



SNOMED
International

Delivering
SNOMED CT

Bahmni - SNOMED CT Implementation Project

*Value Proposition, Integration Approach
and Lessons Learned*

25th June 2026

Bahmni EHR Integration

Project Brief

- Enable effective use of SNOMED CT in low resource settings
- Demonstrate high value features
- Create an implementation exemplar for other software vendors to follow
- Learn from the implementation experience

Bahmni EHR Integration

What is  Bahmni™

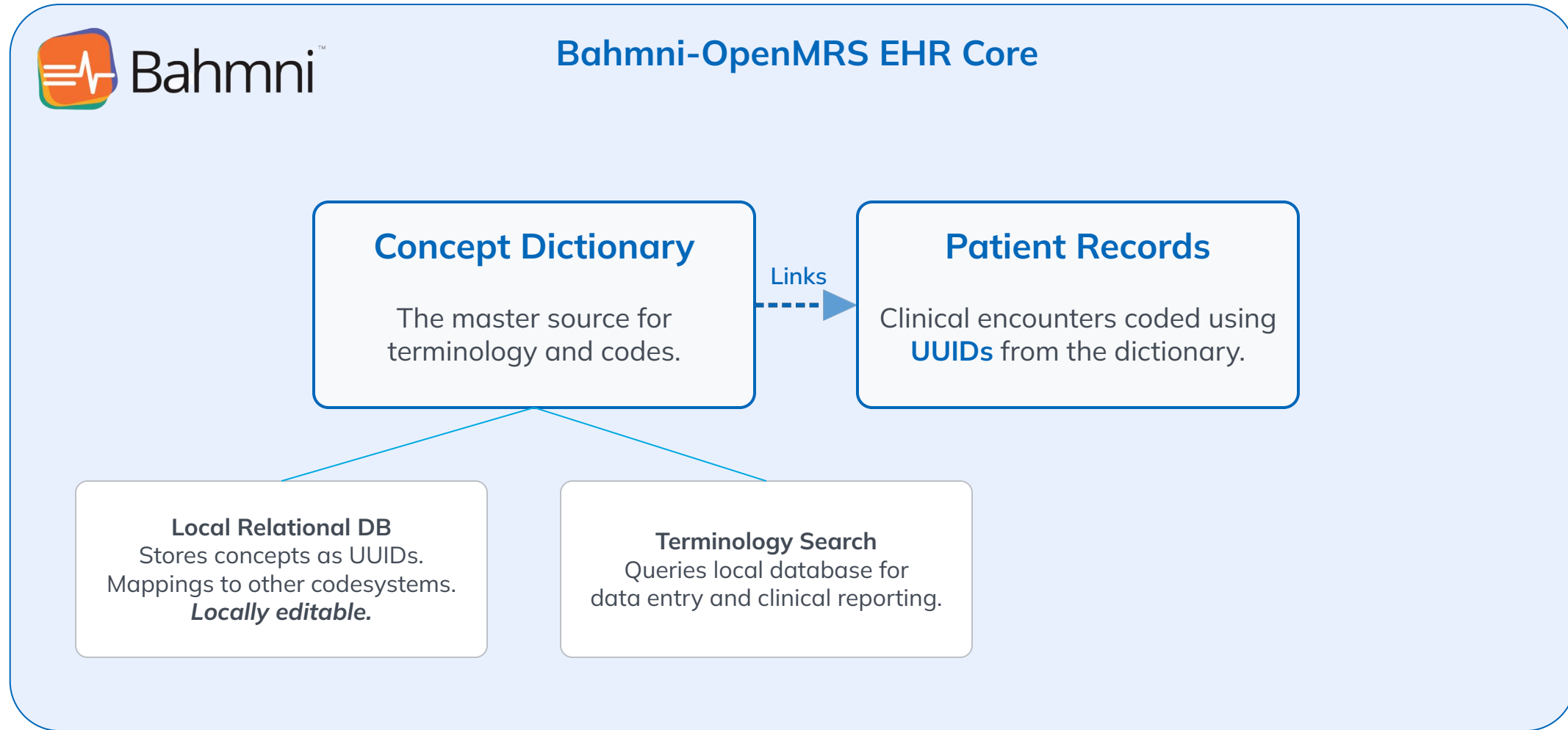
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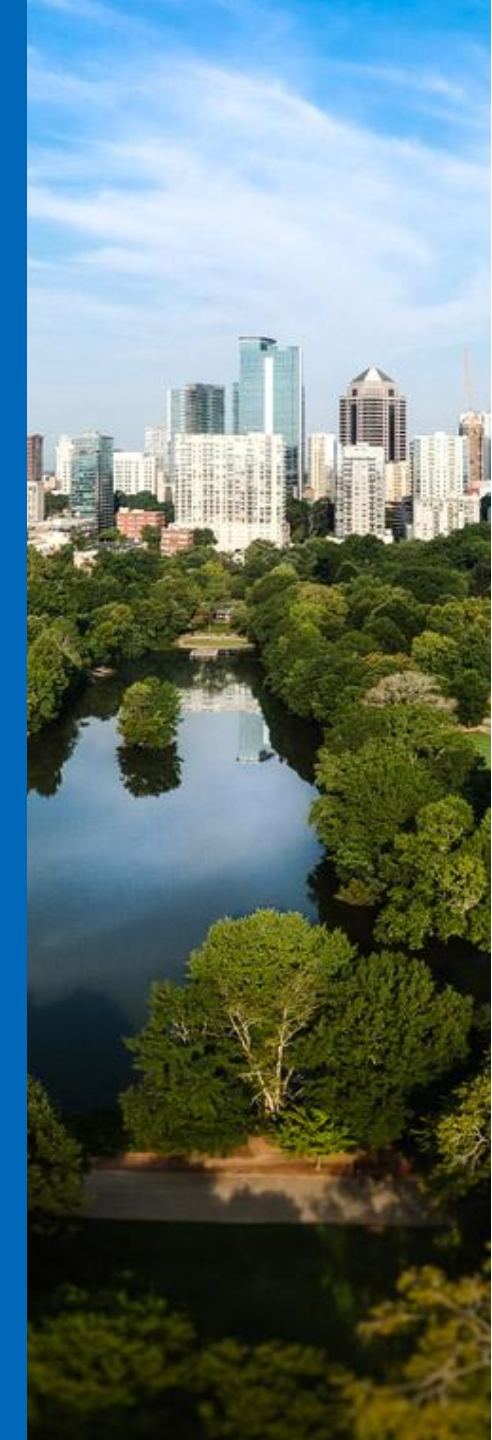
- Bahmni is an easy-to-use open source EMR & hospital system using OpenMRS and other components
- Recognized as a Digital Public Good
- Widely implemented: 500+ sites.
50+ Countries. 4K+ Users.
2M+ Patient Records

