

VA



U.S. Department of Veterans Affairs
Veterans Health Administration
Office of Health Informatics



Business Process Workflow Modeling Training

Tutorial 2, Notation Styles and Standards

Spring 2020

Version: 001

Instructor: Marsha McClure, MHA

*Human Factors Engineering (HFE)
Office of Health Informatics (10A7A)
Veterans Health Administration*

About the Authors & Acknowledgements

- This training was developed under VA Human Factors Services (HFS) Contract (36C77619D0018), Task Order 3, by Visionary Consulting Partners, LLC, contractors to Human Factors Engineering.
 - The HFS Contracting Project Team includes authors and instructors:
 - Anthony Masalonis, PhD
 - Claire Hayes Watson, PhD, MPH
 - Aneesa Motiwala, MS
 - Marsha McClure, MHA
- We would also like to acknowledge Visionary team members who served as reviewers and contributors to this content:
 - Eleanor Thornton, MS, MCHES, AE-C
 - Michael D. Thornton, Sr., MS, PMP, CPHIMS, FHIMSS
 - Nakina Eugene, MPH, CHES
- Video production and editing provided by:
 - Jamiel Chapple
 - Michael D. Thornton Jr.





Objective

- To understand the various modeling notations including Business Process Model and Notation (BPMN), Decision Model and Notation (DMN), Case Management Modeling and Notation (CMMN), and Unified Modeling Language (UML)
- Learn to differentiate between the various modeling notations, including when and how to use each

Modeling Notation: Compare and Contrast

Modeling Type	When to Use	Scenario
BPMN	Repeatable Processes	Basic Encounter with Triage
CMMN	Ad-Hoc or If/Then Processes	Chronic Care Required (e.g.—Hypertension, Arthritis, Atrial Fibrillation)
DMN	Decision Trees and Truth Tables	Conditions Influence Treatment (e.g.—Age, Weight, Sex, BMI)
UML	Entity Relationship Data and Information Flow	Information flows need to be included

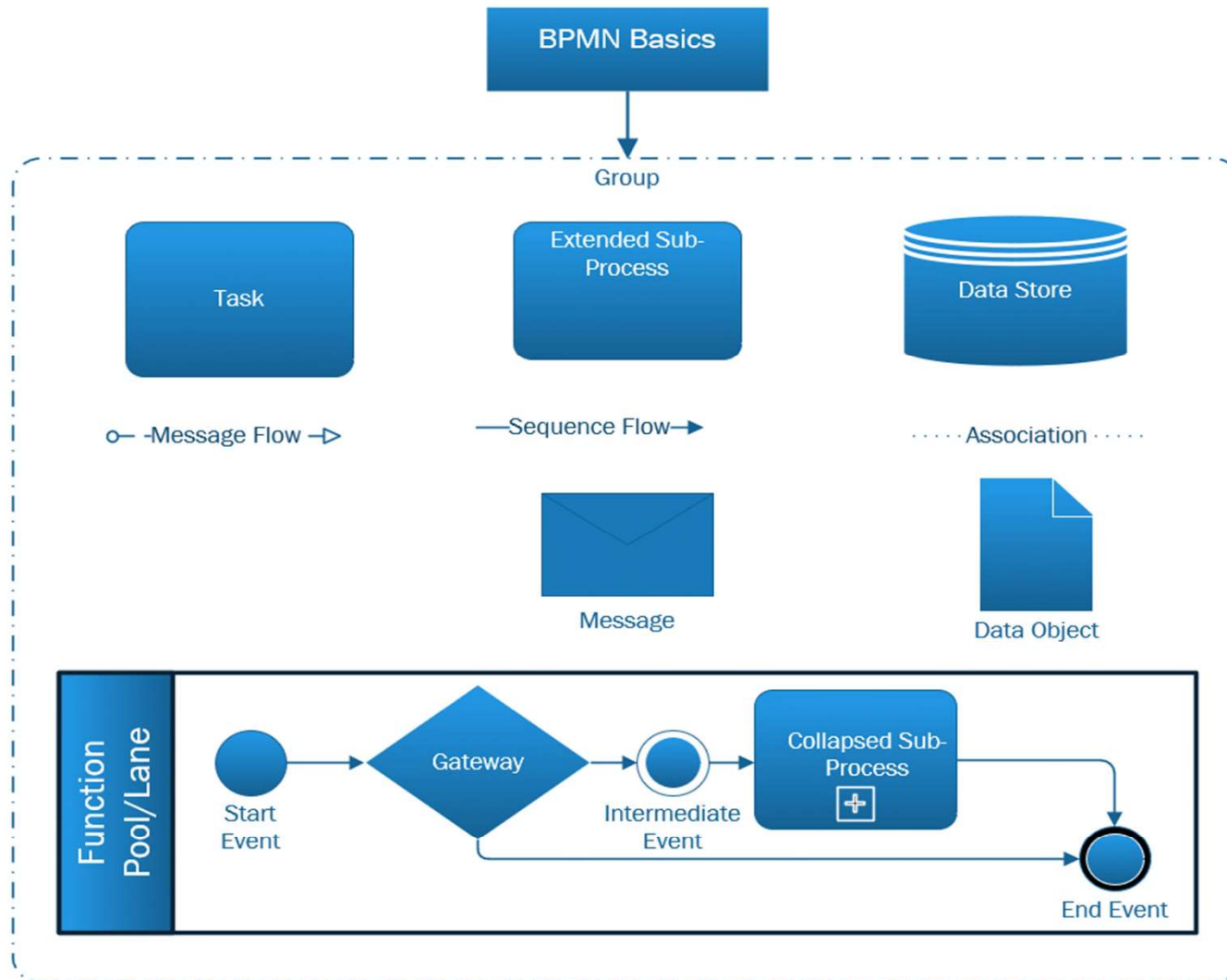
References:

