	Description
Cancel Request	Cancel or nullify	To request that the activity associated with a prior message be cancelled regardless of whether it has begun or completed processing. If nullify is specified, then the original message may be retained for audit purposes but shall not be given out or displayed. Task.focus.identifier = a business identifier (e.g., Claim.identifier) of the main resource of the message to be cancelled. Optional task.input.type = 'nullify' and task.input.valueBoolean = 'true'.
Cancel Response	Cancel or nullify	HCP to respond on a received APA from HIC that the associated activites will be cancelled regardless of whether it has begun or completed processing. Task.focus.identifier = a business identifier (e.g., ClaimResponse.identifier) of the main resource of the message to be cancelled.
Poll Request	poll	To request the next 'n' messages be returned from the NPHIES queue. Typically, these are messages which have not previously been delivered. See Section on Polling.
Status Check	status	To request the processing status of a message, for example for the adjudication of a claim. Task.focus.identifier = a business identifier (e.g., Claim.identifier) of the main resource of the message to be checked.

Table 13: Task Codes

6.2.10 Sample Header Message


```
{
  "resourceType": "Bundle",
  "id": " b4f19206-e136-4213-a1bb-33d14a3b14dd",
  "type": "message",
  "timestamp": "2020-08-28T16:07:00:+03:00",
  "entry": [
    {
      "fullUrl": "urn:uuid:c9904bd5-6039-4408-8d1b-3401cd1ce7a9",
      "resource": {
        "resourceType": "MessageHeader",
        "id": "c9904bd5-6039-4408-8d1b-3401cd1ce7a9",
        "eventCoding": {
          "system": "http://nphies.com/fhir/message-events",
          "code": "claim-request"
        },
        "destination": [
          {
            "endpoint": "http://nphies.sa/license/payer-license/0001",
            "receiver": {
              "identifier": {
                "system": "http://nphies.sa/license/payer-license",
                "value": "0001"
              }
            }
          }
        ],
        "sender": {
          "identifier": {
            "system": "http://nphies.sa/license/provider-license",
            "value": "0001"
          }
        },
        "source": {
          "endpoint": "http://nphies.sa/license/provider-license/0001"
        },
        "focus": [
          {
            "reference": "Claim/1"
          }
        ]
      }
    }
```


Table 14: Sample Header Message

6.2.11 Message Structure: Bundle

The bundle table is used by all the transactions mentioned in the Data Model.

Sr. No.	Field Name	Type	Card.	Description	ValueSet
1	id	id	1..1	A logical Identifier for the bundle resource. ID must use a GUID (Globally Unique Identifier). [Comments]: A UUID (aka GUID) represented as a URI (RFC 4122); e.g., 'c757873d-ec9a-4326-a141-556f43239520'	N/A
2	type	code	1..1	type of the bundle resource. Default value "message" Indicates that the value is taken from a set of controlled strings defined elsewhere (see Using codes for further discussion). Technically, a code is restricted to a string which has at least one character and no leading or trailing whitespace, and where there is no whitespace other than single spaces in the contents. This datatype can be bound to a ValueSet. [Comments]: Always 'message'	http://hl7.org/fhir/ValueSet/bundle-type
3	timestamp	dateTime	1..1	When the bundle was assembled An instant in time in the format YYYY-MM-DDThh: mm: ss.sss+zz: zz (e.g., 2015-02-07T13: 28: 17.239+02: 00 or 2017-01-01T00: 00: 00Z). The time SHALL specified at least to the second and SHALL include a time zone. Note: This is intended for when precisely observed times are required (typically system logs etc.), and not human-reported times - for those, use date or dateTime (which can be as precise as instant, but is not required to be). instant is a more constrained dateTime	N/A

4	entry	BackboneElement	1..*	Entry in the bundle - will have a resource or multiple resources where the first resource must be "MessageHeader".	N/A
5	entry.fullUrl	uri	1..1	URI, or UUID, for the resource contained within this entry.	N/A
6	entry.messageHeader	DomainResource	1..1	A resource that describes a message that is exchanged between systems	N/A
7	entry.focal-resource	DomainResource	1..1	A resource that is the main focal resource for the message, for example the CoverageEligibilityRequest resource for an eligibility request message.	N/A
8	entry.other resource #1	DomainResource	1..1	A resource that describes another resource which is referenced by the above resources.	N/A
9	entry.other resource #2	DomainResource	1..1	A resource that describes another resource which is referenced by the above resources.	N/A

Table 15: Message Structure: Bundle

6.2.12 Message Structure: Header Request

The header request table is used by all the request transactions mentioned in the Data Model.

Sr. No.	Field Name	Type	Card.	Description	ValueSet
1	id	id	1..1	A logical identifier for the messageHeader resource. ID must use a GUID (Globally Unique Identifier). [Comments]: A UUID (aka GUID) represented as a URI (RFC 4122); e.g., 'c757873d-ec9a-4326-a141-556f43239520'	N/A
2	extension.originalRequest	Reference (Any)	0..1	Reference to the original request related to the message Header [Comments]: Will be used by NPHIES for specific scenario, not to be sent by HIC/HCP	N/A

3	extension.originalResponse	Reference (Any)	0..1	Reference to the original response related to the message Header [Comments]: Will be used by NPHIES for specific scenario, not to be sent by HIC/HCP	N/A
4	eventCoding	Coding	1..1	A code which indicates the type of message, for example: eligibility-request, claim-request, cancel-response, etc. [Comments]: NA	http://NPHIES.sa/terminology/ValueSet/message-events
5	destination.endpoint	url	1..1	The actual (logical) destination. [Comments] : e.g. http: //NPHIES.sa/insurer-license/12345	N/A
6	destination.receiver	Reference (Organization)	1..1	Message destination application. A reference to the receiver's organization license. [Comments]: May use the .reference to an included resource or just the .type and .identifier for well-known identifiers such as for providers and insurers. Example: Use: to refer to a well-known insurer .type=Organization, .identifier.type='NIIP' .identifier.system: Identity of the identifier system .identifier.value: identifier in the identifier system	N/A
7	sender	Reference (Organization)	1..1	Message source application . A reference to the sender's organization license that is maintained in the registry. [Comments]: May use the .reference to an included resource or just the .type and .identifier for well-known identifiers such as for providers and insurers. Example: Use: to refer to a well-known provider	N/A

				.type=Organization, .identifier.type='NPI' .identifier.system: Identity of the identifier system .identifier.value: identifier in the identifier system	
8	source.endpoint	url	1..1	The actual (logical) source. [Comments]: e.g., http://NPHIES.sa/iprovider-license/54321	N/A
9	focus	Reference	1..1	A reference to the main resource in the message, for example "CoverageEligibilityRequest" [Comments]: Use .reference to the fullUrl of the included resource	N/A

Table 16: Message Structure: Header Request

6.2.12.1 DataType References: Header Request

Sr. No.	Path	DataType Ref
1	MessageHeader.extension.originalRequest	Ref.1
2	MessageHeader.extension.originalResponse	Ref.1
3	MessageHeader.destination.receiver	Ref.1 Ref.2a
4	MessageHeader.sender	Ref.1 Ref.2a
5	MessageHeader.focus	Ref.1

Table 17: Datatype References for Header Request

6.2.13 Message Structure: Header Response

The header response table is used by all the response transactions mentioned in the Data Model.

Sr. No.	Field Name	Type	Card.	Description	ValueSet
1	id	id	1..1	A logical identifier for the messageHeader resource. ID must use a GUID (Globally Unique Identifier). [Comments]: A UUID (aka GUID) represented as a URI (RFC 4122); e.g., 'c757873d-ec9a-4326-a141-556f43239520'	N/A

2	eventCoding	Coding	1..1	A code which indicates the type of message, for example: eligibility-response, claim-response, cancel-response, etc. [Comments]: NA	http://NPHIES.sa/terminology/ValueSet/message-events
3	destination.endpoint	url	1..1	The actual (logical) destination. [Comments]: e.g., http://NPHIES.sa/iprovider-license/54321	N/A
4	destination.receiver	Reference(Organization)	1..1	Message destination application. A reference to the receiver's organization license that is maintained in the registry. [Comments]: May use the .reference to an included resource or just the .type and .identifier for well-known identifiers such as for providers and insurers. Example: Use: to refer to a well-known insurer .type=Organization, .identifier.type='NIIP' .identifier.system: Identity of the identifier system .identifier.value: identifier in the identifier system	N/A
5	Reference(Organization)	Reference(Organization)	1..1	Message source application . A reference to the sender's organization license that is maintained in the registry. [Comments]: May use the .reference to an included resource or just the .type and .identifier for well-known identifiers such as for providers and insurers. Example: Use: to refer to a well-known provider .type=Organization, .identifier.type='NPI' .identifier.system: Identity of the identifier system .identifier.value: identifier in the identifier system	N/A
6	source.endpoint	url	1..1	The actual (logical) source. [Comments]: e.g., http://NPHIES.sa/insurer-license/12345	N/A
7	response.identifier	id	1..1	The MessageHeader.id of the message to which this message is a response.	N/A

				[Comments]: Id of the MessageHeader in the original (request) message	
8	response.code	code	1..1	Code that identifies the type of response to the message - whether it was successful or not, and whether it should be resent or not. [Comments]: ok | transient-error | fatal-error	http://hl7.org/fhir/ValueSet/response-code
9	response.details	Reference(OperationOutcome)	0..1	If there are errors which cannot be reported in a business-level response then the full details of any issues found in the message. [Comments]: Specific list of hints/warnings/errors, only supplied if a business level response cannot be supplied. When an OperationOutcome is provided then it is also the .focus.	N/A
10	focus	Reference	0..1	A reference to the main resource in the message, for example "CoverageEligibilityRequest" [Comments]: Use .reference to the full Url of the included resource	N/A

Table 18: Message Structure: Header Response

6.2.13.1 Datatype References: Header Response

Sr. No.	Path	Datatype Ref
1	MessageHeader.response.details	Ref.1 Ref.2a

Table 19: Datatype References for Header Response

6.3 Information Flow

Information exchanges will be satisfied with a combination of real-time synchronous request-response and asynchronous FHIR messaging of information models such as eligibility request and response, claim status check and response, and polling for outstanding responses and return of the response.

The diagram below depicts the typical exchange through the central gateway for exchanges with payers and assumes loose coupling of the gateway front-end (provider side) and back-end (payer side) processes.

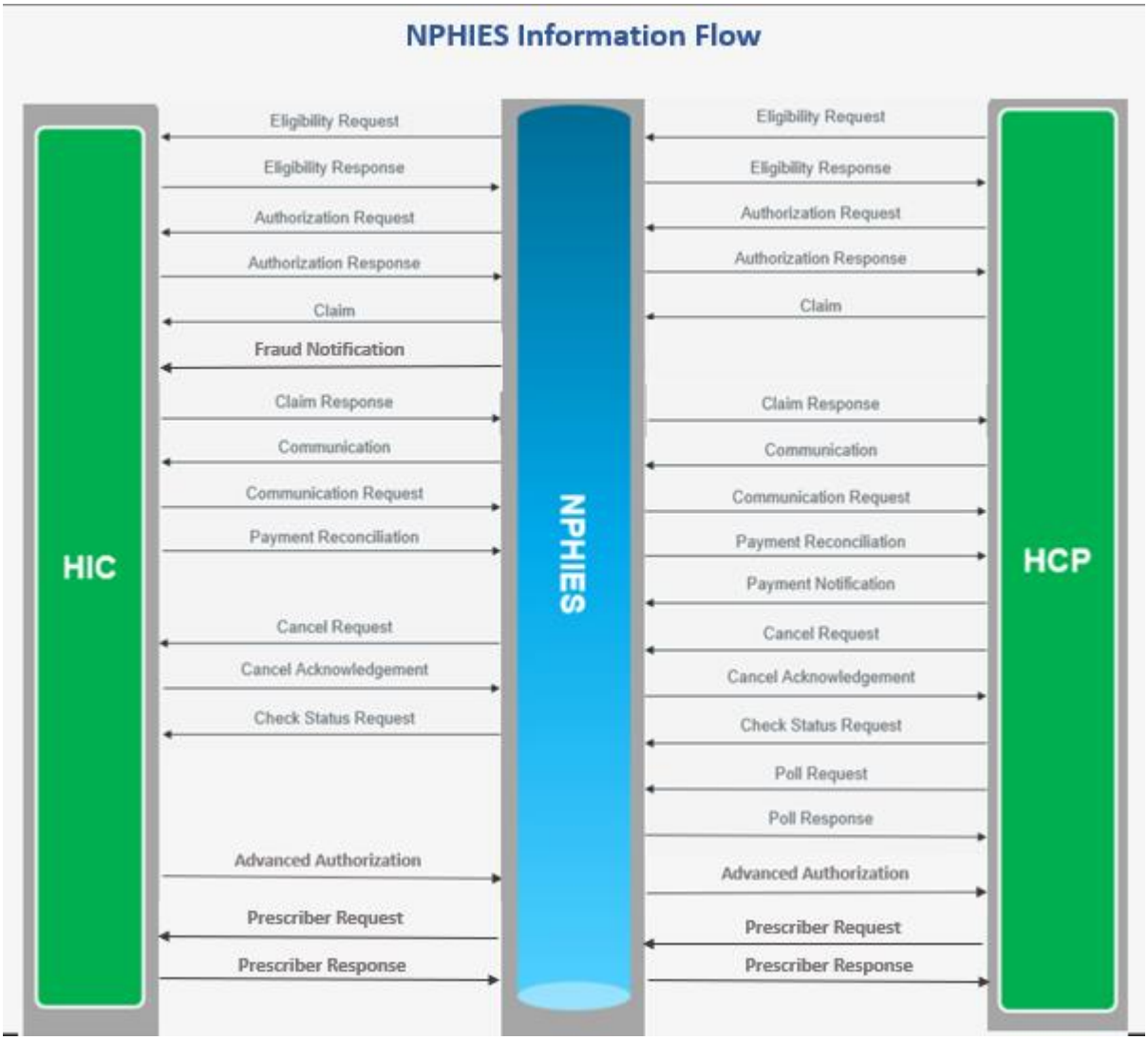

Figure 2: Information Flow

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

6.3.1 Message Exchange Cycle

This section will present the message exchange cycle between the different stakeholders on the NPHIES Financial Services platform.

- **Status Codes**: are based on the [**Operation $process-message**] within HL7 FHIR https://hl7.org/fhir/R4/messageheader-operation-process-message.html
- **Communication:** refers to the open communication channel between the HCP/HIC and NPHIES to complete a given message exchange cycle.
    - In the case of a receiving a message containing errors, the receiving system (NPHIES or HIC) opens a new communication channel to review the error details with the authoring system.

6.3.1.1 Happy Scenarios

The section below outlines the message exchange cycle for successful messaging (online and offline) between the HCP and HIC through NPHIES FS platform.

Connection	Connection	Connection	
Happy Path - Online	**HCP to NPHIES to HIC**	**HIC to NPHIES to HCP**	**Status Code**
Eligibility	Eligibility Request	Eligibility Response	**200 OK**
Prior Authorization	Prior Authorization Request	Prior Authorization Response	**200 OK**
Claim	Claim Request	Claim Response	**200 OK**
Check	Check-Status Request	Check-Status Response	**200 OK**
Cancel	Cancel Request	Cancel Response	**200 OK**
Communication	Communication	Acknowledgement	**200 OK**
Poll	PollRequest	Poll Response (Business Response)	**200 OK**
Payment	PaymentNotice	Acknowledgement	**200 OK**
Batch	BatchRequest	Batch Response	**200 OK**
Prescription	PrescriberRequest	Prescriber Response	**200 OK**

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Table 20: Communication Online - Happy Path

Connection	Connection	Connection	
Happy Path - Offline	**HIC to NPHIES**	**NPHIES to HIC**	**Status Code**
Communication	Communication Request	Acknowledgement	**200 OK**
Payment	Payment Reconciliation	Acknowledgement	**200 OK**
Deferred Claim Response	Claim Response	Acknowledgement	**200 OK**
Deferred Prior Authorization Response	Prior Authorization Response	Acknowledgement	**200 OK**
Advanced Authorization	Advanced Authorization	Acknowledgement	**200 OK**
Deferred Prescriber Response	Prescriber Response	Acknowledgement	**200 OK**

Table 21: asynchronous message - Happy Path

6.3.2 Error Handling

The section below outlines the message exchange cycle between the HCP and HIC through NPHIES FS platform, where some of the messages contain errors that are reported by the receiving system to the authoring system in order to be corrected and submitted again.

When a message is submitted to NPHIES by an HCP or HIC, NPHIES will validate the message and if errors are found, it will send back a response indicating the nature of the error. If possible then response message from NPHIES will contain a business level response such as a claim-response message. However, if it's not possible to construct a business level message then NPHIES will respond with just an OperationOutcome resource containing the error codes. OperationOutcome would be used, for example, when a message received is unreadable, or the sender/ receiver is invalid, or the message type is not valid.

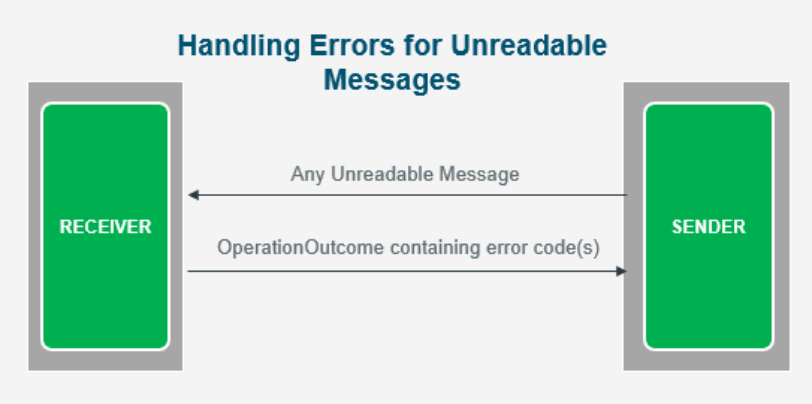

Figure 3: General Error Handling

General Error Handling	
Sender	**Receiver**
Unparsable Message	OperationOutcome
Parsable + Insufficient Information	OperationOutcome
Parsable + Sufficient Information/ Invalid	ResponseMessage + Errors

Table 22: General Error Handling Mechanism

6.3.2.1 HCP Error Handling

In the event of HCP sending a message with errors to NPHIES, NPHIES responds to HCP with a message or an OperationOutcome to advise that their request contained errors. The diagram and table below outline the response based on the type of error.

