

**Characterization of the interface for checking
liabilities (Form 17)
Between HMOs and Hospitals
(Application in Leumit Health Fund)**

FHIR-4.03 API

Version: 7

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1 Track changes

Date	Version	Detail
2021-06-12	2.0	Characterization of response - CoverageEligibilityResponse
		Added a URI for a coverage number
		Added a URI for a UUID ID
		List of HTTP Status codes
2021-07-01	3.0	Added a URI for error codes
		Fixed nesting error codes in Response(error.coding >> error.code.coding)
		Added an extension for the "issue-regards" error array
2021-07-22	4.0	Added an element CoverageEligibilityResponse.insurance.coverage.reference
		Added full bundle examples (Request + Response)
		Replaced the CPT URI with the MOH Service Code URI
		Added an object CoverageEligibilityResponse.insurance.item.benefit
		Israel-CoreURI's patch for gov.il extension
		Added Coverage resource
2022-02-20	5.0	Added section 4.4 with explanation and technical details about Extension
2022-10-19	6.0	Update the document for implementation in Leumit Health Fund: <ol style="list-style-type: none"> Updating the business process (identification by ID and error reporting) Added detailed error codes C coverage resource update(coverage type, adjustments for interoperability needs) Gaps: <ol style="list-style-type: none"> Diagram validation vs. national information flow. CORE approval for changes to the Coverage profile

2022-10-30	6.1	Updating basic conditions, adding an additional identification process.
2022-11-02	6.2	Infrastructural diagram update for low-level environments
2022-11-08	7	Adding REST service characterization (Leumit) to interface management vis-à-vis AS400 Add source-target mappings (section 8)
2022-11-28	7.1	Updated REST service characterization
2023-01-08	7.2	Fixed examples after the implementation process was completed. Completion of Chapter – Base URI 4.1

2 Business process

2.1 Process Partners

2.1.1 Insurer

HMO

2.1.2 patient

A patient who meets the following criteria:

- Insured by one of the HMOs.
- A holder of an Israeli identity card and/or passport, as well as an HMO member card.
- The patient booked an appointment in advance for one of the hospital services.

2.1.3 Hospital service

For services decided upon between the parties

2.2 Basic conditions for the process

A kiosk station that allows the swiping of an HMO magnetic card.

2.3 Additional processes

As part of the project, another identification process will be implemented according to the insured's business ID (for example: according to the ID number).

This process is not a necessary condition for implementing the process.

The requirements are:

1. A kiosk station that allows the entry of a business ID of the insured person (ID) combined with a two-factor authentication mechanism (2FA) through OTP. Prerequisites for the existence of this type of identification process are:
 - The existence of a mobile phone number in the hospital's EHR system
 - An interface that allows sending OTP to the insured person's mobile phone and verifying the OTP after entering it on the kiosk screen.
2. Process development / interface by CallFlow

2.4 Process description

Glossary note: The term “Shaban”, which will appear several times in the document henceforth, is a Hebrew abbreviation for the term “Additional health services”, i.e., health services supplied by the HMO for patients willing to pay a higher premium.

A health plan policy holder who has booked an appointment for service at the hospital arrives at the reception area (a patient without an appointment does not participate in the process and will go to the manned reception station in order to check the possibility of receiving service).

Identification of the patient: The patient swipes an HMO card at a service station (**a process for immediate implementation**) or identifies themselves by means of an ID card and OTP. (**a process that is contingent on the development of the interface on the Ichilov side**)

The system receives the patient's identification by transferring the card and/or typing identification data (ID and OTP) manually into the system at the service station. The identification of the insurer (HMO) is done according to the patient's demographic data. In the case of a non-Israeli citizen, the card carries an internal health plan identification number that is not shared by other health organizations, and therefore the patient will be referred for human service at a reception desk.

If the system at the service station does not detect a summons to the service, the system will refer the patient to receive human service at a reception desk.

After successfully completing the identification, the system makes a request to the HMO to check for insurance coverage (Form 17).

The request includes requested service codes, according to the details of the booked appointment. The HMO checks whether there is a coverage for these service codes and returns a response.

Types of possible responses:

- Approval of a request. The approval will also include data about the request (the maximum number of uses permitted for the requested service, the deductible, the type of coverage - Shaban / Basket)
- Refusal of the request that includes the code and a description of the reason for the refusal
- Technical error (interface)

If the request is approved, the patient receives an appointment for clinician treatment.

The undertaking is retained for the purpose of closing the accounting at another time.

If the request is not approved, the patient is referred to an appointment with the receptionist. A note with a T.R. number will contain the code and description of the S.Y. in it for the refusal of the request.