OMG BPMN, CMMN and DMN overview video: <https://www.youtube.com/watch?v=N3htv1tjmuc>

OMG UML Overview Video: <https://www.youtube.com/watch?v=vAHHdnIV8rU>

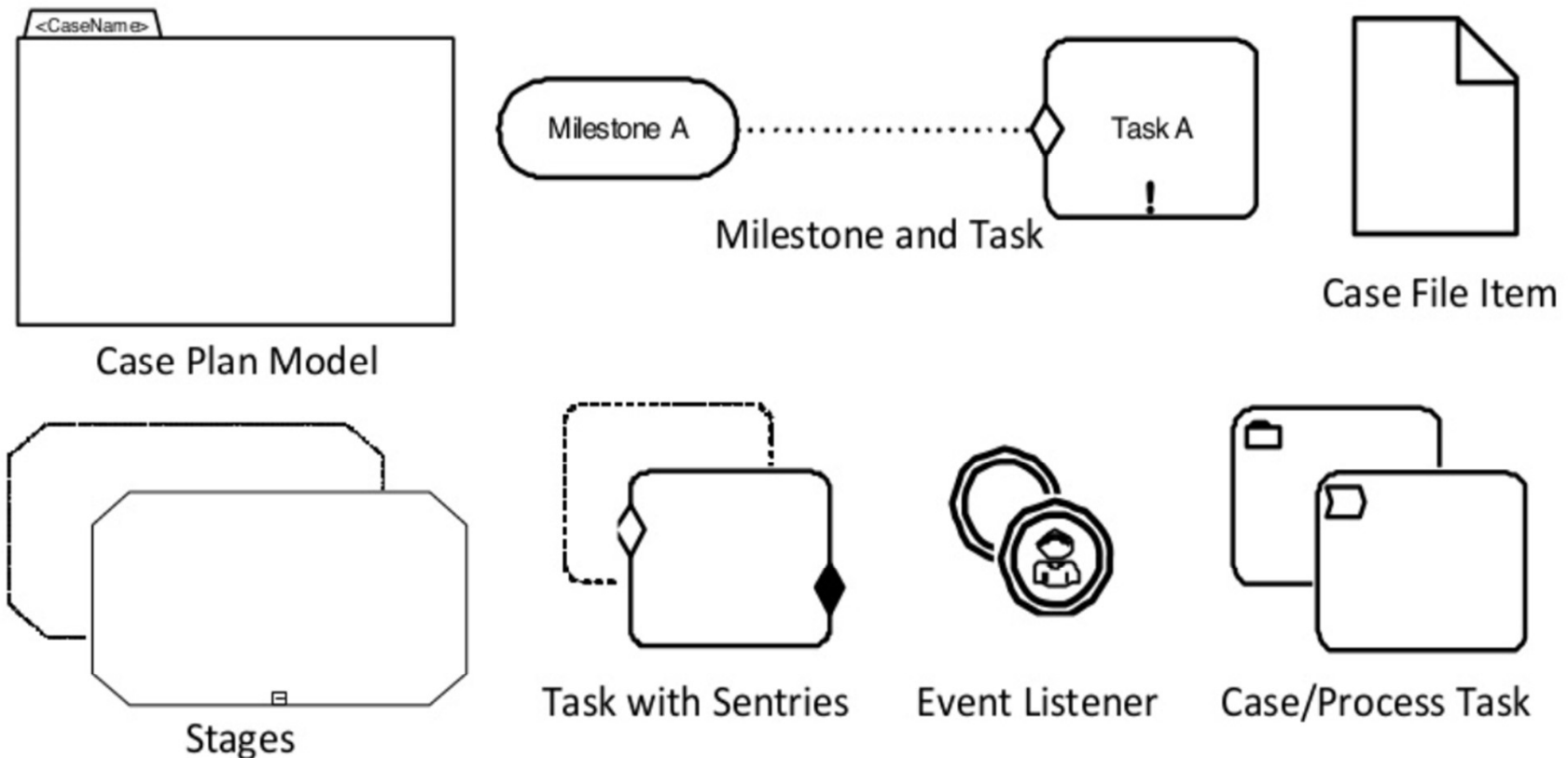
OMG UML for Information Models: <https://www.youtube.com/watch?v=HqKZOgvCeUo>