Figure 4: HCP Error Handling

Connection	Connection	Connection	
Error Handling (HCP)	**HCP**	**NPHIES**	**Status Code**
Unparsable Message	BusinessRequest	OperationOutcome (single resource)	**300+**
Parsable + Insufficient information	BusinessRequest	OperationOutcome (single resource)	**300+**
Parsable + Sufficient information + Invalid	BusinessRequest	BusinessResponse (Error)	**200 OK**
HCP Connection Timed out	BusinessRequest	BusinessResponse (Queued)	**200 OK**

Table 23: HCP Error Handling

6.3.2.2 HIC Error Handling

In the event of HIC sending a message with errors to NPHIES, NPHIES initiates a new message exchange with the HIC and sends an error-notice message listing the errors in the received message from the HIC. The diagram and table below outline the response based on the type of error.

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WEBSITE: NPHIES.sa

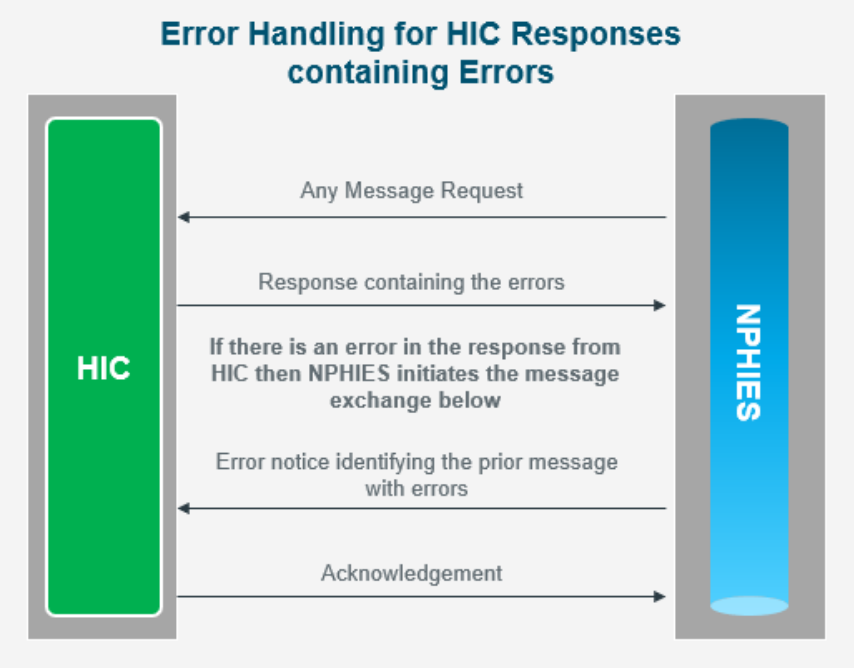

Figure 5: HIC Error Handling

Connection	Connection-1	Connection-1	Connection-1	Connection-2	Connection-2	
Error Handling (HIC)	**HIC**	**NPHIES**	**HCP**	**NPHIES**	**HIC**	**Status Code**
Online Response (Eligibility, Cancel and Check Status) **Unparsable Message or Parsable + Insufficient Information/ Invalid**	Business Response	Business Response (Error/ PayerOffline)	Business Response (Error/ PayerOffline)	ErrorNotice (Message Header with an OperationOutcome). Containing the identifier for the request.	Acknowledgement (OK, or Error)	**200 OK**

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Online Response (PriorAuth, Claim, Communication) **Unparsable Message or Parsable + Insufficient Information/ Invalid**	Business Response	Business Response (Queued)	Business Response (Queued)	ErrorNotice (Message Header with an OperationOutcome). Containing the identifier for the request.	Acknowledgement (OK, or Error)	**200 OK**

Table 24: HIC Error Handling

6.3.2.3 NPHIES Error Handling

In the event of NPHIES sending a message with errors to the HIC, the HIC will send back an acknowledgment to confirm receiving the error-notice or containing an OperationOutcome listing the errors in the received message from NPHIES.

Connection	Connection-2	Connection-2	Connection-2	Connection-2	
Error Handling (NPHIES)	**NPHIES**	**HIC**	**HIC**	**NPHIES**	**Status Code**
Unparsable Message	BusinessRequest	BusinessRequest	ErrorNotice. Containing the identifier for the request.	ErrorNotice. Containing the identifier for the request.	**200 OK**
Parsable + Insufficient Information/ Invalid	BusinessRequest	BusinessRequest	ErrorNotice. Containing the identifier for the request.	ErrorNotice. Containing the identifier for the request, as well as the identifier for the incorrect response.	**200 OK**

Table 25: NPHIES Error Handling

6.3.3 FHIR Messaging

A request-response exchange of FHIR Message Bundles where the Bundle contains: a MessageHeader resource identifying the logical sender and receiver, a message event code for the type of message, and a reference to the focal resource; and all other required supporting of locally referenced resources. See http://hl7.org/fhir/R4/messaging.html

6.3.4 Polling

In cases, where the payer cannot provide the final response in real-time, for example, due to using overnight adjudication or requiring human review, then the Polling Approach, using the same messaging architecture shown in the Information flow will be used. The gateway will maintain a queue for all messages which could not be delivered to the provider as responses to real-time requests from the provider. This is likely to include responses to claim adjudications, prior authorization adjudications, request for additional information and payment reconciliations. The provider sends a Poll request to the gateway which responds with the next response message from the queue (up to 'n' pended messages may be requested) or with an indication that there are no further messages in the queue.

Poll provides supporting information for the poll request. The response to a Poll is a Task referring to: a previously undelivered response message; a task referring to 0 or more Resources; or a Task which may contain errors.

A simple Poll request, one which doesn't specify additional input parameters: include-message-type, exclude-message-type, period or count; would return any single pended resource. Specific types of business behaviors may be supported by providing values for the filtering elements in the .input element, for example:

- Get any pended resource - no filters (parameters) specified
- Get deferred response to a Claim - specify the Claim in the .focus
- Get all requests for supporting information - specify 'communication-request' as an 'include-message-type'
- Get up to 5 PaymentReconciliations – specify “payment-reconciliation” as an ‘include-message-type’ and 5 as a count
- Get any message except a PaymentReconciliation - specify ‘payment-reconciliation’ as an 'exclude-message-type'
- Get a PaymentReconciliation message – specify a 'period' which contains the expected reconciliation creation date, and specify 'payment-reconciliation' as an 'include-message-type'
- Get up to 50 messages – specify a count of 50

Upon processing of the request, the Task may contain errors or a reference to the resource(s) found.

6.3.4.1 Task Input Type

Parameters	Card.	Datatype	Description
include-message-type	0..*	valueCode	Filter: message event types to include by event code of the desired types of messages (MessageHeader.event.coding.code)
period	0..1	valuePeriod	The date range to filter messages based on when the message was received by NPHIES
count	0..1	valuePositiveInt	Maximum number of messages to return from the queue to a limit of 100, 1 if not supplied
exclude-message-type	0..*	valueCode	Filter: message event types to exclude by event code of the desired types of messages (MessageHeader.event.coding.code)

Table 26: Task Input Types

Multiple include-message-type and exclude-message-type parameters may be specified, however, include-message-type and exclude-message-type parameters are mutually exclusive so only includes or excludes should be used at a time not both.

A combination of parameters may be used and only the parameters necessary should be specified.

To obtain responses to a given message, put the business identifier in Task.focus.identifier.

6.3.5 NPHIES Messaging Mechanism

The NPHIES will expose a FHIR operation endpoint to enable the market HIC/ HCPs to exchange FHIR R4 messages that are built based on the NPHIES profiles. HIC/HCPs will exchange the following types of messages to support the various use cases.

Below is the list of message types exchanged between HCPs, NPHIES, and HICs.

HCP and NPHIES Initiated Messages:

Sr. No.	Initiate	Request Message	Response Message
1	HCP	Coverage Eligibility Request	Coverage Eligibility Response
2	HCP	Prior Authorization Request	Prior Authorization Response
3	HCP	Claim Request	Claim Response
4	HCP	Communication	Acknowledgement
5	HCP	Payment Notice	Acknowledgement
6	HCP	Check Status	Status Response
7	HCP	Cancel Request	Cancel Response
8	HCP	Poll Request	Poll Response
9	NPHIES	Error Notice	Acknowledgement

Table 27: HCP and NPHIES Message Types

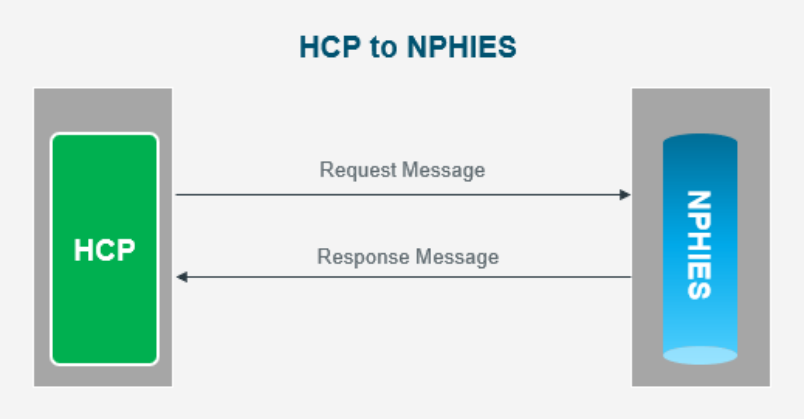

Figure 6: HCP to NPHIES Message Types

Figure 7: NPHIES to HIC Message Types

HIC Initiated Messages:

Sr. No.	Initiate	Request Message	Response Message
1	HIC	Communication Request	Acknowledgement
2	HIC	Payment Reconciliation	Acknowledgement
3	HIC	Prior Authorization Response (Deferred)	Acknowledgement
4	HIC	Claim Response (Deferred)	Acknowledgement
5	HIC	Advanced Authorization	Acknowledgement
6	NPHIES	Fraud Notification	

Table 28: HIC Message Types

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Figure 8: HIC to NPHIES Message Types

6.3.5.1 Message initiated by HIC

When a HIC has a message to send to NPHIES or HCP that is not in immediate response to a request from NPHIES, e.g. response to a prior authorization; deferred adjudication to a claim; or communication request; payment reconciliation, then the HIC shall initiate a message exchange by calling NPHIES' $process-request end-point with the message (for example: claim-response, priorauth-response, advanced-authorization) to be sent to NPHIES and NPHIES will respond with a response message indicating the successful receipt of the message or the existence of errors.

6.3.5.2 Messages Received by HIC

HICs will expose a static endpoint to receive NPHIES messages. HICs will expose one RESTful API endpoint and service to receive NPHIES FHIR R4 messages. HICs will expose another RESTful API endpoint to enable NPHIES to validate the HICs online availability. HIC API example is provided as: https://InsuranceCompany.sa/api/fs/fhir**/$process-message.**

HIC API will do the following:

- Ensure Trusted communication – private key encryption using mutual certificates to allow senders and receivers to identify and authorize the communication
- Exchange of messages using HTTP Request Response
- Maintain the agreed behaviour for the exchange and processing of messages

6.3.5.3 Message initiated by HCP

When an HCP has a message to send to NPHIES or to HIC then the HCP shall initiate a message exchange by calling NPHIES' $process-request endpoint with the message to be sent to NPHIES and NPHIES will respond with a response message indicating the successful receipt of the message or the existence of errors.

6.3.5.4 Messages Received by NPHIES

NPHIES provides a messaging endpoint at https://NPHIES.sa/api/fs/fhir**/$process-message**.
NPHIES API will do the following:

- Ensure Trusted communication – private key encryption using mutual certificates to allow senders and receivers to identify and authorize the communication
- Exchange of messages using HTTP Request Response
- Maintain the agreed behaviour for the exchange and processing of messages

6.3.6 Queue Management

The NPHIES queue will be built for Provider systems as well as Payer systems. The primary goal of building the queue is to ensure that data will not be lost for any of the parties involved. Also, the queue is responsible for the efficient delivery of data to the respective systems. The messages will be supplied on a first-in first-out basis and will be removed from the NPHIES queue if transmitted to the requester and no transmission error being detected by NPHIES and the receipt of response from the Payer to confirm the receipt of each queued transaction.

Provider systems should be programmed to check for queued messages daily and for periodic or allow for manual checking during the day which is needed for retrieving responses to prior authorizations for urgent care.

The NPHIES will be pushing data to Payer systems as soon as a message comes in the queue to be transferred to them. Validation failures and payer timeouts would lead to the gateway short-circuiting and sending responses to HCPs on behalf of the Payer and identifying NPHIES as the author of the response. The NPHIES generated response may identify errors in the message received or may indicate that the message has been queued for delivery to the Payer.

Once the Payer system is available, NPHIES will push all the pended messages one by one to Payer system. Payer will review the requests and then send the responses to NPHIES which will queue the responses for intended Provider.

6.3.7 Methods to Reduce Polling Requests

Although a polling check is a relatively light transaction, the load can become considerable if many providers are checking at a high frequency. While a formal subscription-publication model could be instituted the methods proposed below are lighter, require less maintenance and have been found to provide the same or similar results depending upon the types of providers:

- Message Tagging - a tag may be added by the gateway to provider-bound response messaging to indicate that there are queued messages waiting. For example:

```
"resource":{
      "resourceType": "MessageHeader",
      "id": 123,
      "meta": {
            "lastUpdated": "2020-12-13",
            "profile": [],
            "tag": [{
                  "system":
                "http://nphies.sa/terminology/CodeSystem/meta-
                tags",
                  "code": "queued-messages"
                  }
                ]
      }
```


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6.3.8 Resource Instance Example

Patient Resource sample is provided in JSON format below:


```
{
  "fullUrl": "http://pr-fhir.com.sa/Patient/3",
  "resource": {
    "resourceType": "Patient",
    "id": "3",
    "meta": {
      "profile": [
        "http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/patient|1.0.0"
      ]
    },"identifier": [
      {
        "type": {
          "coding": [
            {
              "system": "http://nphies.sa/terminology/CodeSystem/patient-identifier-type",
              "code": "IQAMA"
            }
          ]
        },
        "system": "http://moi.gov.sa/id/iqama",
        "value": "00000000003"
      }
    ],
    "active": true,
    "name": [
      {
        "text": "Muhammad Ali Abbas",
        "family": "Abbas",
        "given": [
          "Muhammad",
          "Ali"
        ]
      }
    ], "gender": "male",
    "_gender": {
      "extension": [
        {
          "url": "http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-ksa-admir
          "valueCodeableConcept": {
            "coding": [
              {
                "system": "http://nphies.sa/terminology/CodeSystem/ksa-administrative-gender'
                "code": "male"
              }
            ]
          }
        }
      ]
    },"birthDate": "2010-08-21"
  }
}
```


Figure 9: Patient Resource Example

6.3.9 Identify Code Lists

CodeableConcept: A CodeableConcept represents a value that is usually supplied by providing a reference to one or more terminologies or ontologies but may also be defined by the provision of text.

There are fields whose 'Type' is CodeableConcept in message structure definition tables listed in Data Model, and they refer to a ValueSet URL. These URLs are of 2 types:

- Original HL7 link: Example (http://hl7.org/fhir/ValueSet/payeetype)

  For these types of fields, the FHIR hl7 code list has been used, this is usually for field CodeableConcept type (required).

- NPHIES Codes List : Example (http://NPHIES.sa/terminology/ValueSet/related-claim-relationship)

  For these types of fields, NPHIES KSA customized list has been created to address the market specific needs. All these links are needed in the transaction to be used as an identifier to the code list being used for the specific field.

6.3.9.1 Find Related CodeSystems and ValueSets

- Copy the ValueSet link from Message Structure tables defined in Data Model or from the NPHIES profile excel sheet available on nphies Unified Portal. Refer to https://portal.nphies.sa/community/dashboard/documents→ Documentation → NPHIES CodeableConcept Excel file.

- Find the CodeSystem corresponding to the selected ValueSet in CodeableConcept excel file. Refer to https://portal.nphies.sa/community/dashboard/documents → Documentation → NPHIES CodeableConcept Excel file and look for the CodeSystem matching the ValueSets in NPHIES ValueSet sheet.

- The CodeSystem will include the list of possible codes to be used in CodeableConcept excel file. Refer to https://portal.nphies.sa/community/dashboard/documents→ Documentation → NPHIES CodeableConcept Excel file and look for the codes listed in NPHIES CodeSystem Sheet.

For more information about FHIR ValueSets and CodeSystems, refer to the link:
http://hl7.org/fhir/r4/terminology-module.html

6.3.10 Special Handling for Elements

6.3.10.1 Adjudication Elements in Claim, Claim Response

In the adjudication structure, there are four elements of interest in the column category, reason, amount, and value. Some category codes require a monetary amount, therefore, use the amount element while other category codes provide a quantity and therefore, use the value element. The table below indicates which element to use for each of the category codes.

Category Code	Element
approved-quantity	value
benefit	amount
coPay	amount

deductible	amount
discount	amount
eligible	amount
eligpercent	value
patientShare	amount
tax	amount
unallocDeduct	amount
approved-quantity	value

Table 29: Adjudication Elements

6.3.10.2 Adjudication and Rejection Reasons

Adjudication reasons (Rejection Reason) are used to provide detailed explanations for the outcome of an adjudication process.

The new rejection codes categorization can be summarized in Nphies as per the below five categories:

1) ***Administrative (AD)*** → Used for administrative errors in coding, redundant requests, missing, incomplete or inappropriate information about patient or service/procedure codes.