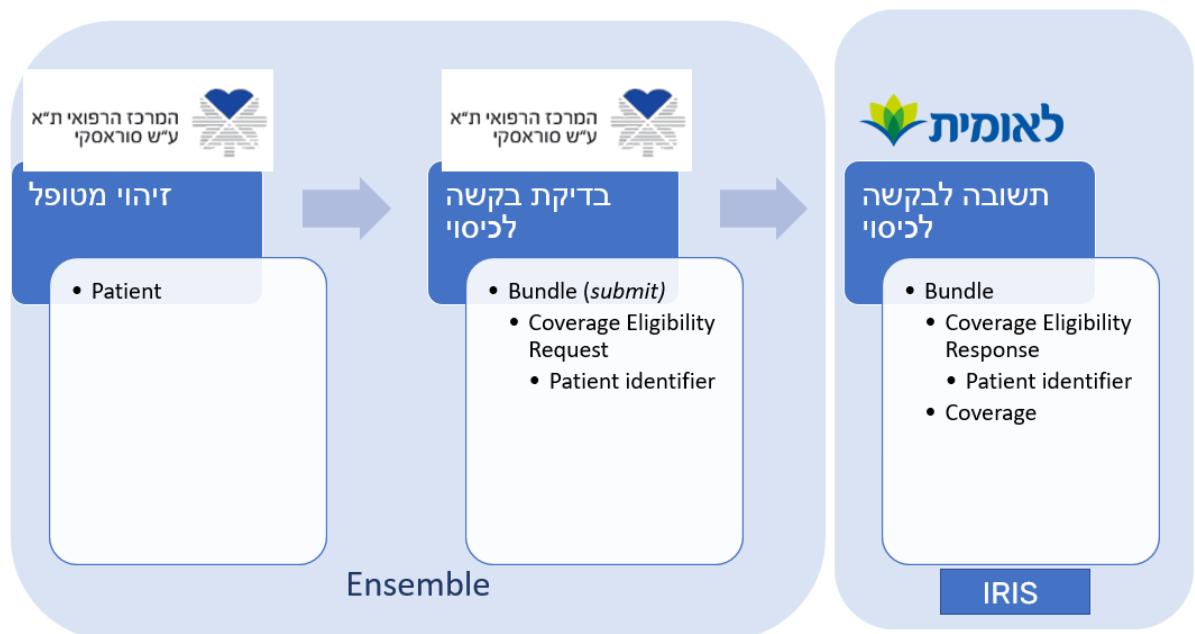
(This functionality requires further development of the QFLOW system on the Ichilov side and is not a condition for the implementation of the process)

There may be the following reasons:

- "Unidentified insured" (insured person not found in the health plan systems according to business ID)
- "No coverage found for the service"
- "A partial coverage was found" (The amount requested for an item in the request > the amount that appears in the commitment)

3 Solution concept

3.1 FHIR data model



3.2 Architecture

In this project, neither party is required to set up a FHIR server in the full sense of the word, but both should assign an address for such a future server. At this stage, these addresses will serve as a basis for generating the one-to-one IDs of the resources of both parties, and for the receiving party (the HMO) this address is also the basis for the HTTP endpoint that it exposes.

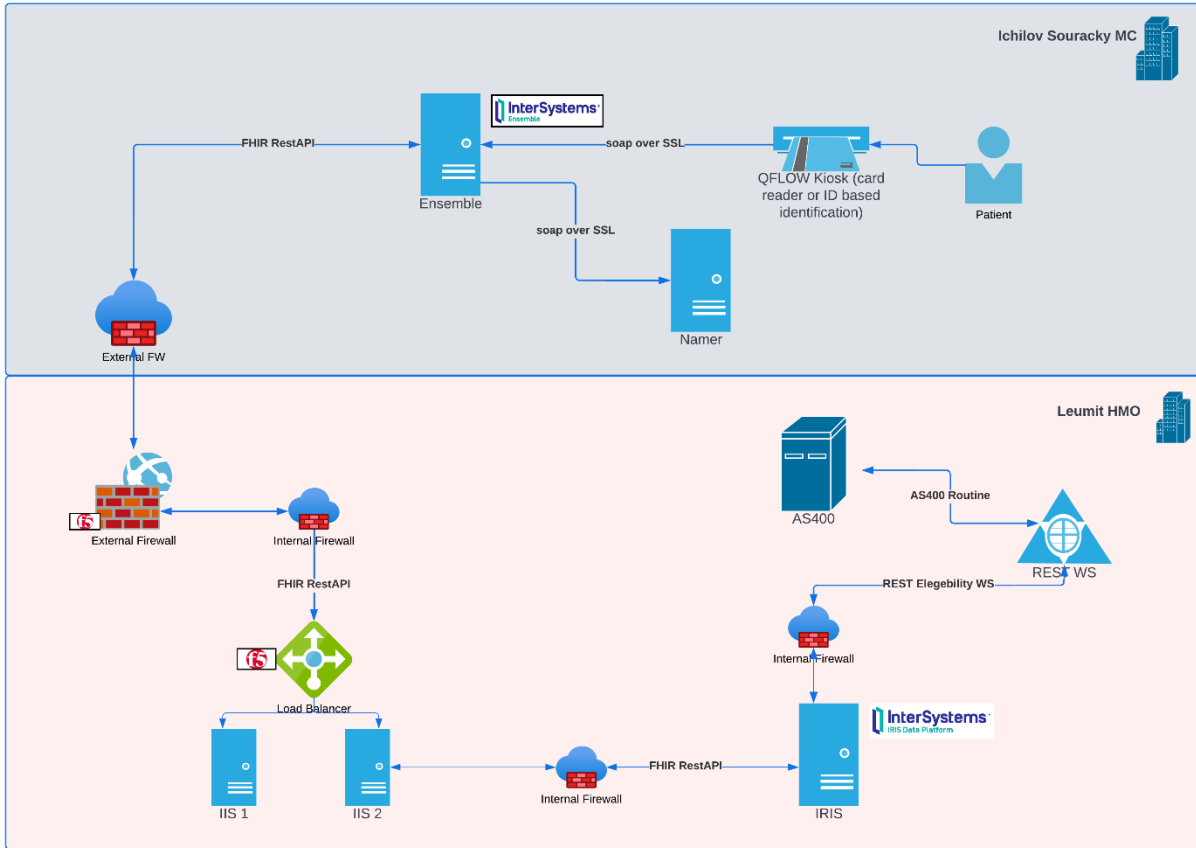
The sending party (hospital) does not need to disclose an endpoint at this stage of the project, but as mentioned above the recommendation is to do so in the future under the Base URL configured for this interface.