BPMN Basic Notation and Concepts






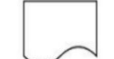
CMMN Basic Notation and Concepts




Case Management Model and Notation 1.0

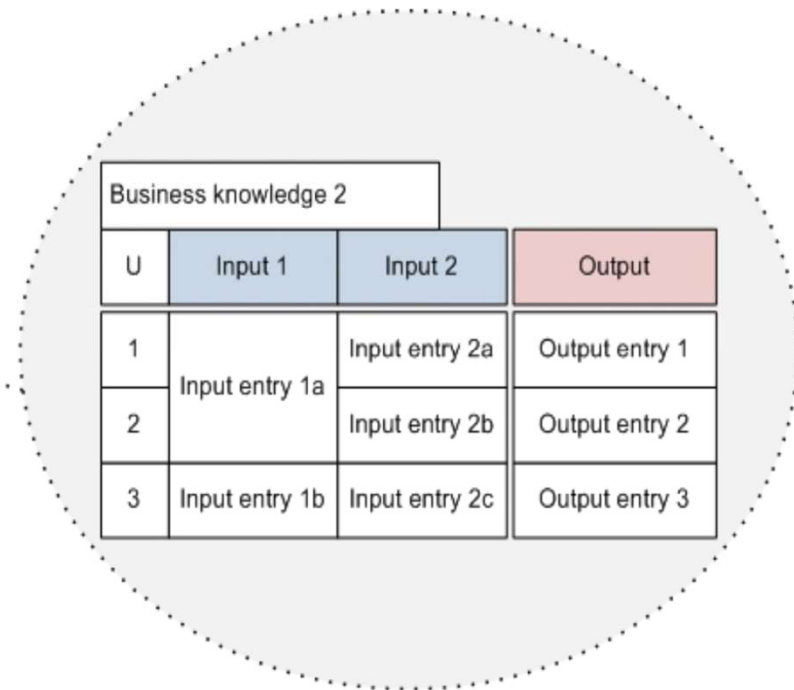
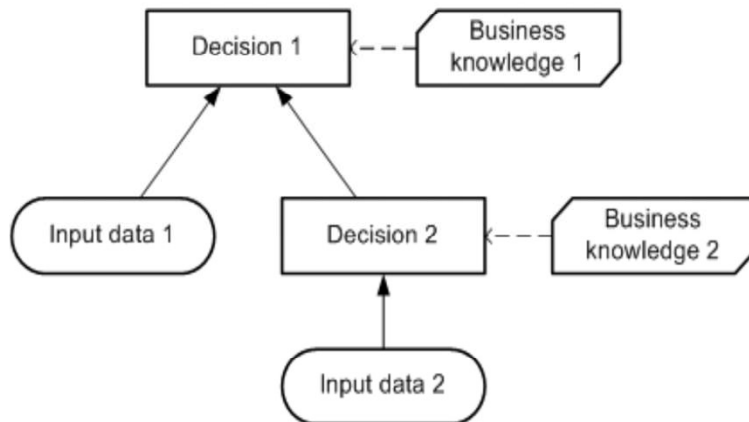