Category	New Codes (9)	Consolidated Descriptions	Claim or PA	Detailed code	Descriptions	Examples
AD	**AD-1**	**Inconsistent/inappropriate information (i.e., patient demographics, clinician specialty, diagnosis)**	Claim & PA	AD-1-1	Diagnosis is inconsistent with provider type	Request for a CABG surgery by an emergency department
			Claim & PA	AD-1-2	Diagnosis is inconsistent with clinician specialty	Request for cataract surgery, but the clinician SCFHS submitted belongs to an orthopedic surgeon
			Claim & PA	AD-1-3	Diagnosis is inconsistent with encounter type	Request for a CABG surgery with diagnosis code atherosclerosis of coronary artery bypass graft for an day case encounter
			Claim & PA	AD-1-4	Diagnosis is inconsistent with service/procedure	Request for CABG procedure with a diagnosis of renal failure

			Claim & PA	AD-1-5	Service/procedure is inconsistent with provider type	Request for a sleep study by an emergency department of a private hospital
			Claim & PA	AD-1-6	Service/procedure is inconsistent with clinician specialty	Request submitted by an ophthalmology clinic for dental conditions
			Claim & PA	AD-1-7	Service/procedure is inconsistent with encounter type	Request for CABG for a day case encounter
			Claim & PA	AD-1-8	Clinician registration is invalid or expired	Request for CABG by cardiac surgeon who did new renew his SCFHS registration this year
			Claim & PA	AD-1-9	Mismatch in member information	Information is valid however for a different member
	AD-2	**Service Date Error**	Claim & PA	AD-2-1	Date of birth follows date of service/procedure	Request for a service for a baby before he was born
			Claim & PA	AD-2-2	Date of death precedes the date of service/procedure	Request for a CT scan for service date 02/01/2022, while date of death was on 01/01/2022 hence the prior authorization request will not be approved.
			Claim & PA	AD-2-3	Date of service/procedure is prior to coverage effective date	Requested for mammogram on 30/1/2022 while the coverage date started from 2/1/2022 for this service
			Claim & PA	AD-2-4	Duplicate service/procedure code	A second request for a lipoma removal

					based on the date	procedure on the same day
			Claim	AD-2-5	Time limit for submission has expired	A claim submission after 5 months of the date of service
			Claim	AD-2-6	Service was performed outside authorization validity date	Tonsillectomy is authorized to be carried out between 01/01/2022 and 01/02/2022. However, the claim is submitted with a service date of 03/02/2022.
	AD-3	**Coding Error**	PA	AD-3-1	Authorization not required for service/procedure	Prior Authorization not required for service/procedure
			Claim & PA	AD-3-2	Use bundled code	Request for CPAP mask for a new patient with sleep apnea, while mask should be bundled with CPAP device
			Claim & PA	AD-3-3	Room services and food are included in room and board expenses	Request for room cleaning service while the patient was admitted for day case surgery
			Claim	AD-3-4	Incorrect DRG calculated	The DRG code submitted on claim is not supported by the diagnoses and procedures/interventions when regrouped by the HIC
			Claim & PA	AD-3-5	Diagnosis is inconsistent with patient's age	Senile cataract diagnosis code is reported on a prior authorization request for a neonate (age less than 28 days)
			Claim & PA	AD-3-6	Diagnosis is inconsistent with patient's gender	Request for transurethral surgery with a diagnosis of benign prostatic hypertrophy is reported for female patient

			Claim & PA	AD-3-7	Service/procedure is inconsistent with patient's age	Antenatal screening tests are requested for a 3-year-old female
			Claim & PA	AD-3-8	Service/procedure is inconsistent with patient's gender	Transurethral resection of the prostate is requested for a female

Table 30 : Administrative category Rejection Reasons

2) ***Coverage (CV)*** → Used for requested service(s) that are not covered by the policy for any reason.

Category	New Codes (9)	Consolidated Descriptions	Claim or PA	Detailed code	Descriptions	Examples
CV	**CV-1**	**Requested service/diagnosis not covered in member's plan**	Claim & PA	CV-1-1	Provider is out of beneficiary network	Request for a service from a provider who didn't sign a contract with the insurance company
			Claim & PA	CV-1-2	Provider is not eligible for the service	Request from day case center for online psychiatric consultation
			Claim & PA	CV-1-3	Diagnosis is not covered	Request to cover fertility testing for infertility
			Claim & PA	CV-1-4	Service/procedure is not covered	Requested for CBC while the patient is admitted to the hospital
			Claim & PA	CV-1-5	Service/procedure does not meet the criteria of urgency criteria	Request for an elective appendectomy with urgency level 4 (triage level 4)
			Claim & PA	CV-1-6	Pre-existing diagnosis/condition is not covered	Request for CPAP supplies after the patient was insured this year, the patient was diagnosed with OSA 2 years ago

			Claim & PA	CV-1-7	Pre-existing diagnosis/condition was not disclosed	Request for maternity care during the third trimester while the patient was just insured a month ago and didn't disclose the pregnancy
			Claim & PA	CV-1-8	Annual limit/sublimit amount exceeded	Annual limit for a member is 500,000 SAR and the cumulative paid amount exceeds this limit. Hence, all further services will not be eligible for payment.
			Claim & PA	CV-1-9	Consultation is within 14-day follow up period	Request for cardiac team consultation 5 days after the cardiac surgery
			Claim & PA	CV-1-10	Work related injury is not covered	Request for non-urgent fracture treatment while the injury was a result for a fall at a construction site
	CV-2	**Patient is not a covered member**	Claim & PA	CV-2-1	Patient is not a covered member	Claim is submitted for Member number “123”. However, member number “123” is not found in payers database
	CV-3	**Maximum benefit reached for requested time period**	Claim & PA	CV-3-1	Benefit maximum for this time period or occurrence has been reached	Request for physical therapy session after the patient completed 6 sessions of physical therapy which were determined based on his policy benefits
			Claim & PA	CV-3-2	Service/procedure may be appropriate, but too frequent	Request for CBC at the same day from 2 different providers

			Claim & PA	CV-3-3	Service/procedure exceeds number of times per life	Request for appendectomy while the patient had an appendectomy 2 years ago.
			Claim & PA	CV-3-4	Service/procedure exceeds number of times per policy	Request for third molar filling for the second time for one year
			Claim & PA	CV-3-5	Service/procedure is above Saudi Riyals threshold per policy	Request for bariatric surgery with an amount of 30,000 SAR, while the threshold is 20,000 SAR per bariatric surgery
	CV-4	**Medication prescription or Device issue (i.e., dose, quantity, refill, formulary, other)**	Claim & PA	CV-4-1	Inappropriate medication dose	Request for a dose per day for Panadol 500 mg is labeled at 4000 mg per day for a patient equal to or above the age of 12
			Claim & PA	CV-4-2	Inappropriate medication duration	Request for Augmentin for acute sinusitis for one day
			PA	CV-4-3	Authorization quantity exceeds prescription quantity	Physician has prescribed cimetidine (Tagamet) 60 Days and prior authorization Req. for 90 days
			Claim & PA	CV-4-4	Prescription out of date	Request for a prescription which was prescribed one year ago
			Claim & PA	CV-4-5	Medication is not listed in formulary	Prescription for nasal irrigation device that is not part of the hospital-insurance formulary
			Claim & PA	CV-4-6	Milk Products do not meet coverage criteria	Request for milk supplementation for lactose intolerance patient

			Claim & PA	CV-4-7	Device is not consistent with the service/procedure	Request for a CPAP machine associated with endoscopy report
			Claim & PA	CV-4-8	Refill too soon	Request for glucometer supplies one week after he receives the 90 months' supply
			Claim & PA	CV-4-9	Service/procedure/device/medication was included within another service/procedure	Request for CPAP mask for patient who just got his CPAP machine and mask
			Claim & PA	CV-4-10	Device/medications is not approved by the Saudi FDA	Request for a procedure with a device that was not registered with the Saudi FDA

Table 31: Coverage Category for Rejection Reasons

3) ***Medical Necessity (MN)*** → Used when the requested healthcare service is not clinically justified.

Category	New Codes (9)	Consolidated Descriptions	Claim or PA	Detailed code	Descriptions	Examples
MM	**MN-1**	**Medical necessity**	Claim & PA	MN-1-1	Service is not clinically justified based on clinical practice guideline, without additional supporting diagnosis	Request for bariatric surgery for a patient with BMI of 25
			Claim & PA	MN-1-2	Patient is enrolled in hospice/palliative care	Patients need glucometer in hospice care

Table 32: Medical necessity Category for Rejection Reasons

4) ***Supporting Evidence (SE)*** → Use when medical documentation is inadequate or missing information (e.g., chart notes, imaging, medications, clinical data, failed treatment trial)

Category	New Codes (9)	Consolidated Descriptions	Claim or PA	Detailed code	Descriptions	Examples
SE	**SE-1**	**Requires supporting evidence/documentation.**	Claim & PA	SE-1-1	Vital signs are inadequate or missing	Request for a bariatric procedure for a patient with no documented blood pressure
			Claim & PA	SE-1-2	History of present illness is inadequate or missing	Request for CABG procedure with history of presenting illness leg pain
			Claim & PA	SE-1-3	Chief complaint is inadequate or missing	Request for a sleep study for a patient came with chief complain of abdominal pain
			Claim & PA	SE-1-4	Physical examination is inadequate or missing	Request for lipoma removal procedure with no documented physical examination
			Claim & PA	SE-1-5	Past medical history is inadequate or missing	Request for A1C test with no past medical history of diabetes
			Claim & PA	SE-1-6	Investigation result is inadequate or missing	Request for CPAP machine with no sleep study
			Claim & PA	SE-1-7	Type of diagnosis is inadequate or missing	Request for a sleep study with a primary diagnosis myocardial infarction, and secondary diagnosis sleep apnea
			Claim & PA	SE-1-8	Treatment plan is inadequate or missing	Request for CABG surgery for a patient with chest pain with no treatment plan
			Claim & PA	SE-1-9	Quantity of service/procedure is inappropriate or missing	Request for cataract surgery for three times rather two times
			Claim & PA	SE-1-10	Patient occupation is inappropriate or missing	Request for work related injury with no patient occupation

Table 33: Supporting Evidence Category for Rejection Reasons

5) ***Billing Errors (BE)*** → Used when there is a billing error (e.g., payment errors, Price agreement mismatch, claim submission error)

Category	New Codes (9)	Consolidated Descriptions	Claim or PA	Detailed code	Descriptions	Examples
BE	BE-1	Payment, billing, price, claim submission error, or adjustment	Claim	BE-1-1	Co-pay was not collected from member	A copayment for an outpatient visit was not collected
			Claim	BE-1-2	Service was not performed	A service was preauthorized, but was not performed until the claim submission period
			Claim	BE-1-3	Submission not compliant with contractual agreement between provider & payer	A claim for LASIK procedure was submitted while there is no agreement between the provider and the payer
			Claim	BE-1-4	Preauthorization is required and was not obtained	A claim was submitted for physiotherapy while prior authorization was not obtained prior to the submission
			Claim	BE-1-5	Claim information is inconsistent with preauthorized services	Physiotherapy claim was submitted for plantar fasciitis, while shockwave was preauthorized for the condition
			Claim	BE-1-6	Calculation discrepancy	Claim submitted for a CT Scan with an amount of 1500 SAR. However according to the contract, the service is chargeable at 1000 SAR hence the claim would be processed as per the contract.
			Claim	BE-1-7	Incorrect billing regime	An inpatient claim is submitted as Fee for Service when it should be billed as DRG.

			Claim	BE-1-8	Appeal procedures not followed, or time limits not met	A claim appeal is not submitted within the appropriate timeframe.
			Claim	BE-1-9	Recovery of Payment	Initial payment made to the incorrect provider Id resulting in a recovery of payments.
			Claim	BE-1-10	Fraud	After claim review, patient BMI was intentionally changed to cover a service for only obese patients

Table 34: Billing Errors Category for Rejection Reasons

Please refer to the "Appendix=adjudication-reason" code list in the codeable concept document in the Nphies Unified Portal: https://portal.nphies.sa/community/dashboard/documents

6.3.11 Category Codes and Supporting Info

Category Code	display	supportingInfo.code	supportingInfo.timing	supportingInfo.value	supportingInfo.reason (value set)
info	Information	NA	NA	valueString	NA
onset	Onset	http://nphies.sa/terminology/ValueSet/diagnosis-icd-10-am	timingDate	NA	NA
attachment	Attachment	NA	NA	valueAttachment	NA
missingtooth	Missing Tooth	http://nphies.sa/terminology/ValueSet/fdi-oral-region	timingDate	NA	http://nphies.sa/terminology/ValueSet/missing-tooth-reason
employmentImpacted	EmploymentImpacted	NA	Period 1	NA	NA
lab-test	lab-test	.coding.system= http://loinc.org/vs	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org	NA
reason-for-visit	Reason For Visit	.coding.system= http://nphies.sa/terminology/ValueSet/visit-reason	NA	NA	NA
days-supply	Days Supply	NA	NA	valueQuantity : (Quantity 2)	NA

Category Code	display	supportingInfo.code	supportingInfo.timing	supportingInfo.value	supportingInfo.reason (value set)
				system = http://unitsofmeasure.org code= d	
vital-sign-weight	Weight	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= kg	"OR "http://nphies.sa/terminology/ValueSet/weight-absence-reason
vital-sign-systolic	Systolic	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= mm[Hg]	OR "http://nphies.sa/terminology/ValueSet/blood-pressure-absence-reason
vital-sign-diastolic	Diastolic	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= mm[Hg]	OR "http://nphies.sa/terminology/ValueSet/blood-pressure-absence-reason
icu-hours	ICU Hours	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= h	NA
ventilation-hours	Ventilation Hours	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= h	NA
vital-sign-height	Height	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= cm	OR "http://nphies.sa/terminology/ValueSet/height-absence-reason
chief-complaint	Chief Complaint	http://nphies.sa/terminology/ValueSet/diagnosis-icd-10-am Text can be used in Claim.supportingInfo.code.text	NA	NA	NA
temperature	Temperature	NA	Period 3	valueQuantity : (Quantity 2) system = http://unitsofmeasure.org code= Cel	OR "http://nphies.sa/terminology/ValueSet/temperature-absence-reason
pulse	Pulse	NA	Period 3	valueQuantity: (Quantity	"OR

Category Code	display	supportingInfo.code	supportingInfo.timing	supportingInfo.value	supportingInfo.reason (value set)
				2) system = http://unitsofmeasure.org code= /min	""http://nphies.sa/terminology/ValueSet/pulse-absence-reason"
oxygen-saturation	Oxygen Saturation	NA	Period 3	valueQuantity: (Quantity 2) system = http://unitsofmeasure.org code= %	"OR ""http://nphies.sa/terminology/ValueSet/oxygen-saturation-absence-reason"
respiratory-rate	Respiratory Rate	NA	Period 3	valueQuantity: (Quantity 2) system = http://unitsofmeasure.org code= /min	"OR ""http://nphies.sa/terminology/ValueSet/respiratory-rate-absence-reason"
last-menstrual-period	Last Menstrual Period	NA	timingDate	NA	NA
birth-weight	Birth Weight	NA	NA	valueQuantity: (Quantity 2) system = http://unitsofmeasure.org code= kg	NA
morphology	Morphology	http://nphies.sa/terminology/ValueSet/morphology-code	NA	NA	NA
treatment-plan	Treatment Plan	NA	NA	valueString	NA
patient-history	patient's past surgical and medical history	NA	NA	valueString	NA
physical-examination	Physical Examination	NA	NA	valueString	NA
history-of-present-illness	history Of Present Illness	NA	NA	valueString	NA
investigation-result	Investigation Result	http://nphies.sa/terminology/ValueSet/investigation-result	NA	valueAttachment	NA
admission-weight	Admission Weight	NA	NA	valueQuantity: (Quantity 2) system = http://unitsof	NA

Category Code	display	supportingInfo.code	supportingInfo.timing	supportingInfo.value	supportingInfo.reason (value set)
				measure.org code= kg	
estimated-Length-of-Stay	Estimated Lenghth Of Stay	NA	NA	valueQuantity: (Quantity 2) system = http://unitsofmeasure.org code= d	NA

Table 35: Category Codes and Supporting Information

Important Notes on supporting information :

- Regarding Admission weight:
  - admission weight is mandatory when age is less than 365 days.
  - Age is calculated as follows: encounter start date - patient birth date.
  - Patient.birthdate shall be on or before Encounter.period.start when encounter.period.start exists.
  - Patient.birthdate shall be on or before currentDate and after 1900-01-01
  - Admission weight shall be only present when claim type = institutional and claim subtype = IMP
- Regarding Morphology:
  - If principal or secondary diagnosis in a claim or prior authorization belongs to morphology diagnosis list then supporting info "morphology" SHALL be provided.

- Regarding the following information categories: (vital-sign-weight, vital-sign-systolic, vital-sign-diastolic, vital-sign-height, temperature, Pulse, oxygen-saturation, respiratory-rate):
  - You either provide value for them or a permissible value (absence reason)
  - For permissible values, please get back to the codeable concept document.
- Regarding Investigation result:
  - If principal or secondary diagnosis in a claim or prior authorization belongs to morphology diagnosis list then supporting info "morphology" SHALL be provided.
  - Supporting information "investigation-result" requires an attachment when attachment code is used.
  - Investigation Result "Text" Shall be Provided when Investigation Result Supporting info is selected with Code = "Other"

(for investigation result codes, please refer to the codeable concept document)

6.3.12 Accident:

- **Accident description:**

  - Details of an accident which resulted in injuries which required the products and services listed in the claim.

- **Accident types:**

Accident type	Code	Definition
Motor vehicle accident	MVA	Incident or accident as the result of a motor vehicle accident
School Accident	SCHOOL	Incident or accident is the result of a school place accident.
Sporting Accident	SPT	Incident or accident is the result of a sporting accident.
Workplace accident	WPA	Incident or accident is the result of a workplace accident
ActPatientSafetyIncidentCode	*_ActPatientSafetyIncidentCode*	A code specifying the particular kind of Patient Safety Incident that the Incident class instance represents. **Examples:**"Medication incident", "slips, trips and falls incident".The actual value set for the domain will be determined by each (realm) implementation, whose Patient Safety terminology will be specific, although probably linked to the WHO Patient Safety Taxonomy that is currently under development.

