HEALTHONE DATABASE SOLUTION PRESENTATION

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HEALTHONE DATABASE DESIGN SOLUTION

Demonstrating how our proposed database meets HealthOne's operational and business requirements.

BUSINESS ISSUE

Problem Statement

HealthOne requires a comprehensive database system to manage patients, doctors, hospitals, prescriptions, visits, medical files, insurance and drug information seamlessly.

- Current data management practices lack integration and efficiency.

- Need for robust tracking of relationships between entities like PATIENT, DOCTOR, and HOSPITAL.

INFORMATION REQUIREMENTS

1. Patient Information:

- Personal data, contact information and assigned primary care doctor.

2. Doctor and Hospital Information:

- Doctor specialties, hospital affiliations and contact details.

3. Prescriptions and Drugs:

- Track prescriptions, associated drugs and expiration dates.

4. Medical History:

- Visits, diagnosis and reasons for consultations.

5. Insurance Records:

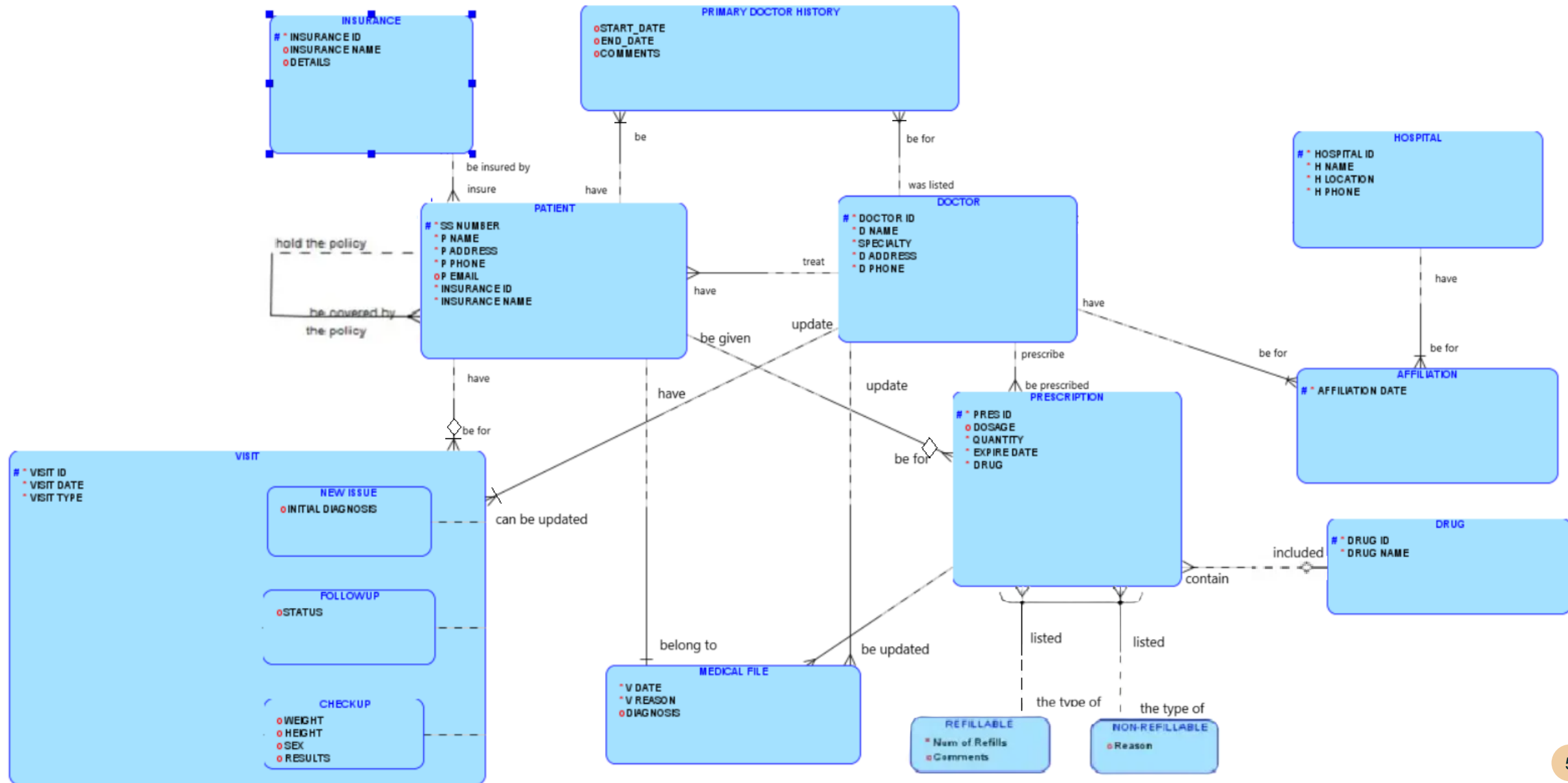- Insurance policies and coverage linked to patients.