Reference: <https://www.slideshare.net/NicoHerzberg/introduction-to-cmmn>

DMN Basic Notation and Concepts

Decision		Business Knowledge Model	
Input		Knowledge Source	

Information Requirement	Knowledge Requirement	Authority Requirement
		

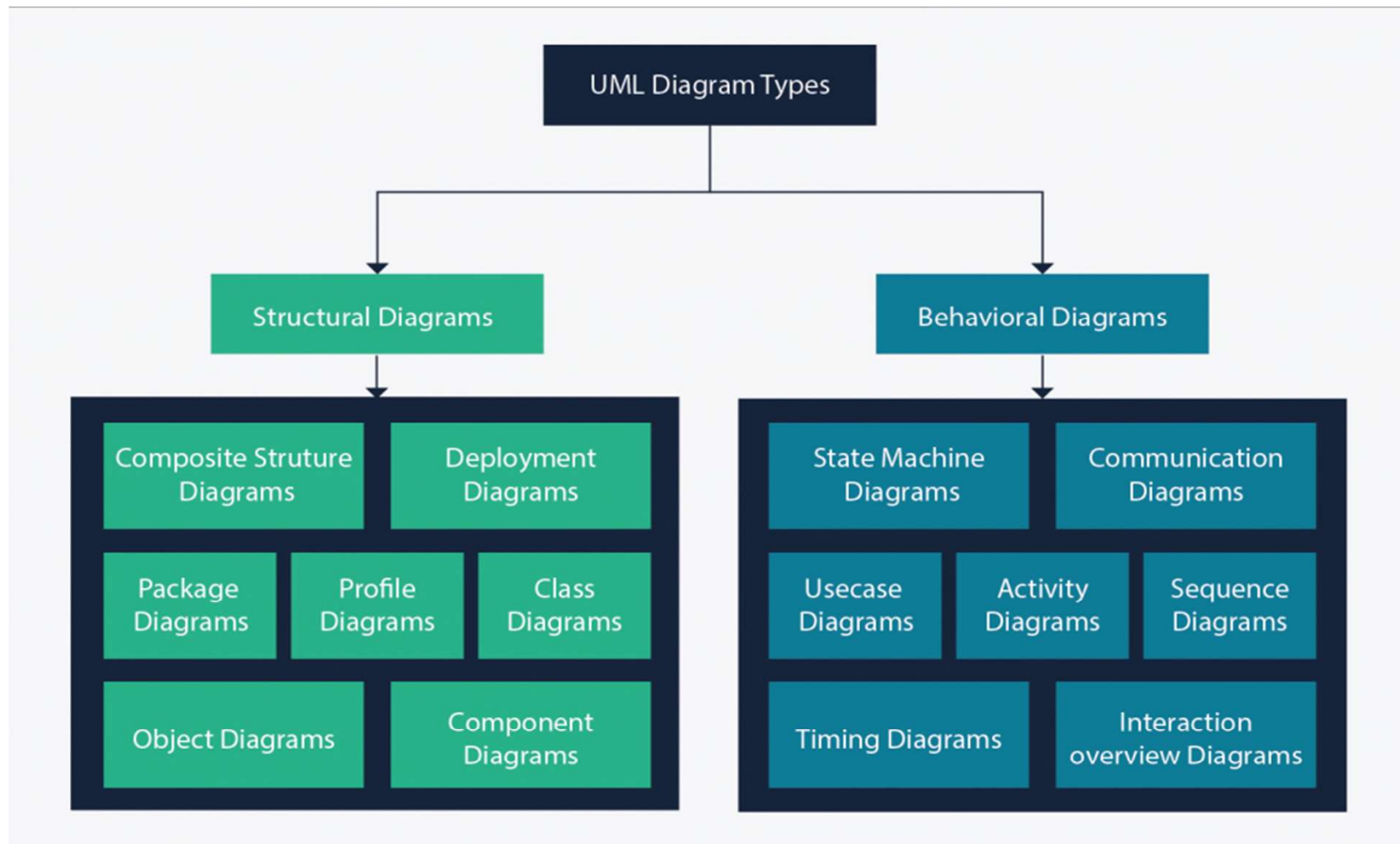


Reference:

<https://www.omg.org/spec/DMN/1.3/PDF>

https://access.redhat.com/documentation/en-us/red_hat_process_automation_manager/7.1/html/designing_a_decision_service_using_dmn_models/dmn-con_dmn-models

UML Basic Concepts



Reference:

<https://www.omg.org/spec/UML/2.4.1/Superstructure/PDF>

<https://d3n817fwly711g.cloudfront.net/uploads/2012/02/UML-Diagram-types-1-1024x658.png>

