Diagnosing and Treating Pulmonary Embolus using HL7 FHIR and the OMG's Business Process Modeling Standards

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Part of Intermountain's Venous Thromboembolism Care Process Model

DIAGNOSIS AND MANAGEMENT OF

Venous Thromboembolism (VTE)

This care process model (CPM) was created by the Intensive Medicine Clinical Program at Intermountain Healthcare. Groups represented on this team include Emergency Medicine, Thrombosis, Pulmonary / Critical Care, Pharmacy, Radiology, Medical Informatics, and others. This CPM provides expert advice for the management of VTE using current national practice guidelines, including those of the American College of Chest Physicians, the American College of Physicians, the American College of Emergency Physicians, the European Society of Cardiology, and the International Society on Thrombosis and Haemostasis.

Why Focus ON VTE?

- **Prevalence.** VTE is the third most common cause of cardiovascular death in the U.S., after heart attack and stroke. As many as two million people in the U.S. are diagnosed with DVT each year, and half a million or more are affected by PE. As many as one-fifth of PE cases are expected to be fatal, leading to 100,000 deaths each year.[GIO]
- **Difficulty of management.** VTE symptoms are often nonspecific and can range from mild to life-threatening. Medications for VTE carry a risk of bleeding, and there are a large number of medications to choose from.
- **Cost.** Patients with suspected VTE often undergo unneeded imaging tests. These tests drive up healthcare costs and expose patients to unnecessary medical risk.