Logically, the very fact that the API is exposed by the receiving party creates a "FHIR server", which is limited to the following features only:

1. FHIR version 4.0.3
2. JSON format
3. Action \$submit for the resources:
 - a. Bundle
 - b. CoverageEligibilityRequest
 - c. Claim(future)
4. Return of resources:
 - a. Bundle
 - b. CoverageEligibilityResponse
 - c. ClaimResponse (future)
 - d. Coverage

The recommendation is that any future expansion of FHIR capabilities beyond the above will be performed under the same Base URL.

The following is a diagram of the flow of information:



4 Data Infrastructure

4.1 Base URL

Each party of the interface must have a set base address. For each party, this address has a slightly different meaning at this stage of the project, but in the long run it will mean the same – it's the address of the enterprise FHIR server.

Separate addresses should be assigned to each environment (development, test, production, etc.).

Examples:

<http://hapi-fhir.outburn.co.il/fhir>

<https://fhir.tlvmc.gov.il>

<https://leumit.co.il/fhir>

<https://fhir-dev2.tlvmc.gov.il>

Environment/ Organization	Leumit	Ichilov
DEV	https://vdfhirweb.leumit.co.il/fhir	
QA	https://vqafhirweb.leumit.co.il/fhir	
PRE PROD		
PROD		

In this document, we will refer to the parties' Base URL as [ClientBase](hospital) and [ServerBase](HMO).

4.2 HTTP Codes

As long as no **technical** error has occurred in the service, 200 OK must be returned, even if no coverage is found, or coverage is found to be invalid. Business errors will be returned in the body of the answer in the appropriate places.

If any technical error has occurred, error codes 4xx or 5xx should be returned depending on the type of error. The body of the answer in such a case will be empty.

4.3 URI's List

Each type of business identifier or coding system must have an agreed-upon URI. Some of these URIs exist, such as that of the CPT coding system or an Israeli identity card. Encodings and/or local identifiers of each party (such as a fictitious ID identifying a tourist in Leumit, or Ichilov I-codes) will require the assignment of a URI under the domain of the organization responsible for the coding system.

While the URI structure in FHIR is usually constructed as a URL, it doesn't necessarily have to be an available URL. In fact, this is a one-to-one ID for Namespace.

Unlike Base URLs (ServerBase, ClientBase), Uri's do not change from environment to environment, and "live" under an insecure protocol (http, not https).

Coding System / ID	URI	Classification	commentary
Israeli ID	http://fhir.health.gov.il/identifier/il-national-id	IL-CORE	9 digits with leading zeros
Palestinian ID	http://fhir.health.gov.il/identifier/pna-national-id	IL-CORE	
Passport number	http://hl7.org/fhir/sid/passport-[xxx]	HL7	[xxx] is the country code according to ISO-3166 (3 characters)
Fictitious I.D. (Leumit)	http://fhir.leumit.co.il/identifier/mrn	LOCAL	
Magnetic card number (Leumit)	http://fhir.leumit.co.il/identifier/magnetic-card	LOCAL	
Legal entity number	http://fhir.health.gov.il/identifier/legal-entity	IL-CORE	Number of Bn/Assoc./ non-profit etc.
MoH Service Code	http://fhir.health.gov.il/cs/medical-service-moh	IL-CORE	Replaces the CPT URI in light of the MOH decision
License in medical professions	http://practitioners.health.gov.il/Practitioners	IL-CORE	To use a license number as a business ID, it must be transferred in the full format including the prefix. For example: 1-482745
Long-term care license	http://practitioners.health.gov.il/Nurses	IL-CORE	No prefix
I Codes (Ichilov)	http://fhir.tlvmc.gov.il/cs/i-code	LOCAL	
Application ID / Application	http://fhir.tlvmc.gov.il/identifier/prev-auth-req-no	LOCAL	
UUID	urn:iETF:rfc:3986	HL7	When using UUIDs as an identifier, include the prefix <code>urn:uuid:</code> example: <code>urn:uuid:0c3151bd-1cbf-4d64-b04d-cd9187a4c6e0</code>

Commitment number (Leumit)	http://fhir.leumit.co.il/identifier/obligation-num	LOCAL	
Error codes for handling	http://fhir.leumit.co.il/cs/obligation-treatment-error	LOCAL	Depending on the list of errors
Collection type code	http://terminology.hl7.org/CodeSystem/coverage-copay-type	LOCAL	Code for deductible
Code describing the type of information described in the Coverage resource (pledge / Shaban programs)	http://fhir.health.gov.il/cs/coverage-type	IL-CORE	CORE staff approval required
Shaban / Basket identification code	http://fhir.health.gov.il/cs/coverage-class	IL-CORE	CORE staff approval required

4.4 Extensions

As part of the project, the need arose to define an extension for the purpose of linking a specific recurring error code with the service code. In a "standard" manner – the set of errors is returned through the entire answer and therefore it is not possible to specify the service code to which it refers for each error in the array (except as part of the text of the error).