Based on the list available on FHIR website on the url: http://terminology.hl7.org/CodeSystem/v3-ActCode

- **Accident validation rules:**

  - Claim.accident with claim.accident.type = "WPA" SHALL exist if at least one diagnosis code is from the work related diagnosis list "http://nphies.sa/terminology/ValueSet/work-related-diagnosis" when claim.use="claim" or "preauthorization" and Vice versa

  - Claim.accident with claim.accident.type = "MVA" SHALL exist if at least one diagnosis code is from the RTA diagnosis list (http://nphies.sa/terminology/ValueSet/rta-diagnosis) when claim.use="claim" or "preauthorization" and Vice versa

6.4 Message Transmission

Message Transmission in case of HCP's connection gets timeout or HIC is offline

- If HCP connection times-out/ disconnects before receiving the response:
    - Poll Request can be used to fetch the offline responses available in NPHIES.
    - Poll Request can't be used with Eligibility or status check use cases as this response must be real time while the connection is opened. In this case, HCP is expected to send another Eligibility request or status request to the HIC.
    - If the HCP sends the same exact request again. NPHIES will return the response received from the HIC matching the sent request. If the HCP sends a transaction and does not receive any response back, he should send exactly the same transaction again, so he can get the answer which may have arrived at NPHIES while the provider was reconnecting to NPHIES.
    - If the HCP sends a Poll request, NPHIES will return the valid responses based on the criteria sent in the Poll Request (Period, Transactions to be included … etc.)
- If HIC is offline
    - NPHIES will send a response message to the HCP indicating the successful posting of the message and including whether that transaction is queued or the returning the error code in case the payer is offline.
    - NPHIES queues the messages to be sent to the HIC as soon as its back online, where queuing is applicable.
    - HIC can then send the needed offline response in which the HCP can pick up the response using the Poll Message.

6.5 Newborn Eligibility Prior Authorization Claims

Newborns usually do not have their own insurance (coverage) from the date of birth to about 30 days, so the eligibility check, prior authorizations, and claim for services provided to the newborn will include the newborn's (patient) patient information and will use the mother's insurance (coverage). However, because the newborn's gender and date of birth in the patient resource do not match that of the insurer-saved subscriber, the newborn extension is specified in the eligibility, approval, or claim message to notify the insurer that the message is for the newborn.

The eligibility message only requires the addition of the newborn extension, while prior authorizations and claims require the birth-weight to be included in the supportingInfo section.

When specifying a newborn for prior authorizations and claims, Birthweight is required only on the newborn encounter - i.e. the birth encounter.

For information, refer to *Category Code and Supporting Info*.

6.6 Patient Policy Discovery

HIDP - Health Insurance Data

When a provider does not already know which insurers have policies for a patient then may access the HIDP-API, Health Insurance Data, to obtain a list of insurers having policies for the patient. *For more information, refer* to *the document Beneficiary Discovery Insurance HIDP Guideline.*

6.7 Duplicate Checking

Upon the receipt of a transaction, the nphies system will check whether the transaction has been previously received by nphies. And if so, then nphies sends a response to the provider and does not send a new transaction to the payer. The type of the response sent by nphies depends on whether the nphies system already has a response stored from either the nphies transaction validation system or the payer.

How does nphies detect duplicates?

Each transaction has a unique identifier or the main resource in the transaction. For example, the main or focal resource for prior authorizations and claims is the **Claim** resource and each **Claim.identifier** is required to be a unique combination of the **Claim.identifier.system** and the **Claim.identifier.value** which are both provided by the provider.

When a transaction is received, the nphies system will compare the identifier received with the transactions which have been previously received. And if a match is found, then the transaction content is compared, and if an exact match is found, then they are considered as duplicates.

Type of response returned,

- If the new transaction is not a duplicate and has a new identifier not previously sent, then the transaction proceeds to nphies validation and if is valid to the payer or nphies for processing.
- If the new transaction has a duplicate identifier and nphies already has a response from either nphies or the payer, then nphies will return the most recent response.
- If nphies receives a duplicate identifier and nphies does not have a response on file, then nphies will return a queued message indicating that it is already processing a copy of this message.
- If nphies receives a message which is an exact duplicate of a previously sent message including the same **Bundle.id** and **MessageHeader.id**, identifier and exact copy of the body of the message, then nphies will return the most recent response for that message. If not, nphies will respond with a 'queued' response or an error.

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7 USE CASES

7.1 Check Eligibility Cycle

This use case enables the HCPs to verify the beneficiary's insurance coverage benefit plans which makes them eligible to receive healthcare services at the given facility.

Note: if the provider doesn't know the patient insurance then the provider may use the HIDP-API to obtain a list of the patient's insurance so they can then send the eligibility checks to those insurers (see section 6.6).

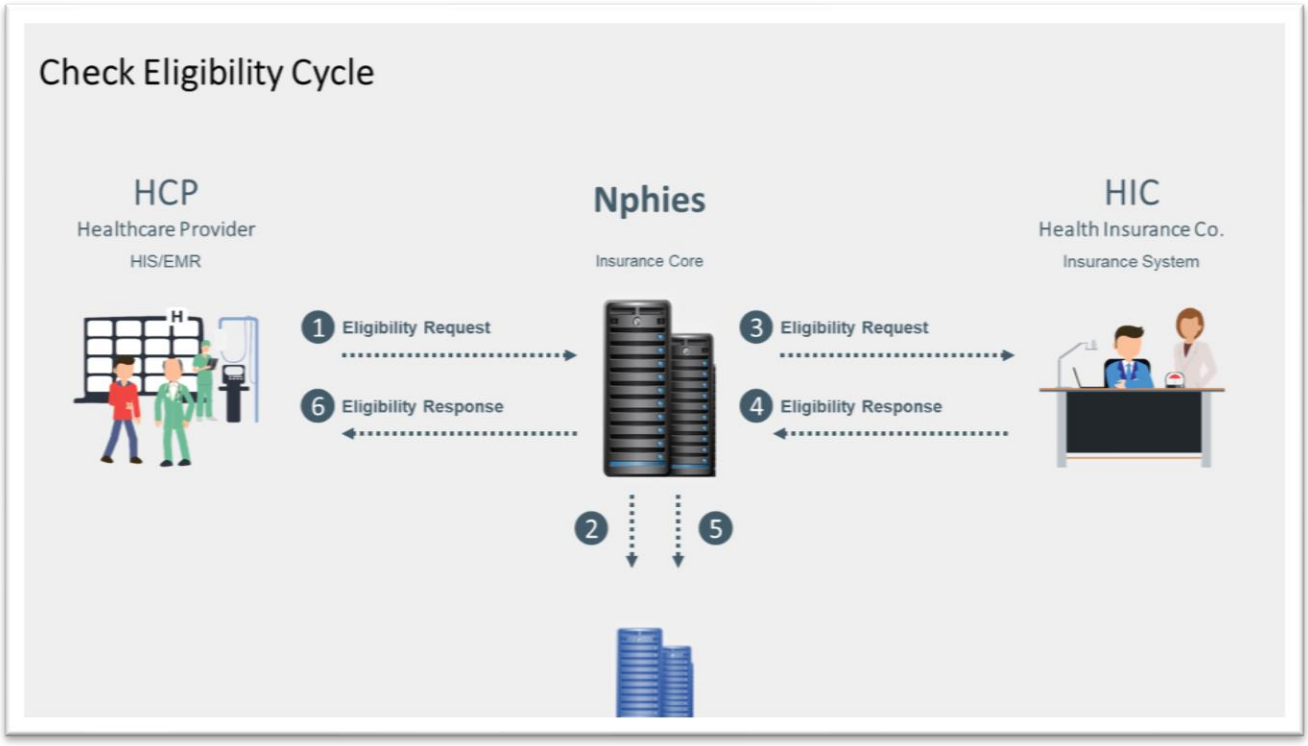

Figure 10: Check Eligibility Cycle

Eligibility Use Case Guidance

Type	Description	Required Resources
Discovery	The insurer is requested to report on any coverages which they are aware of in addition to any specified.	Patient identifier
Validation	A check that the specified coverages are in-force is requested.	Option 1: Patient Identifier + Coverage Option 2: Patient Identifier + "Discovery" as eligibilityrequest-purpose
Benefit	The plan benefits and optionally benefits consumed for the listed, or discovered if specified, coverages are requested.	Option 1: Patient Identifier + Coverage Option 2: Patient Identifier + "Discovery" as eligibilityrequest-purpose

Table 36: Eligibility Use Case Guidance

7.1.1 Eligibility Extensions

7.1.1.1 Newborn

On eligibility requests for a newborn, add the Newborn extension as shown in section 6.2.6 Table of Extensions.

7.1.1.1.1 Transfer

On eligibility requests for a newborn, add the Transfer extension as shown in section 6.2.6 Table of Extensions.

7.1.2 Eligibility Response Extensions

7.1.2.1 Site Eligibility

A new field (siteEligibility) is added to the eligibility response from the insurer to inform the provider whether the patient is eligible to have their services covered by the insurance.

The payer adds the siteEligibility extension to the eligibility response. A value of "eligible" indicates that the patient is eligible, and other codes indicates that the patient is not eligible.

The below siteEligibility extension is provided if the CoverageEligibilityResponse.outcome is "complete."

```
{
   "extension": {
          "url": "http://nphies.sa/fhir/ksa/nphies-
fs/StructureDefinition/extension-siteEligibility",
          "valueCodeableConcept": {
                "Coding": [{
                      "system":
"http://nphies.sa/Terminology/CodeSystem/siteEligibility",
                      "code": "eligible"
                }]
           }
   }
}
```

For more information, refer to the document *Site Eligibility*.

7.2 Request Prior Authorization Cycle

The use case enables the HCP to obtain an approval from the HIC to receive reimbursement for delivering the requested service/ treatment to the beneficiary.

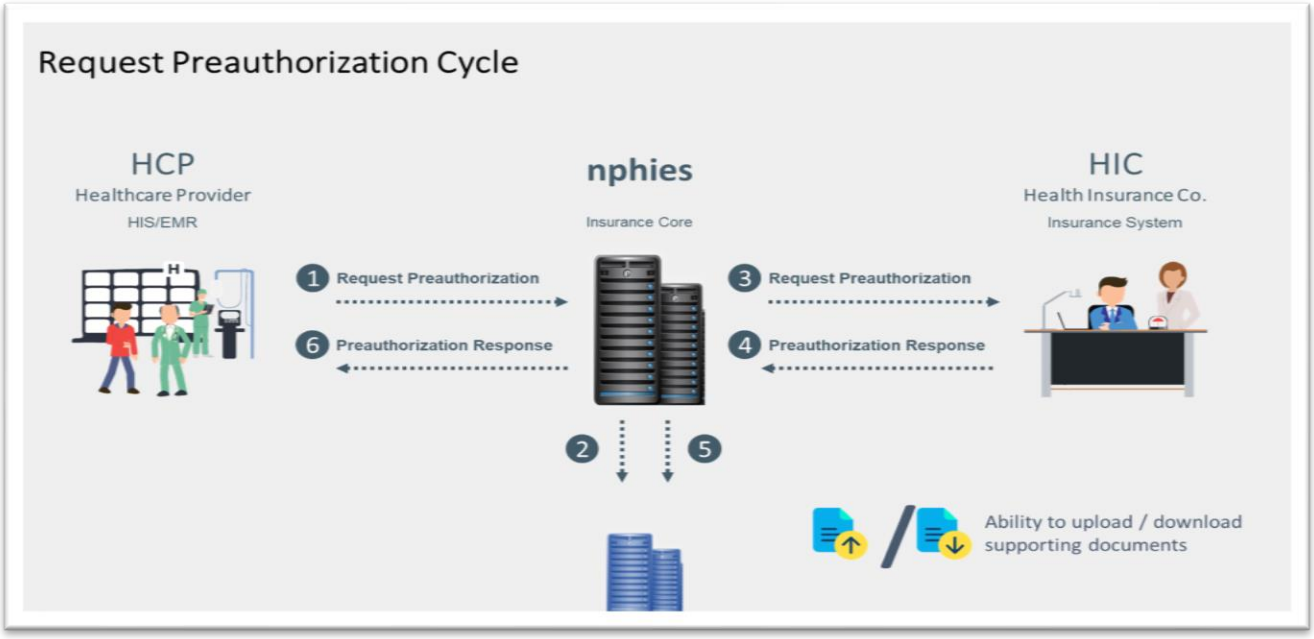

Figure 11: Request Prior Authorization Cycle

7.3 Patient Referral Prior Authorization – Transfer of Care

Use Case

A provider is unable to provide some services to the patient and therefore needs to request the transfer of services to another provider by sending a prior authorization for the transfer to the patient's insurer.

Referral Prior Authorization handling on nphies

Follow the below steps to process Patient Referral Prior Authorization on nphies,

1. The first provider submits a new prior authorization to update the previous prior authorization and remove the services that are unable to perform.

2. The first provider requests a second prior authorization for referral with flag (**extension-transfer = true**[1]for certain services that are not available at the facility. Once approved by the payer, the payer can send the following information through the following channel(s),

[1].

- To the first provider in the prior authorization response,
    - The prior authorization response adjudication details will indicate the approved-quantity for each of the services which are approved for the transfer. The prior authorization reference provided in the **ClaimResponse.preAuthRef** is the first provider's prior authorization number for that transfer.
    - The prior authorization response should include three new extensions,
        - transferAuthorizationProvider
        - transferAuthorizationPeriod
        - transferAuthorizationNumber
    - The name of the second provider, the prior authorization number for the second provider, any additional instructions for the service(s) being authorized.
    - The approved quantity in the item elements indicates what services are approved for transfer, provides the result of the adjudication outcome, but the implementor should rely on the approved quantity as the fees charged by the second provider may not match those of the first provider.
- SMS message to patient: the name of the second provider, newly generated prior authorization number and the authorized service(s).
- To the second provider via insurer's portal or email or a hardcopy: the name of the second provider, a newly generated prior authorization number and the authorized service(s).
- The prior authorization for the second provider is considered as an offline prior authorization.

3. The patient goes to the second provider, if the provider sends an eligibility request to receive the Table of Benefits (TOB), then it must include the extension-transfer flag in the eligibility request.
4. The second provider can submit a claim for the authorized services by including the following,

*Table **Error! Main Document Only.**: Transfer Extension Flags : use the extensions below to indicate whether a request is for a transfer*

Field	Description	Min	Max	Data type
CoverageEligbiltyRequest.extension.transfer	Flag to indicate a prior authorization to transfer services to another provider has been issued	0	1	Boolean
Claim.extension.transfer	Flag to indicate a prior authorization to transfer services to another provider	0	1	Boolean

- supportingInfo: the reason for visit: Referral, including the name of the provider in Claim.referral.display.
- insurance.preAuthRef: the prior authorization reference number that was supplied.
- **Claim.extension.authorizationOffLineDate** extension providing the date of the prior authorization.

5. To extend the prior authorization, the second provider creates a new prior authorization request that includes,
   - supportingInfo: the reason for visit and referral elements as in Step 4.
   - insurance.preAuthRef: the prior authorization reference number that was supplied.

   The payer should be aware that the referred services may be provided by an out-of-network provider, and it should not be rejected for this reason.

6. Any further prior authorization extensions refer to the initial extension prior authorization request, therefore this is no longer an offline adjudication, and it does not require a reason for visit.

Example of the transfer extension

```
"extension": [
   {      "url": "http://nphies.sa/fhir/ksa/nphies-
fs/StructureDefinition/extension-transfer",
          "valueBoolean": true
   }
]
```

7.3.1 Prior Authorization Examples

Below is the list of possible scenarios of Prior Authorization use case:

Use Case	Scenarios	Action
Prior Authorization Use Case	The prior authorization reference issued with the original prior authorization response reported under "ClaimResponse.preAuthRef" field, e.g., AGB126TH, does not change, that is, the same prior authorization reference string shall be returned on responses to restatements of the original prior authorization.	
Cancel an Unused Prior Authorization	Prior Authorization - none of the amount is consumed. Example: The patient wants to receive services from a different provider. The first HCP cancels the existing Prior Authorization. Then the beneficiary can go to a	Submit a 'cancel-request' where Task.focus = Business Identifier of original prior authorization (claim)

Use Case	Scenarios	Action
	different HCP who will be able to submit a new Prior Authorization.	
Cancel a Partially used Prior Authorization	Prior Authorization - some services have been provided Example: The treatment has concluded, or the patient wishes to change providers. The HCP submits a new Prior Authorization containing only the services already provided and does not include the services that are not going to be performed.	Submit a prior authorization-request' where Claim.related.claim = Business Identifier of original prior authorization (claim) claim.related.relationship = 'prior' Remember to include all services. If the service has already been provided then put the service date in the Claim.item.servicePeriod.start.
Modify an existing Prior Authorization	Prior Authorization restatement - change the services being authorized Example: Add or remove services, changes the services to match those actual performed during an encounter or surgery. The HCP submits a new Prior Authorization containing only the services planned or already provided and does not include the services that are not going to be performed.	Submit a prior authorization-request' where Claim.related.claim = Business Identifier of original prior authorization (claim) claim.related.relationship = 'prior'. Remember to include all services. If the service has already been provided then put the service date in the Claim.item.servicePeriod.start.
Partially Approved or Rejected prior Authorization Handling	How to resubmit a Partially Approved or Rejected prior Authorization.	Submit a prior authorization-request' where Claim.related.claim = Business Identifier of original prior authorization (claim) claim.related.relationship = 'prior'. And send any additional supporting information to justify the medical necessity of the proposed services. Remember to include all services. If the service has already been provided then put the service date in the Claim.item.servicePeriod.start.