Program Goals and Measures

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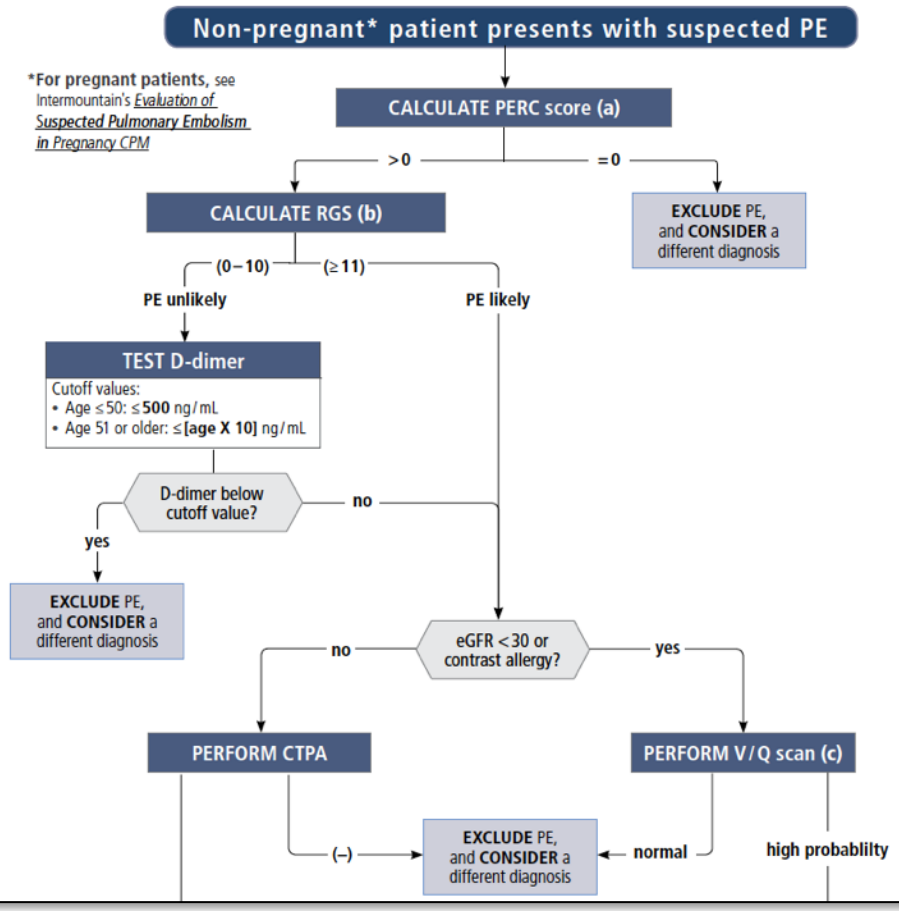
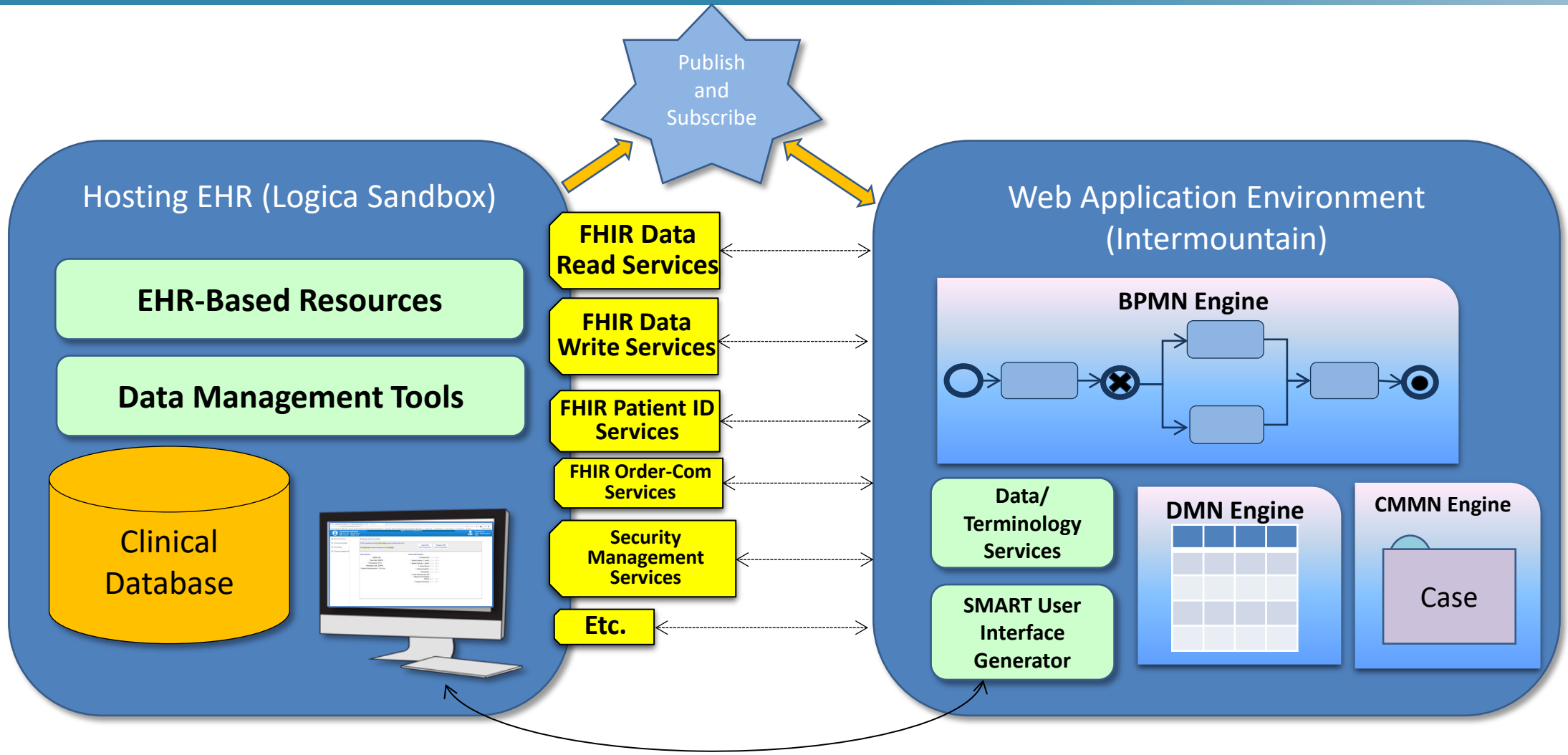
ALGORITHM 1: PULMONARY EMBOLISM (PE) DIAGNOSIS