The extension defined is generic and suitable for use in other scenarios as well (for example – in search results).

It is important to note that the use of the extension is intended only for errors relating to a particular service code and not for general errors such as "invalid magnetic card" or "unfamiliar patient".

Technical details:

Canonical URL: <http://fhir.outburn.co.il/StructureDefinition/issue-regards>

Simplifier Page: <https://simplifier.net/outburn/issueregards>

Definition: <http://hapi-fhir.outburn.co.il/fhir/StructureDefinition/issue-regards>

Documentation: <https://outburn.co.il/wp-content/uploads/2022/01/IssueRegards-Extension.pdf>

5 Operations

5.1 Submit CoverageEligibilityRequest

The request will be submitted using the following POST method:

```
POST [ServerBase]/CoverageEligibilityRequest/$submit
```

The full URL for performing a POST operation is:

[https://leumitapits.leumit.co.il/CoverageElegibilityRequest/\\$submit](https://leumitapits.leumit.co.il/CoverageElegibilityRequest/$submit)

In the body of the request, a CoverageEligibilityRequest resource or a Bundle resource containing an array of CoverageEligibilityRequest resources will be transferred.

The body of the reply will either be in the CoverageEligibilityResponse resource structure, or a bundle of resources of this type, depending on the structure of the request received.

<https://www.hl7.org/fhir/coverageeligibilityrequest-operation-submit.html>

5.2 Submit Claim (future)

This constitutes confirmation to the insurer that the obligation has been fulfilled.

```
POST [ServerBase]/Claim/$submit
```

A claim or bundle resource containing an array of claim resources will be transferred in the body of the request.

The body of the reply will either be in as a ClaimResponse resource structure or a bundle of resources of this type, depending on the structure of the request received.

<https://www.hl7.org/fhir/claim-operation-submit.html>

6 Header

In each API reference, under the Header parameter Content-Type, pass the value:

"application/fhir+json;.fhirVersion=4.0"

7 Body

The resources structures passed through the interfaces will be based on FHIR® Release 4 (v4.0.1) and will be represented in JSON format.

Support can also be extended to other formats such as XML, but these capabilities are not described in this document.

Cardinality legend:

0..1– single value, non-mandatory

1..1– single value, mandatory

0..* – array, non-mandatory

1..* – array, mandatory

7.1 Eligibility Request Resource

Element path	Cardinality	Type	Value	Notes
resourceType	1..1	string	fixed: "CoverageEligibility Request"	
id	1..1	string	The logical ID of the resource	Contact number
identifier	0..*	Object		Referral ID on the client side
identifier.system	0..1	string		A URI that acts as a namespace for the identifier values
identifier.value	0..1	string	The identifier value	Shall be unique within the namespace. Contact number
status	1.. 1	string	active	Application Status
purpose	1.. *	string	fixed: "validation"	Purpose of referral
patient	1.. 1	Object		
patient.identifier	1..1	Object		
patient.identifier.system	1..1	string	URI	Business ID URI (depending on the list) Is country code information stored?
patient.identifier.value	1..1	string		The value of the business ID (ID number / passport, magnetic card) Passport issue?

servicedDate	0..1	string	YYYY-MM-DD	Date of provision of the service
created	1..1	string	YYYY-MM-DDTHH:mm:ss.msZ	Date and time the request was created
provider	0..1	Object		The service provider (the organization that seeks to provide the service)
provider.type	1..1	string	fixed: "Organization"	
provider.identifier	1.. 1	Object		Organization ID
provider.identifier.system	1.. 1	string		The URI of a legal entity number
provider.identifier.value	1.. 1	string		Number of legal entity - Bn etc.
provider.display	0..1	string		Service provider description
insurer	0..1	Object		The insurer (organization)
insurer.identifier	1.. 1	Object		Organization ID
insurer.identifier.system	1.. 1	string		The URI of a legal entity number
insurer.identifier.value	1.. 1	string		Number of legal entity - Bn etc.
insurer.display	0..1	string		Description of the insurer
item	1..*	Object		Array of items
item.productOrService	1..1	Object		Service Requested
item.productOrService.coding	1..*	Object		Encoding an item
item.productOrService.coding.system	1..1	string		Coding system URI
item.productOrService.coding.code	1..1	string		Service Code \Item:CPTor I-code, depending on URI
item.productOrService.coding.display	0.. 1	string		Description of the code
item.productOrService.text	0..1	string		Service Description / Item
item.provider	0..1	Object		Performing physician
item.provider.type	1..1	string	fixed: "Practitioner"	

item.provider.identifier	1..1	Object		Identification of a caregiver service provider (physician, nurse, etc.)
item.provider.identifier.system	1..1	string	URI	Depending on the type of identifier
item.provider.identifier.value	1..1	string		Business ID value
item.quantity	0..1	Object		
item.quantity.value	1..1	number		Requested quantity
item.unitPrice	0..1	Object		price
item.unitPrice.value	1..1	number		sum
item.unitPrice.currency	1..1	string	fixed: "ILS"	currency