6. Affiliations:

- Relationships between doctors and hospitals.

7. Historical Data:

- Tracking changes in primary care doctor assignments over time with patients and hospitals.

ENTITY – RELATIONSHIP DIAGRAM (ERD)

Entities Explanation

1. PATIENT

- Represents individuals receiving care through HealthOne.

- Key Attributes:

  - **SS_NUMBER:** Unique identifier for each patient.

  - **PR_DOC_ID:** Refers to the assigned primary care doctor.

  - **P_NAME, P_ADDRESS, P_EMAIL:** Personal and contact information.

2. DOCTOR

- Represents healthcare professionals providing services.

- Key Attributes:

  - **DOCTOR_ID:** Unique identifier for each doctor.

  - **SPECIALTY:** Area of expertise.

  - **D_NAME, D_ADDRESS, D_EMAIL:** Personal and contact information.

ENTITY – RELATIONSHIP DIAGRAM (ERD)

Entities Explanation

3. HOSPITAL

- Represents medical facilities affiliated with HealthOne doctors.

- Key Attributes:

    - **HOSPITAL_ID:** Unique identifier for each hospital.

    - **H_NAME, H_LOCATION, H_PHONE:** Contact information.

2. PRESCRIPTION

- Represents medical instructions issued by doctors to patients.

- Key Attributes:

    - **PRES_ID:** Unique prescription identifier.

    - **SS_NUMBER, DOCTRO_ID:** Links to patient prescribing doctor.

    - **DOSAGE, QUANTITY, EXPIRE_DATE:** Details about medication instructions.

ENTITY – RELATIONSHIP DIAGRAM (ERD)

Entities Explanation

5. MEDICAL_FILE

- Documents patient medical history, linking visits, diagnoses and prescriptions.

- Key Attributes:

  - **SS_NUMBER:** inks the medical file to a specific patient.

  - **DOCTOR_ID, PRES_ID:** Tracks doctor and associated prescriptions.

  - **V_DATE, V_REASON, DIAGNOSIS:** Visit date, reason and diagnosis.

6. AFFILIATION

- Captures the relationship between doctors and hospitals.

- Key Attributes:

  - **DOCTOR_ID, HOSPITAL_ID:** Defines the affiliation.

  - **AFFILIATION_DATE:** Start date of the relationship.

ENTITY – RELATIONSHIP DIAGRAM (ERD)

Entities Explanation

8. INSURANCE

- Represents patient insurance details.

- Key Attributes:

    - **INSURANCE_ID:** Unique insurance policy identifier.

    - **SS_NUMBER:** Links insurance to a specific patient.

    - **INSURANCE_NAME, DETAILS:** Insurance company name and details.

9. DRUG

- Represents medications linked to prescriptions.

- Key Attributes:

    - **DRUG_ID:** Unique identifier for each drug.

    - **DRUG_NAME:** Name of the drug.

    - **PRES_ID:** Links the drug to a specific prescription.

ENTITY – RELATIONSHIP DIAGRAM (ERD)

Entities Explanation

10. PRIMARY DOCTOR HISTORY

- Records changes in a patient's primary doctor assignment.

- Key Attributes:

    - **SS_NUMBER, DOCTOR_ID, START_DATE, END_DATE:** Tracks assignment periods.