BPMN Example: Telestroke Program





BPMN Example: Telestroke Outline

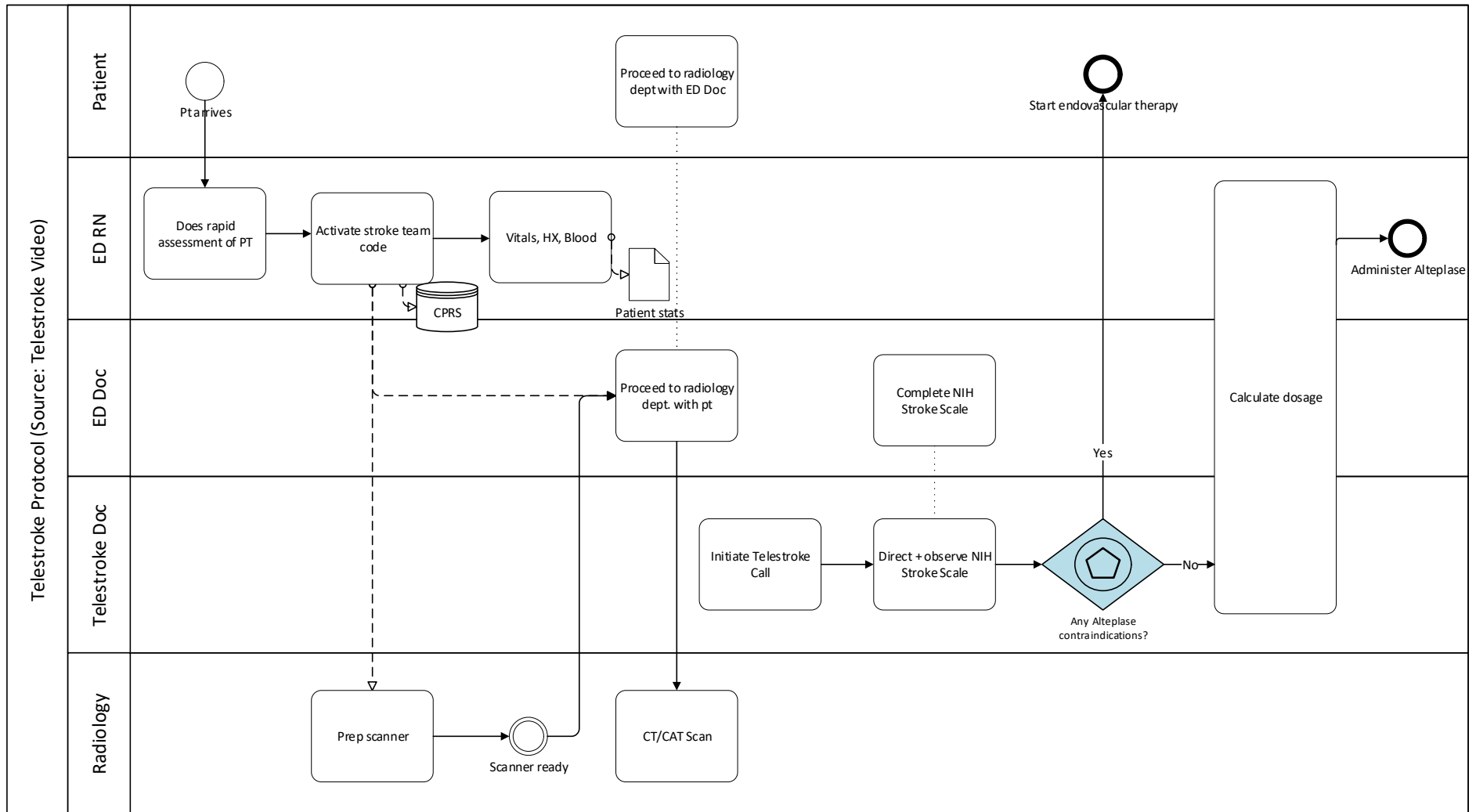
- A Patient arrives at Emergency Department (ED) with symptoms of a stroke.
- The ED Nurse performs a rapid assessment of the patient, activates the Stroke Team Code, and takes the patient's vitals which are recorded in the electronic medical record (CPRS).
- At this time, the Radiology Department is notified of the stroke code and begins to prepare the CT scanner.
- Once the CT scanner is ready, the ED Doctor is pinged and proceeds to Radiology with the patient so the scan can be completed.