Example:

```
{
  "id": "eligibility-request-example-1111",
  "resourceType": "CoverageEligibilityRequest",
  "identifier": [
    {
      "system": "http://fhir.tlvmc.gov.il/identifier/preauth-req-no",
      "value": "3722"
    }
  ],
  "status": "active",
  "purpose": [
    "validation"
  ],
  "patient": {
    "identifier": {
      "system": "http://fhir.health.gov.il/identifier/il-national-id",
```



```
"value": "1004757530"
}
},
"servicedDate": "2023-01-02",
"created": "2023-03-08T11:27:54.001Z",
"provider": {
  "type": "Organization",
  "identifier": {
    "system": "http://fhir.health.org.il/identifier/legal-entity",
    "value": "500106919"
  },
  "display": "Ichilov Hospital"
},
"insurer": {
  "identifier": {
    "system": "http://fhir.health.org.il/identifier/legal-entity",
    "value": "580039899"
  },
  "display": "Leumit"
},
"item": [
  {
    "productOrService": {
      "coding": [
        {
          "system": "http://fhir.health.gov.il/cs/medical-service-moh",
          "code": "L9262",
```

```
"display": "Service Code 1"
}
],
},
"provider": {
  "type": "Practitioner",
  "identifier": {
    "system": "http://practitioners.health.gov.il/Practitioners",
    "value": "1-25235"
  }
},
"quantity": {
  "value": 1
},
"unitPrice": {
  "value": 159,
  "currency": "ILS"
}
},
{
  "productOrService": {
    "coding": [
      {
        "system": "http://fhir.health.gov.il/cs/medical-service-moh",
        "code": "L9261",
        "display": "Service Code 2"
      }
    ]
  }
}
```

```
]
},
"provider": {
  "type": "Practitioner",
  "identifier": {
    "system": "http://practitioners.health.gov.il/Practitioners",
    "value": "1-25235"
  }
},
"quantity": {
  "value": 1
},
"unitPrice": {
  "value": 159,
  "currency": "ILS"
}
},
{
  "productOrService": {
    "coding": [
      {
        "system": "http://fhir.health.gov.il/cs/medical-service-moh",
        "code": "L9260",
        "display": "Service Code 3"
      }
    ]
  }
},
}
```

```

"provider": {
  "type": "Practitioner",
  "identifier": {
    "system": "http://practitioners.health.gov.il/Practitioners",
    "value": "1-25235"
  }
},
"quantity": {
  "value": 1
},
"unitPrice": {
  "value": 159,
  "currency": "ILS"
}
}
]
}

```

7.2 Eligibility Response Resource

Element path	Cardinality	Type	Value	Notes
resourceType	1..1	string	fixed: "CoverageEligibilityResponse"	
id	1..1	string	UUID	The logical ID of the resource
identifier	0..*	Object		The reply ID in the server
identifier.system	0..1	string		A URI that acts as a namespace for the identifier values
identifier.value	0..1	string	The identifier value	Shall be unique within the namespace

status	1.. 1	string	active entered- in-error	Reply Status
purpose	1.. *	string	fixed: "validation"	Purpose of referral
patient	1.. 1	Object		
patient.identifier	1..1	Object		
patient.identifier.system	1..1	string	URI	Business ID URI (depending on the list)
patient.identifier.value	1..1	string		The value of the business ID (ID number / passport, magnetic card)
servicedDate	0..1	string	YYYY-MM-DD	Date of provision of the service
created	1..1	string	YYYY-MM- DDTHH:mm:ss.m sZ	Date and time the reply was created
requestor	0..1	Object		Service provider (organization)
requestor.type	1..1	string	fixed: "Organization"	
requestor.identifier	1.. 1	Object		Organization ID
requestor.identifier.system	1.. 1	string		The URI of a legal entity number
requestor.identifier.value	1.. 1	string		Number of legal entity - Bn etc.
requestor.display	0..1	string		Service provider description
request	1..1	Object		Request
request.identifier	0..1	Object		Business identification of the request
request.identifier.system	1..1	string		URI for request detection
request.identifier.value	1..1	string		Application ID
outcome	1..1	string	complete error	Overall result

disposition	0..1	string	Commitment found for the service No coverage found for the service Partial coverage found	Description of the result
insurer	1.. 1	Object		The insurer (organization)
insurer.identifier	1.. 1	Object		Organization ID
insurer.identifier.system	1.. 1	string	http://fhir.health.gov.il/identifier/legal-entity	The URI of a legal entity number
insurer.identifier.value	1.. 1	string		Number of legal entity - Bn etc.
insurer.display	0..1	string		Description of the insurer
insurance	0..*	Object		insurance
insurance.coverage	1..1	Object		Details of insurance coverage (commitment)
insurance.coverage.display	1..1	string		Description of the commitment
insurance.coverage.identifier	0..1	Object		Commitment identification
insurance.coverage.identifier.system	1..1	string	http://fhir.leumit.co.il/identifier/obligation-num	URI for Commitment Number A URI that acts as a namespace for the identifier values
insurance.coverage.identifier.value	1..1	string		Commitment number
insurance.coverage.reference	1..1	string	http://fhir.leumit.co.il/Coverage/OBL.[Number of commitments]	Reference coverage via URL
insurance.inforce	0..1	boolean	true false	Whether the coverage is valid
insurance.benefitPeriod	0..1	Object		Commitment expiration dates