BPMN– an Example: Pulmonary Embolism Diagnosis and Treatment

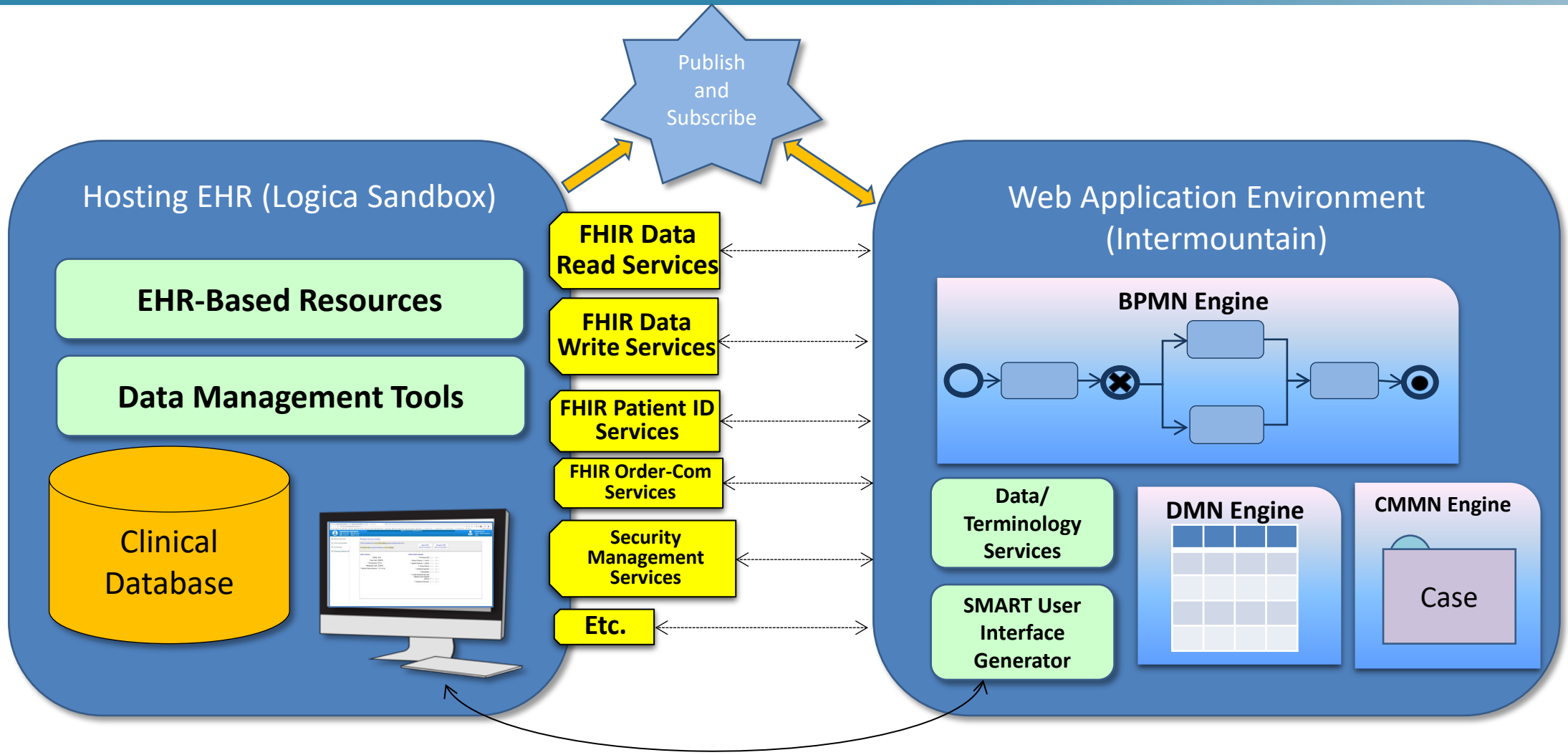
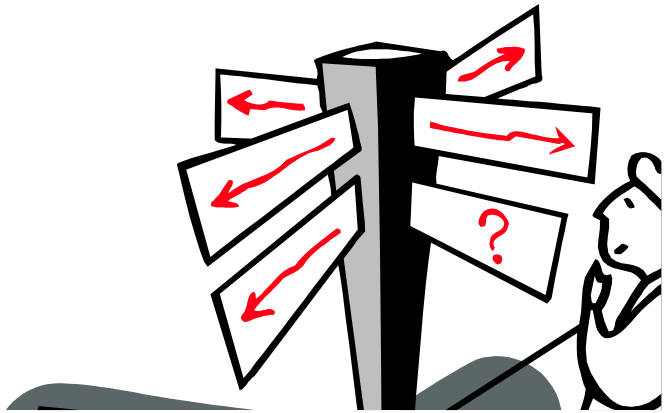
- A Clinical Workflow for Evidence-Based Diagnosis and Treatment
- Implemented and Tested Using **OMG's Business Process Model and Notation (BPMN)** Standard for Workflows
- Connect to a simulated EHR using **FHIR/SMART** Standards
  - Developed using the **Logica Sandbox** as an EHR
- Provides a testbed for **FHIR/SMART/BPMN** support of complex clinical processes

An Environment for Developing Interoperable Applications



Demonstration

An Environment for Developing Interoperable Applications



Thank You