**COSC 515**

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**Assignment #1**

Read this article and answer the following questions:

<https://pubsonline.informs.org/do/10.1287/LYTX.2012.01.03/full/>

**a. What problem is being addressed by applying predictive analytics?**

The problem being addressed in the article is non-adherence to medical prescriptions. This is an issue that causes 125,000 premature deaths per year in the United States. Current methods of intervention on this issue are reactive by doctors, and are often too-little too-late.

**b. What is the FICO Medication Adherence Score?**

The FICO Medication Adherence Score accurately ranks patients’ likelihood to follow medical prescriptions by using metrics such as age, gender, marital status, etc. to predict medical adherence. The scoring model has been built using publicly available data to score patients on adherence in the first year.

**c. How is a prediction model trained to predict the FICO Medication Adherence Score HoH? Did the prediction model classify the FICO Medication Adherence Score?**

De-identified data from a large pharmacy-benefits manager on over one-million patients with five different diseases was used to train the prediction model. Then separate predictive models were generated for each of the diseases. The prediction model classified the FICO Medication Score of a patient based on this model.

**d. Zoom in on Figure 4, and explain what kind of technique is applied on the generated results.**

The generated results were segmented into higher and lower risk groups. Patient risk was sectored into deciles and then deciles were segmented in three groups of higher, normal, and lower risk. Each of these groups was provided a specialized number and level of interventions

**e. List some of the actionable decisions that were based on the prediction results**

Different actionable decisions were taken on patients depending on their FICO Medication Adherence Score. Some of these tactics included sending automated email or text reminders, simplifying drug regimens, providing instructions in a patient’s native language, and having a nurse visit to ensure proper usage of medication.