Bahmni EHR Integration

Features Delivered

1. Diagnosis Search and Save
2. Procedure Order Entry
3. Medication Clinical Decision Support
4. Interoperability Features
5. Analytics Integration





Diagnosis Search and Save

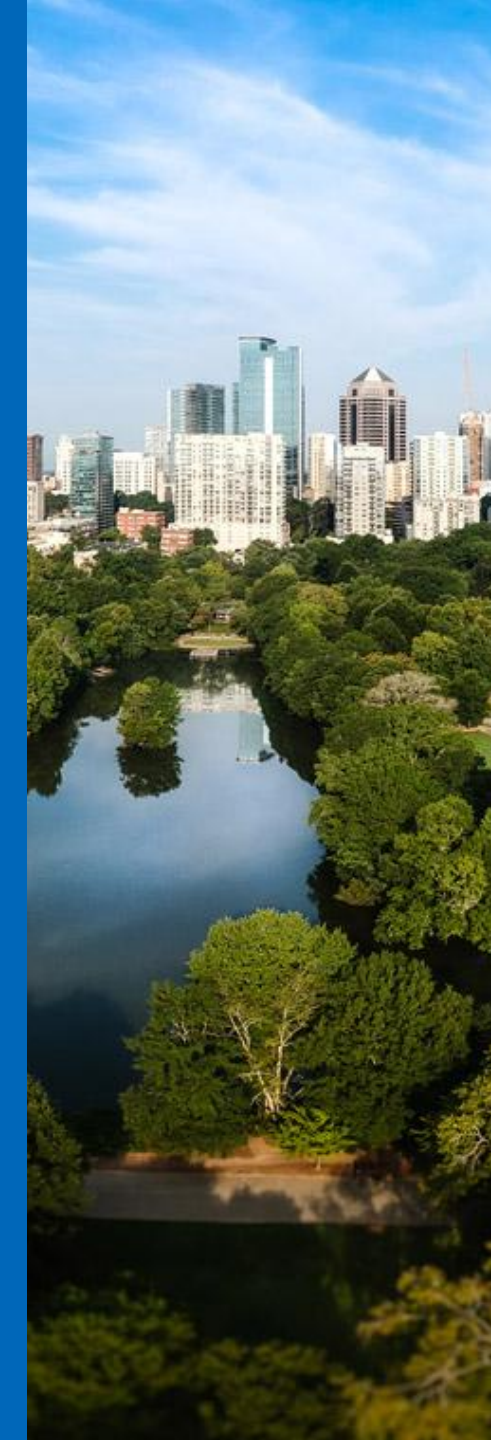


- Follows best practice search:
 - Multiple prefix any order search terms
 - Search across active synonyms of active concepts
 - User presented with SNOMED Preferred Terms
 - Constrained to an appropriate subset of concepts
- Innovative architecture:
 - Loosely-couples FHIR Terminology Server with OpenMRS Dictionary
 - Painless SNOMED CT upgrades

Diagnosis Search and Save



Diagnoses	Order	Certainty
asthma Asthma Asthma caused by wood dust Mild asthma Bakers' asthma Mixed asthma Acute asthma Hay fever with asthma Severe asthma Allergic asthma IgE-mediated allergic asthma Feather-pickers' disease Coal workers' pneumoconiosis Cardiac asthma Brittle asthma Asthma finding Millers' asthma Seasonal asthma Asthma resolved Platinum asthma Moderate asthma	ACCEPT PRIMARYSECONDARY	CONFIRMEDPRESUMED
	PRIMARYSECONDARY	CONFIRMEDPRESUMED
		CONFIRMED PRIMARY 17 Oct 23 Super Man
		CONFIRMED PRIMARY 17 Oct 23 Super Man
	Initial	Current
	Status	Date
	ActiveInactiveHistory Of	dd/mm/yyyy
		Notes
	condition from 17 Oct 23	by Super Man (superman)
		by Super Man (superman)



Procedure Selection

- Different type of UI, designed for touch devices
- Existing curated list of procedures was mapped to SNOMED CT
- Map leveraged to organise by body structure

Procedure Selection



▼ Procedures

Search:

- Head and Neck
- Pelvis
- Ear
- Nose
- Eye
- Neck
- Chest
- Dental
- Abdomen
- Upper Limbs
- Lower Limbs
- Back
- Hip
- Female Reproductive System
- Male Reproductive System
- Transfusion
- Skin & Mucous Membranes
- Subcutaneous Tissue
- Muscle
- Peripheral Vessels
- Cardiac
- Joints
- Other
- Suture Removal