insurance.benefitPeriod.start	0..1	string	YYYY-MM-DD	Start date
insurance.benefitPeriod.end	0..1	string	YYYY-MM-DD	End date
insurance.item	0..*	Object		Array of items
insurance.item.productOrService	1..1	Object		Item / Service
insurance.item.productOrService.coding	1..*	Object		Encoding an item
insurance.item.productOrService.coding.system	1..1	string		Coding system URI
insurance.item.productOrService.coding.code	1..1	string		Item Code
insurance.item.productOrService.text	0..1	string		Description of the item
insurance.item.provider	0..1	Object		Performing physician
insurance.item.provider.type	0..1	string	fixed: "Practitioner"	Type of service provider
insurance.item.provider.identifier	0..1	Object		Identification of an performing physician
insurance.item.provider.identifier.system	1..1	string		Identification system URI
insurance.item.provider.identifier.value	1..1	string		Id of the performing physician
insurance.item.provider.display	0..1	string		Full name of performing physician
insurance.item.excluded	0..1	boolean	true false	True if the item is not covered by the commitment. False (or missing field) means that the item is covered
insurance.item.name	0..1	string		Short name for the item as it appears in the commitment
insurance.item.description	0..1	string		Description of a long item as it appears in the commitment
insurance.item.benefit.type.text	1..1	String	Benefit	Fixed value
insurance.item.benefit.allowedUnsignedInt	0..1	number		Maximum permitted number of uses for the requested service

insurance.item.benefit.usedUnsignedInt	0..1	number		The amount of uses utilized out of the permitted amount for the requested service
error	0..*	Object		Errors
error.extension	0..*	Object		Extensions
error.extension.url	1..1	string	http://fhir.outburn.co.il/StructureDefinition/issue-regards	The extension identifier (URL). The issue-regards extension is intended to record the code of the item for which there is an error
error.extension.valueCoding	1..1	Object		Encode the item that the error refers to
error.extension.valueCoding.system	1..1	string		Item Encoding System URI (CPT or I-Code)
error.extension.valueCoding.code	1..1	string		The item code in the specified encoding system (CPT or I-Code)
error.code	1..1	Object		Error code
error.code.coding	0..*	Object		Error encoding
error.code.coding.system	1..1	string	http://fhir.leumit.co.il/cs/obligation-treatment-error	Error coding system URI
error.code.coding.code	1..1	string	1 2	The error code in the coding system
error.code.coding.display	0..1	string	"No coverage found" "Mishandling"	Error code description
error.code.text	0..1	string		Detailed error description

Example:

```
{
  "resourceType": "CoverageEligibilityResponse",
  "created": "2023-01-08T11:27:24Z",
```



```
"Disposition": "There is a partial commitment",
"error": [
  {
    "code": {
      "coding": [
        {
          "code": "16",
          "display": "No coverage found      ",
          "system": "http://fhir.leumit.co.il/cs/obligation-treatment-
error"
        }
      ],
      "text": "16 No coverage found      "
    },
    "extension": [
      {
        "url": "http://fhir.outburn.co.il/StructureDefinition/issue-
regards",
        "valueCoding": {
          "code": "L9262",
          "system": "http://fhir.health.gov.il/cs/medical-service-moh"
        }
      }
    ]
  },
  {
    "code": {
      "coding": [
        {
          "code": "16",
          "display": "No coverage found      ",
          "system": "http://fhir.leumit.co.il/cs/obligation-treatment-
error"
        }
      ],
      "text": "16 No coverage found      "
    },
    "extension": [
      {
        "url": "http://fhir.outburn.co.il/StructureDefinition/issue-
regards",
```

```
"valueCoding": {
  "code": "L9261",
  "system": "http://fhir.health.gov.il/cs/medical-service-moh"
}
],
"id": "202300000000000000141",
"identifier": [
  {
    "system": "urn:ietf:rfc:3986",
    "value": "urn:uuid:202300000000000000141"
  }
],
"insurance": [
  {
    "benefitPeriod": {
      "end": "2023-03-01",
      "start": "2023-01-02"
    },
    "coverage": {
      "display": "Commitment to outpatient clinics",
      "identifier": {
        "system": "http://fhir.leumit.co.il/identifier/obligation-num",
        "value": "112747827"
      },
      "reference": "http://fhir.leumit.co.il/Coverage/OBL.112747827"
    },
    "inforce": true,
    "item": [
      {
        "benefit": [
          {
            "allowedUnsignedInt": 1,
            "type": {
              "text": "benefit"
            },
            "usedUnsignedInt": 0
          }
        ]
      }
    ]
  }
],
```

```
"excluded": false,
"productOrService": {
  "coding": [
    {
      "code": "L9260",
      "display": "examination by a surgeon in the clinic",
      "system": "http://fhir.health.gov.il/cs/medical-service-moh"
    }
  ]
},
"provider": {
  "type": "Practitioner"
}
],
"insurer": {
  "display": "Leumit",
  "identifier": {
    "system": "http://fhir.health.gov.il/identifier/legal-entity",
    "value": "580039899"
  }
},
"outcome": "complete",
"patient": {
  "identifier": {
    "system": "http://fhir.health.gov.il/identifier/il-national-id",
    "value": "1004757530"
  }
},
"purpose": [
  "validation"
],
"request": {
  "identifier": {
    "system": "http://fhir.tlvmc.gov.il/identifier/preauth-req-no",
    "value": "3722"
  }
},
"requestor": {
```

```

"display": "Ichilov Hospital",
"identifier": {
  "system": "http://fhir.health.gov.il/identifier/legal-entity",
  "value": "500106919"
},
"type": "Organization"
},
"servicedDate": "2023-01-02",
"status": "active"
}