Table 37: Prior Authorization Use Case Scenarios

7.3.2 Cancel Prior Authorization Service

This use case enables the HCP to send cancel Prior Authorization to HIC

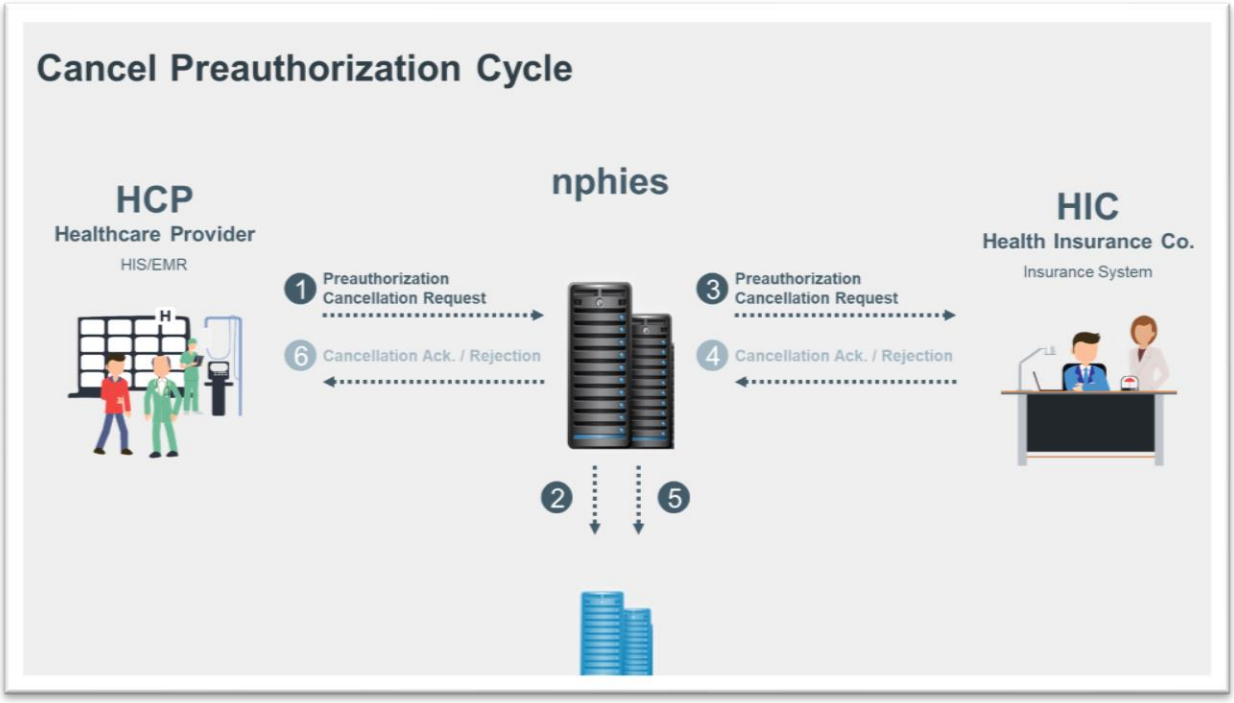

Figure 12: Cancel Prior Authorization Service

7.4 Process Claim Cycle

This use case enables the HCP to electronically submit the health insurance claims to the HIC for adjudication. This provides for both single and batch of claims submission.

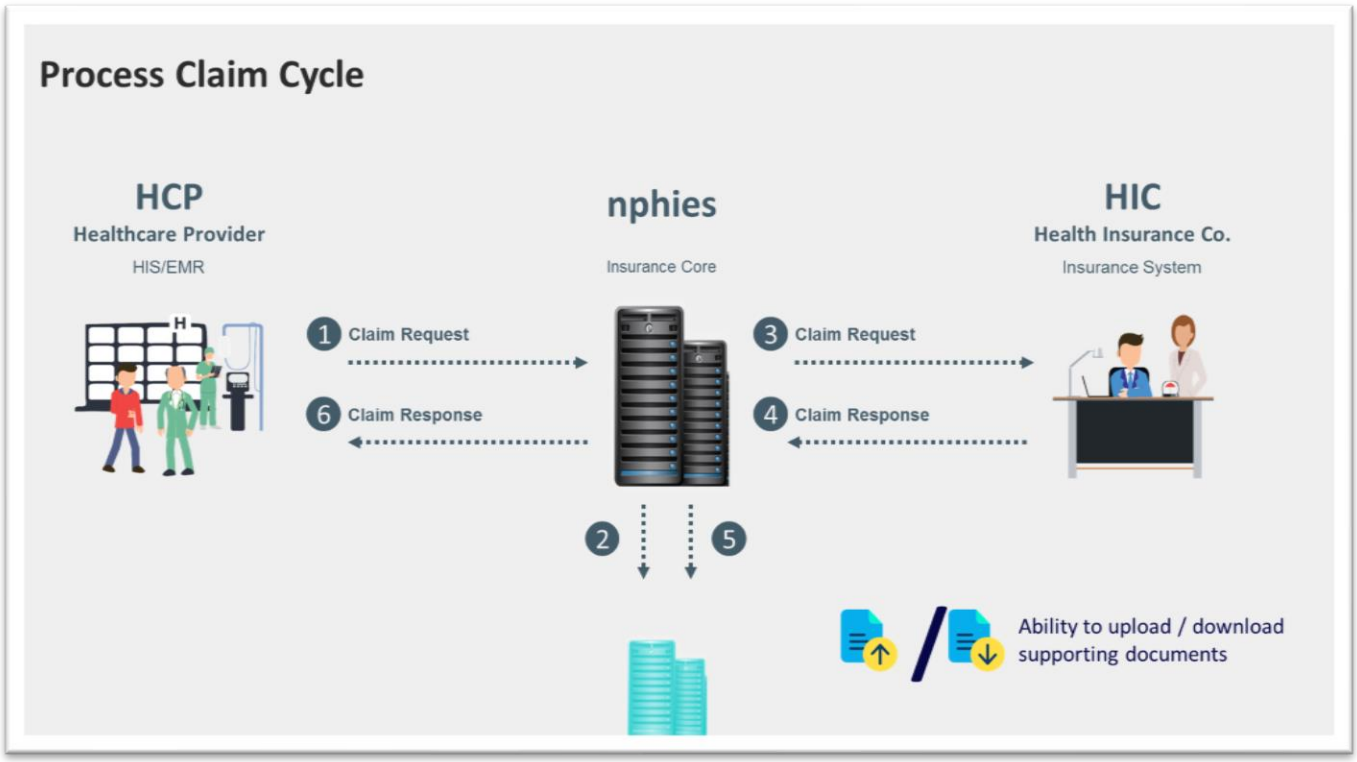

Figure 13: Process Claim Cycle

7.4.1 Sending Claim Supporting Documents after adjudication

When an HCP receives a complete claim response from the HIC with items which are partially approved and where the provider does not agree with the adjudication result, then the Provider may do the following:

- Communicate the required supporting information for the partially approved or rejected items sent. The payer will receive the supporting info and can issue a revised claim response.
- In case any services need to be added on a “complete” claim, then the provider will send another “New” claim with the same episode Identifier as the first one.

To know more on how this can be done, Please refer to Nphies Unified Portal and navigate to Documents → User Guides & Manuals Description → Claims Re-submission with Supporting Information Guide.

7.4.2 Claim Extensions

7.4.2.1 Episode of Care

From a business perspective, the HIC requires the episode of care identifier from the provider in order to identify multiple claims for the same episode of care. If the patient has multiple visits for different services within the same episode of care, the rendered services can be claimed separately sharing the same episode of care identifier. For example,

- The patient was admitted on 20th of November. A claim is issued at the end of the month.
- The patient was discharged on 15th of December. Another claim is sent after the discharge.
- A follow-up visit with the physician was on December 19th and a claim issued for the service.
- All three claims will report the same episode of care identifier, so the payer will be able to link all the claims within the same episode of care.

The below extension will be added and applied as mandatory to all types of claims at the **Claim** level,

```
{
  "extension": {
    "url": "http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-episode",
    "valueIdentifier": {
         "system": "[BaseURL]/extension-episode",
         "value": "episode123ABC"
    }
  }
}
```

7.4.2.2 Patient Invoice

The HIC & HCP need to identify the patient invoice number for line item to detect duplication and for other purposes.

The below extension will be added and applied as mandatory to all types of claims at the **Claim.item** level,

```
{
  "extension": {
    "url": "http://nphies.sa/fhir/ksa/nphies-fs/StructureDefinition/extension-patientInvoice",
    "valueIdentifier": {
        "system": "[BaseURL]/patientInvoice",
        "value": "ABC123"
    }
  }
}
```

7.4.2.3 Responding to Partial Approvals and Rejections

If the payer partial approves or rejects a service due to insufficient information, then the provider may, send to the payer a Communication which references the claim and includes the supporting information. The payer may then issue a new ClaimResponse along with a reissue-reason code, with their revised adjudication.

7.5 Request Claim Supporting Documents

This use case enables the HICs to request supporting document(s) for a specified transaction to support business processes such as adjudication.

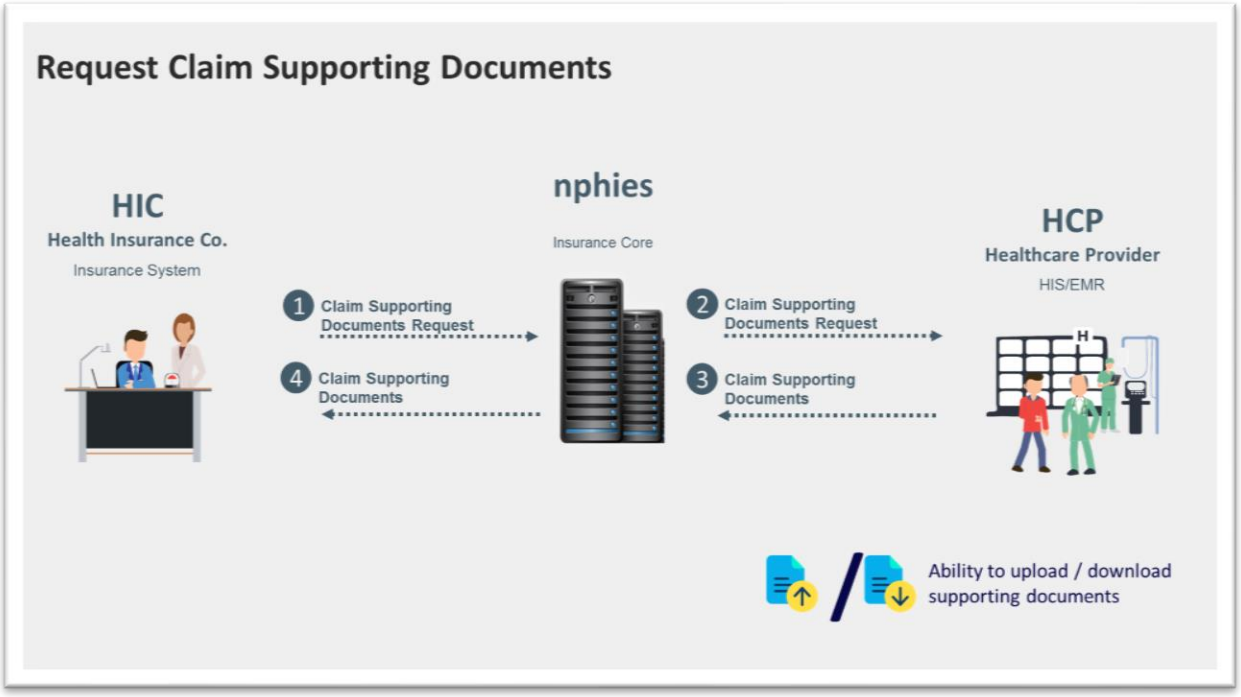

Figure 14: Request Claim Supporting Documents

7.6 Cancel Claim Request

This use case enables HCP to send Nullify/ Cancel Claim Request to HIC.

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

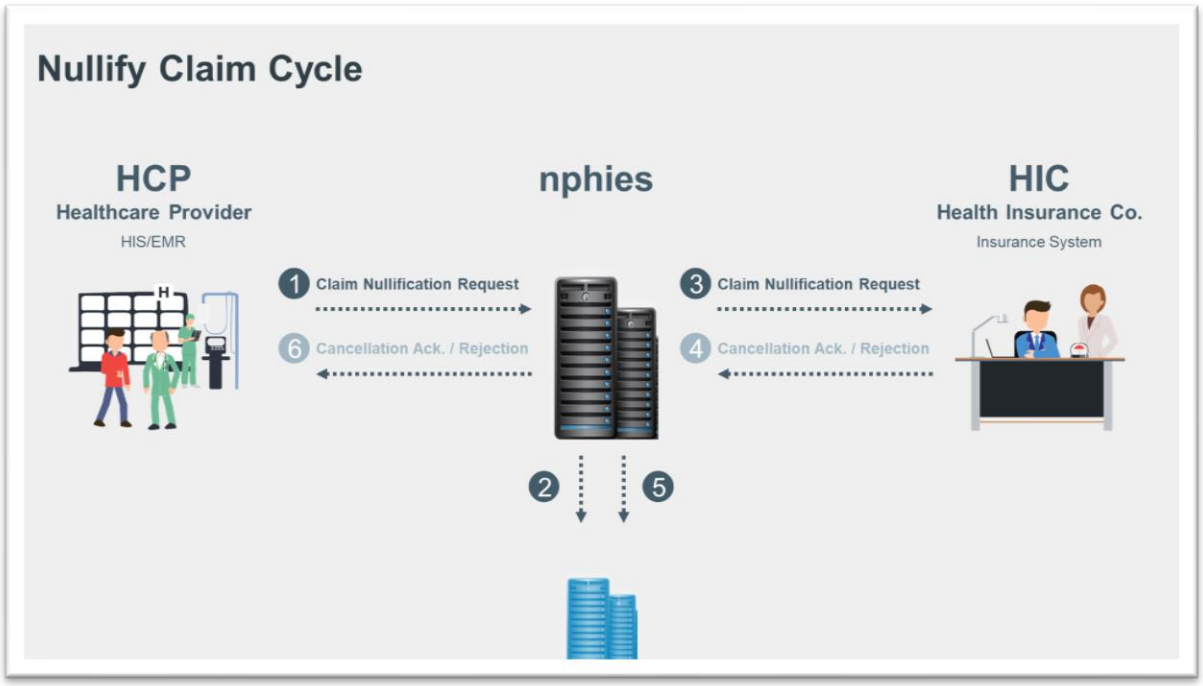

Figure 15: Nullify/ Cancel Claim Request

7.7 Payment Reconciliation

This use case enables HIC to send the payment advice (Payment Reconciliation) to the HCP.

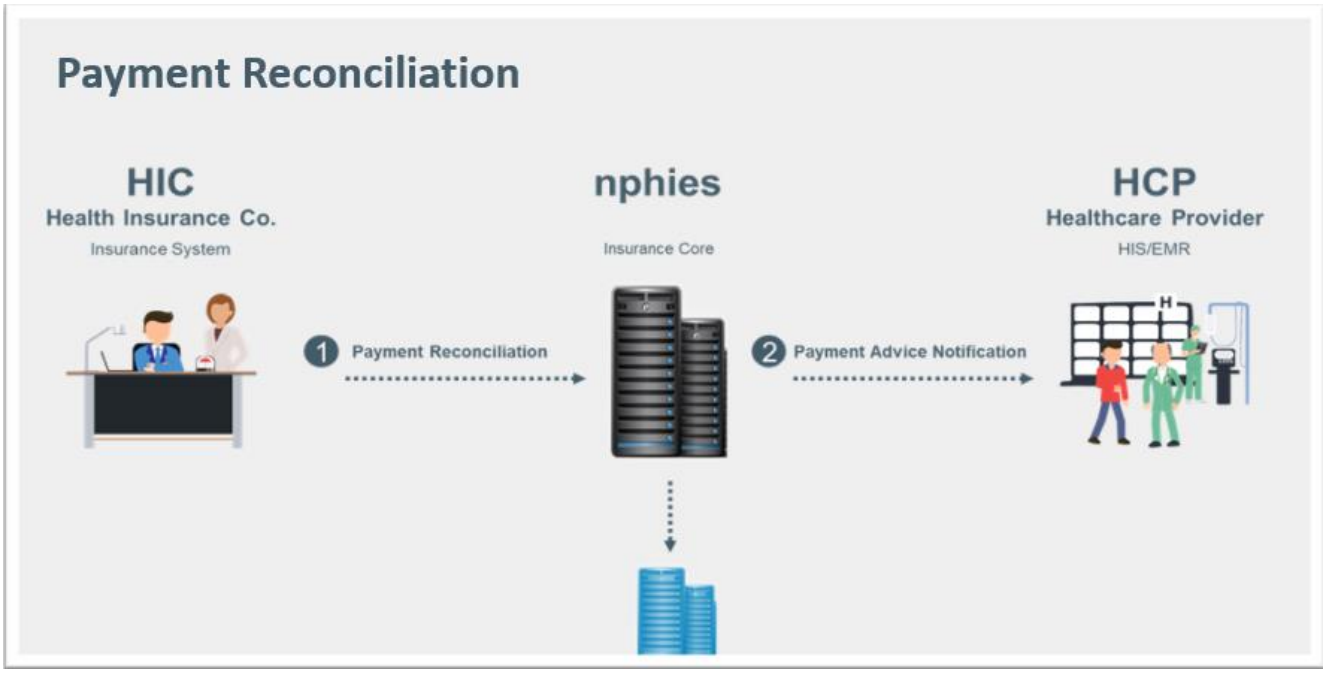

Figure 16: Payment Reconciliation

7.8 Payment Notice

- This use case enables HCP to send the payment confirmation to the NPHIES

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

- Payment Notice Service will have the ability to link to an existing payment advice notification

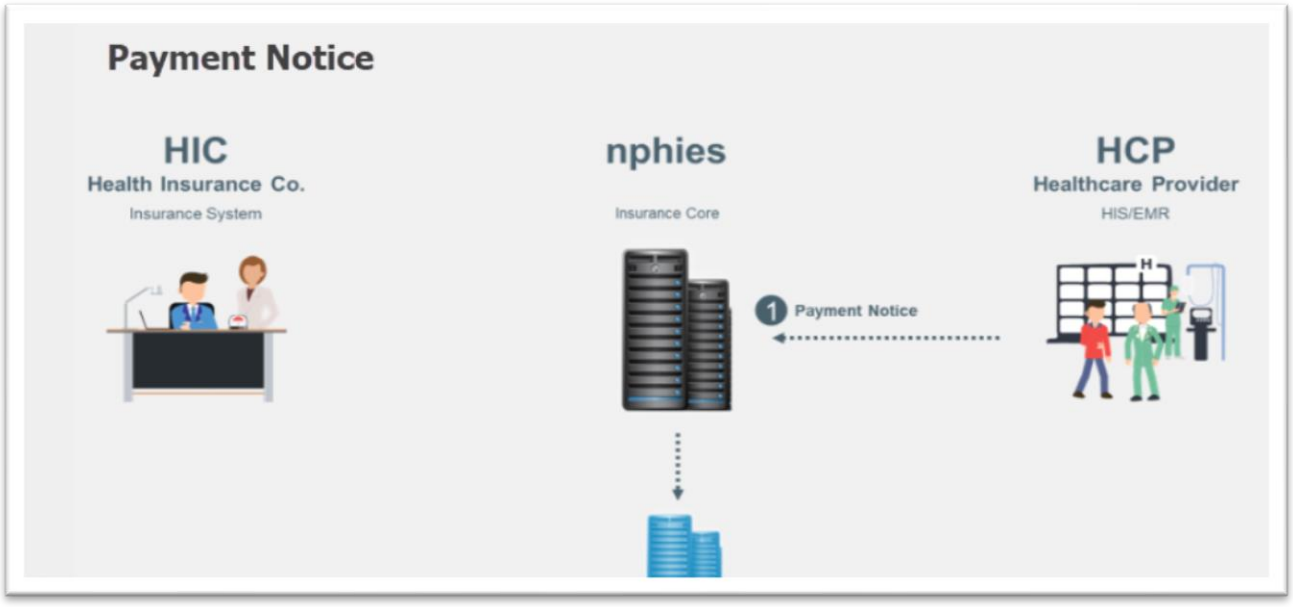

Figure 17: Payment Notice

7.9 Advanced Authorization

- This use case enables HIC to send the Advanced Authorization (Approval) to the HCP without receiving a prior authorization request. This transaction is initiated by HIC for specific scenarios.