DESCRIBES A CLINICAL PROCEDURE

Ultrasonography of calf of left lower leg	Anesthesia for procedure on upper leg	Venography of right lower extremity
Venography of left lower extremity	Reattachment of muscle	Operation on toenail
Filing of toenail	Fluoroscopy guided drainage of right lower ...	Fluoroscopy guided drainage of left lower ex...
Venography of right upper extremity	Incision and drainage of hematoma of lower...	Escharotomy of burnt skin of lower leg
Repair of defect of fascia of lower leg	Harvesting of sheet of fascia from fascia lata...	Incision and drainage of bursa of foot
Removal of foreign body from foot	Repair of ankle	MRI of right lower extremity with contrast
Anesthesia for lower leg cast procedure	Repair of tendon of lower limb	Repair of tendon of upper limb
Replantation of lower leg	Incision and drainage of deep haematoma o...	Removal of left ventricular thrombus
Removal of right ventricular thrombus	MRI of right foot with contrast	MRI of left foot with contrast
Ultrasonography of toe of left foot	MRI of calf of right lower leg with contrast	MRI of calf of left lower leg with contrast
Ultrasonography of toe of right foot	CT of right lower extremity with contrast	CT of left lower extremity with contrast
Excision of excessive skin and subcutaneous...	CT of left lower extremity	Incision and drainage of lower extremity
Incision and drainage of upper extremity	Repair of cardiac pacemaker pocket in skin ...	Repair of joint of left knee
Repair of joint of right knee	Bathing of skin of right foot	Bathing of skin of left foot
Foot repair	Procedure on foot	Procedure on lower leg
Procedure on lower extremity	Incision of ankle region	Ultrasonography of calf of right lower leg

- Curated set of SNOMED CT “clinical drugs”
- Clinical Decision Support for:
 - Condition-Drug contraindications
 - *Any type of Asthma and Drug containing Propranolol*
 - *Any Disease of liver and Drug containing Atorvastatin*
 - Drug-Drug contraindications
 - *Drug containing Aspirin and Drug containing Dabigatran*
 - *Drug containing Ibuprofen and Drug containing Warfarin*
 - Drug Dose warnings
 - Derived from the ATC/DDD Index

Medication Clinical Decision Support



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New Prescription

Change Duration

**Azithromycin 500 mg oral tablet
(Tablet)**

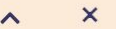
1 Tablet(s) | Every 8 hours | 7 Day(s)

from 17 Oct 23



Oral, As directed | 21 Tablet(s)

⚠ The amount of Azithromycin prescribed is 5 times the average daily dose.



Substance : Azithromycin

Present in this patient's medication :

- Azithromycin 500 mg oral tablet

Route of administration :

- Oral
 - Prescribed daily dose : 1.5g
 - Recommended average daily dose : 0.3g
 - Prescribed amount is 5.00 times over the average daily dose

Conclusion : Combined prescribed amount is 5.00 times the average daily dose. **?**

Recent

07 Jun 17 ★

Dispensed All

Refill All

ⓘ **Acetazolamide 250 mg oral
tablet (Tablet)**

1 Tablet(s) | Once a day | 1 Day(s)

Started on 16 Oct 23



Oral, As directed | 1 Tablet(s)