```

7.3 Bundle Resource

Element path	Cardinality	Type	Value	Notes
resourceType	1..1	string	fixed: "Bundle"	
id	1..1	string	UUID	A unique UUID
type	1..1	string	fixed: "collection"	
entry	0..*	Object		A container for a resource
entry.fullUrl	1..1	string	[ClientBase]/ [ResourceType]/[LogicalID]	This is the full absolute URL of the resource.
entry.resource	1..1	Object		The actual Patient resource

Example:

```

{
  "resourceType": "Bundle",
  "id": "ff5a1b38-c3c1-4c40-91d2-b9831ebfdc25",
  "type": "collection",
  "entry": [
    {
      "fullUrl": "https://fhir.tlvmc.gov.il/CoverageEligibilityRequest/123",
      "resource": { -- CoverageEligibilityRequest resource - snipped for brevity -- },
    },
    {
      "fullUrl": " https://fhir.tlvmc.gov.il/CoverageEligibilityRequest/456",
      "resource": { -- CoverageEligibilityRequest resource - snipped for brevity -- },
    }
  ]
}

```

7.4 Coverage Resource

Element path	Cardinality	Type	Value	Notes
resourceType	1..1	string	Coverage	Fixed value
id	1..1	string	OBL.[Number of commitment] ex: OBL.999999	Value H.H. ID - Liability ID
Identifier	0..*	Object		Liability ID
identifier.system	0..1	string	http://fhir.leumit.co.il/identifier/obligation-num	Fixed value (URI for national coverage ID)
identifier.value	0..1	string	ex:999999	Commitment number
status	1..1	string	active	Fixed value
type	1..1	Object		Coverage type
type.coding	1..*	Object		
type.coding[0]	1..1	Object		
type.coding[0].system	1..1	string	http://fhir.health.gov.il/cs/coverage-type	Fixed value: An encoding system that defines the prayer factor (Shaban identification).
type.coding[0].code	1..1	string	OBL	A code for identifying the type of obligations issued by a cash register for services performed by an external party (Basket, Shaban)

type.coding[0].display	0..1	string	commitment	Code description
beneficiary	1..1	Object		Insured
beneficiary.identifier	1..1	string		
beneficiary.identifier.system	1..1	string	<p>ex: http://fhir.leumit.co.il/identifier/magnetic-card</p> <p>ex: http://fhir.health.gov.il/identifier/il-national-id"</p>	<p>The business ID URI(e.g. magnetic stripe ID or Israeli ID ID)</p> <p>A complete list of detection systems for patient identification can be found here: https://simplifier.net/ilcore/ilcorepatient</p>
beneficiary.identifier.value	1..1	string	<p>ex: 12205518650284201 3092043815349 ex: 030101010</p>	The value of the business ID (ID number / passport, magnetic card)
period	1..1	Object		Commitment expiration dates
period.start	1..1	string	YYYY-MM-DD	Start date
period.end	0..1	string	YYYY-MM-DD	End date
payor	1..*	Object		Insuring factor
payor.idenitifer	0..1	Object		Organization ID

payor.idenitifer.system	1..1	string	http://fhir.health.gov.il/identifier/legal-entity	Fixed value(legal entity number URI)
payor.idenitifer.value	1..1	string	580039899	Fixed value (number of legal entity - company / company account, etc.)
payor.display	0..1	string	Leumit	Fixed value (description of the insurer)
.class	0..*	Object		Additional data on commitment
class.type	1..1	Object		
class.type.coding	1..*	Object		
class.type.coding.system	1..1	string	http://fhir.health.gov.il/cs/coverage-class	Fixed value
class.type.coding.code	1..1	string	OBL-EXT OBL-BASKET	Commitment type code (Basket / Shaban)
class.type.coding.display	1..1	string	Commitment within the framework of the basket Commitment within the framework of Shaban	
class.value	1..1	string	LEUMIT	Fixed value
costToBeneficiary	0..*	Object		Cost per insured person
costToBeneficiary[0].type	1..1	Object		Reporting whether it is included in family collection or individual collection that includes monthly

				membership fees for collection
costToBeneficiary[0].type.coding	1..*	Object		
costToBeneficiary[0].type.coding.system	1..1	string	http://terminology.hl7.org/CodeSystem/coverage-copay-type	Fixed value
costToBeneficiary[0].type.coding.code	1..1	string	deductible	Fixed value
costToBeneficiary[0].type.coding.display	1..1	string	Deductible	Fixed value
costToBeneficiary[0].type.text	1..1	string	Deductible amount	Fixed value
costToBeneficiary[0].valueMoney	1..1	Object		Deductible amount