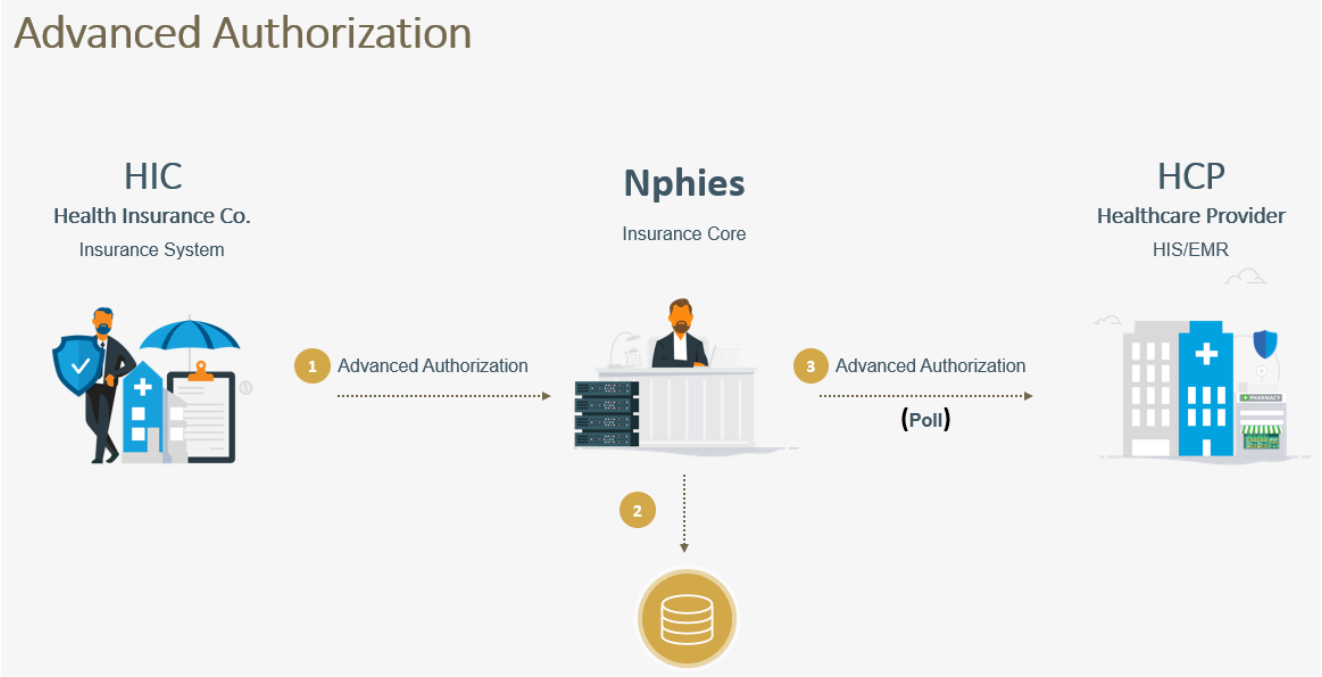

Figure 18: Advanced Authorization

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

7.9.1 Advanced Authorization Examples

Below is the list of possible scenarios of Advanced Authorization use case:

Use Case	Scenarios
Advanced Authorization Use Case	HIC sends the Advanced Authorization to HCP in order to provide required services to the patient. HCP receives Prior Authorization on treatment for a patient without submitting prior authorization. HCP will use Poll Request to fetch the offline responses (APA) available in NPHIES
Modify/add additional item on a received APA	In case HCP intends to modify/add additional item on a received APA from HIC, HCP should send a new prior authorization request including all the approval items (existing and additions/modifications). Keeping the preAuthRef received in the APA. The previous APA is considered overridden by the new prior authorization request
Requesting for modification or extension	In case HCP intends to modify or extend the approval HCP should send a communication linking the business identifier APA in the communication.about explaining the requested changes in the communication.payload HIC will issue another related APA applying the requested changes keeping the same preAuthRef The previous APA is considered overridden by the new one

Table 38: Advanced Authorization Use Case Scenarios

7.9.2 Advanced Authorization Cancellation

This use case enables the HCP or HIC to cancel the Advanced authorization.

- APA can be canelled by **HIC** where the payer will send another response using the same preAuthRefnumber and reissue reason = cancel
- APA can be canceleld by **HCP** using existing task cancellation workflow, Submit a 'cancel-request' where Task.focus = Business Identifier of the Advanced Authorization

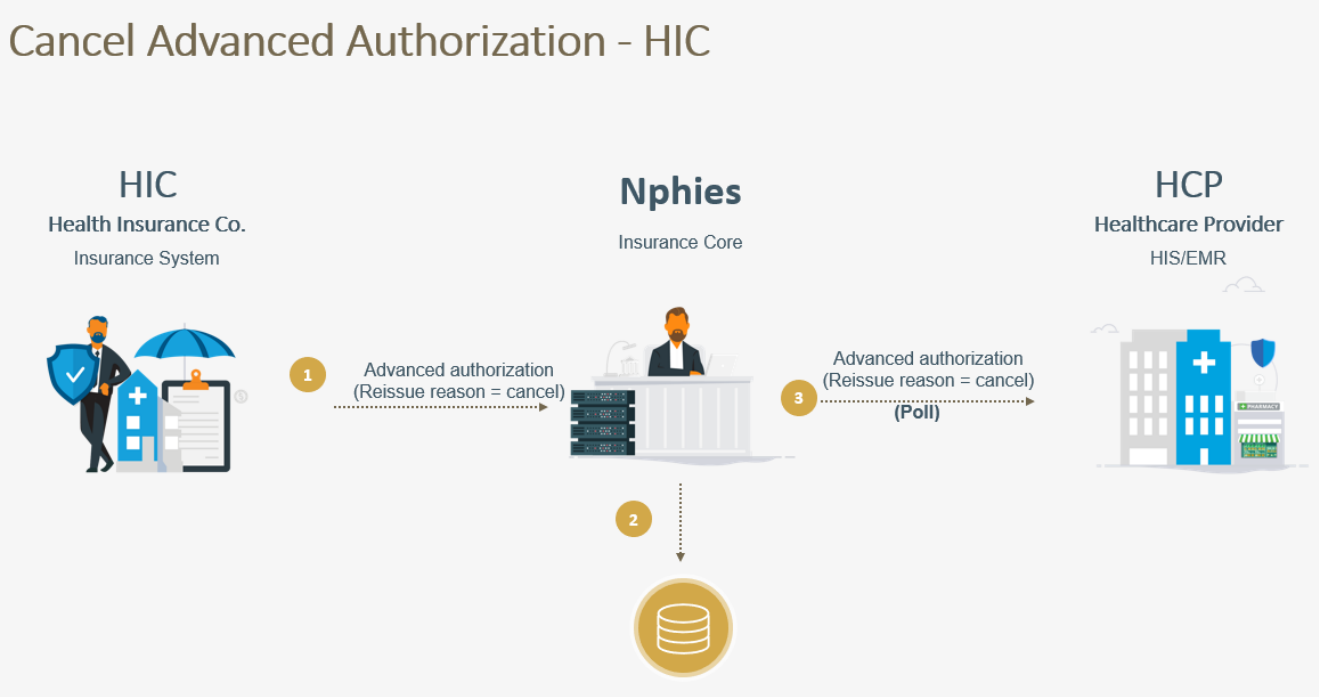

Figure 19: Cancel Advanced Authorization - HIC

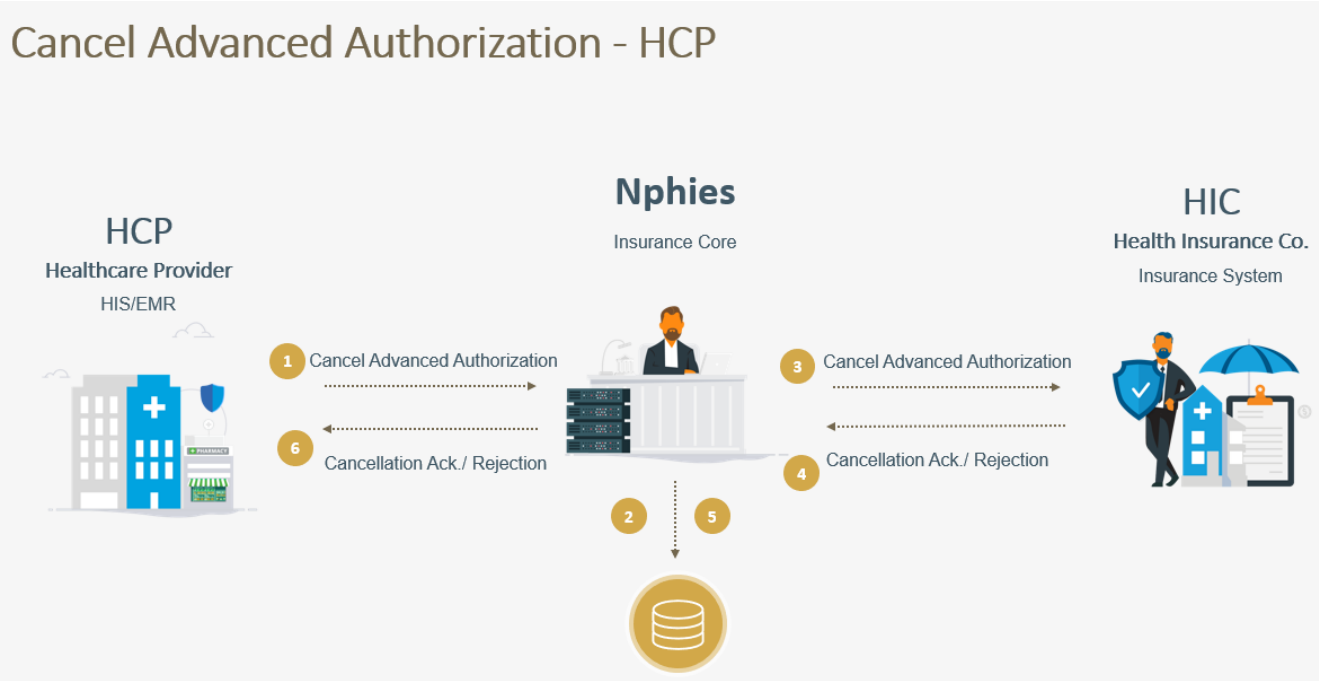

Figure 20: Cancel Advanced Authorization - HCP

7.10 Fraud Notification (FMS)

This use case enables Nphies to send notification message to HIC if any unusual behavior was detected in a claim.

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

Fraud notification will include one or more issue details codes and description for unusual behavior that were detected by NPHIES and analyzed by FMS in relation to the successfully submitted claim to HIC.

- It will only be sent to the payer if only there's an unusual behavior detected.
- Regardless of the response, the payer will receive the Fraud notification message once the claim request is received by the HIC
- OperationOutcome.extension.request resource has the claim identifier for the payer to link between the Claim request and the fraud notification.

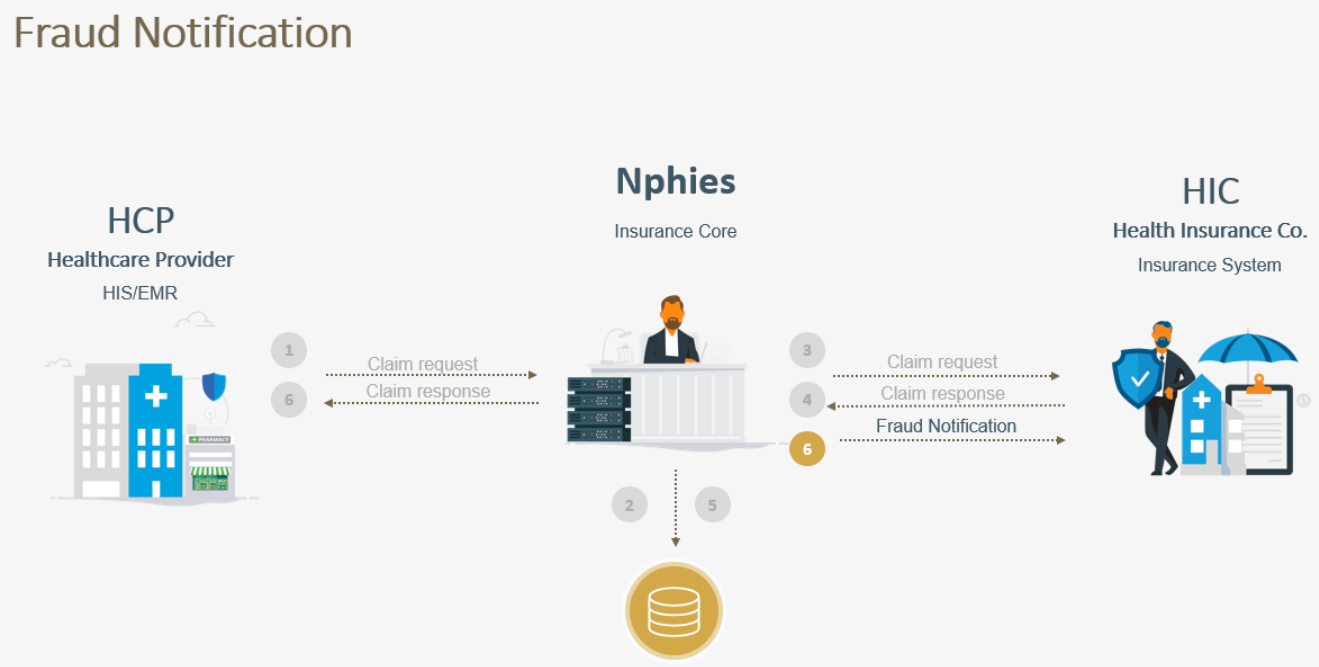

Figure 21:Fraud Notification

7.11 Prescription Verification(Predetermination)

The use case enables the HCP to obtain an initial approval (clinical transaction/non financial approval) from the HIC to proceed with medication prescription using the scientific code using the scientific code for using GTIN (with justification), and the expected payer response is a medical/business advisory response.

1) This transaction contains prescription information such as dosage, frequency, strength..etc.
2) The prescription verification response contains information about the approved duration and does not require financial information.