16 Oct 23 Super Man

**Propranolol hydrochloride 80 mg
oral tablet (Tablet)**

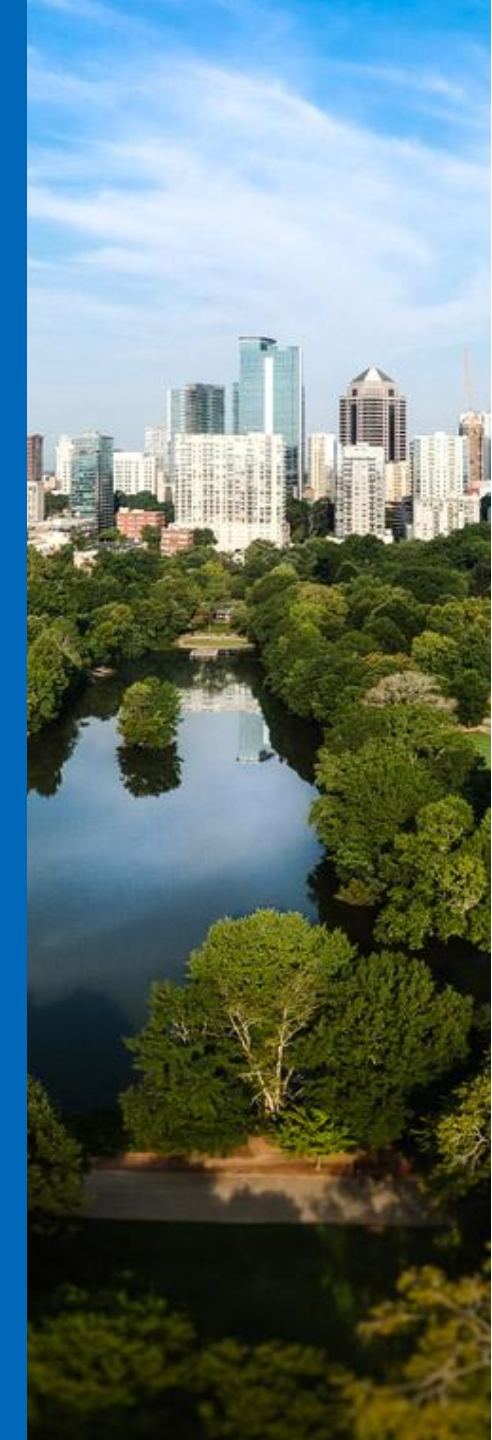
1 Tablet(s) | Once a day | 1 Week(s)

Started on 16 Oct 23



Oral, As directed | 7 Tablet(s)

16 Oct 23 Super Man



Interoperability Features



- Automatic generation of ICD-10 reports
- Terminology binding for Interoperability Frameworks
- Patient data FHIR representation

Interoperability Features

Example Diagnosis report using ICD-10

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SNOMED Diagnosis Line Report(ICD) for Clinical Findings

From 2023-10-01 to 2023-10-16

Report Generated On: 2023-10-16 04:50:34

Patient Id	Patient Name	Gender	Date of Birth	Diagnosis	SNOMED Code	Date & Time of Diagnosis	ICD10 Code(s)
GAN203014	Jaya Patel	F	1988-10-16	Seasonal asthma	445427006	16-Oct-2023 21:51	J45.9
GAN203013	Rohan Jain	M	1968-10-16	Hypertensive disorder	38341003	16-Oct-2023 21:18	I10
GAN203013	Rohan Jain	M	1968-10-16	Seasonal asthma	445427006	16-Oct-2023 20:47	J45.9
GAN203013	Rohan Jain	M	1968-10-16	Hypertensive disorder	38341003	16-Oct-2023 20:47	I10
GAN203012	jacob joss	M	1983-10-16	Asthma	195967001	16-Oct-2023 19:08	J45.9
GAN203012	jacob joss	M	1983-10-16	COVID-19	840539006	16-Oct-2023 19:08	U07.1
GAN203012	jacob joss	M	1983-10-16	Hyponatremia	89627008	16-Oct-2023 19:08	E87.1
GAN203012	jacob joss	M	1983-10-16	Bronchitis	32398004	16-Oct-2023 19:08	J40
GAN203012	jacob joss	M	1983-10-16	Pelvic peritonitis	788010000	16-Oct-2023 19:08	K65.0
GAN203012	jacob joss	M	1983-10-16	Hypokalemia	43339004	16-Oct-2023 19:08	E87.6
GAN203010	Ayaan Sharma	M	1989-06-07	Hypokalemia	43339004	16-Oct-2023 18:20	E87.6