    - **COMMENTS:** Notes about the change.

HOW OUR SOLUTION MEETS HEALTHONE'S NEEDS

1. Comprehensive Patient Management

- *Centralized Patient Information:* The PATIENT entity consolidates all essential details, including contact information, primary care doctor assignment and insurance policies.

- *Medical History Tracking:* The MEDICAL_FILE entity stores comprehensive medical history, ensuring quick and accurate access to diagnosis, visit reasons and associated prescriptions.

2. Seamless Doctor and Hospital Integration

- *Doctor Specialties and Contact Details:* The DOCTOR tracks specialties and contact details, ensuring patients are connected to the right healthcare providers.

- *Hospital Affiliation:* The AFFILIATION entity captures the many-to-many relationship between doctors and hospitals, enabling effective management of affiliations and healthcare coverage.

HOW OUR SOLUTION MEETS HEALTHONE'S NEEDS

3. Accurate Prescription and Drug Management

- *Prescription Tracking:* PRESCRIPTION and DRUG entities ensure precise recording of medication details, dosages and expiration dates, reducing errors and improving compliance.

- *Linkage to Visits and Doctors:* Prescriptions are directly linked to visits and the prescribing doctor, providing full traceability.

2. Efficient Appointment ad Visit Scheduling

- *Visit Records:* The VISIT entity tracks appointment dates, visit types and associated doctors, enabling better scheduling and workload distribution.

- *Visit Insights:* Detailed records of each visit help improve patient care and streamline reporting.

HOW OUR SOLUTION MEETS HEALTHONE'S NEEDS

5. Insurance Management

- *Patient Coverage:* The INSURANCE entity stores optional insurance details linked to patients, facilitating billing and healthcare costs.

6. Historical Data and Tracking

- *Primary Doctor History:* The PRIMARY DOCTOR entity allows tracking of changes in patient-doctor assignments, ensuring accountability and continuity of care.

- *Affiliation Timelines:* Start dates int the AFFILIATION entity provide insights into historical relationships between doctors and hospitals.

HOW OUR SOLUTION MEETS HEALTHONE'S NEEDS

7. Scalable and Flexible Design

- *Entity Relationships :* The design key components making the system comprehensive and interconnected.

- *Future Growth:* The database is structured to allow easy addition of new entities or attributes as HealthOne expands.

8. Enhanced Operational Efficiency

- *Centralized Database:* A single source of truth eliminates data silos, reducing redundancy and errors.

- *Improved Decision-Making:* Access to interconnected, up to date information enables better patient care and operational decisions.

HOW OUR SOLUTION MEETS HEALTHONE'S NEEDS

Our solution provides HealthOne with a robust, reliable and user-friendly database system that ensures:

► **All business needs**

   ► **Patient care**

      ► **Data integration**

         ► **Operational efficiency**

STATE ASSUMPTIONS

1. Unique Identifiers

- SS_NUMBER: Each patient has a unique Social Security Number serving as their primary identifier.

- DOCTOR_ID, HOSPITAL_ID, PRES_ID: Unique identifiers are assigned to doctors, hospitals, prescriptions accordingly to avoid duplication.

2. Primary Doctor Relationship

- Each patient has exactly one primary care doctor at any given time, represented by the PR_DOC_ID in the PATIENT entity.

- Historical changes in primary care doctor assignments are tracked in the PRIMARY DOCTOR HISTORY entity.

3. Visit and Medical File Management

- Each visit is attended by one doctor and involves one patient.

- Medical files are unique to each patient but can reference multiple doctors and prescriptions over time.

STATE ASSUMPTIONS

4. Prescription Management

- A prescription is always linked to one patient and issued by one doctor.

- Prescriptions can include multiple drugs.

5. Hospital Affiliation

- Doctors can be affiliated with multiple hospitals, and each affiliation is timestamped with a start date.

- Hospitals operate independently, and no hierarchical relationships between hospitals are tracked.

6. Insurance Policies

- Each patient is always linked to one insurance, at a given time.

THANK YOU

Additional Questions?

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