3) Prescription can include number of refills in Dosage.timing.repeat.count and payer will reply with approved-refill using ClaimResponse.item.adjudication.category to mention number of refills approved
4) Prescriber response preAuthRef (or paper prescription reference number) can be included in the Claim.prescription field on both Prior Authorization and Claim level
5) The prescription response can be a real time or a deferred transaction
6) HIC is allowed to send only one prescription response

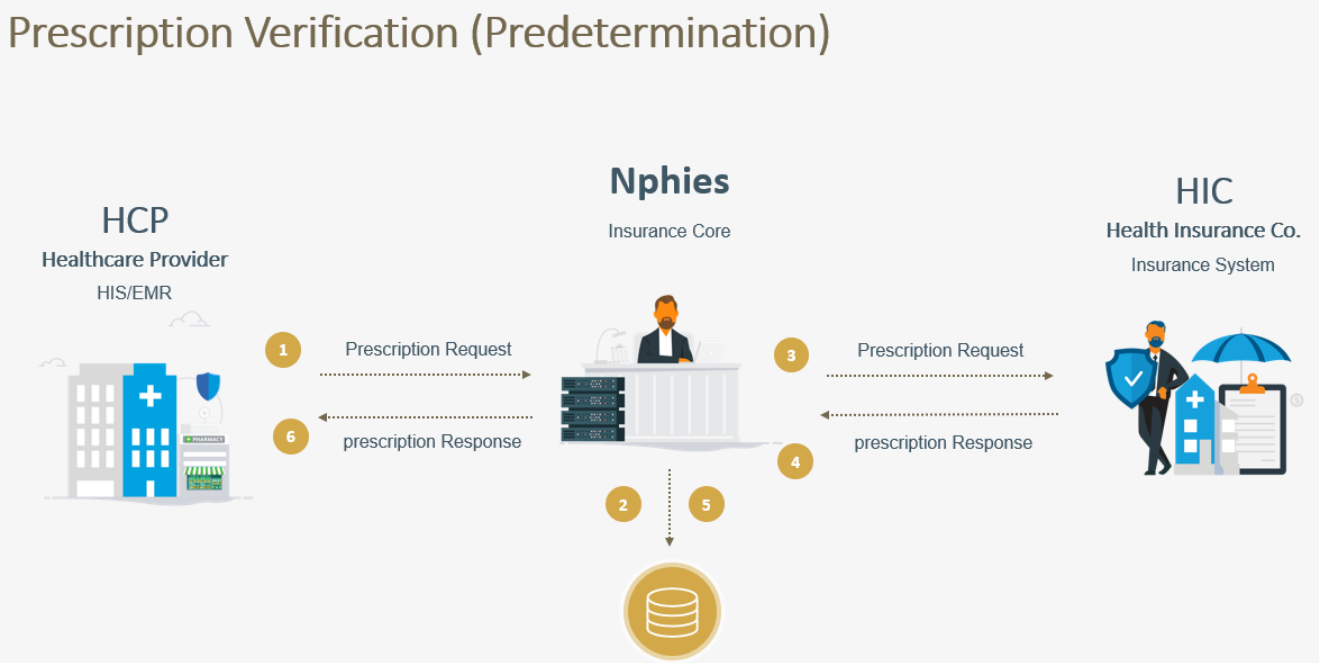

Figure 22:Prescription

7.11.1 Prescription examples

Use Case	Scenarios
Appealing	HCP sends prescription to HIC and receive a partially or fully rejected response. HCP can appeal to change the medical decision form the payer side by sending related prescription using claim.related.relationship = appealing HCP will send the same identical prior authorization again: - Claim.related.relationship = appealing - Providing any supported attachments or comments to justify the appealing reason in the supporting info section HIC will respond back to the appealing prescription request with the same PreAuthRef number used in the initial response

The Council of Cooperative Health Insurance
King Fahd Road, Al Malqa, Riyadh 13524

EMAIL:
CALL CENTER: 92 000 4299
WEBSITE: NPHIES.sa

Use Case	Scenarios
Cancellation	Enable HCP to send Nullify/ Cancel Prescriber Request to HIC. HIC has the ability to acknowledge/reject the cancellation using one of the specified reasons.
Communication	HIC seeks more information from HCP in case any information is missing in the financial transaction such as radiology and laboratory images to support the request from HCP. HCP has the ability to send communication including additional information without request from HIC.
Status check	Enable the HCP to check the processing status of the transaction using the Task resource.
Requesting for prescription with Refills	In case the prescriber wants to issue a prescription which can be dispensed multiple times (Refilled), the prescriber can send the number of requested refills in Dosage.timing.repeat.count HIC in such case is mandated to respond back with number of approved refills indicated in ClaimResponse.item.adjudication.category

Table 39: Prescription Use Case Scenarios

8 SCENARIOS

The example scenarios will explain how different healthcare stakeholders will utilize the Financial transactions. These will also help user in understanding the combination of use cases mentioned in Section 7.

Note:

1. Refer to the Reference Implementation Guide for Scenarios including Actors and Encounters

2. Refer to the Nphies Unified Portal https://portal.nphies.sa/community/dashboard/documents for Sample Messages

9 DATA MODEL

Following FHIR Resources will be used to compose data models for information exchange:

- CoverageEligibilityRequest
- CoverageEligibilityResponse
- Prior Authorization
- Prior Authorization Response
- Claim
- ClaimResponse
- Communication Request
- Communication Response
- Patient
- Coverage
- Organization Payer
- Organization Provider
- Practitioner
- Practitioner Role
- Encounter
- Payment Reconciliation
- Payment Notice
- VisionPrescription
- Location
- Task

The section below provides the breakdown of message structures including information about:

- **Field Name** – The path (Name) of the field (Element) as per FHIR R4 based profile in addition to extensions added to accommodate the localized NPHIES datasets

- **Type** – Value Type as per standard FHIR R4 data element types

- **Card.** – Cardinality of the elements indicating the no. of instances mentioned in the table. Refer to Section 3.2 Cardinality

- **Description** – Text description of the element

- **ValueSet** – The binding ValueSet referring to the CodeSystem and codes allowed for any fields of type CodeableConcepts

Profile Table's Structure is illustrated in the shown image below:

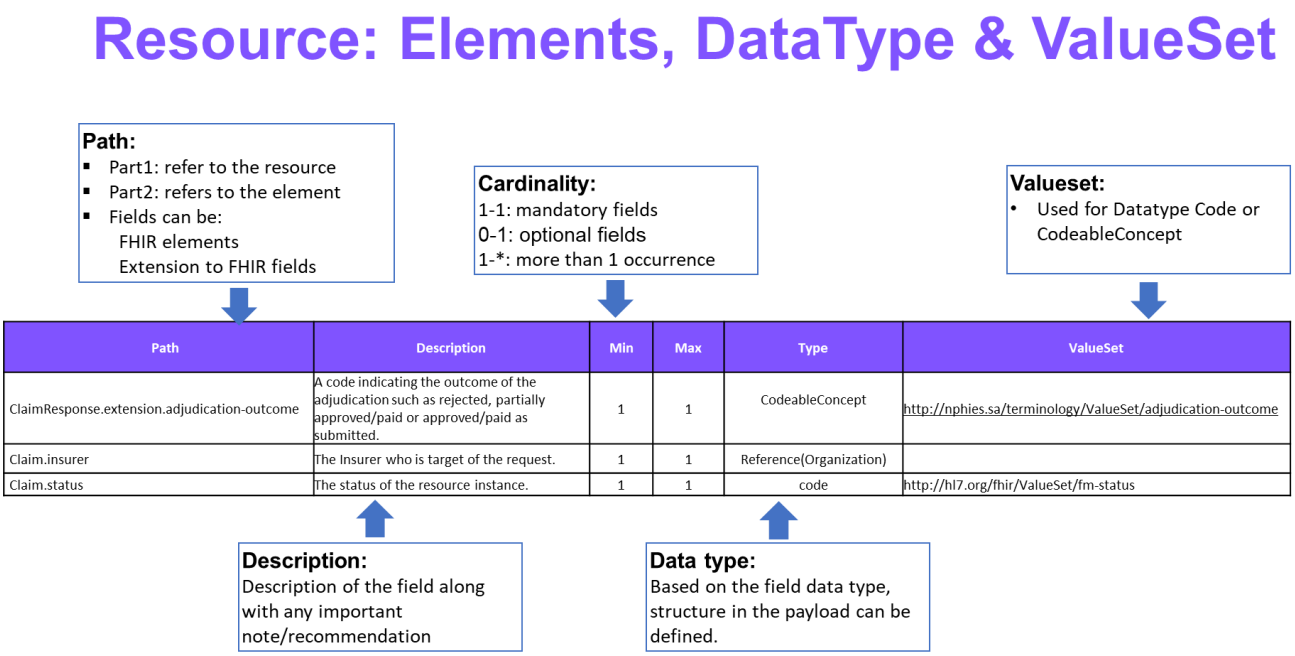

Figure 23: Profile Tables' Structure

9.1 CoverageEligibilityRequest

Eligibility requests enable the HCPs to verify the beneficiary's insurance coverage benefit plans which makes them eligible to receive healthcare services at the given facility. CoverageEligiblityRequest is created using Message Bundle. All related resources must be in the same bundle.

9.1.1 Input

Only HCPs will be able to perform this action.

9.1.1.1 Message Structure: Coverage Eligibility Request

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.1.1.2 Sample Message: CoverageEligibilityRequest

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 40: Sample Message: Coverage Eligibility Request

9.2 CoverageEligibilityResponse

HICs respond to the eligibility request in the form of eligibility response stating whether the included insurance plan, or that located by the insurer, is active as of the requested date and from which the provider can determine whether the patient is eligible for reimbursement of healthcare services at the given facility. CoverageEligibilityResponse is created using a Message Bundle. All related resources must be in the same bundle.

9.2.1 Input

Only HICs can perform this action.

9.2.1.1 Message Structure: Coverage Eligibility Response

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.2.1.2 Sample Message: CoverageEligibilityResponse

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 41: Sample Message: Coverage Eligibility Response

9.3 Prior Authorization

The business process enables the HCP to obtain a prior authorization from the HIC for reimbursement for the delivery of specific services and treatment to be provided to the beneficiary. Prior Authorization typically represents a guarantee of payment for the referenced services. Prior Authorization Request is created through Message Bundle. All related resources must be in the same bundle. There are 5 types of Prior authorization profiles:

1. Institutional
2. Professional
3. Pharmacy
4. Dental
5. Vision

9.3.1 Input

Only HCPs will be able to perform this action.

9.3.1.1 Prior Authorization – Institutional

An implementation profile of the Saudi Claim profile for Institutional Prior Authorizations.

Message Structure: Prior Authorization Profile – Institutional

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents

9.3.1.2 Prior Authorization – Professional

An implementation profile of the Saudi Claim profile for Professional Prior Authorizations (e.g., medical, rehabilitative, allied professionals).

Message Structure: Prior Authorization Profile – Professional

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.3.1.3 Prior Authorization – Pharmacy

An implementation profile of the Saudi Claim profile for Outpatient Pharmacy Prior Authorizations.

Message Structure: Prior Authorization Profile – Pharmacy

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.3.1.4 Prior Authorization – Dental

An implementation profile of the Saudi Claim profile for Outpatient Dental Prior Authorizations.

Message Structure: Prior Authorization Profile – Dental

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.3.1.5 Prior Authorization – Vision

An implementation profile of the Saudi Claim profile for Outpatient Vision Prior Authorizations.

Message Structure: Prior Authorization Profile – Vision

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.3.1.6 Sample Messages:Prior Authorization

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 42: Sample Message:Prior Authorization

9.4 Prior Authorization Response

HICs respond to the Prior Authorization in the form of prior authorization response stating whether the patient is authorized to receive healthcare services at the given facility. CreateAuthorizationResponse is created using Message Bundle. All related resources must be in the same bundle.

9.4.1 Input

Only HICs can perform this action.

9.4.1.1 Message Structure: Prior Authorization Response

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.4.1.2 Sample Message: Prior Authorization Response

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 43: Sample Message: Prior Authorization Response

9.5 Advanced Authorization

HIC submit advanced authorization to HCP for the delivery of different services and treatment. The **Advance Authorization**, is a transaction which is sent by the HIC to HCP where a prior approval is needed to facilitate different business scenarios.

CreateAdvancedAuthorization is created using Message Bundle. All related resources must be in the same bundle.

9.5.1 Input

Only HICs can perform this action.

9.5.1.1 Message Structure: Prior Authorization Response

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.5.1.2 Sample Message: Prior Authorization Response

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 44: Sample Message: Prior Authorization Response

9.6 Prescription Verification (Predetermination)

A prescriber in HCP to submit the Prescription Verification (predetermination) request which includes relevant patient case details and prescription details of the patient to patient's insurance (HIC or TPA).

Prescription details and medication are described using medication scientific code and details (name and description) or GTIN code, for each medication as per prescription verification Profile

9.6.1 Input

Only HCPs can perform this action.

9.6.1.1 Message Structure: Prescription request

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.6.1.2 Sample Message: Prescription request

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

9.7 Prescription Response

HICs respond to the Prescription Verification (predetermination) request submitted by prescriber in HCP in the form of medical/business adjudication/advice or with communication request.

9.7.1 Input

Only HICs can perform this action.

9.7.1.1 Message Structure: Prescription Response

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.7.1.2 Sample Message: Prescription Response

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

9.8 Claim

Claim transactions enable the HCP to send claim related transactions to the HIC for the reimbursement of the amounts agreed to be covered by the HIC for the delivery of the requested service/ treatment to the beneficiary by the HCP. Claim is created using Message Bundle. All related resources must be in the same bundle. There are 5 types of claim profiles:

1. Institutional
2. Professional
3. Pharmacy
4. Dental
5. Vision

9.8.1 Input

Only HCPs can perform this action.

9.8.1.1 Claim – Institutional

An implementation profile of the Saudi Claim profile for institutional Claims (Admitted care: IP and Day Case).

Message Structure: Claim Institutional

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.8.1.2 Claim – Professional

An implementation profile of the Saudi Claim profile for Professional Claims (e.g., Emergency, Outpatient (medical, rehabilitative, allied professionals)).

Message Structure: Claim Professional

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.8.1.3 Claim – Pharmacy

An implementation profile of the Saudi Claim profile for Outpatient Pharmacy Claims.

Message Structure: Claim Pharmacy

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.8.1.4 Claim – Dental

An implementation profile of the Saudi Claim profile for Outpatient Dental Claims.

Message Structure: Claim Dental

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.8.1.5 Claim – Vision

An implementation profile of the Saudi Claim profile for Outpatient Vision Claims.

Message Structure: Claim Vision

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.8.1.6 Sample Messages: Claim

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 45: Sample Message: Claim Bundle

9.9 ClaimResponse

HICs respond to the submitted claims in the form of a claim response to provide the details of the adjudication of the claim with respect to the patient's insurance policy. ClaimResponse is created using Message Bundle. All related resources must be in the same bundle.

9.9.1 Input

A profile of ClaimResponse to provide the response to a Claim request. Only HICs can perform this action.

9.9.1.1 Message Structure: Claim Response

Refer to the message structure of the transaction from excel file *'Profiles',* available on Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.9.1.2 Sample Message: Claim Response

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 46: Sample Message: Claim Response Bundle

9.10 Fraud Notification (FMS)

This process is automatically executed by Nphies in order to identify transactions that match the pre-defined logic of Unusual behavior rules and notify the concerned stakeholders to execute investigation and corrective action if required.

9.10.1 Input

Only NPHIES will be able to perform this action

9.10.1.1 Message Structure: Fraud Notification

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.10.1.2 Sample Message: Fraud Notification

Data Elements
Refer to the Nphies Unified Portal for sample messages in JSON format https://portal.nphies.sa/community/dashboard/documents).

9.11 Communication Request (Additional Info)

HIC seeks more information from HCP in case any information is missing in the financial transaction such as radiology and laboratory images to support the request from HCP. Communication request is created through Message Bundle. All related resources must be in the same bundle.

9.11.1 Input

Only HICs will be able to perform this action.

9.11.1.1 Message Structure: Communication Request Bundle

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.11.1.2 Sample Message: Communication Request

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 47: Sample Message: Communication Request

9.12 Communication (Additional Info)

HCP will reply to the HIC with supporting information. Communication is created through Message Bundle. All related resources must be in the same bundle.

9.12.1 Input

Only HCPs will be able to perform this action.

9.12.1.1 Message Structure: Communication Bundle

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.12.1.2 Sample Message: Communication Response

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 48: Sample Message: Communication Response

9.13 Patient Profile

A Patient resource for the subject of care.

9.13.1 Input

Only HCPs will be able to perform this action.

9.13.1.1 Structure: Patient Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.13.1.2 Sample Message: Patient Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 49: Sample Message: Patient Profile

9.14 Coverage Profile

A coverage resource for conveying the patient's insurance details, example shown below:

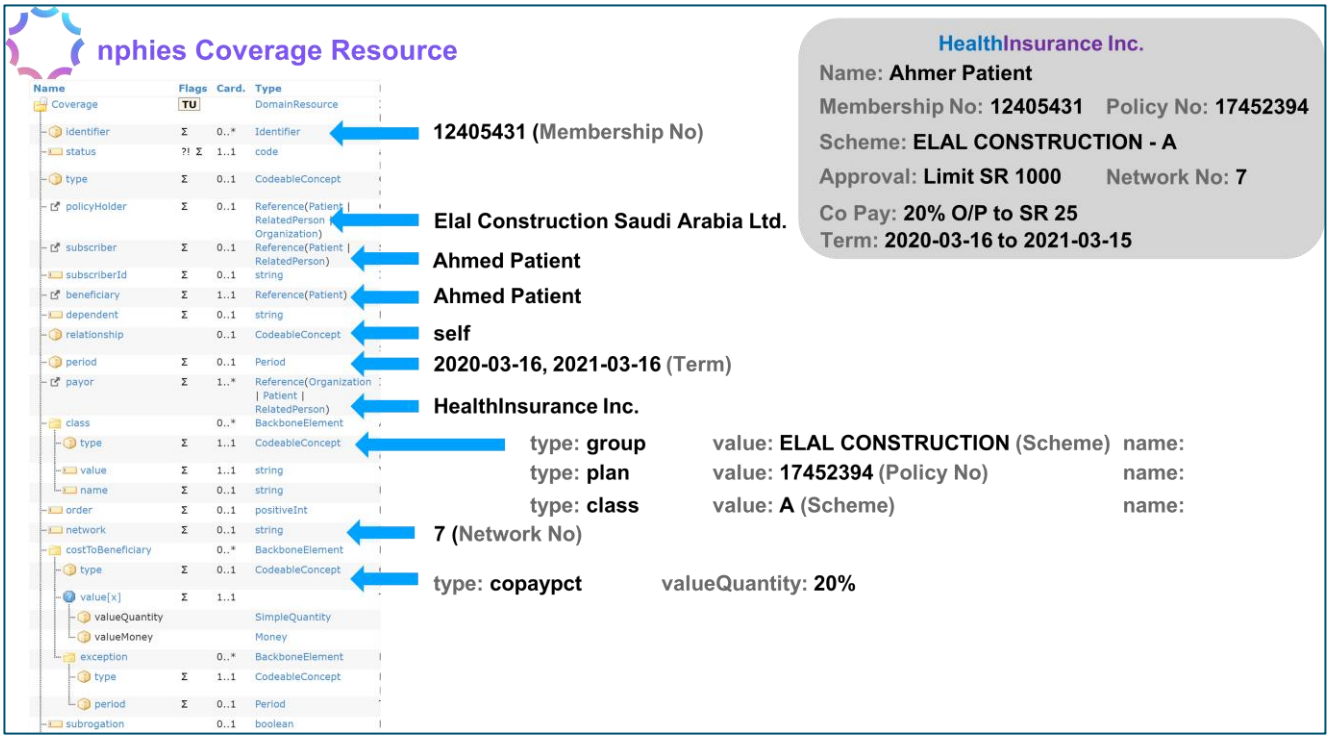

Figure 24: Coverage Resource Example

9.14.1 Input

Both HCPs and HICs will be able to perform this action.