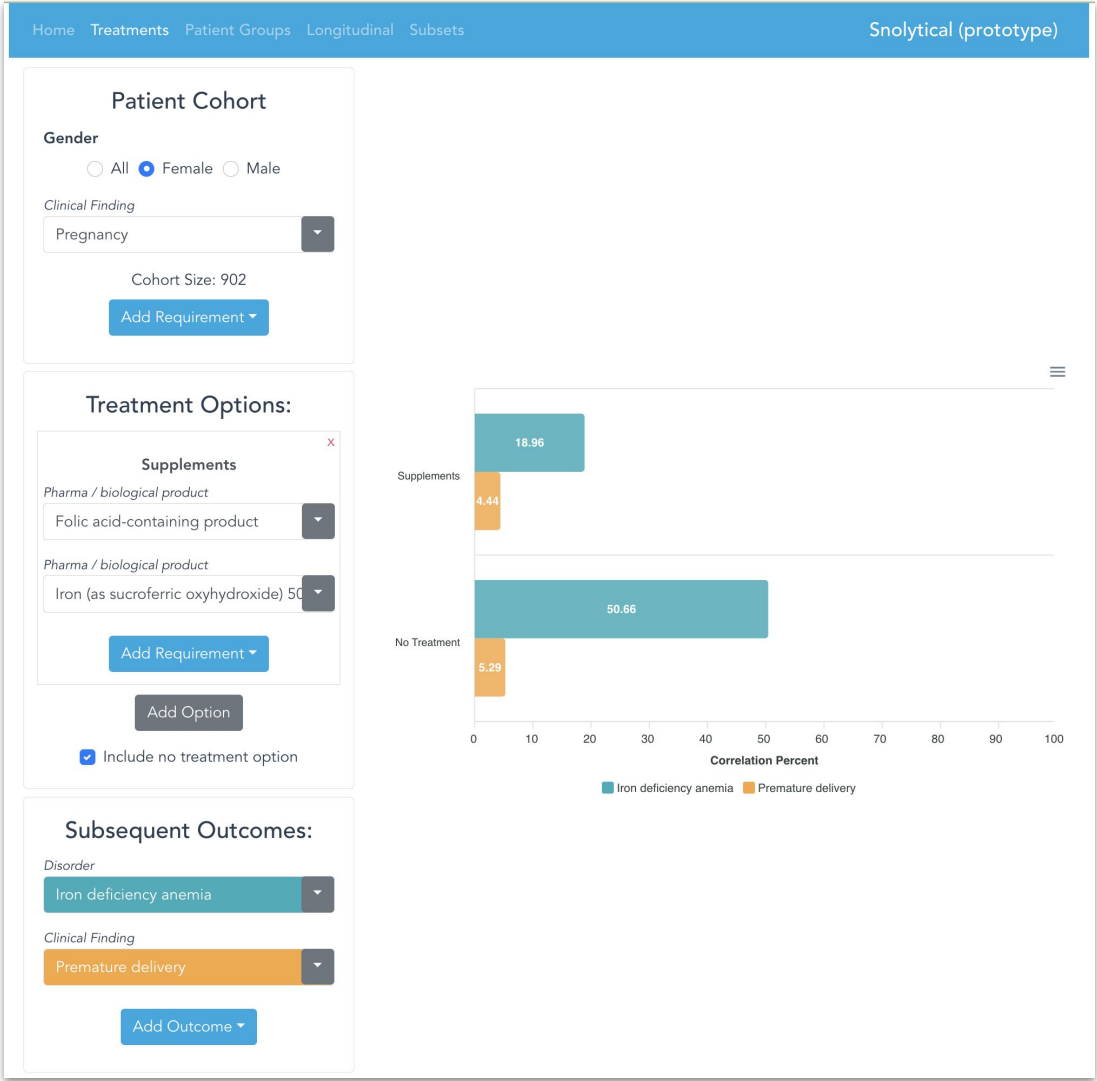
- **Utilisation of SNOMED CT**

Data Analytics Demonstrator Tool

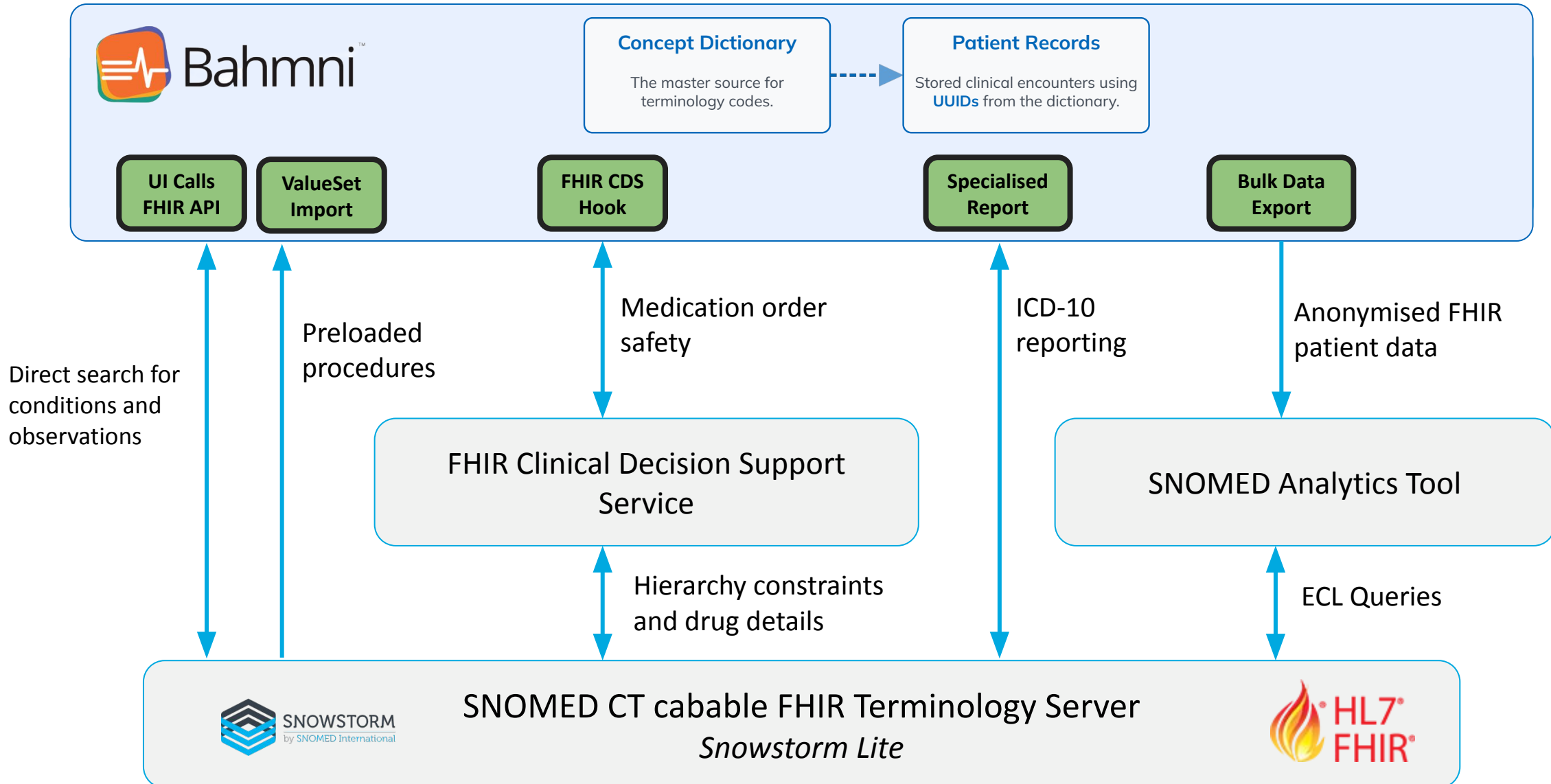
- Via bulk export of anonymised patient data in FHIR format

- **Capabilities**

- Population management
- Vulnerable patient identification
- Treatment effectiveness monitoring



Bahmni SNOMED CT Integration Architecture





Thank You

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