BPMN Example: Telestroke Outline

- At this time, the Telestroke Call is initiated with the Telestroke Doctor.
- The ED Doctor works to complete the NIH Stroke Scale while the Telestroke Doctor directs and observes the scale being completed.
- The Telestroke Doctor assesses the patient's eligibility for receiving Alteplase as a treatment, by determining if there are any contraindications for the patient.
 - If there are contraindications, the patient will start endovascular therapy.
 - If there are NO contraindications, the Telestroke Doctor, ED Doctor, and ED Nurse, will calculate the Alteplase dosage for the patient.
- The ED Nurse will administer the Alteplase.

BPMN Example: Telestroke Program



END OF TUTORIAL



References

- Creatly (20120. *UML Diagram Types* [Photograph]. Retrieved from <https://d3n817fwly711g.cloudfront.net/uploads/2012/02/UML-Diagram-types-1-1024x658.png>
- Herzbeg, N. (2015). *Introduction to CMNN* [SlideShare slides]. Retrieved from <https://www.slideshare.net/NicoHerzberg/introduction-to-cmmn>
- Object Management Group. (2020, March). *Decision Model and Notation*. Retrieved from <https://www.omg.org/spec/DMN/1.3>
- Object Management Group. (2011, August). *OMG Unified Modeling Language™ (OMG UML), Superstructure*. Retrieved from <https://www.omg.org/spec/UML/2.4.1/Superstructure/PDF>
- Object Management Group. (2016, July 11). *OMG Webinar: BPMN, CMMN, DMN: An intro to the triple crown of process improvement standards* [Video]. YouTube. <https://www.youtube.com/watch?v=N3htv1tjmuc>
- Object Management Group. (2018, November 16). *Overview: UML® (Unified Modeling Language™) and SysML® (Systems Modeling Language™)* [Video]. YouTube. <https://www.youtube.com/watch?v=vAHHdnIV8rU>
- Red Hat, Inc. (n.d.). *Designing a Decision Service Using DMN Models, Chapter 1. Decision Model and Notation (DMN)*. Retrieved from https://access.redhat.com/documentation/en-us/red_hat_process_automation_manager/7.1/html/designing_a_decision_service_using_dmn_models/dmn-con_dmn-models
- Visual Paradigm. (2011, April 18). *Generate ERD Relationship from UML Association in Class Diagram* [Video]. YouTube. <https://www.youtube.com/watch?v=HqKZOgvCeUo>