9.14.1.1 Structure: Coverage Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.14.1.2 Sample Message: Coverage Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 50: Sample Message: Coverage Profile

9.15 Organization Payer Profile

An Organization resource for an organization providing healthcare insurance.

9.15.1 Input

Only HICs will be able to perform this action.

9.15.1.1 Structure: Organization Payer Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.15.1.2 Sample Message: Organization Payer Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 51: Sample Message: Organization Payer Profile

9.16 Organization Provider Profile

An Organization resource for an organization providing healthcare services.

9.16.1 Input

Only HCPs will be able to perform this action.

9.16.1.1 Structure: Organization Provider Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.16.1.2 Sample Message: Organization Provider Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 52: Sample Message: Organization Provider Profile

9.17 Practitioner Profile

A Practitioner resource for a person providing healthcare services.

9.17.1 Input

Only HCPs will be able to perform this action.

9.17.1.1 Structure: Practitioner Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.17.1.2 Sample Message: Practitioner Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 53: Sample Message: Practitioner Profile

9.18 Practitioner Role Profile

A profile on PractitionerRole which references the provider (person) working in the context of a provider (organization).

9.18.1 Input

Only HCPs will be able to perform this action.

9.18.1.1 Structure: Practitioner Role

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.18.1.2 Sample Message: Practitioner Role Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 54: Sample Message: Practitioner Role Profile

9.19 Encounter Profile

Encounter Definition: refers to a specific clinical instance or episode during which an insured patient receives healthcare services, and the associated information is documented for the purpose of processing an insurance transaction. The encounter represents and describes the interaction between the insured patient and the healthcare provider, resulting in the provision of medical services or treatments.

Prior Authorization/Claim							
Claim Type	Institutional		Professional				Dental
Claim Subtype	Inpatient [IP]		Outpatient [OP]			Emergency [EMR]	Outpatient [OP]
Encounter Class	Day Case (SS)	Inpatient (IP)	Outpatient (AMB)	Home Care (HH)	Telemedicine (VR)	Emergency (EMER)	Outpatient (AMB)

Prior Authorization

#	Category	Encounter Field Display Name in System	Encounter Field Technical Name [Profile]	Pre-Authorization						
				Institutional		Professional				Dental
				Inpatient [IP]		Outpatient [OP]			Emergency [EMR]	Outpatient [OP]
				Day Case [SS]	Inpatient [IP]	Outpatient [AMB]	Home Care [HH]	Telemedicine [VR]	Emergency [EMER]	Outpatient [AMB]
1	General	Encounter Identifier	Encounter.identifier	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	General	Encounter Status	Encounter.status	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	General	Encounter Class	Encounter.class	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	General	Encounter Start Date	Encounter.period.start	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	General	Encounter End Date	Encounter.period.end	Optional	Optional	Optional	Optional	Optional	Optional	Optional
6	General	Encounter Priority	Encounter.priority	Optional	Optional	Optional	Optional	Optional	Optional	Optional
7	General	Care Type	Encounter.serviceType	Optional	Optional	Optional	Optional	Optional	Optional	Optional
8	General	Cause of Death	Encounter.extension.causeOfDeath	Optional	Optional	Optional	Optional	Optional	Optional	Optional
9	General	Service Event Type	Encounter.extension.serviceEventType	No	No	Yes	Yes	Yes	Yes	Yes
10	Emergency	Emergency Arrival Code	Encounter.extension.emergencyArrivalCode	No	No	No	No	No	Optional	No
11	Emergency	Emergency Service Start Date	Encounter.extension.emergencyServiceStart	No	No	No	No	No	Optional	No
12	Emergency	Triage Category	Encounter.extension.triageCategory	No	No	No	No	No	Yes	No
13	Emergency	Triage Date	Encounter.extension.triageDate	No	No	No	No	No	Yes	No
14	Emergency	Emergency Department Disposition	Encounter.extension.emergencyDepartmentDisposition	No	No	No	No	No	Optional	No
15	Hospitalization	Admission Specialty	Encounter.hospitalization.extension.admissionSpecialty	Optional	Optional	No	No	No	No	No
16	Hospitalization	Admit Source	Encounter.hospitalization.admitSource	Optional	Optional	No	No	No	No	No
17	Hospitalization	Readmission	Encounter.hospitalization.reAdmission	Optional	Optional	No	No	No	No	No
18	Hospitalization	Origin	Encounter.hospitalization.origin	Optional	Optional	No	No	No	No	No
19	Hospitalization	Intended Length of Stay	Encounter.hospitalization.extension.intendedLengthOfStay	No	No	No	No	No	No	No
20	Hospitalization	Discharge Specialty	Encounter.hospitalization.extension.dischargeSpecialty	Optional	Optional	No	No	No	No	No
21	Hospitalization	Discharge Disposition	Encounter.hospitalization.dischargeDisposition	Optional	Optional	No	No	No	No	No

Claim

#	Category	Encounter Field Display Name in System	Encounter Field Technical Name [Profile]	Condition(s)	Claim						
					Institutional		Professional				Dental
					Inpatient [IP]		Outpatient [OP]			Emergency [EMR]	Outpatient [OP]
					Day Case [SS]	Inpatient [IP]	Outpatient [AMB]	Home Care [HH]	Telemedicine [VR]	Emergency [EMER]	Outpatient [AMB]
1	General	Encounter Identifier	Encounter.identifier		Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	General	Encounter Status	Encounter.status		Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	General	Encounter Class	Encounter.class		Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	General	Encounter Start Date	Encounter.period.start		Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	General	Encounter End Date	Encounter.period.end	Mandatory if Discharge Disposition or Discharge Specialty is entered Or if Emergency Department Disposition is entered	Conditional	Conditional	Optional	Optional	Optional	Optional	Optional
6	General	Encounter Priority	Encounter.priority		Optional	Optional	Optional	Optional	Optional	Optional	Optional
7	General	Care Type	Encounter.serviceType		Optional	Optional	Optional	Optional	Optional	Optional	Optional
8	General	Cause of Death	Encounter.extension.causeOfDeath	Mandatory if Discharge Disposition is "died". Or if Emergency Department Disposition is "DED" or "DOA".	Conditional	Conditional	Optional	Optional	Optional	Conditional	Optional
9	General	Service Event Type	Encounter.extension.serviceEventType		No	No	Yes	Yes	Yes	Yes	Yes
10	Emergency	Emergency Arrival Code	Encounter.extension.emergencyArrivalCode		No	No	No	No	No	Yes	No
11	Emergency	Emergency Service Start Date	Encounter.extension.emergencyServiceStart		No	No	No	No	No	Yes	No
12	Emergency	Triage Category	Encounter.extension.triageCategory		No	No	No	No	No	Yes	No
13	Emergency	Triage Date	Encounter.extension.triageDate		No	No	No	No	No	Yes	No
14	Emergency	Emergency Department Disposition	Encounter.extension.emergencyDepartmentDisposition		No	No	No	No	No	Yes	No
15	Hospitalization	Admission Specialty	Encounter.hospitalization.extension.admissionSpecialty		Yes	Yes	No	No	No	No	No
16	Hospitalization	Admit Source	Encounter.hospitalization.admitSource		Yes	Yes	No	No	No	No	No
17	Hospitalization	Readmission	Encounter.hospitalization.reAdmission		Optional	Optional	No	No	No	No	No
18	Hospitalization	Origin	Encounter.hospitalization.origin		Optional	Optional	No	No	No	No	No
19	Hospitalization	Intended Length of Stay	Encounter.hospitalization.extension.intendedLengthOfStay		Yes	Yes	No	No	No	No	No
20	Hospitalization	Discharge Specialty	Encounter.hospitalization.extension.dischargeSpecialty	Mandatory if Encounter End Date or Discharge Disposition is entered	Conditional	Conditional	No	No	No	No	No
21	Hospitalization	Discharge Disposition	Encounter.hospitalization.dischargeDisposition	Mandatory if Encounter End Date or Discharge Specialty is entered	Conditional	Conditional	No	No	No	No	No

Emergency definition: Is the encounter where the patient is taking services within the emergency department according to the urgency of their need for care.

- For additional encounter updates and emergency added field, refer to table:

Triage definition: is an MOH systematic process used in healthcare settings, particularly in emergency departments, to prioritize and categorize patients based on the severity of their medical conditions.

Scenario	Claim Type	Claim Subtype	Encounter Class	Triage Category
Emergency room treatment with life threatening condition with/without subsequent hospital admission (died or transferred to another hospital)	Professional	EMR	EMER	1 Immediate resuscitation 2 Very Urgent 3 Urgent
Emergency room treatment for non-life-threatening condition with/without subsequent hospital admission	Professional	EMR	EMER	4 Standard ER 5 non-Urgent

Triage Category	Definition
Immediate resuscitation	Patients who require immediate life-saving interventions to maintain adequate oxygenation, perfusion, and/or neurological function.
Very Urgent	Patients who require urgent medical attention but are not in immediate danger of life or limb.
Urgent	Patients who require prompt medical attention but are not in immediate danger of life or limb.
Standard ER	Patients who require evaluation and treatment for non-life-threatening conditions
Non-Urgent	Patients who do not require immediate medical attention and can be seen by a primary care provider in the near future.

Notes :

- For the following fields: **Encounter.extension.triageDate, Encounter.period, Encounter.extension.emergencyServiceStart:** Date time format up to seconds SHALL be mandatory. If seconds are not available, they can be defaulted to zero while minutes must be provided.

- These are important definitions related to Encounter:

Field	Definition
Encounter.extension.emergencyArrivalCode	The method how the patient came to the emergency department
Encounter.extension.emergencyServiceStart	The exact date & time when patient start availing the service at the emergency department
Encounter.extension.emergencyDepartmentDisposition	Category or kind of location after discharge from emergency department

Encounter.extension.triageCategory	The appropriate level of care for a patient based according to the urgency of their need for care
Encounter.extension.triageDate	The exact date & time when the triage category for patient was determined at the emergency department
Encounter.extension.causeOfDeath	The cause of death of the patient
Encounter.extension.serviceEventType	To classify if the visit is a first or subsequent visit.
Encounter.hospitalization.extension.admissionSpecialty	The specialty of the doctor who admitted the patient.
Encounter.hospitalization.extension.dischargeSpecialty	The specialty of the doctor who discharged the patient.
Encounter.hospitalization.extension.intendedLengthOfStay	The intended Length of stay at the time of the admission.
Encounter.period	The start and end time of the encounter.

- Encounter.period.end is optional unless Encounter.hospitalization.dischargeDisposition (or Encounter.extension.emergencyDepartmentDisposition) and Encounter.hospitalization.extension.dischargeSpecialty are present.
- If Encounter.hospitalization.extension.dischargeSpecialty is provided ,then Encounter.hospitalization.dischargeDisposition and Encounter.period.end should be provided.
- The last two mentioned notes are based on the following:
    - Encounter.hospitalization.dischargeDisposition and Encounter.period.end SHALL be provided when claim.use="claim", encounter.class ="IMP or "SS" and Encounter.hospitalization.extension.dischargeSpecialty is provided
    - Encounter.period.end SHALL be provided when Encounter.hospitalization.dischargeDisposition exist when claim.use="claim", encounter.type ="IMP or "SS"
    - Encounter.extension.emergencyDepartmentDisposition SHALL be provided when Encounter.class ="EMER" and claim.use= "claim" and encounter.period.end is provided
    - Encounter.hospitalization.extension.dischargeSpecialty SHALL be provided when claim.use="claim",encounter.type ="IMP or "SS" and encounter.period.end is provided

- Encounter.hospitalization.dischargeDisposition SHALL be provided when claim.use="claim", encounter.type ="IMP or "SS" and encounter.period.end is provided

9.19.1 Input

Only HCPs will be able to perform this action.

9.19.1.1 Structure: Encounter Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on UnifiedPortal (https://portal.nphies.sa/community/dashboard/documents).

9.19.1.2 Sample Message: Encounter Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 55: Sample Message: Encounter Profile

9.20 Payment Reconciliation

This is to enable the HIC to notify the appropriate HCP that the payment for adjudicated claim(s) has been submitted by them and provides the details of the payment. PaymentReconciliation is created through Message Bundle. All related resources must be in the same bundle.

9.20.1 Input

Only HICs will be able to perform this action.

9.20.1.1 Message Structure: Payment Reconciliation

A profile of PaymentReconciliation to convey payment and the allocation details of the payment.

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.20.1.2 Sample Message: Payment Reconciliation

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 56: Sample Message: Payment Reconciliation

9.21 Payment Notice

This is to enable the HCP to notify NPHIES that a submitted 'Payment Advice' has been received and payment processed by the HIC. Payment Notice is created through Message Bundle. All related resources must be in the same bundle.

9.21.1 Input

Only HCPs will be able to perform this action.

9.21.1.1 Message Structure: Payment Notice

A profile of Payment Notification to advise that payment has been received.

Refer to the message structure of the transaction from excel file *'Profiles',* available on UnifiedPortal (https://portal.nphies.sa/community/dashboard/documents).

9.21.1.2 Sample Message: Payment Notice

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 57: Sample Message: Payment Notice

9.22 VisionPrescription Profile

The VisionPrescription resource provides the information requirements for a prescription for glasses and contact lenses for a patient.

9.22.1 Input

HCPs can perform this action.

9.22.1.1 Structure: VisionPrescription Profile

A profile on the VisionPrescription resource.

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.22.1.2 Sample Message: VisionPrescription Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 58: Sample Message: VisionPrescription

9.23 Task Profile

A task resource describes an activity that can be performed and tracks the state of completion of that activity. It is a representation that an activity should be or has been initiated, and eventually, represents the successful or unsuccessful completion of that activity.

9.23.1 Input

HIC and HCP can perform this action.

9.23.1.1 Task Usage

Summary of the values to be used in the Task profile fields for different scenarios.

Task	PollRequest	PollResponse	Cancel Request	Cancel Response	Check-Status Request	Check-Status Response
Task.status	requested	completed, failed	requested	completed, failed	requested	completed, failed
Task.intent	order	order	order	order	order	order
Task.priority	routine	routine	routine	routine	routine	routine
Task.code	poll	poll	cancel, nullify	cancel, nullify	status	status
Task.focus			Required	Required	Required	Required
Task.reasonCode			WI, NP, TAS	WI, NP, TAS		
Task.input						
Task.input.type	include-message-type, exclude-message-type, count, period	include-message-type, exclude-message-type, count, period				
Task.input.value[x]	- if "include-message-type": valueCodeableConcept from the resourceTypes valueSet (http://hl7.org/fhir/ValueSet/resource-types) - if "exclude-message-type":	- if "include-message-type": valueCodeableConcept from the resourceTypes valueSet (http://hl7.org/fhir/ValueSet/resource-types) - if "exclude-message-type": valueCodeableConcept from the resourceTypes valueSet (http://hl7.org/fhir/ValueSet/resource-types)				

	valueCodeableConcept from the resourceTypes valueSet (http://hl7.org/fhir/ValueSet/resource-types) - if "count": integer - if period: Period	- if "count": integer - if period: Period				
Task.output						
Task.output.type		error, response		error		error, status
Task.output.value[x]		- if error: valueCodeableConcept - from the adjudication-outcome valueset (http://Nphies.sa/terminology/ValueSet/adjudication-error) - if response - valueReference referencing the Bundle included in the ResponseMessage Bundle		valueCodeableConcept - from the adjudication-outcome valueset		- if error: valueCodeableConcept - from the adjudication-outcome valueset - if status - valueCodeableConcept http://hl7.org/fhir/ValueSet/remittance-outcome
Task.output.valueCodeableConcept.extension.						
Task.output.valueCodeableConcept.extension.expression		if task.output.type = "error"		if task.output.type = "error"		if task.output.type = "error"

Table 59: Task Usage

9.23.1.2 Structure: Task Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on Nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.23.1.3 Sample Message: Task Profile

Data Elements
Refer to Nphies Unified Portal for sample messages in JSON format (https://portal.nphies.sa/community/dashboard/documents).

Table 60: Sample Message: Task Profile

9.24 Location (Department) Profile

A Location includes both incidental locations (a place which is used for healthcare without prior designation or prior authorization) and dedicated, formally appointed locations and it can also be used to refer to the department name in the facility.

9.24.1 Input

HIC and HCP can perform the action.

9.24.1.1 Structure: Location (Department) Profile

Refer to the message structure of the transaction from excel file *'Profiles',* available on nphies Unified Portal (https://portal.nphies.sa/community/dashboard/documents).

9.24.1.2 Sample Message: Location Profile

Data Elements
Refer to nphies Unified Portal for sample messages in JSON/XML format (https://portal.nphies.sa/community/dashboard/documents).

Table 61: Sample Message: Location Profile

9.25 Error Codes

Please refer to the "Appendix=adjudication-error" list in the codeable concept document in the Nphies Unified Portal:

https://portal.nphies.sa/community/dashboard/documents

SUPPORT INFORMATION:

For any inquiries, recommendations, or complaints, please contact any of the below mentioned email addresses:

- Al-Tamimi, Nour <nal-tamimi@jo.imshealth.com>
- Mansour Al Jundi <dr.aljundi@gmail.com>
- Awal, Melinda <mawal@ae.imshealth.com>
- Abdelrahim, Tarek <TAbdelrahim@ae.imshealth.com>

Please use the format below:

Subject: NPHIES Implementation Guide Document

Body: Please refer to the Section, Page Number, Table, Image related to the provided comment.

We will make sure to revise all comments and needed updates.

Thank you.

Process to address the inquiries, recommendations, or complaints will be:

- CHI/ Market will send inquiries/ issues details to the account manager. (email addresses listed above in the section)
- Account managers will check if they are able to answer the issue or inquiry.
- In case they are not able to do so immediately, they will open a ticket on IQIVA service desk, and the incident management process will be followed.