# Note Template

Throughout this tutorial, we will discuss how to create deployable AI in healthcare. We provide you with 8 key inflexion points in the design of deployable AI. These Inflexion points highlight pivotal moments or decisions in the development of AI models for healthcare. To explain each point, we will use a combination of didactic teaching and a case study.

We ask that you take notes on:

1. Your key take aways from the inflexion points (what stood out to you as important)
2. The decisions you would make – based on what you learned – for the case study.

We hope to showcase the work done in this session and ask that you submit these notes + the final practical exercise example.

**Group Details**

*If you would like to receive credit for the work submitted, please include:*

* **Your Name**:
* **Your Institution**:

**Clinical Case Study**

**ROTEM (Rotational Thromboelastometry)** is a point-of-care diagnostic tool used to assess blood coagulation in real time. It measures the viscoelastic properties of whole blood as it clots and breaks down, providing dynamic insights into clot formation, strength, and dissolution. ROTEM is especially useful in managing bleeding and guiding transfusion decisions in trauma, surgery, and critical care settings. Unlike traditional lab-based coagulation tests, ROTEM offers faster, more comprehensive information on the entire clotting process, including contributions from platelets, fibrinogen, and clot lysis.

**Why Use Machine Learning to Automate ROTEM?**

Using **machine learning (ML)** to automate ROTEM interpretation offers several potential benefits:

1. **Timely and Objective Decision Support**  
   ROTEM produces complex, high-dimensional data (e.g., curves, multiple parameters like CT, CFT, MCF, ML). ML can quickly interpret these patterns to provide real-time, standardized decision support—crucial in time-sensitive settings such as trauma resuscitation or massive transfusion protocols.
2. **Reducing Variability**  
   Human interpretation of ROTEM can vary by clinician experience. ML offers consistent, reproducible interpretations and can act as a second reader to reduce errors.
3. **Prediction of Clinical Resources Needed**  
   ML models can be trained to predict clinical outcomes (e.g., need for transfusion, mortality, risk of rebleeding) based on ROTEM data combined with clinical variables, supporting early intervention and resource allocation.

**8 Key Inflexion Points**

**#1. Clinical Scenario**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model (i.e., what decision are you automating, who receives the information, and when/how will they receive the model output)*
  + [add notes here]

**#2. Data Available**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model (i.e., what data should be used to the develop the model and where should the data come from when deployed)*
  + [add notes here]

**#3. Prediction Time Window**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model*
  + [add notes here]

**#4. Model Pipeline**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model*
  + [add notes here]

**#5. User Interface and Human-Computer interaction Scenario**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model (i.e., what is important to include in UI?)*
  + [add notes here]
  + [remember to attach screen shot]

**#6. User Training and Trust**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model*
  + [add notes here]

**#7. Reporting and Liability Considerations**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model*
  + [add notes here]

**#8. Post-Deployment Monitoring**

* *General notes on this section:* 
  + [add notes here]
* *Decisions for ROTEM model (e.g., how should we monitor this model after it has been deployed?)*
  + [add notes here]

***Please email this document and a screenshot of your user interface to*** [***gemma.postill@utoronto.ca***](mailto:gemma.postill@utoronto.ca)***.***