Example:

```
{
  "resourceType": "Coverage",
  "beneficiary": {
    "identifier": {
      "system": "http://fhir.health.gov.il/identifier/il-national-id",
      "value": "1004757530"
    }
  },
  "class": [
    {
      "type": {
        "coding": [
          {
            "code": "OBL-BASKET",
            "display": "Commitment of the basket framework",
            "system": "http://fhir.health.gov.il/cs/coverage-class"
          }
        ]
      }
    }
  ]
}
```



```
    },
    "value": "LEUMIT"
  }
],
"costToBeneficiary": [
  {
    "type": {
      "coding": [
        {
          "code": "deductible",
          "display": "Deductible",
          "system": "http://terminology.hl7.org/CodeSystem/coverage-copay-
type"
        }
      ],
      "text": "Deductible charge"
    },
    "valueMoney": {
      "currency": "ILS",
      "value": 36.61
    }
  }
],
"id": "OBL.112747827",
"identifier": [
  {
    "system": "http://fhir.leumit.co.il/identifier/obligation-num",
    "value": "112747827"
  }
],
"payor": [
  {
    "display": "Leumit",
    "identifier": {
      "system": "http://fhir.health.gov.il/identifier/legal-entity",
      "value": "580039899"
    }
  }
],
"period": {
  "end": "2023-03-01",
```

```
"start": "2023-01-02"
},
"status": "active",
"type": {
  "coding": [
    {
      "code": "OBL",
      "display": "Pledge",
      "system": "http://fhir.health.gov.il/cs/coverage-type"
    }
  ]
}
}
```

7.5 Full example – Request Bundle



Request Bundle.txt

7.6 Full example – Response Bundle



Response Bundle.txt

8 Analysis of gaps Vis-à-vis existing profiles

8.1 US- CORE

To the best of our knowledge, the resources do not exist in US-CORE

8.2 IL- CORE

- An Israeli ID should be 9 digits long, including leading zeros. The check digit should be correct.
- Passport numbers must have the URI of a specific country. In the absence of a country code, passport numbers cannot be transferred as identifiers
- Non-nursing licenses should include the prefix
- Do not transfer under the URI of an Israeli ID card values that are not real ID numbers (such as identification numbers that masquerade as ID numbers, but in fact are generated locally for the purpose of identifying tourists)



9 Key issues and decisions

resource	element		Issue	Resolution/ Solution	Issue for examination by the IL- CORE team
CoverageEl igibilityReq uest			It is required to approve a coverage request for several suppliers, a hospital sends an array of suppliers to know for which provider the coverage is made. CERq is configured against one provider	The service codes are replicated, but each of the CERq is configured for a different provider. An alternative of setting up an extension was tested but it was ruled out because the bundle is a more standard solution to move a list	no
CoverageEl igibilityReq uest	paitent.ide ntifier	Id	The information of the country code is not maintained for passport numbers (in Ichilov and Leumit). In contrast, the Israeli profile requires a country code in identifier.	In the first stage of the project, there will be no support for passportists - it is necessary to think about and change work processes vis-à-vis the HMOs and hospitals in keeping passport number information and country code, similar to the issue that arose with the Green Pass during the coronavirus pandemic.	Ichilov's discussion in front of the MCM team at the Ministry of Health is also required.
CoverageEl igibilityReq uest	provider.id entifierinsu rer.identifi er	Insurer	What is the business ID for the vendor and insurer? The alternatives: 1. Ministry of Health license number; 2. Company ID / H.Z. (number of legal	The number of a legal entity in accordance with IL-CORE , the company number exists for all medical providers	no

			entity in accordance with IL-CORE)	and not all of them have a license.	
CoverageEligibilityRequest	ProductOrService	Service Code	Should the application be supported according to I-codes (Ichilov's local service coding)?	An array of service codes (CPT code, I-code) will be transferred in order to enable support for the employment agreements with special codes between the two business entities (hospitals and health plans)	no
CoverageEligibilityRequest	ProductOrService	Service Code	The CBP tariff is sometimes not the same as the CPT encoding, so using the CPT URI can lead to errors. For example, service code 28899, codes that start with L	Using a CPT URI and asking the CBP to set a different URI in ValueSet for non-CPT codes	yes
CoverageEligibilityResponse	Error	Error	The standard structure does not allow to return the service code to which the error refers, but only to specify it in the text. Alternatives: 1. Using the set of service codes and returning the information about the error in the excluded element. This solution does not give information about the error (non-existent / excluded / incorrect code)2. Build an extension for an error	Build an extension for the error code that includes the service code.	no

<p>CoverageeligibilityResponse</p>	<p>coverage</p>	<p>How to transfer in a standard way additional data on the coverage that are currently irrelevant to Ichilov and will not be used but are important to the Leumit for the purpose of reuse of the resource for other purposes: deductible amount, permitted amount of the type of service, quantity utilized so far The alternatives examined: 1. Create extension 2. Add spraycoveragetobundle</p>	<p>Transfer of additional coverage resource, in order to adhere to the FHIR standard. This resource represents coverage and includes an element of deductible height</p>	<p>no</p>
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